Section 3 Sampling Strategy

3.1 Excavation Sampling Strategy

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

- Sediment types
- Natural geographic features, such as steams and ponds
- Background research, including information from historic maps and Land Commission Award (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 was primarily based on the relationship to *kuleana* LCAs as indicators of areas of intensive traditional Hawaiian activity. A secondary factor in selection was 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 was 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 that limited the survey effort were:

- The survey area's large (13.87 acres), dispersed (6.9 km/4.3 miles) expanse
- 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 AISP proposed 232 test excavations within the 13.87-acre project footprint, arranged much like a string of pearls along the City Center corridor (Figure 14 and Figure 15). The AISP served as a framework to guide the archaeological inventory survey work. This section details the subsurface sampling strategy that was the primary means of archaeological cultural resource inventory.

While a good faith effort was made to carry out these specific excavations it was anticipated that 3 percent to 10 percent of these specific proposed excavations would not be feasible for whatever combination of reasons, including current built environment constraints, public safety, and traffic management requirements. The SHPD was kept in close consultation regarding any deviations from the terms of the plan and if more than 5 percent of the proposed excavations

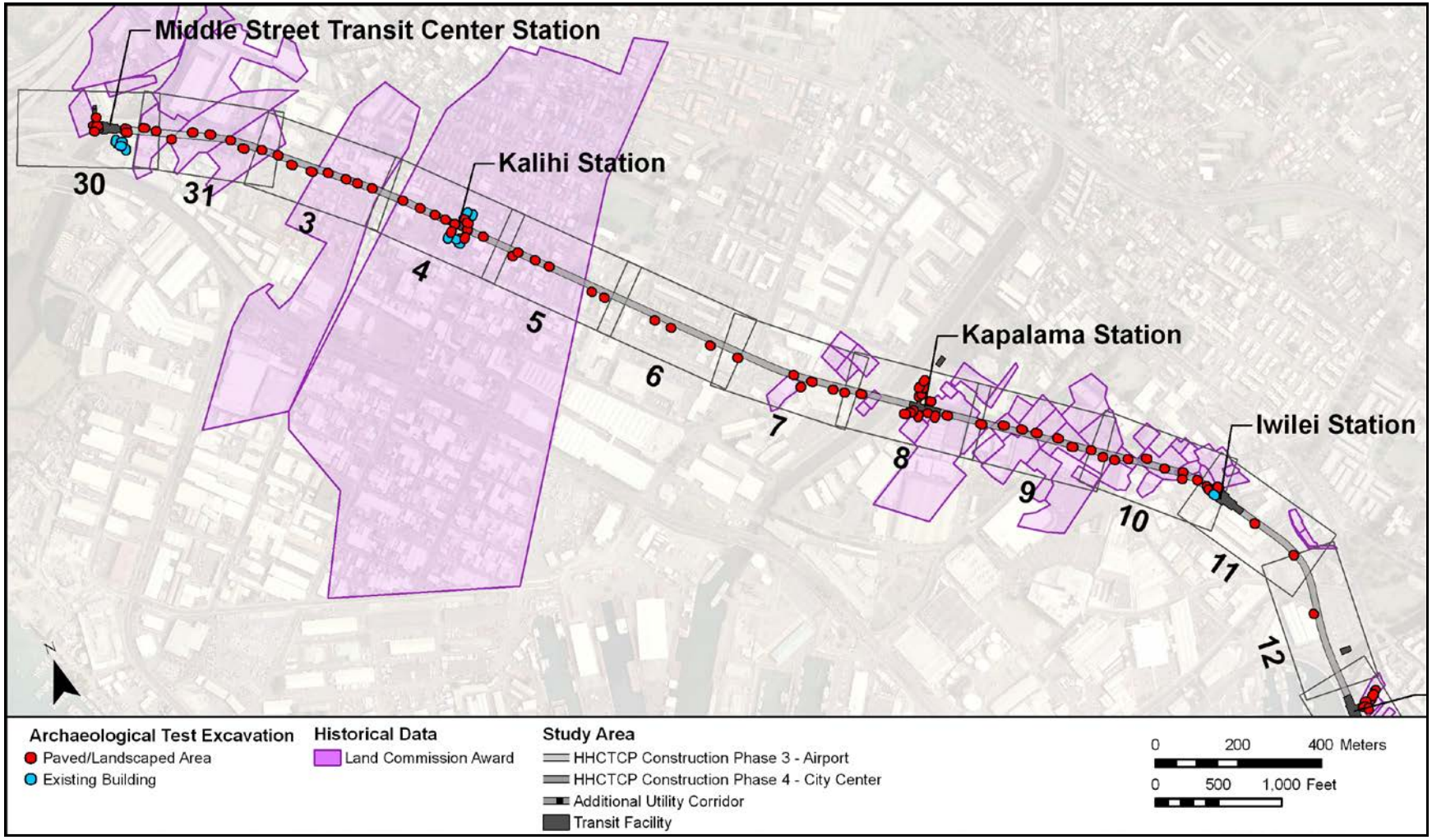

Figure 14. Proposed AISP testing locations (232 test excavations) in the western portion of the City Center Corridor (from Hammatt et al. 2011)

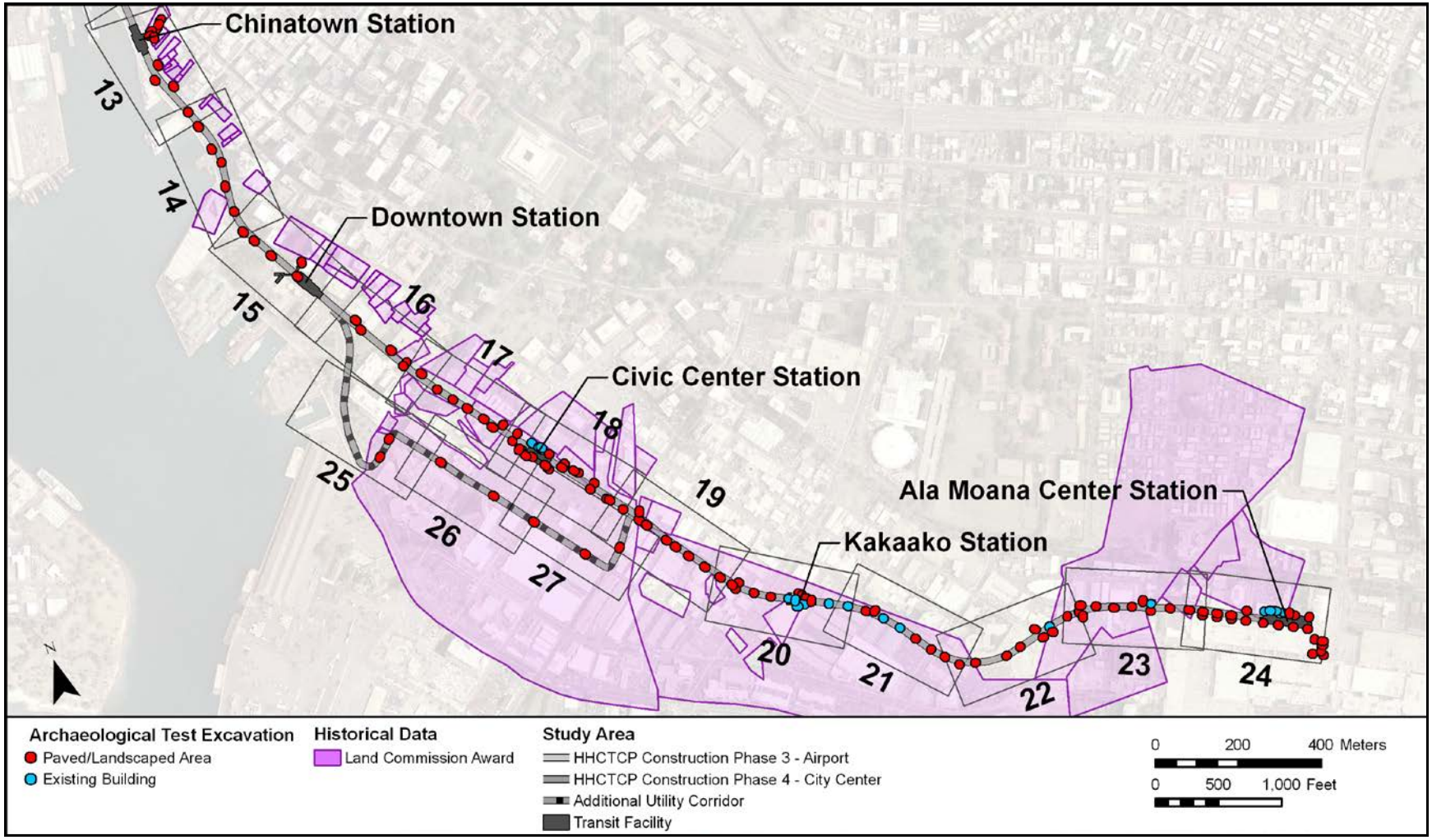

Figure 15. Proposed AISP testing locations (232 test excavations) in the eastern portion of the City Center Corridor (from Hammatt et al. 2011)

proved unfeasible, replacement locations for unfeasible excavations were proposed. The SHPD was kept abreast of unanticipated constraints and/or opportunities that arose during the AIS fieldwork. A total of nine of the 232 test excavations (3.87 percent) had to be abandoned; however, additional test excavations as well as test cores were added to document finds, increasing the total number of test excavations to 250 with seven supplementary geotechnical cores. The 250 test excavations actually conducted during the AIS are depicted on Figure 16 and Figure 17. These figures can be compared to Figure 14 and Figure 15, which depict the proposed 232 trenches from the AISP. The numbered mapping sheets on both sets of figures are the same, except that letters have been added before the map sheet number on the actual AIS test excavation figures and Sheet #s 25, 26, and 27 in the proposed AISP test excavation figures have been changed to Sheet #s P1, P2, and P3 in the actual AIS test excavation figures. These map sheet numbers are also referred to in Section 3.5, discussion of excavation sampling strategy for guideway column foundation locations and utility relocations, below. On Figure 14 and Figure 15, the red dots indicate test excavations that were planned outside in landscaped or paved areas, while the blue dots represent test excavations that were planned inside existing buildings. On Figure 16 and Figure 17, the red dots depict completed test excavations, while the black dots represent abandoned test excavations.

The initially proposed 232 specific locations for archaeological test excavations were regarded as a starting place. Finds of human skeletal remains and/or any other significant archaeological finds and/or specific types of sediments led to additional testing. Additional test excavations were undertaken within the project engineering footprint in the vicinity of areas that required additional investigation. Specific additional testing strategies were developed in consultation with the SHPD, the City, and project engineers.

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

3.2 Kaka‘ako Station Relocation

Kaka‘ako Station and a portion of the HHCTCP corridor near the Kaka‘ako Station were relocated based on consultation with the land owner in that area and subsequent to the approval of the City Center AISP. This station relocation was addressed in an AISP addendum (Hammatt et al. 2013), which was accepted in the SHPD Section 106 review letter of March 1, 2013 (Log No. 2013.1958, Doc. No. 1302SL28).

Kaka‘ako Station was moved slightly (approximately 50 m) to the northeast (*mauka*) to the Alternate A site. The alignment was changed beginning approximately 30 m (100 ft) NW (‘Ewa) of Ward Avenue (on the NE or *mauka* side of Halekauwila Street) and ending 100 m (330 ft) SE (Diamond Head) of Kamake‘e Street in the middle of Queen Street, where it rejoins the previously proposed alignment (Figure 18 and Figure 19). In keeping with the AISP’s survey strategy, a “one-for-one” approach for test excavations was used for this slight movement northeast of the infrastructure resulting in the same number and same total area of proposed test excavations (see Figure 18 and Figure 19).

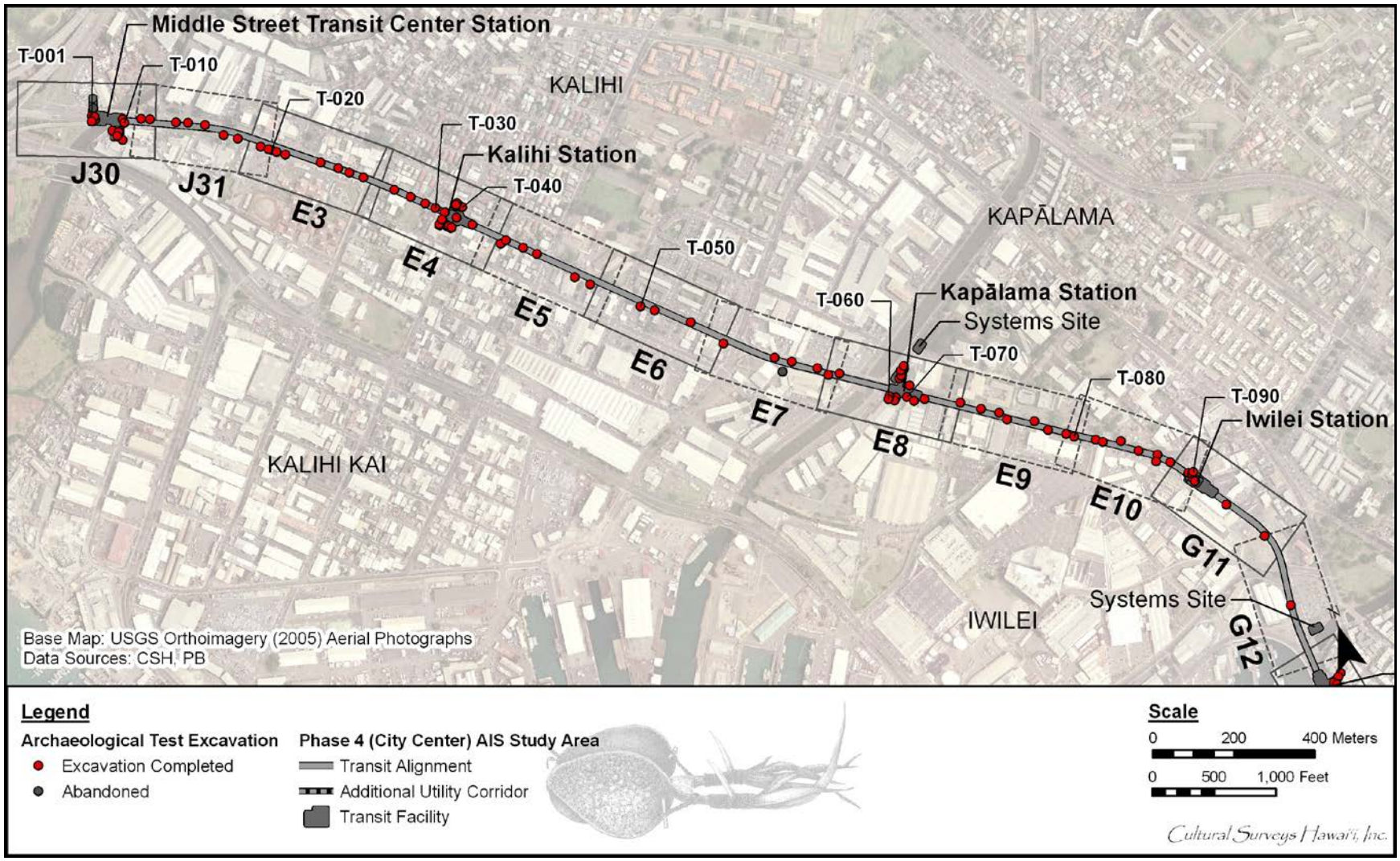

Figure 16. Actual AIS testing locations (250 test excavations) in the western portion of the City Center corridor

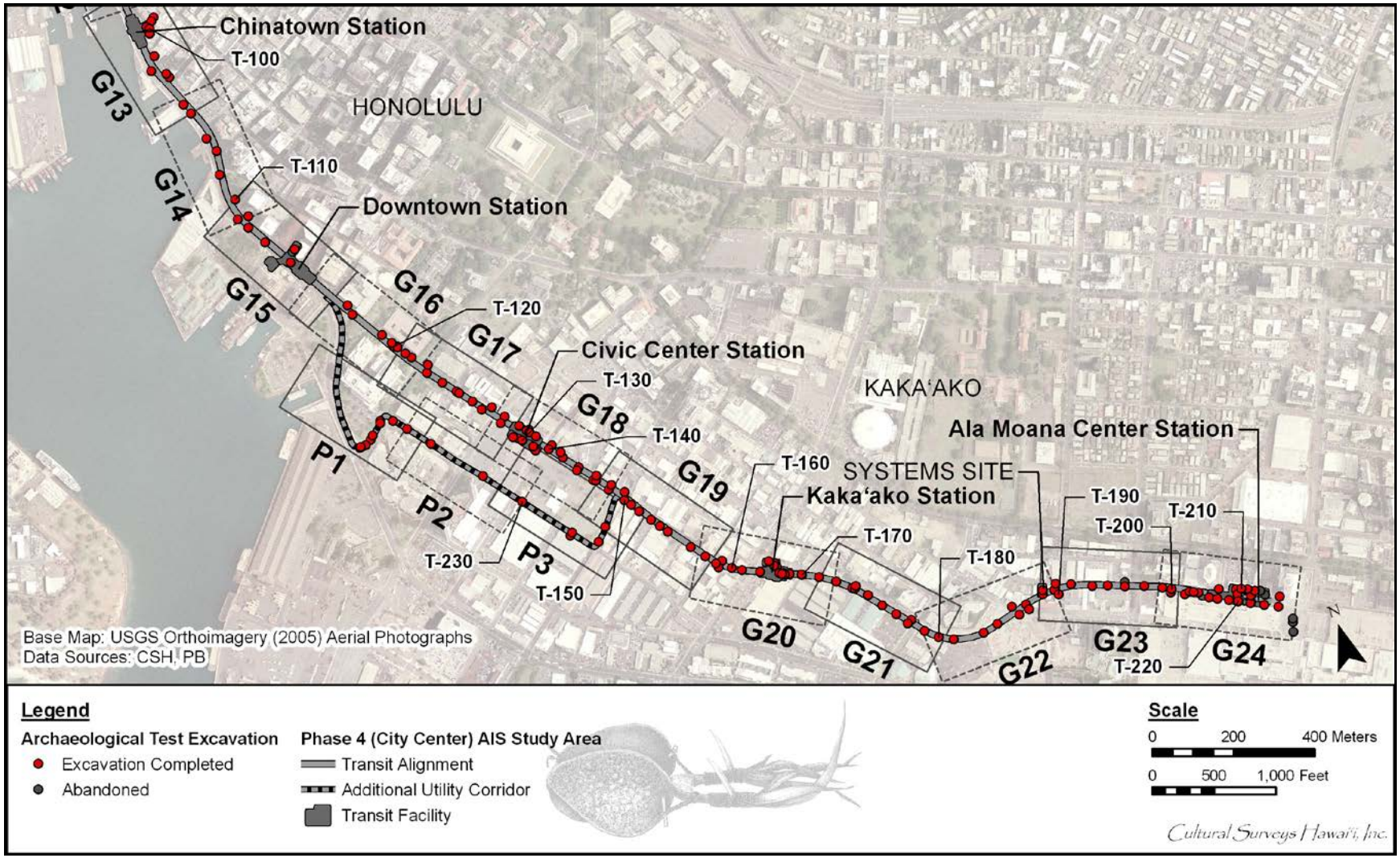

Figure 17. Actual AIS testing locations (250 test excavations) in the eastern portion of the City Center corridor

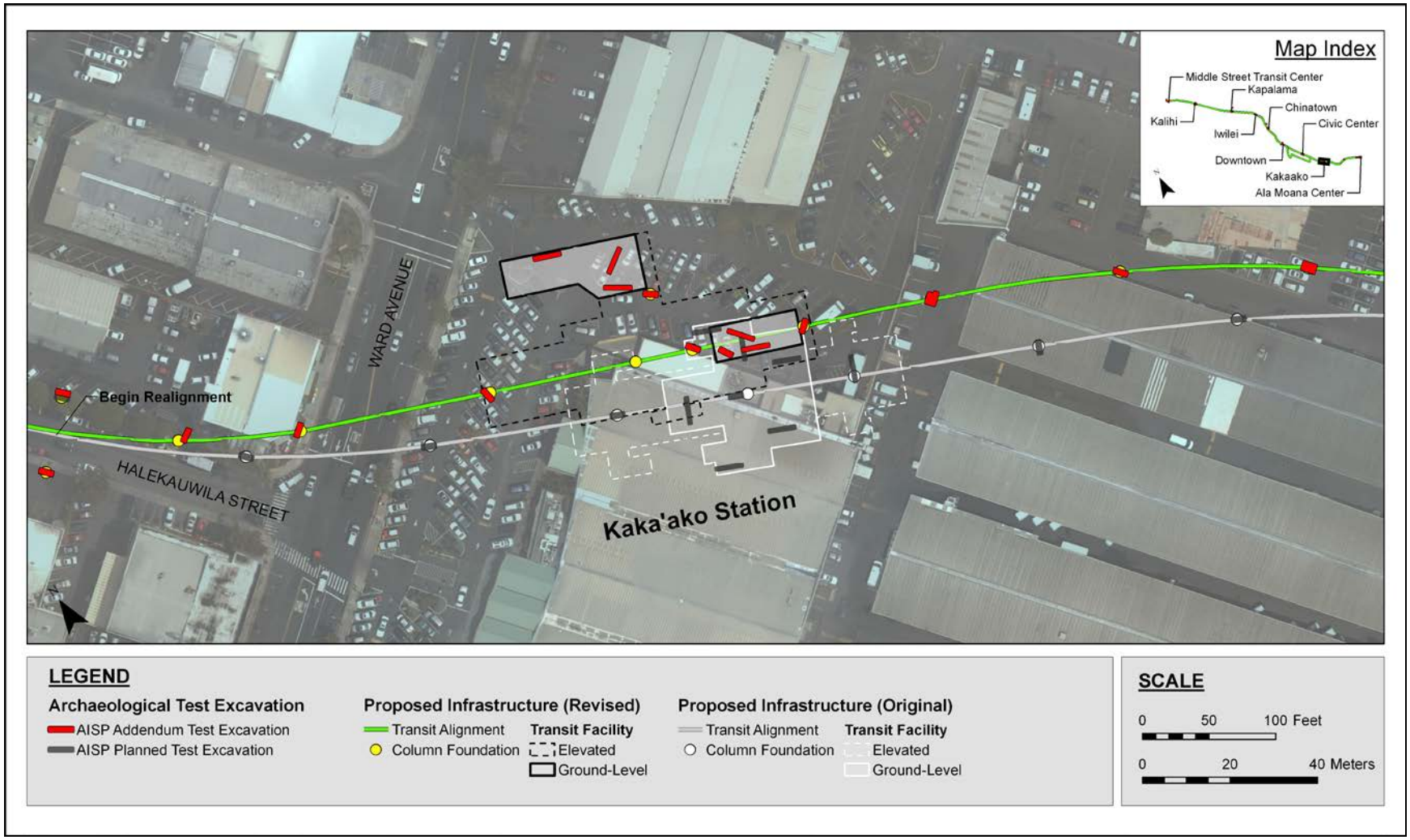

Figure 18. Aerial photograph showing relocations of Kaka‘ako Station and alignment (base map: 2006 PB aerial photographs)

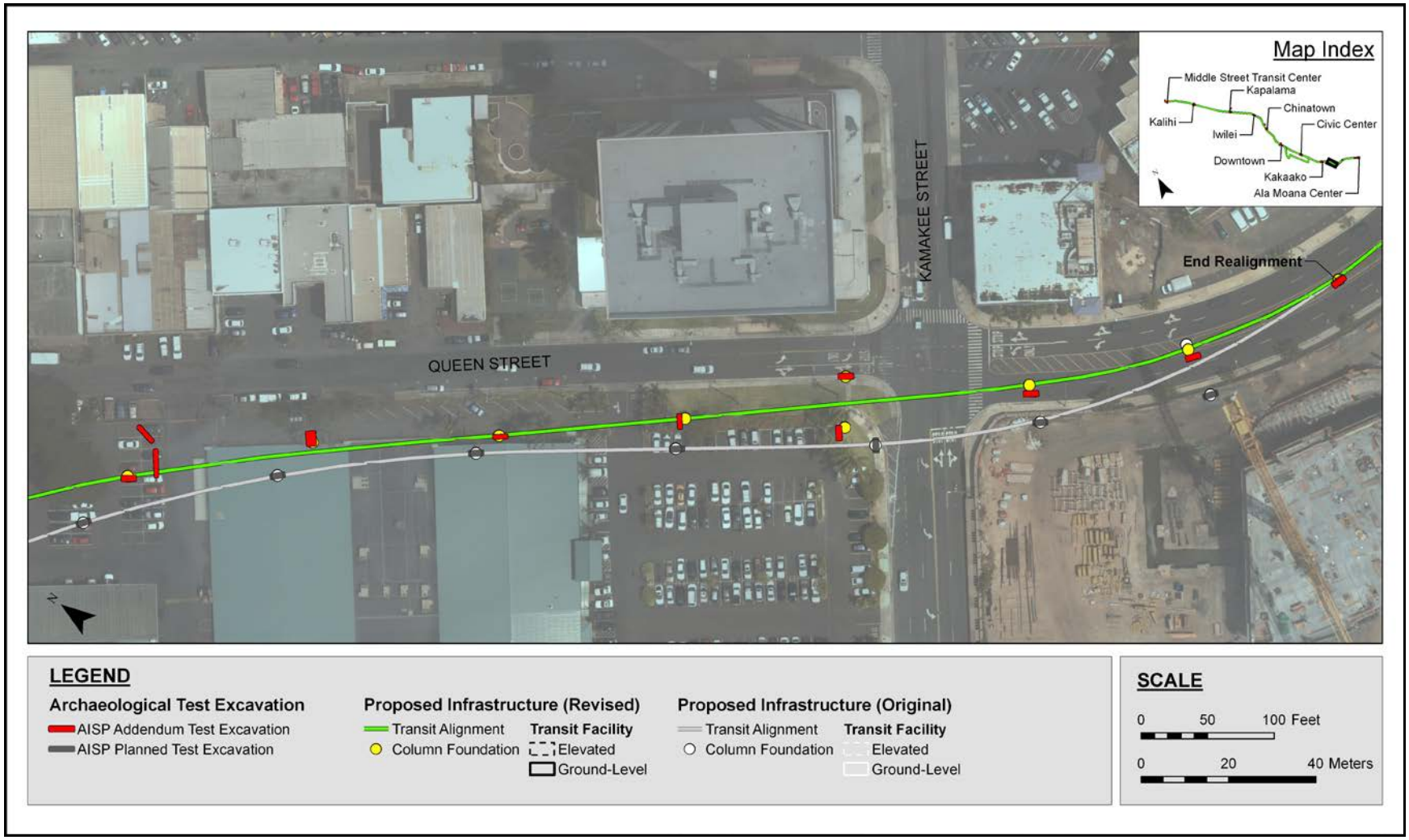

Figure 19. Aerial photograph showing transit realignment just southeast of the Kaka‘ako Station (base map: 2006 PB aerial photographs)

3.3 Additional and Abandoned Testing

The overall objective of the archaeological cultural resource identification activities was to locate and document archaeological cultural resources that may be affected by project construction. Once identified, these archaeological deposits were investigated and recorded in sufficient detail so that their significance could be assessed and the project's potential effect on significant archaeological deposits could be evaluated.

The AIS investigation strove to provide information to project engineers that would allow for the avoidance of significant archaeological deposits, particularly burials, during the City Center construction. The current sampling strategy was 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 AISP originally proposed 232 test excavations within the 13.87-acre City Center footprint; at the end of the AIS, 250 test excavations and seven test cores were completed. Additional testing was 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 was required at the locations of archaeological finds and in areas of no finds, but where excavation results for that area (for example the sediment types exposed) indicated more testing was warranted. The abandonment of several test excavations during the City Center AIS was also warranted. This was due to prior disturbances, station and column redesigns, and property access issues

The survey area for the City Center AIS (and the APE) was confined to the area of direct, project-related ground disturbance. The AIS investigation was limited to that area. Discussions with Native Hawaiian individuals and groups 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, would be located within the project footprint. Trenches would not be expanded outside of that footprint.

3.3.1 Decisions for 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 depended 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 needed was decided on a case-by-case basis based on these factors and in consultation with the City and the SHPD.

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

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

Because of the narrowness of the study area (east/west axis of the rail alignment), the focus of additional testing first determined the ʻEwa/Diamond Head extent of the subsurface deposit. Once this was established, the area may have been further tested to determine the extent of the deposit *mauka/makai* (north/south—perpendicular to the rail alignment axis).

The additional AIS testing at discoveries was an iterative process. The focus was 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 was a primary concern. If engineering and subsequent testing quickly determined a means of avoidance, and sufficient information had been gathered to assess significance and project effect, then AIS testing at that location was complete. If avoidance became more difficult based on project engineering, existing built environment constraints, and the results of additional testing, continued AIS testing became necessary to find an appropriate design and engineering solution. Decisions had to be made on a case-by-case basis. Project design/engineering constraints and flexibility at each location played a large part in the decision-making process. SHPD and City input was part of the process.

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

A. Completed trenches outlined in the discussion of the sampling strategy for general geographic areas. This provided at least broad-brush information regarding archaeological cultural resource locations for that geographic area

B. When archaeological resources were discovered, provided description and location information to PB/HART planning and engineering team and the SHPD

C. For discoveries of iwi kūpuna, notified appropriate parties (e.g., the SHPD, the OIBC, NHOs, lineal and cultural descendants) following the burial consultation protocol

D. For the location of a find, consulted GIS layers of existing utilities and the proposed project build out for that location based on preliminary engineering

E. Consulted project engineers about testing options and the flexibility of project design/engineering for that location

F. Consulted with the SHPD and asked for its input regarding additional testing options

G. Designed additional testing strategy in the vicinity of the find, focusing on areas that would be affected by project construction (e.g., a replacement column location), including potential areas for project redesign to avoid the find

H. Notified project engineers to obtain any additional permits and/or traffic control that was needed for the additional testing

I. Conducted additional testing

J. Working with project engineers, compared testing results to preliminary engineering in that area to see if there was a design/engineering solution to avoid the find

K. Evaluated whether there was sufficient information to describe and assess the significance, and determine the project's effect on the find

L. If a design/engineering solution was not found to avoid the find and/or there was need for additional testing to document the find and assess its significance, repeated consultation steps above with GIS, engineers, and the SHPD

M. Designed and implemented additional testing and reevaluated results in terms of a potential design or engineering solution to avoid the find

N. Ensured sufficient information was available to evaluate the archaeological cultural resource's significance and the project's effect on that resource

O. If no design/engineering solution was available to avoid find, considered appropriate mitigation options, for example, burial relocation or data recovery

The description and location information of a find was disseminated quickly to the SHPD, consulting parties, and project engineers. The additional AIS testing did not need to follow immediately after the discovery and initial documentation of a find. There was time to consult and make considered decisions regarding additional AIS testing in the vicinity of finds.

3.3.2 Decisions for Additional AIS Testing at Other Areas

The need for additional AIS testing was not limited to areas where the proposed sampling strategy documented archaeological cultural resources. Additional testing was also required in areas of no finds, but where excavation results for that area (for example the sediment types exposed) indicated more testing was required as part of the AIS identification effort.

The actual number and location of additional testing locations in these "no find" areas was 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 for that area; and the type of evidence (for example a thick sand deposit) that had triggered the need for additional testing. In consultation with project engineers, an additional testing strategy was designed in the vicinity to identify if archaeological cultural resources were present. This additional testing focused on areas that would be affected by project construction based on preliminary engineering. The additional testing was designed and carried out in consultation with the City and the SHPD. Archaeological cultural resources found during additional AIS testing followed the procedures outlined above.

3.3.3 Additional Testing Performed

Twenty-seven test excavations were added during the course of the City Center AIS (Table 2). These test excavations were added in order to: further investigate archaeological finds, find alternative routes for project elements in order to avoid sensitive cultural materials, and provide archaeological coverage in areas where sediment types indicated archaeological deposits might be present. The locations of the 27 added test excavations can be seen on figures in Sections 3.4 and 3.5, below.

Table 2. Description of Additional Test Excavations

Test Excavation	Excavation Type	Street	Area ft^2
020A	Utility Relocation (6” Gas)	Kamehameha Highway	40
104A	Utility Relocation (Fiber Optic Line)	Nimitz Highway	40
111A	Utility Relocation (Electrical Line)	Nimitz Highway	40
119A	Utility Relocation (Electrical Line)	Halekauwila Street	30
120A	Utility Relocation (Electrical Line)	Halekauwila Street	40
120B	Utility Relocation (Electrical Line)	Halekauwila Street	30
122A	Utility Relocation (Electrical Line)	Halekauwila Street	30
146A	Guideway Column	Halekauwila Street	30
148A	Guideway Column	Halekauwila Street	24
151A	Utility Relocation (8” Sewer)	Halekauwila Street	40
168A	Station Building	Ward Avenue	30
168B	Station Building	Ward Avenue	40
170A	Guideway Column	Ward Avenue	32
172A	Guideway Column	Queen Street	30
174A	Utility Relocation (Electrical Line)	Queen Street	30
175A	Guideway Column	Queen Street	30
178A	Guideway Column	Kamake‘e Street	30
202A	Utility Relocation (24” Storm Drain)	Kona Street	40
226A	Utility Relocation (Electrical Line)	Punchbowl Street	40
226B	Utility Relocation (Electrical Manhole)	Punchbowl Street	40
226C	Utility Relocation (Electrical Manhole)	Punchbowl Street	40
226D	Utility Relocation (Electrical Manhole)	Punchbowl Street	40
227A	Utility Relocation (Electrical Manhole)	Punchbowl Street	40
227B	Utility Relocation (Electrical Manhole)	Punchbowl Street	40
228A	Utility Relocation (Electrical line)	Pohukaina Street	40
231A	Utility Relocation (Electrical Manhole)	Pohukaina Street	40
232A	Utility Relocation (Electrical Line)	Cooke Street	40
Total Area Added			**966**

Test Excavation 20A (T-020A) was added to further investigate an *imu* feature (SIHP #50-80-14-7425) discovered in the adjacent T-020. This test excavation also investigated a utility relocation.

T-104A was added to further investigate the natural land surface/coral shelf in the area. The adjacent T-104 could not be entered due to safety concerns and, therefore, it was never determined if the BOE (base of excavation) was at the coral shelf or just a coral boulder concentration. T-104A also investigated a utility relocation.

T-111A was added to further investigate the "Honolulu Fort" area, since the nearby test excavations (T-111 and T-112) did not encounter any deposits associated with this historically documented landmark and T-111 had to be terminated early due to safety concerns. This test excavation also investigated a utility relocation.

T-119A was added to further investigate and delineate the boundaries of the basalt stone and mortar wall found within adjacent T-119 to the northwest—part of SIHP #50-80-14-70428. This test excavation also investigated a utility relocation.

T-120A was added to further investigate and delineate the boundaries of the feature concentration found within T-120, approximately 5 m to the northeast—part of SIHP #50-80-14-7428. This test excavation also investigated a utility relocation.

T-120B was added to further delineate the boundaries of the feature concentration found within T-120 and T-120A, approximately 30 m and 40 m (respectively) to the northwest—part of SIHP #50-80-14-7428. This test excavation also investigated a utility relocation.

T-122A was added to further investigate a wetland deposit (part of SIHP #50-80-14-2963) located in T-122. This test excavation also investigated a utility relocation.

T-146A was added because T-146 encountered a subsurface concrete jacket and could not be completely excavated. T-146A further investigated and delineated the boundaries of SIHP #50-80-14-5820. This test excavation also investigated a guideway column location.

T-148A was added because T-148 encountered a subsurface concrete jacket and could not be completely excavated. T-148A further investigated and delineated the boundaries of SIHP #50-80-14-5820. This test excavation also investigated a guideway column location.

T-151A was added to further investigate features associated with SIHP #50-80-14-5820. This test excavation also investigated a utility relocation.

T-168A was added to further investigate and delineate the boundaries of SIHP #50-80-14-7429. This test excavation also investigated a portion of the station building.

T-168B was added to further investigate and delineate the boundaries of SIHP #50-80-14-7429. This test excavation also investigated a portion of the station building.

T-170A was added to increase testing coverage area due to redesign and slight relocation of the guideway column tested by T-170. T-170A also further investigated cultural material associated with SIHP #50-80-14-7429 in T-170. This test excavation also investigated a guideway column location.

T-172A was added to further investigate natural sand/land surfaces documented in T-172. This test excavation also investigated a guideway column location.

T-174A was added to increase testing coverage area due to utility relocation and to further investigate natural sand/land surfaces documented in T-174. This test excavation also investigated a utility relocation.

T-175A was added to further investigate natural sand/land surfaces documented in T-175. This test excavation also investigated a guideway column location.

T-178A was added to further investigate natural sand/land surfaces for the immediate area. This test excavation also investigated a guideway column location.

T-202A was added to further investigate the vicinity of a historic privy located in T-202 (SIHP #50-80-14-7430).

T-226A was added because T-226 encountered a 12-inch waterline and could not be fully excavated. T-226A further investigated subsurface cultural deposits designated SIHP #50-80-14-2918.

T-226B was added to increase testing coverage area due to utility relocation and to further investigate subsurface cultural deposits designated SIHP #50-80-14-2918.

T-226C was added to increase testing coverage area due to utility relocation and to further investigate subsurface cultural deposits designated SIHP #50-80-14-2918.

T-226D was added to increase testing coverage area for utility relocation due to redesign around human skeletal remains located in T-226C and to further investigate subsurface cultural deposits designated SIHP #50-80-14-2918.

T-227A was added to further investigate subsurface cultural deposits designated SIHP #50-80-14-2918. This test excavation also investigated a utility relocation.

T-227B was added to further investigate subsurface cultural deposits designated SIHP #50-80-14-2918. This test excavation also investigated a utility relocation.

T-228A was added to further investigate natural sand/land surfaces for the immediate area. This test excavation also investigated a utility relocation.

T-231A was added to further investigate the vicinity of T-231, which encountered a utility line and could not be completely excavated. This test excavation also investigated a utility relocation.

T-232A was added to further investigate subsurface cultural deposits, a component of SIHP #50-80-14-7189, and sand deposits observed in T-232. This test excavation also investigated a utility relocation.

In addition to the 27 added test excavations, seven supplemental cores were drilled (Table 3). Six of these (098-1, 098-2, 099-1, 099-2, 101-1, and 101-2) were within the Chinatown Station footprint and were drilled in order to compare the coring sediment samples to the sediment samples previously collected from surrounding trenches. The stratigraphic information documented from the coring samples was compared against known stratigraphic information from T-096 and T-097, previously excavated to the basal coral shelf, and T-100 which reached the water table. The purpose of the coring test was to see whether or not any A-horizon/culturally modified sediments, natural organic peaty sediments, and estuary sediments could accurately be identified through coring and, if so, is coring a viable alternative to trenching in areas affected by

safety issues. The locations of these six geotechnical cores can be seen on the figures for SIHP #50-80-14-7427, the corresponding archaeological cultural resource, in Section 4.3. The goal of drilling the seventh core, 124A, aside from testing for a planned utility relocation, was to determine the presence or absence of sand deposits, and therefore the possibility of subsurface cultural deposits. The location of this geotechnical core can be seen on the figures for SIHP #50-80-14-2963, the corresponding archaeological cultural resource, in Section 4.3.

Table 3. Description of Supplemental Geotechnical Cores

ID #	Excavation Type	Street
098-1	Station Building	N Nimitz Hwy. and Kekaulike St.
098-2	Station Building	N Nimitz Hwy. and Kekaulike St.
099-1	Station Building	N Nimitz Hwy. and Kekaulike St.
099-2	Station Building	N Nimitz Hwy. and Kekaulike St.
101-1	Station Building	N Nimitz Hwy. and Kekaulike St.
101-2	Station Building	N Nimitz Hwy. and Kekaulike St.
124A	Utility Relocation (8” Water)	Halekauwila St.

3.3.4 Abandoned Testing

Nine test excavations had to be abandoned during the course of the project (Table 4). These test excavations were abandoned due to prior disturbances, station and column redesigns, and property access issues. T-003 and T-055 were abandoned due to prior disturbance: T-003 was planned to test a column location, but the proposed column will be straddling an existing fence line at a location where existing retaining walls and footings extend below grade, and T-055 was planned to test a proposed utility relocation that was located immediately adjacent to a newly constructed grease trap that CSH observed the excavation and installation of. T-135, T-197, T-223, T-224, and T-225 were abandoned due to column and/or station redesigns. T-135 was planned to test a proposed station touchdown point based on a prior design of the station footprint. Modular redesign and shortening of the straddle-bent foundations allowed for a reduction in the area of disturbance, and T-136 was expanded to provide additional investigation coverage in the area. T-197 was planned to test a proposed column location based on a prior design that employed a straddle-bent column; an alternative design consisting of a center pier was chosen instead. T-223, T-224, and T-225 were abandoned due to the redesign of Ala Moana Station. The station was redesigned to eliminate the need for touchdown/connectivity to the shopping center in the vicinity of the originally proposed trench locations. In consultation with SHPD, and based on the lack of observed archaeological deposits in neighboring test excavations, T-215 and T-216 were abandoned due to access issues; the private property owner refused to allow access to the area.

Table 4. Description of Abandoned Test Excavations

Test Excavation	Excavation Type	Street	Area (ft^2)
003	Station Column—prior disturbance	Kamehameha Highway	30
055	Utility Relocation—prior disturbance	Dillingham Boulevard	30
135	Station Building—design change	Halekauwila Street	40
197	Guideway Column—design change	Kona Street	30
215	Station Building—access denied	Kona Street	40
216	Station Column—access denied	Kona Street	30
223	Station Building—design change	Kona Street	40
224	Station Building—design change	Kona Street	40
225	Station Platform—design change	Kona Street	30
Total Area Abandoned			**310**

3.4 Excavation Sampling Strategy—Stations

This AIS addresses sampling at nine proposed stations. Subsurface testing occurred following the pedestrian survey of the study area and the GPR survey of the specific testing areas. Additional testing was considered in areas near any test excavation where archaeological cultural resources were identified or where testing results indicated the likelihood of archaeological cultural resources. The extent of additional testing was made in consultation with the SHPD. The testing strategy at the nine transit stations is described in Table 5.

Figures depicting the testing strategy and photographs showing general location overviews of each transit station are provided below (Figure 20 through Figure 84). The figures not only depict the locations of test excavations, but provide insight into how the test excavation locations were chosen—for example, they show the specific project component or feature that is tested by each test excavation. For the transit stations, test excavation locations were chosen to provide sampling across the station footprint, with particular interest in areas of deeper, subsurface excavations—such as areas of elevator shafts. Stations and station components in areas of previous subsurface work and areas located seaward of the former shoreline (which would contain only fill materials—such as at the Downtown Station) had much fewer test excavations. In these figures, the original AISP proposed testing locations are shown in blue, while the actual excavated trenches are shown in red, and abandoned test excavations are shown in black. For most station locations, the actual footprint of the station touchdowns (the areas where otherwise elevated stations meet the ground, such as the entrance ways) were redesigned and contracted (i.e., the station touchdowns were made smaller) subsequent to the approval of the City Center AISP. The redesigned station layouts were provided to CSH and the station test excavations were adjusted to match the redesigned station footprints. In almost all cases the number of proposed station test excavations remained the same, only the distribution within the redesigned station touchdown changed. This is apparent in examining the various station touchdown footprint figures, where the AISP proposed test excavation locations in blue are shown outside the current station touchdown footprint of many of the newly designed (and contracted) stations. If the number of blue AISP proposed test excavations is less than indicated on Table 5, this is because the red actual test excavations share the same footprint, and the red actual test excavations covers the AISP proposed test excavations.

Table 5. Sampling Strategy at Transit Station and Ancillary Facility Locations

Location	Proposed AISP Subsurface Testing	Actual AIS Subsurface Testing
Middle Street Transit Center Station	Test four 2’ by 20’ excavations and two 3’ by 10’ excavations at station column foundations; One 2’ by 20’ off-set test excavation at a nearby *makai* sewer relocation; Four 2’ by 20’ test excavations at (*makai*) Station Ancillary Building; No test excavations at (*mauka)* Station Entrance Building due to prior soil remediation work that completely removed the former sediments of this area	Tested three 2’ by 20’ excavations (T-001, 005, 009) and two 3’ by 10’ excavations (T-002, 004) at station column foundations (T-004 was reduced to a 3’ by 10’ excavation due to utility conflicts and T-003, a 3’ by 10’ excavation, was abandoned due to conflicts with existing infrastructure); One off-set test excavation (T-010; reduced to a 3’ by 10’ excavation due to utility conflicts) at a nearby makai sewer relocation; Four 2’ by 20’ test excavations (T-006, 007, 008, 011) at (*makai*) Station Ancillary Building; No test excavations at (*mauka)* Station Entrance Building due to prior soil remediation work that completely removed the former sediments of this area
Kalihi Station	Test three out of three station column foundations with 3’ by 10’ excavations; Four 2’ by 20’ test excavations at (*mauka*) Station Entrance Building; Six 2’ by 20’ test excavations at (*makai*) Station Entrance Building	Tested three out of three station column foundations with 3’ by 10’ excavations (T-033, 041, 043; one column location has since been moved); Four 3’ by 10’ test excavations (T-034, 036, 037, 040) at (*mauka*) Station Entrance Building (all test excavations readjusted due to station redesign); Five 2’ by 20’ (T-032, 035, 038, 039, 042) and one 3’ by 10’ (T-031) test excavations at (*makai*) Station Entrance Building (all test excavations readjusted due to station redesign)

Location	Proposed AISP Subsurface Testing	Actual AIS Subsurface Testing
Kapālama Station	No testing of three station column foundations due to utility constraints; Test one 3’ by 10’ off-set test excavation at a *makai* storm drain catch basin; Five 2’ by 20’ test excavations at (*mauka*) Station Entrance Building and one 2’ by 20’ test excavation at small *mauka* touchdown; Four 2’ by 20’ test excavations at (*makai*) Station Entrance Building and one 2’ by 20’ test excavation at small *makai* touchdown	No testing of three station column foundations due to utility constraints; Tested one 3’ by 10’ off-set test excavation (T-070) at a *makai* storm drain catch basin; Five 2’ by 20’ test excavations (T-062, 064, 065, 066, 067) at (*mauka*) Station Entrance Building (all test excavations readjusted due to station redesign) and one 2’ by 20’ test excavation (T-069) at small *mauka* touchdown; Four 2’ by 20’ test excavations (T-060, 061, 063, 068) at (*makai*) Station Entrance Building and one 3’ by 10’ test excavation (T-071) at small *makai* touchdown (all test excavations readjusted due to station redesign)
Iwilei Station	No testing of seven station column foundations due to their location in a former fishpond and constraints; Four 2’ by 20’ test excavations at Station Entrance Building	All test excavations readjusted due to station redesign: One 3’ by 10’ test excavation (T-088) at a station column foundation; Three 2’ by 20’ test excavations (T-089, 090, 091) at Station Entrance Building; One 2’ by 20’ test excavation (T-092) at Station Ancillary Building
Chinatown Station	No testing of four station column foundations due to their location seaward of the former shoreline and constraints; Three 4’ by 20’ test excavations at (*mauka*) Station Entrance Building; One 4’ by 20’ test excavations and two 2’ by 20’ test excavations at (*mauka*) Station Ancillary Building; No testing at (*makai*) HECO transformer due to its being located seaward of the former shoreline and constraints	No testing of four station column foundations due to their location seaward of the former shoreline and constraints; Three 4’ by 20’ test excavations (T-099, 100, 101) at (*mauka*) Station Entrance Building (all test excavations readjusted due to station redesign); One 4’ by 20’ test excavation (T-097) and two 2’ by 20’ test excavations (T-096, 098) at (*mauka*) Station Ancillary Building (all test excavations readjusted due to station

Location	Proposed AISP Subsurface Testing	Actual AIS Subsurface Testing
		redesign); No testing at (*makai*) HECO transformer due to its being located seaward of the former shoreline and constraints
Downtown Station	Test only two of 14 station column foundations with a single 2' by 20' test excavation in consideration of their being located seaward of the former shoreline and constraints; Only one 2' by 20' test excavation at (*mauka*) Station Entrance Building due to its being located seaward of the former shoreline and constraints; No testing at *(makai)* Station Entrance Building due to its location seaward of the former shoreline and constraints	Tested only two of 14 station column foundations with a single 2' by 20' test excavation (T-115) in consideration of their being located seaward of the former shoreline and constraints; Only one reduced (due to utility conflicts) 3' by 10' test excavation (T-114) at (*mauka*) Station Entrance Building due to its being located seaward of the former shoreline and constraints; No testing at *(makai)* Station Entrance Building due to its location seaward of the former shoreline and constraints
Civic Center Station	Test only four out of eight station column foundations with 3' by 10' test excavations due to constraints; Five 2' by 20' test excavations at (*makai*) Station Entrance Building to supplement 3½ previous test excavations within building footprint; One 3' by 10' test excavation at *mauka* elevator	All test excavations readjusted due to station redesign: Tested only four out of eight station column foundations with three 3' by 10' test excavations (T-131, 134, 137) and one 2' by 20' test excavation (T-136) due to constraints; Two 2' by 20' test excavations (T-132, 133) at (*makai*) Station Entrance Building to supplement 3½ previous test excavations within building footprint; Three 2' by 20' test excavations (T-130, 138, 139) at (*makai*) Station Ancillary Building to supplement 3½ previous test excavations within building footprint; One 2' by 20' test excavation (T-135) at *mauka* elevator was abandoned due to station redesign

Location	Proposed AISP Subsurface Testing	Actual AIS Subsurface Testing
Kaka‘ako Station	Test three out of three station column foundations with two 3’ by 10’ test excavations and one 2’ by 20’ test excavation; Six 2’ by 20’ test excavations at Station Entrance Building	All test excavations readjusted due to station redesign (refer to discussion of Kaka‘ako Station redesign in this Volume, Section 3.2): Tested four out of five station column foundations with four 3’ by 10’ test excavations (T-162, 166, 167, 169); Three 2’ by 20’ test excavations (T-163, 164, 165) at Station Entrance Building; Two 2’ by 20’ test excavations (T-168, 168B) and one 3’ by 10’ test excavation (T-168A) at Station Ancillary Building
Ala Moana Center Station	Test eight out of eight station column foundations (with 3’ by 10’ excavations); Four 2’ by 20’ test excavations at (*mauka*) Station Ancillary Building; Three 2’ by 20’ and three 3’ by 10’ test excavations at (*makai*) Station Entrance Building	All test excavations readjusted due to station redesign: Tested nine station column foundations with 3’ by 10’ test excavations (T-205, 206, 207, 208, 212, 213, 217, 218, 219, 220); One 2’ by 20’ test excavation (T-214) at (*mauka*) Station Ancillary Building (one 2’ by 20’ test excavation [T-215 and T-216] was abandoned); Two 2’ by 20’ test excavations (T-210, 211) and one 3’ by 10’ test excavation (T-209) at (*makai*) Station Entrance Building; Three 2’ by 20’ test excavations (T-204, 221, 222) for utility relocations

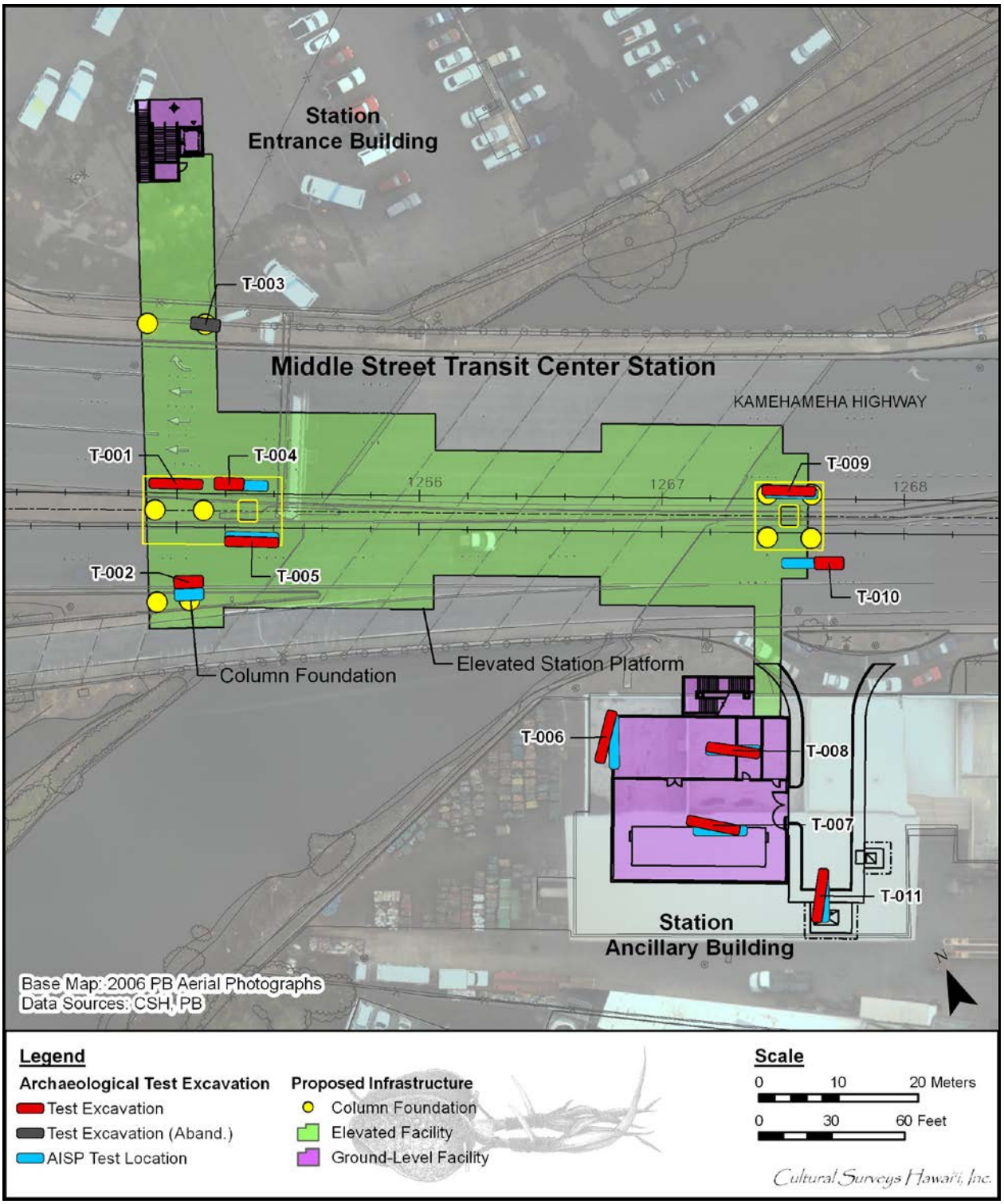

Figure 20. Middle Street Transit Center Station (Kamehameha Highway just east of Middle Street), aerial photograph showing overlay of transit center infrastructure (see following figures for details) and locations of proposed AISP and actual AIS test excavations

Figure 21. General view of Middle Street Transit Center Station, (*mauka*) Station Entrance Building location (subject of recent soil remediation work), view to north

Figure 22. General view of Middle Street Transit Center Station, western column foundations at Kamehameha Highway (Kalihi Stream in background at left), view to southwest

Figure 23. General view of Middle Street Transit Center Station, Station Ancillary Building location (present Gaspro buildings), view to southwest

Figure 24. General view of Middle Street Transit Center Station, eastern column foundations in median of Kamehameha Highway, view to southwest

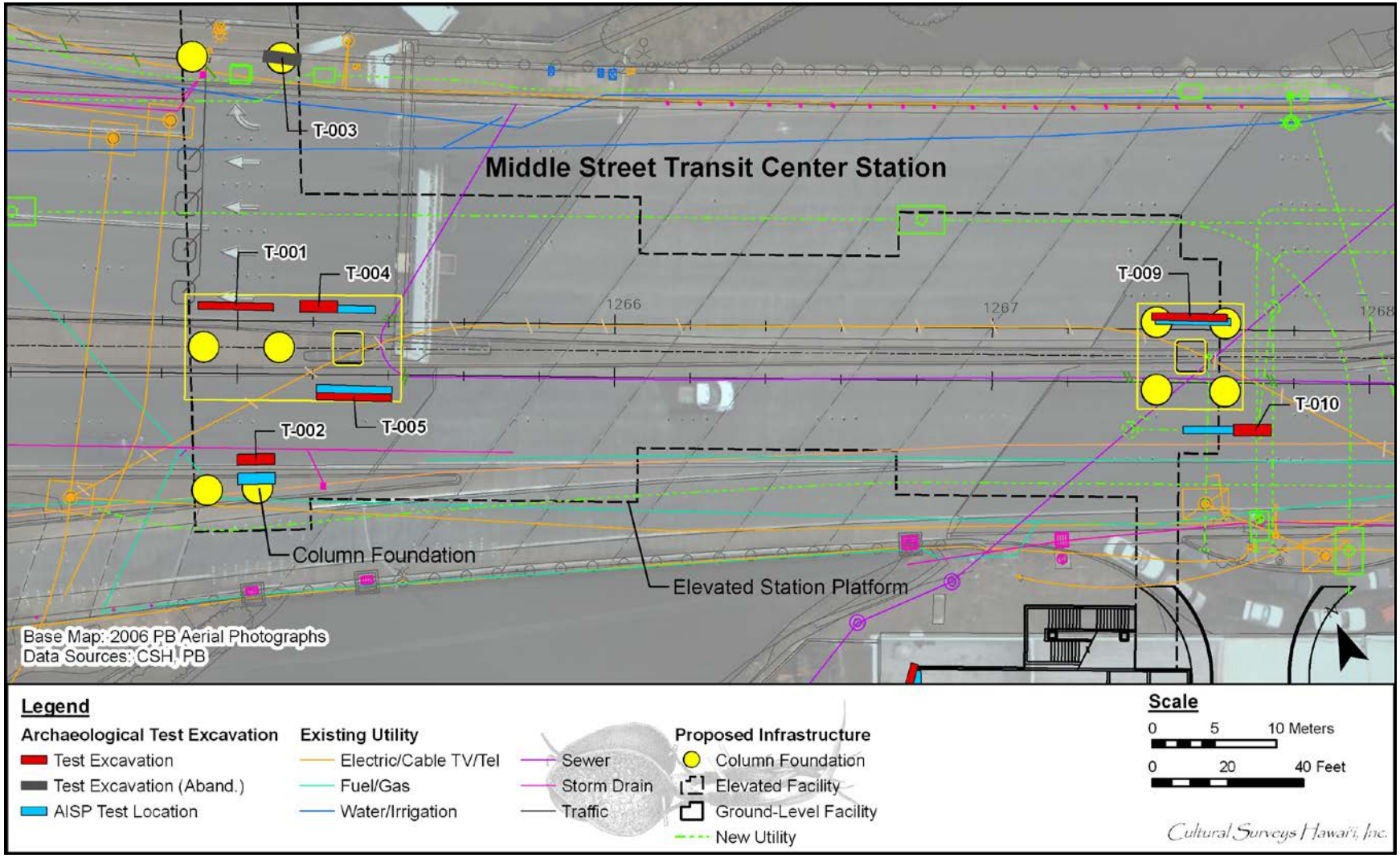

Figure 25. Middle Street Transit Center Station, detail of column foundation layout at Kamehameha Highway, showing locations of proposed AISP and actual AIS test excavations

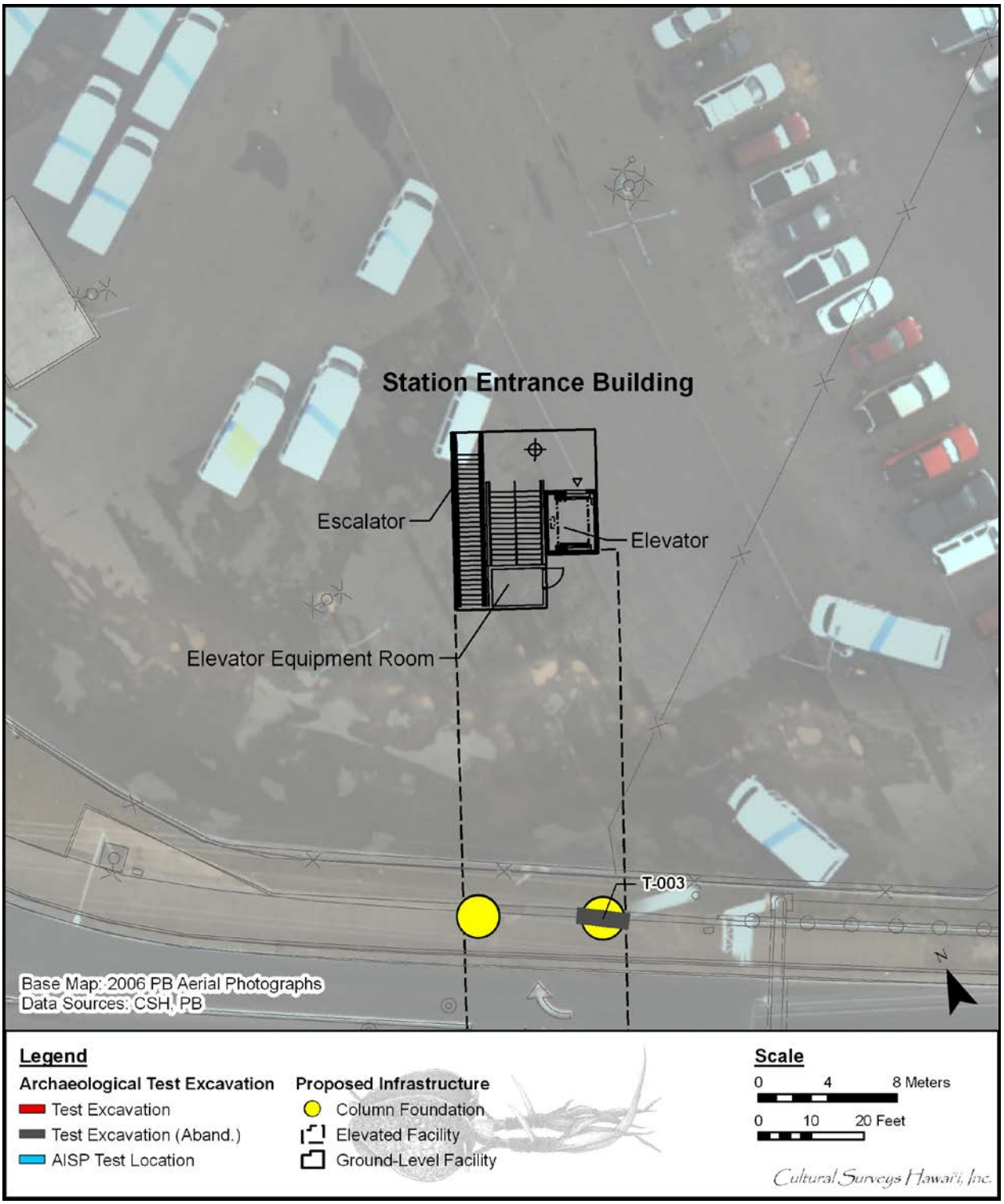

Figure 26. Middle Street Transit Center Station, detail of (*mauka*) Station Entrance Building (no test trenches at *mauka* Station Entrance Building due to prior soil remediation work); also note T-003, a test excavation at a column foundation that was abandoned

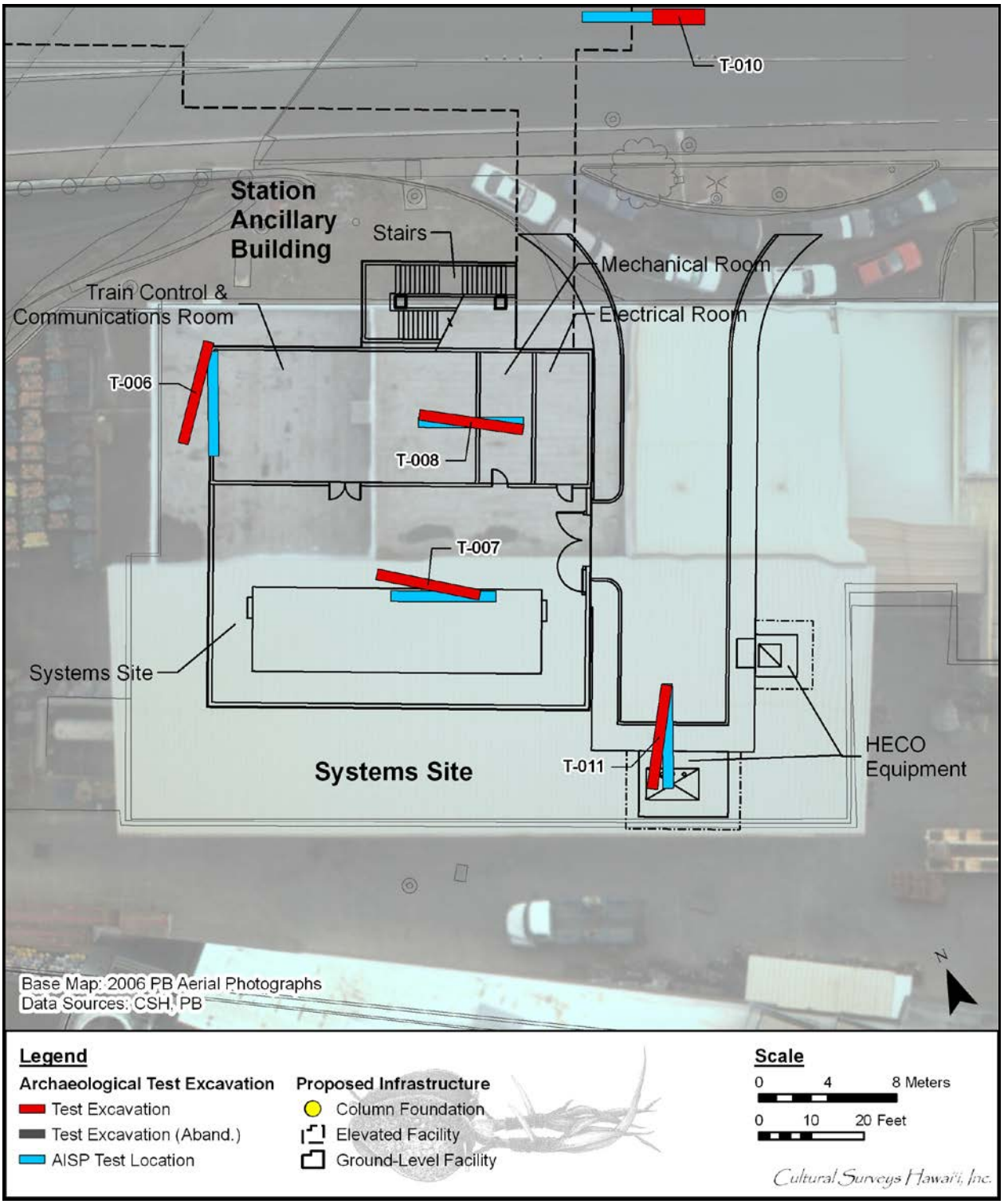

Figure 27. Middle Street Transit Center Station, detail of (*makai*) Station Ancillary Building showing locations of proposed AISP and actual AIS test excavations

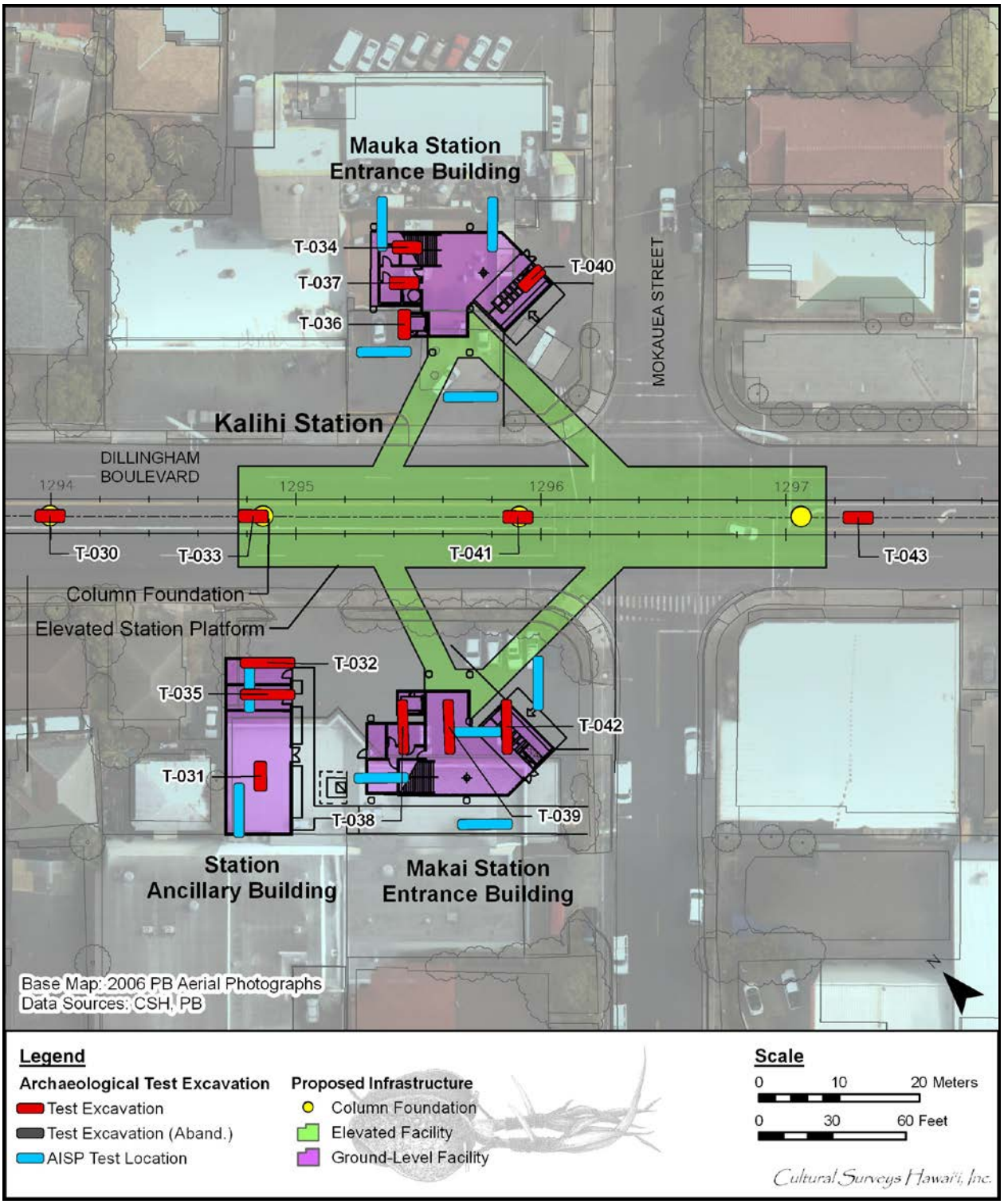

Figure 28. Kalihi Station (Dillingham Boulevard just west of Mokauea Street), aerial photograph showing overlay of transit station infrastructure (see following figures for details) and locations of proposed AISP and actual AIS test excavations

Figure 29. General view of Kalihi Station, southeast side of (*makai*) Station Entrance Building, (parking lot and Salon Del Mar hair styling), view to southwest

Figure 30. General view of Kalihi Station, southwest side of (*makai*) Station Entrance Building, (parking lot and Dillingham Cafe), view to southwest

Figure 31. General view of Kalihi Station, column foundations location, middle of Dillingham Boulevard, view to northwest

Figure 32. General view of Kalihi Station, (*mauka*) Station Entrance Building (parking lot and 7-Eleven convenience store), view to northeast

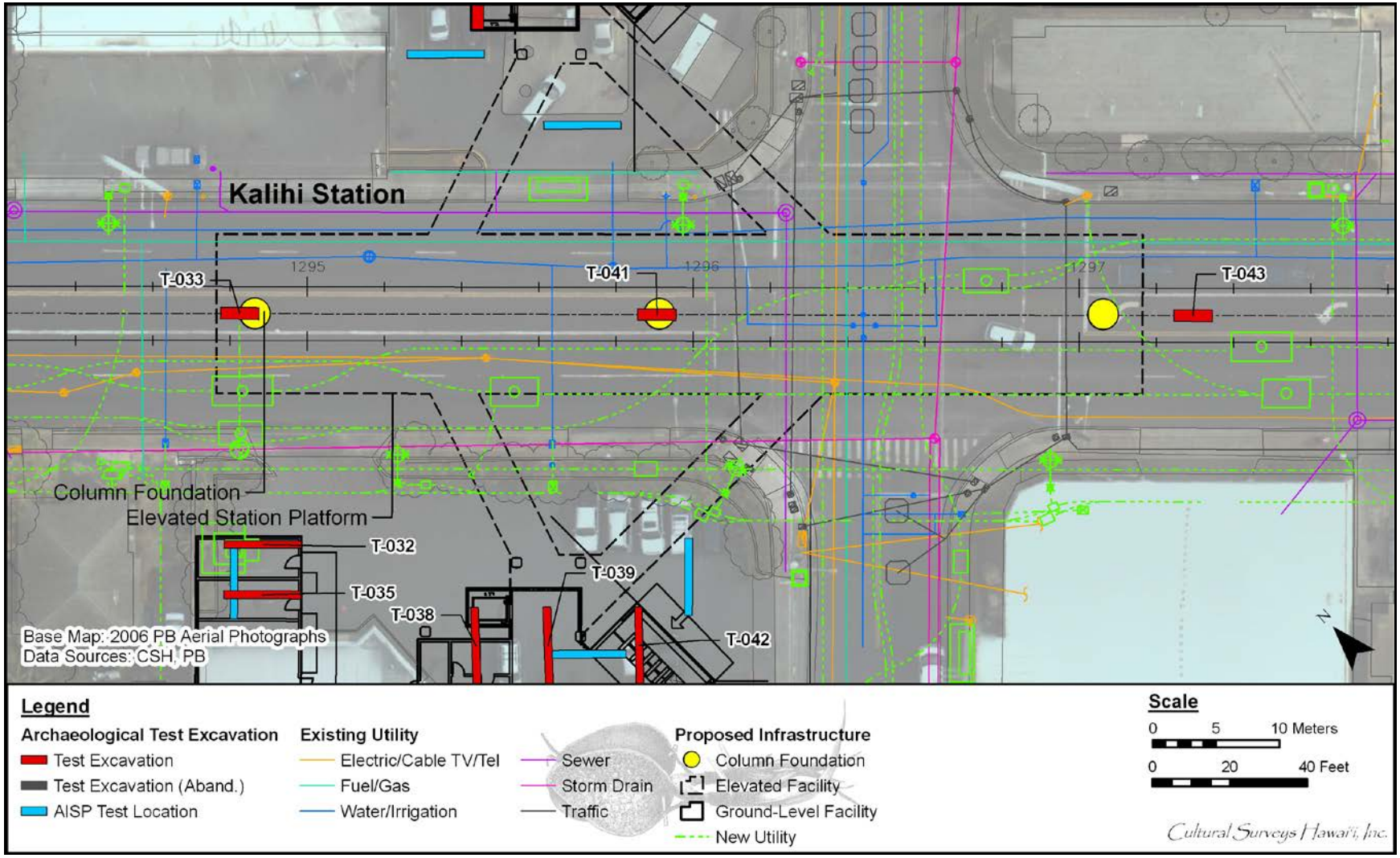

Figure 33. Kalihi Station, detail of column foundation layout at Dillingham Boulevard showing locations of proposed AISP and actual AIS test excavations

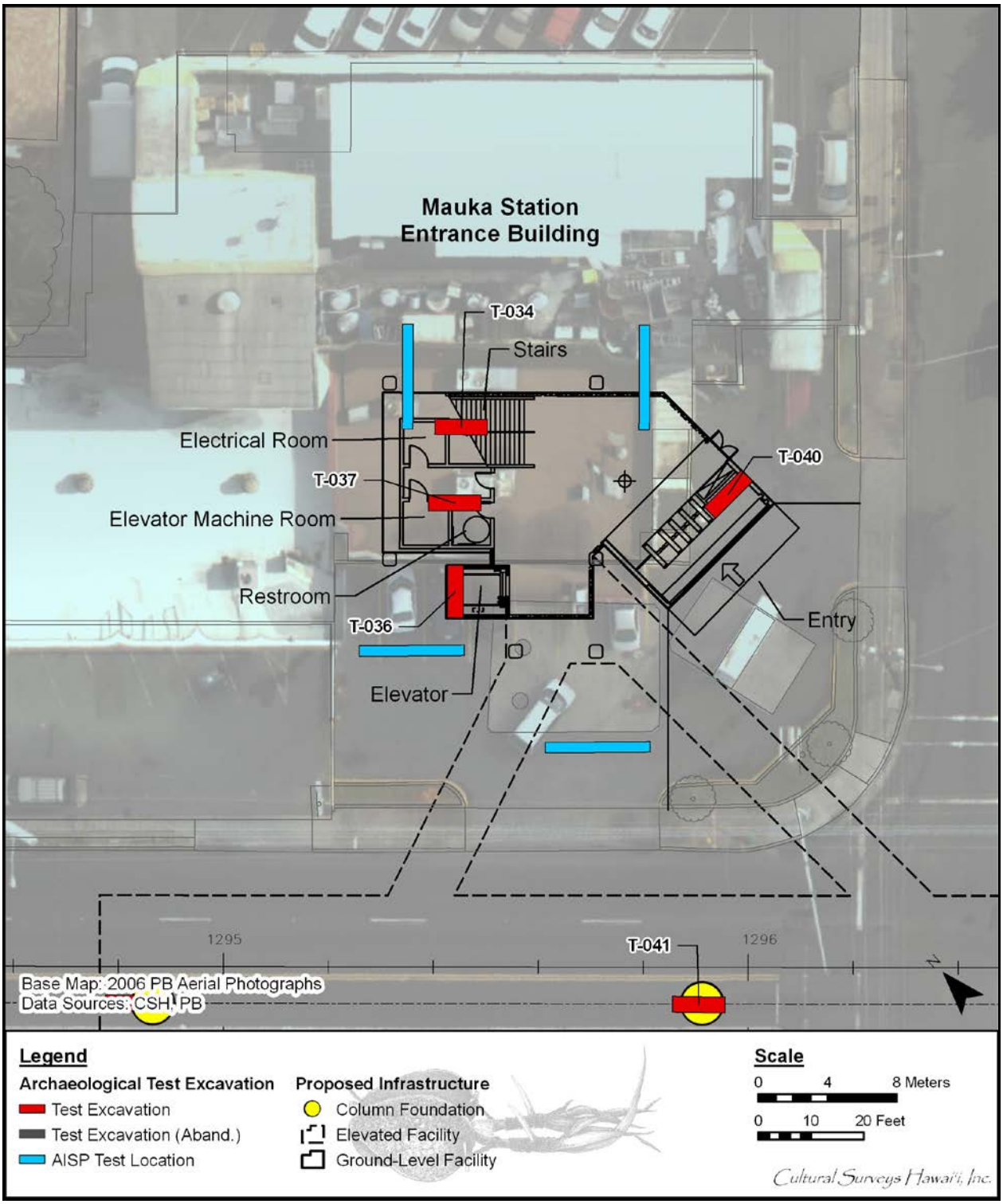

Figure 34. Kalihi Station, detail of (*mauka*) Station Entrance Building showing locations of proposed AISP and actual AIS test excavations

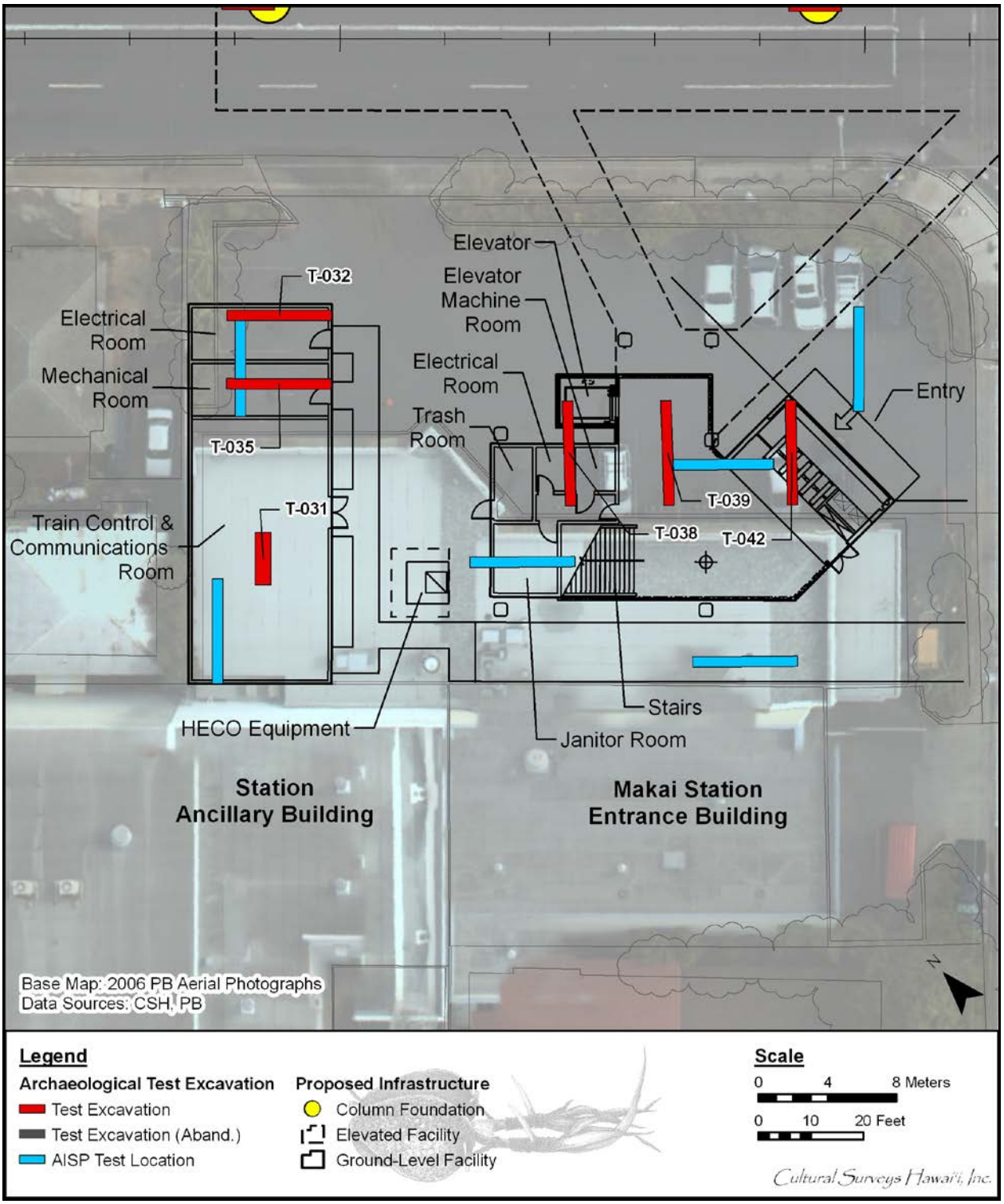

Figure 35. Kalihi Station, detail of (*makai*) Station Entrance Building showing locations of proposed AISP and actual AIS test excavations

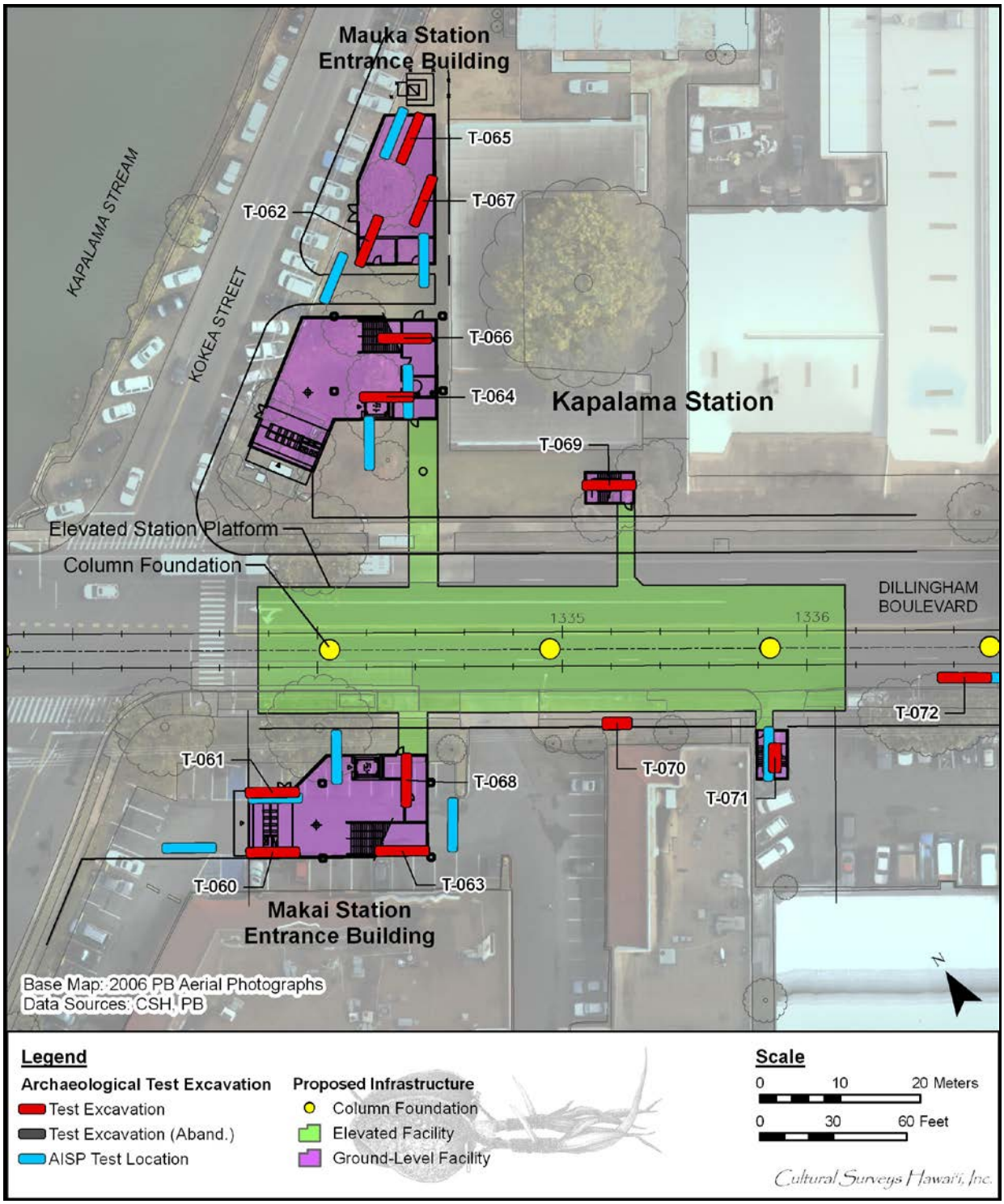

Figure 36. Kapālama Station (Dillingham Boulevard just east of Kokea Street and *makai* of Honolulu Community College), aerial photograph showing overlay of transit station infrastructure (see following figures for details) and locations of proposed AISP and actual AIS test excavations

Figure 37. 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 38. General view of Kapālama Station, (*mauka*) Station Entrance Building, secondary *mauka* entry/exit location, view to northeast

Figure 39. General view of Kapālama Station, (*makai*) Station Entrance Building location (parking lot), view to southwest

Figure 40. General view of Kapālama Station, (*makai*) Station Entrance Building location (parking lot), view to southeast

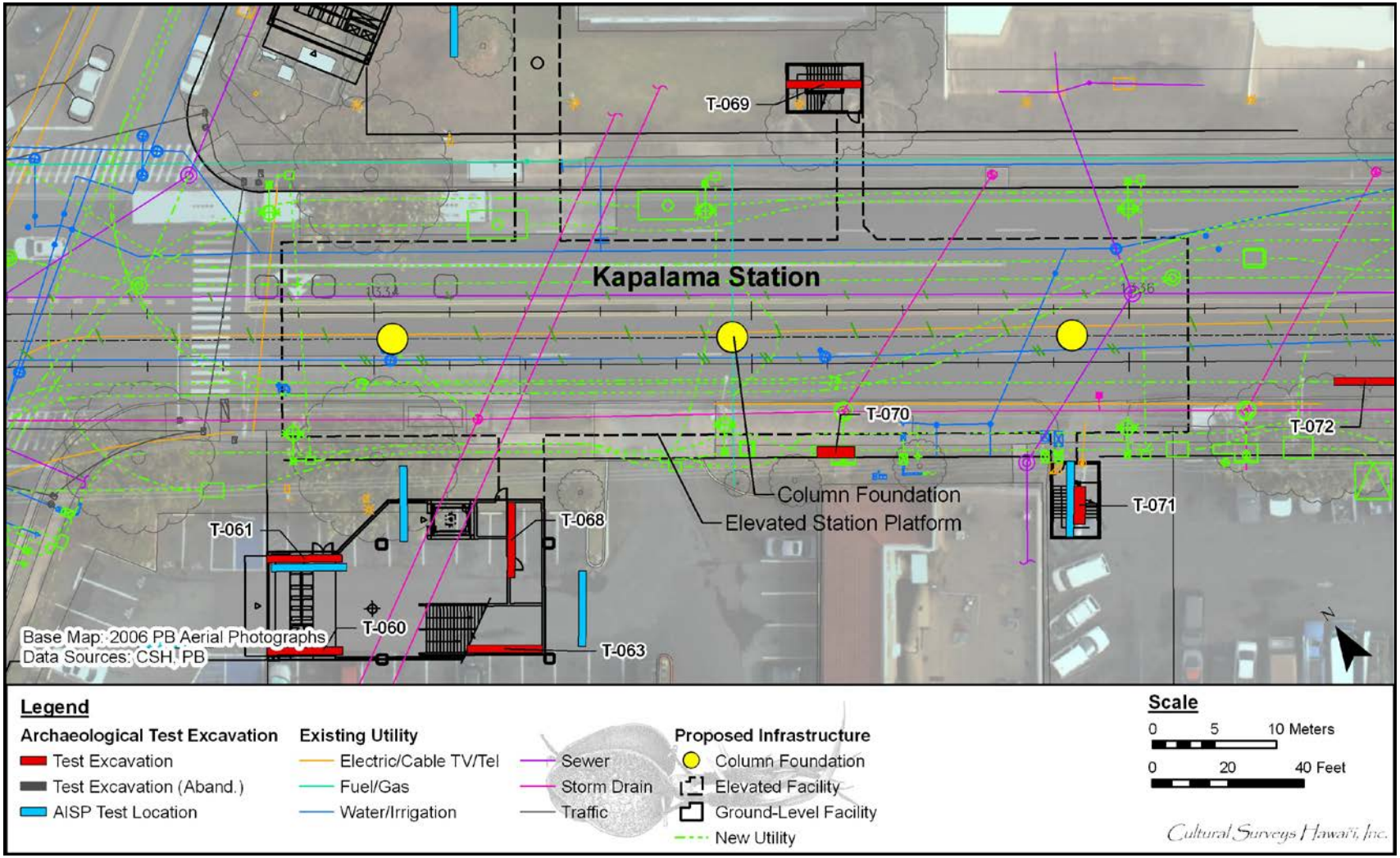

Figure 41. Kapālama Station, detail of column foundation layout at Dillingham Boulevard showing locations of proposed AISP and actual AIS test excavations; note that no testing of the three station column foundations was conducted due to utilities

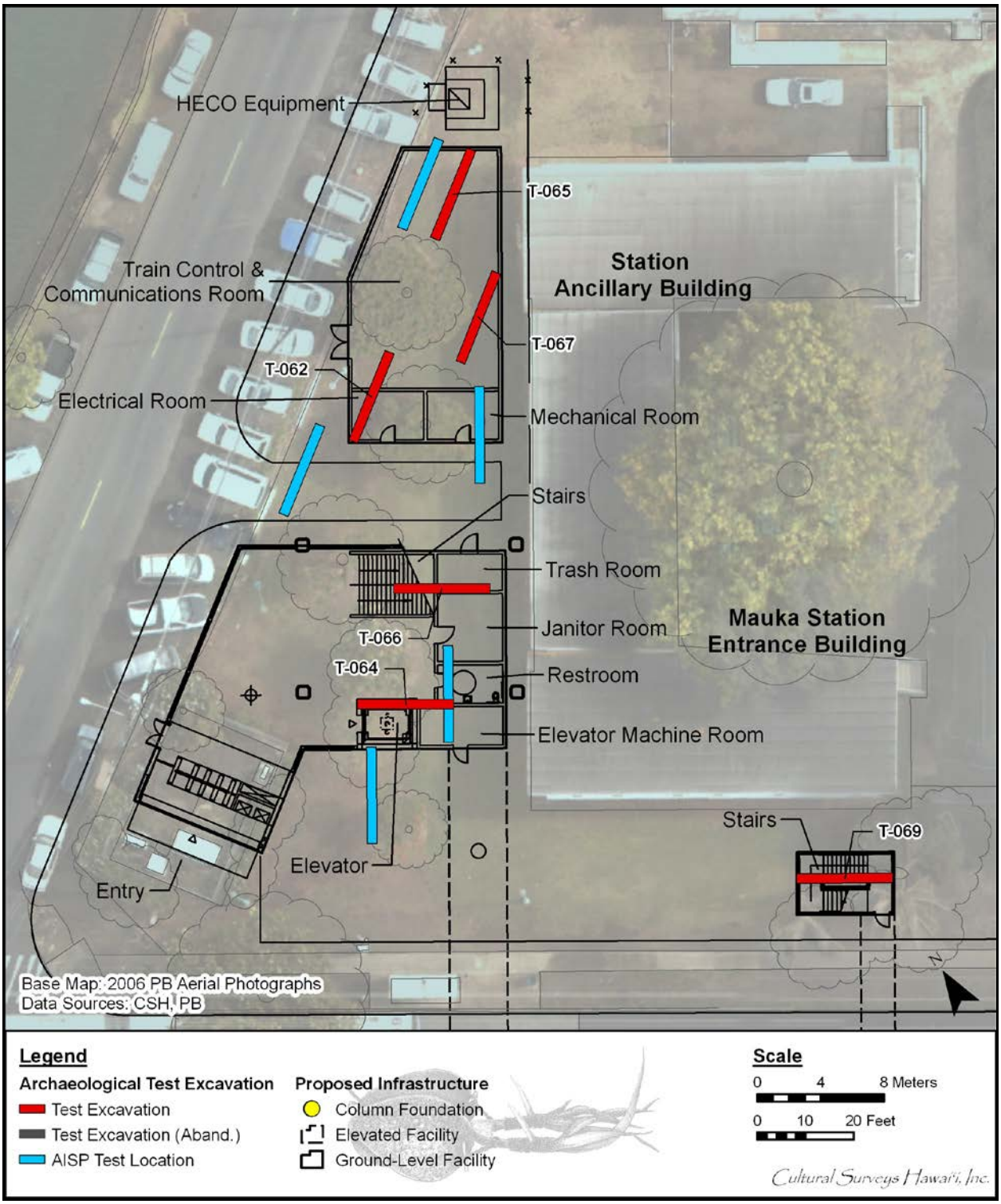

Figure 42. Kapālama Station, detail of (*mauka*) Station Entrance Building showing locations of proposed AISP and actual AIS test excavations

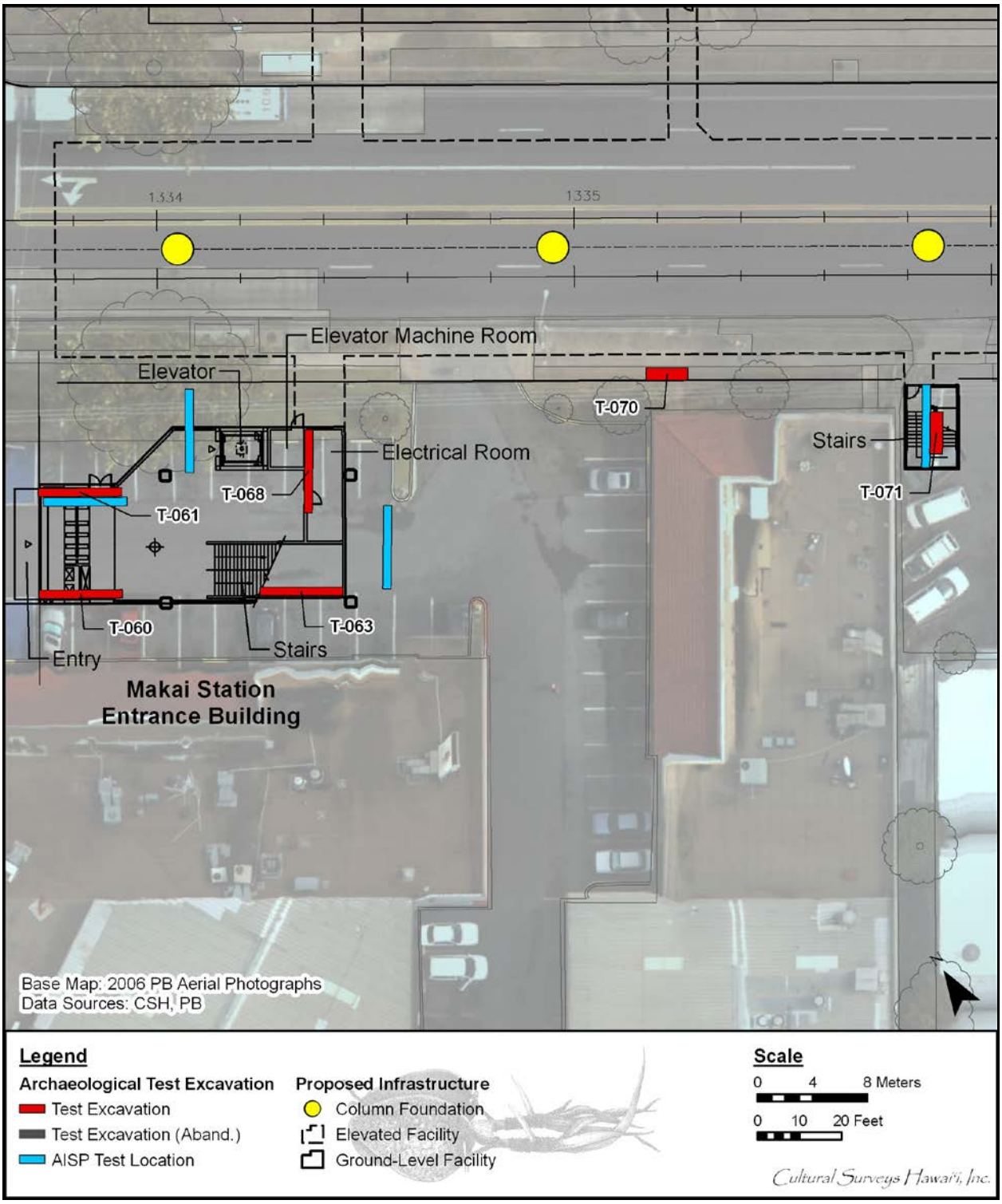

Figure 43. Kapālama Station, detail of (*makai*) Station Entrance Building showing locations of proposed AISP and actual AIS test excavations

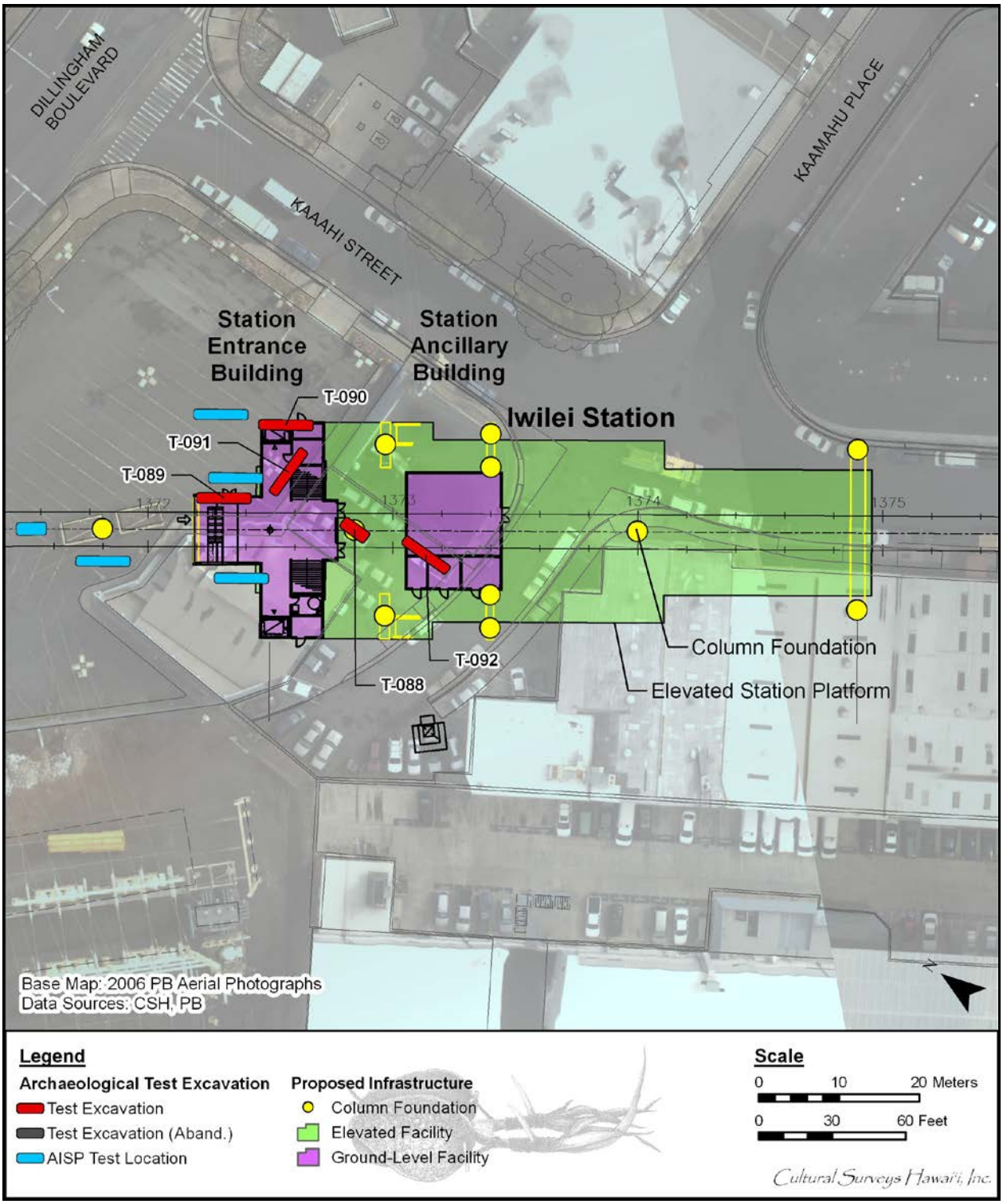

Figure 44. Iwilei Station (*makai*) of Ka‘a‘ahi Street and Ka‘amahu Place), aerial photograph showing overlay of transit station infrastructure (see following figures for details) and locations of proposed AISP and actual AIS test excavations

Figure 45. General view of north side of Iwilei Station (parking lot and Nu‘uanu Auto Co.) from Dillingham Boulevard, view to south

Figure 46. General view of south side of Iwilei Station (Nu‘uanu Auto Co.), from across Ka‘amahu Place, view to north

Figure 47. 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 48. General view of Iwilei Station, location of southeastern straddle column foundations on Ka‘a‘ahi Street, view to northwest

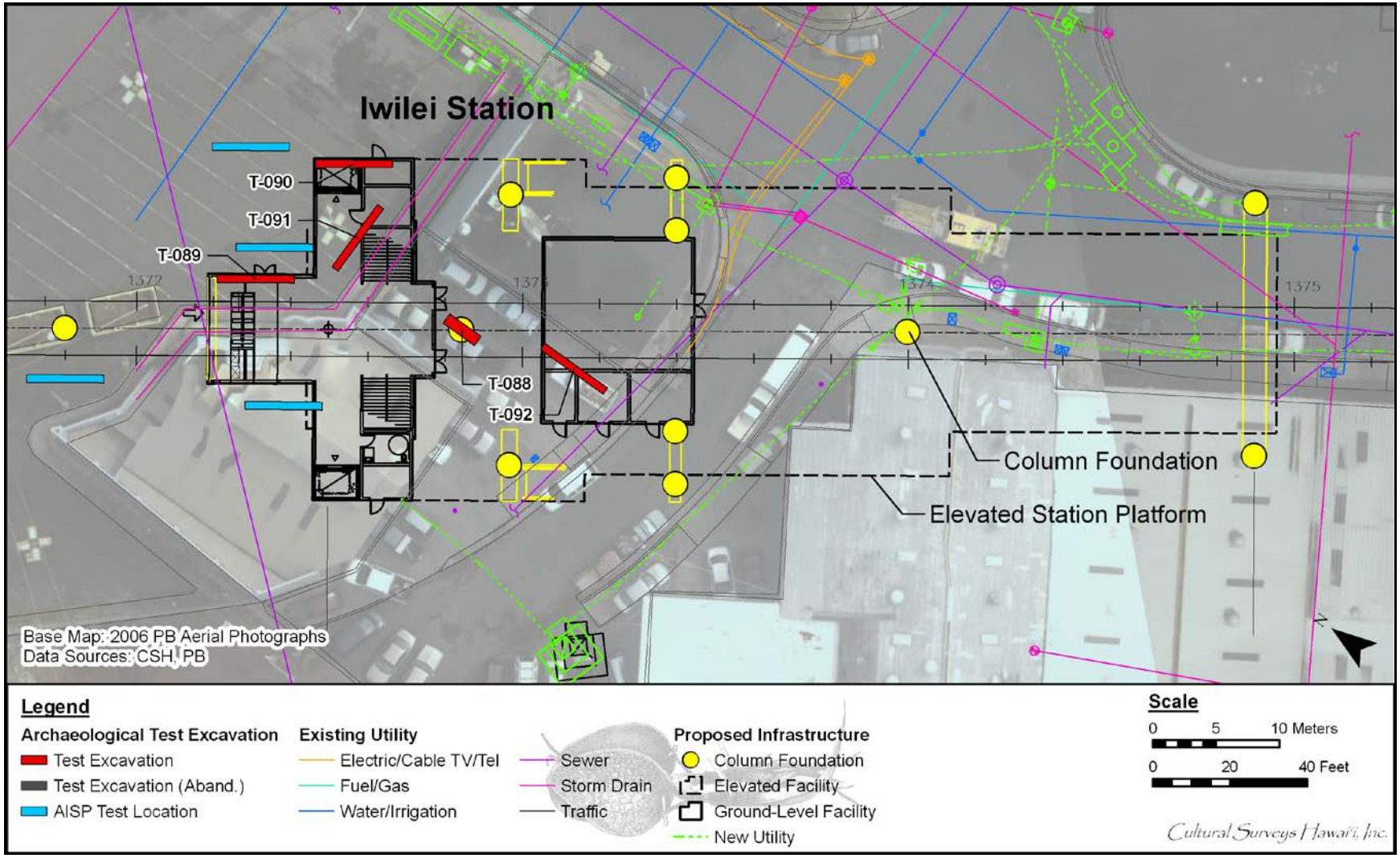

Figure 49. Iwilei Station, detail of column foundation layout showing locations of proposed AISP and actual AIS test excavations

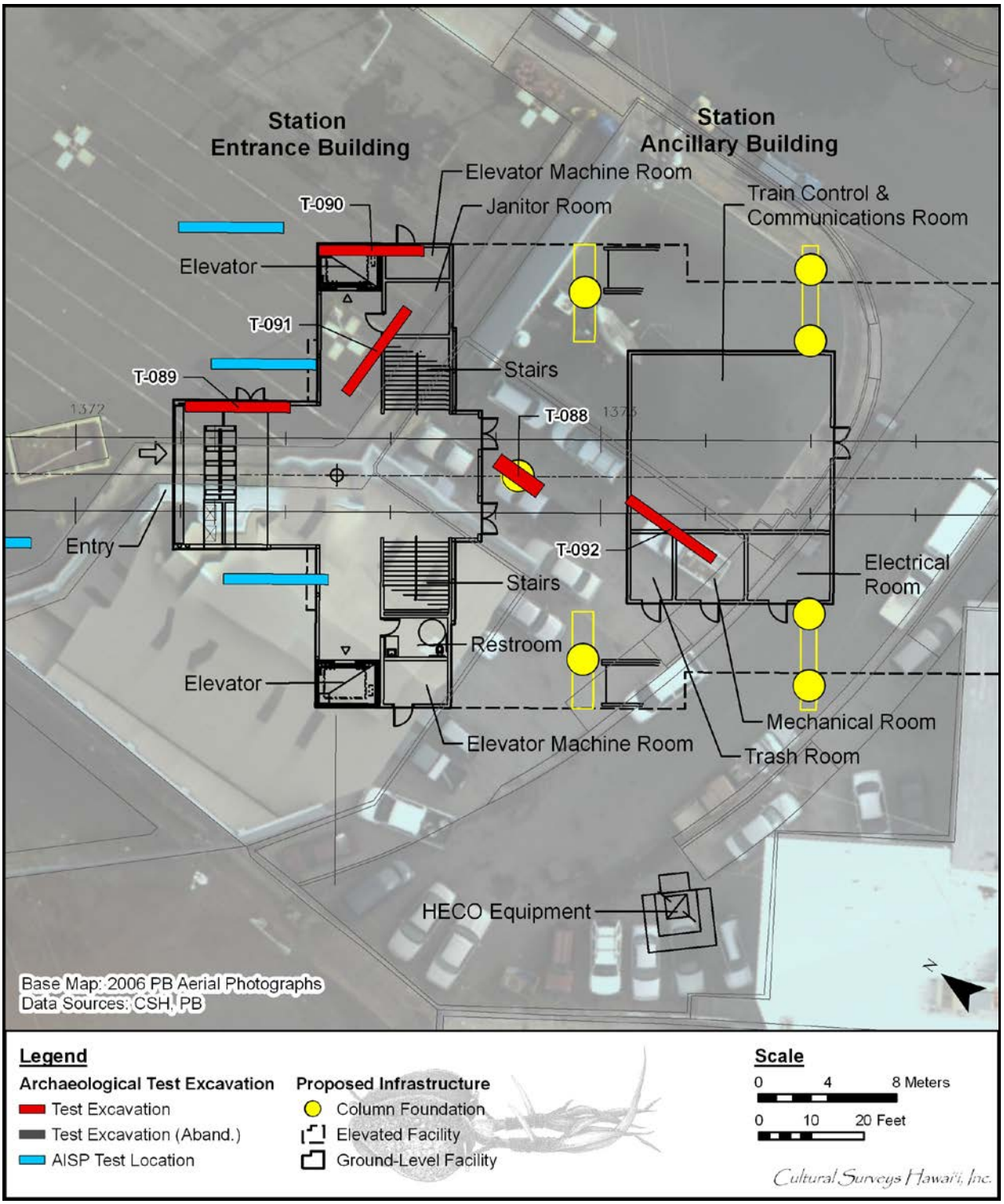

Figure 50. Iwilei Station, detail of Station Entrance Building showing locations of proposed AISP and actual AIS test excavations

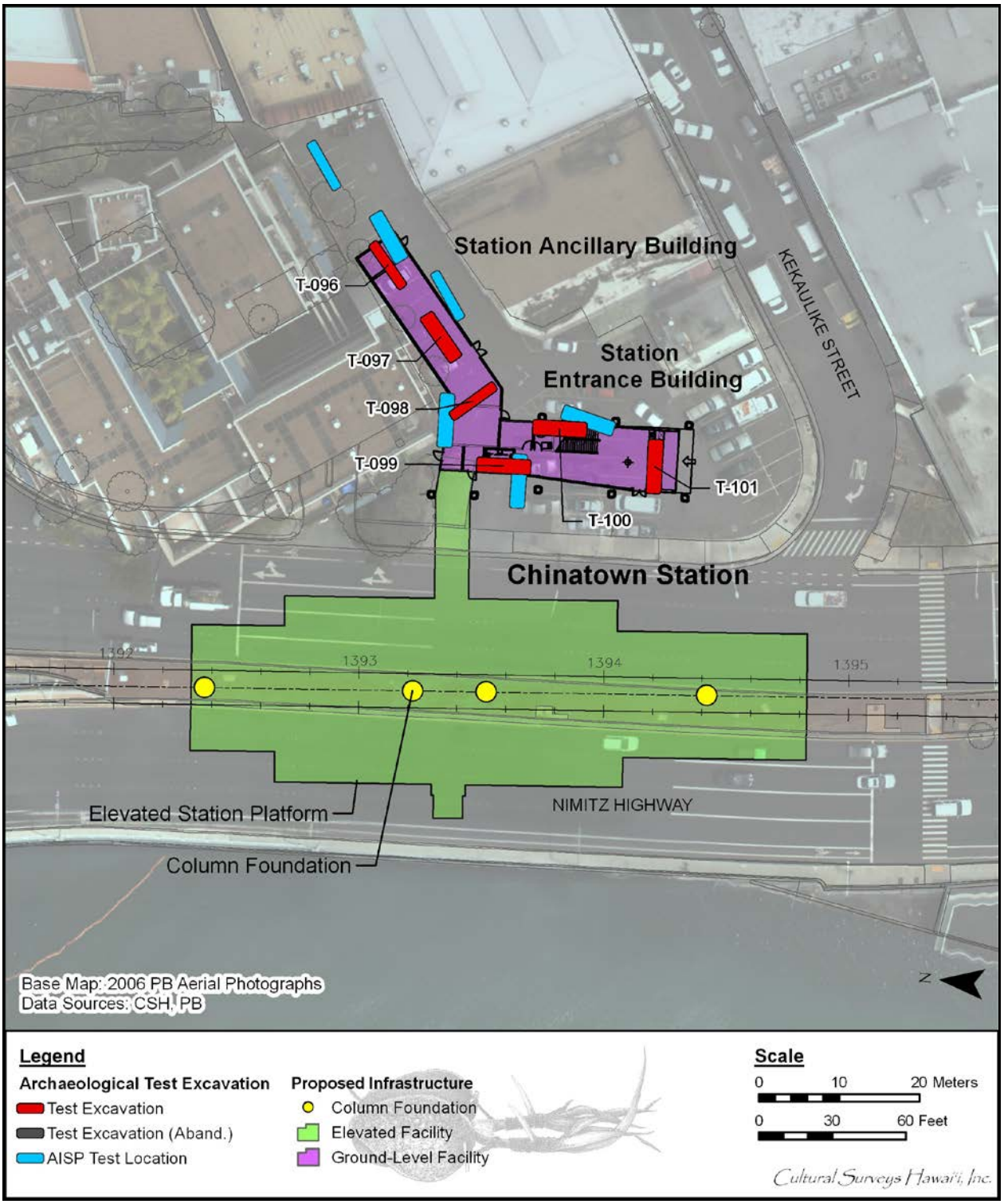

Figure 51. Chinatown Station, aerial photograph showing overlay of transit station infrastructure (see following figures for details) and locations of proposed AISP and actual AIS test excavations

Figure 52. General view of Chinatown Station, Station Entrance Building location, view from *mauka* side of Nimitz Highway, view to northeast

Figure 53. General view of Chinatown Station, Station Entrance Building location, view from *mauka*/‘Ewa corner of Nimitz Highway and Kekaulike Street, view to north

Figure 54. General view of Chinatown Station, view of southern column foundation locations in median of Nimitz Highway, view to north

Figure 55. General view of Chinatown Station, view of infrastructure location and northern column foundation locations in median of Nimitz Highway, view to north

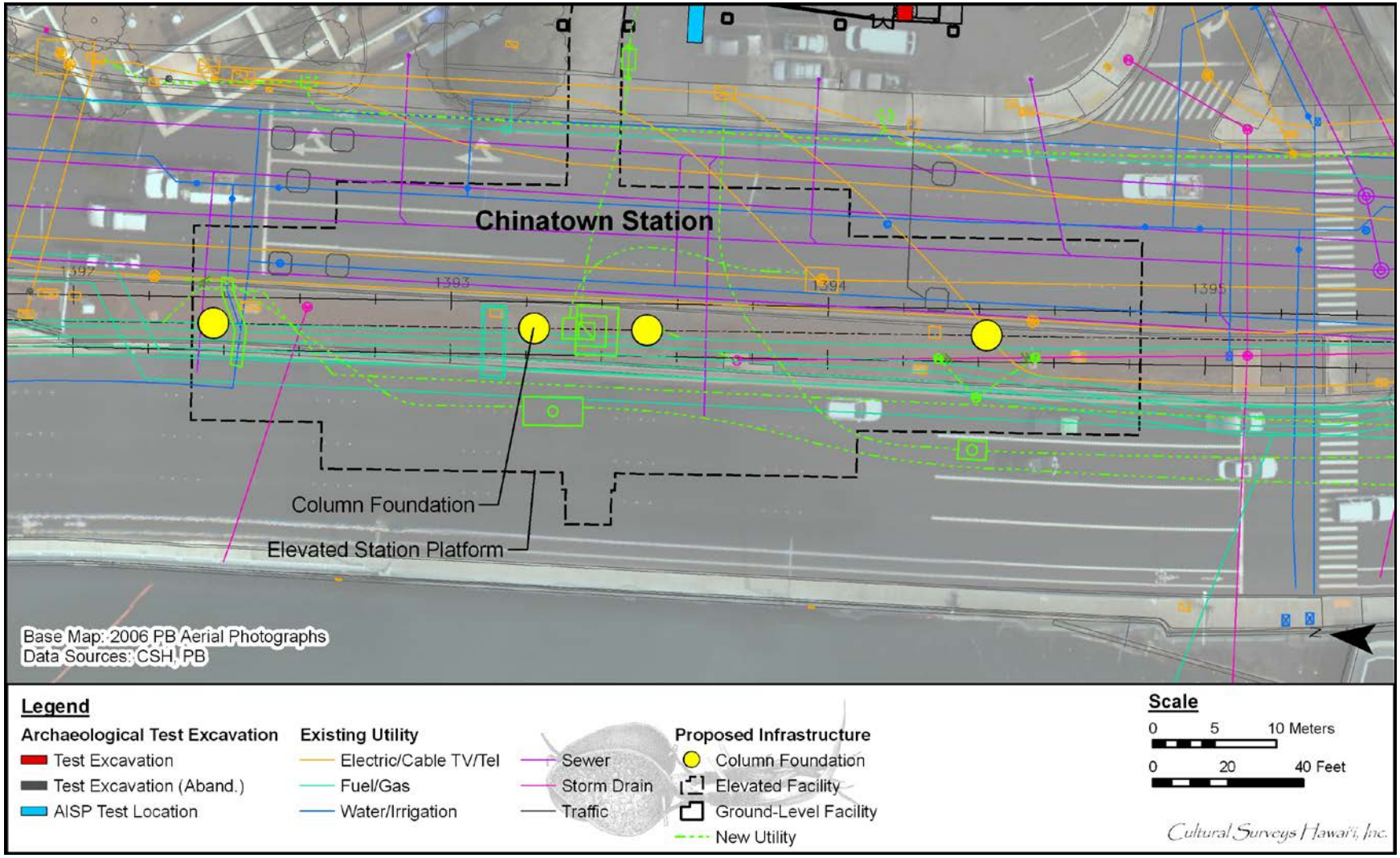

Figure 56. Chinatown Station detail of column foundation layout showing that no testing was conducted of the four column foundations, due to their location seaward of the former coastline and constraints

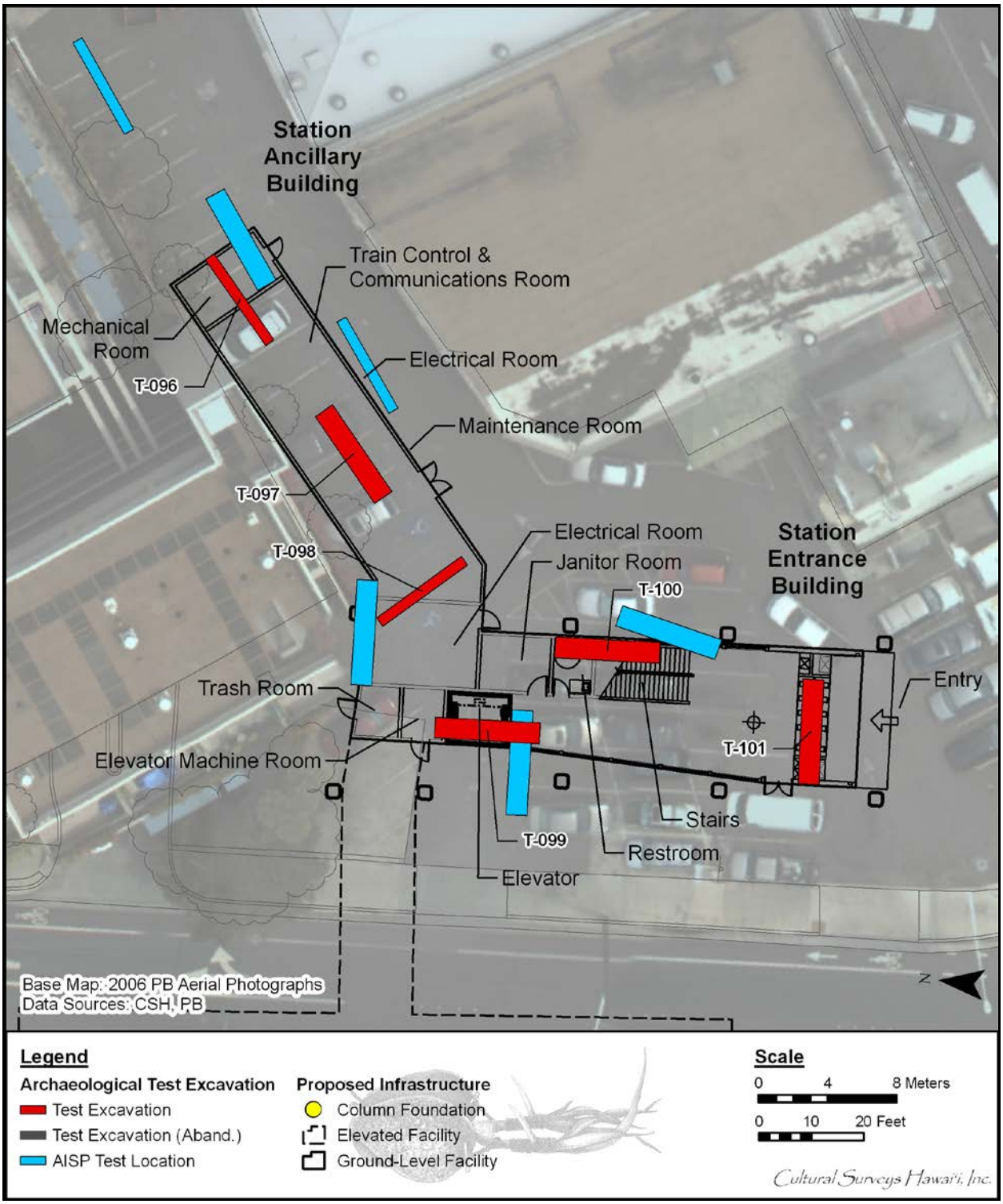

Figure 57. Chinatown Station detail of (*mauka*) Station Entrance Building and Station Ancillary Building layout showing locations of proposed AISP and actual AIS test excavations

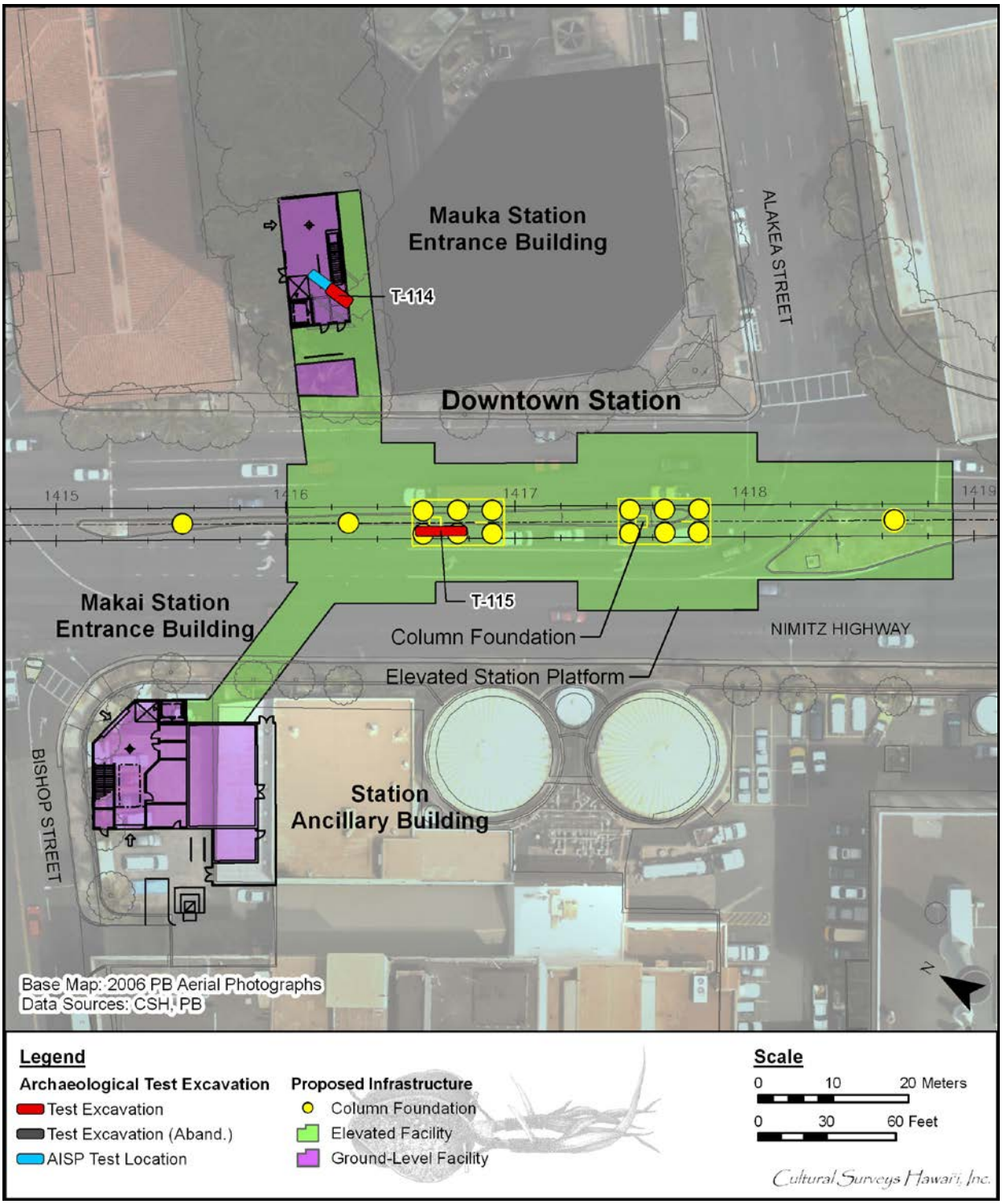

Figure 58. Downtown Station (northwest of the intersection of Alakea Street and Nimitz Highway), aerial photograph showing overlay of transit station infrastructure (see following figures for details) and locations of proposed AISP and actual AIS test excavations

Figure 59. Downtown Station, (*mauka*) Station Entrance Building location, Pacific Guardian Center west plaza, view to northeast

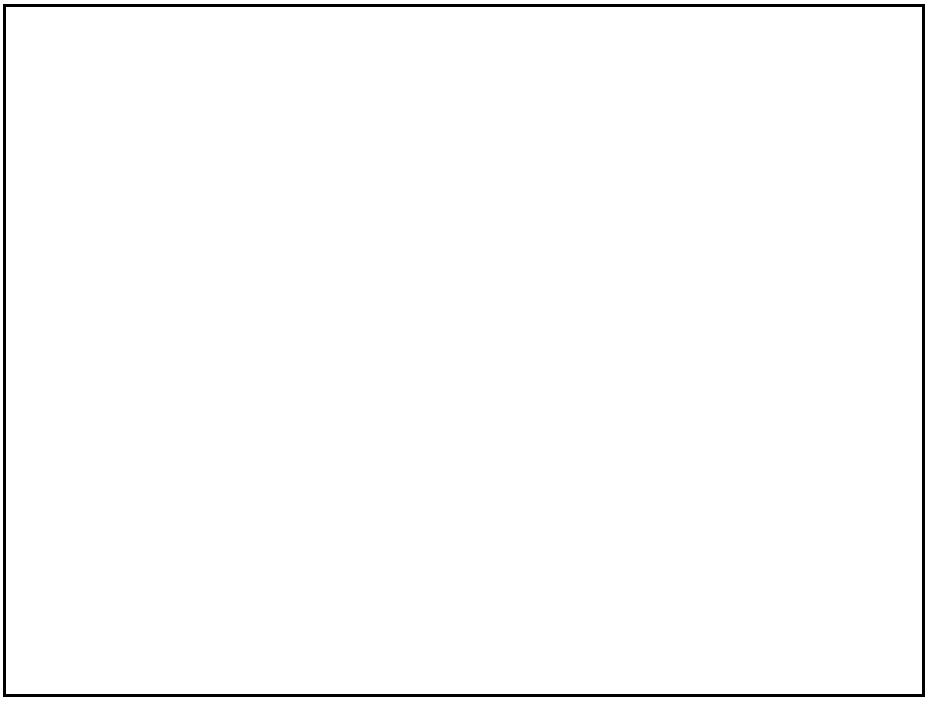

Figure 60. Downtown Station, (*mauka*) Station Entrance Building location, Pacific Guardian Center west plaza, view to southwest

Figure 61. 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 west

Figure 62. Downtown Station, (*makai*) Station Entrance Building location and column location in median of Nimitz Highway, (HECO facility), from across Nimitz Highway, view to west

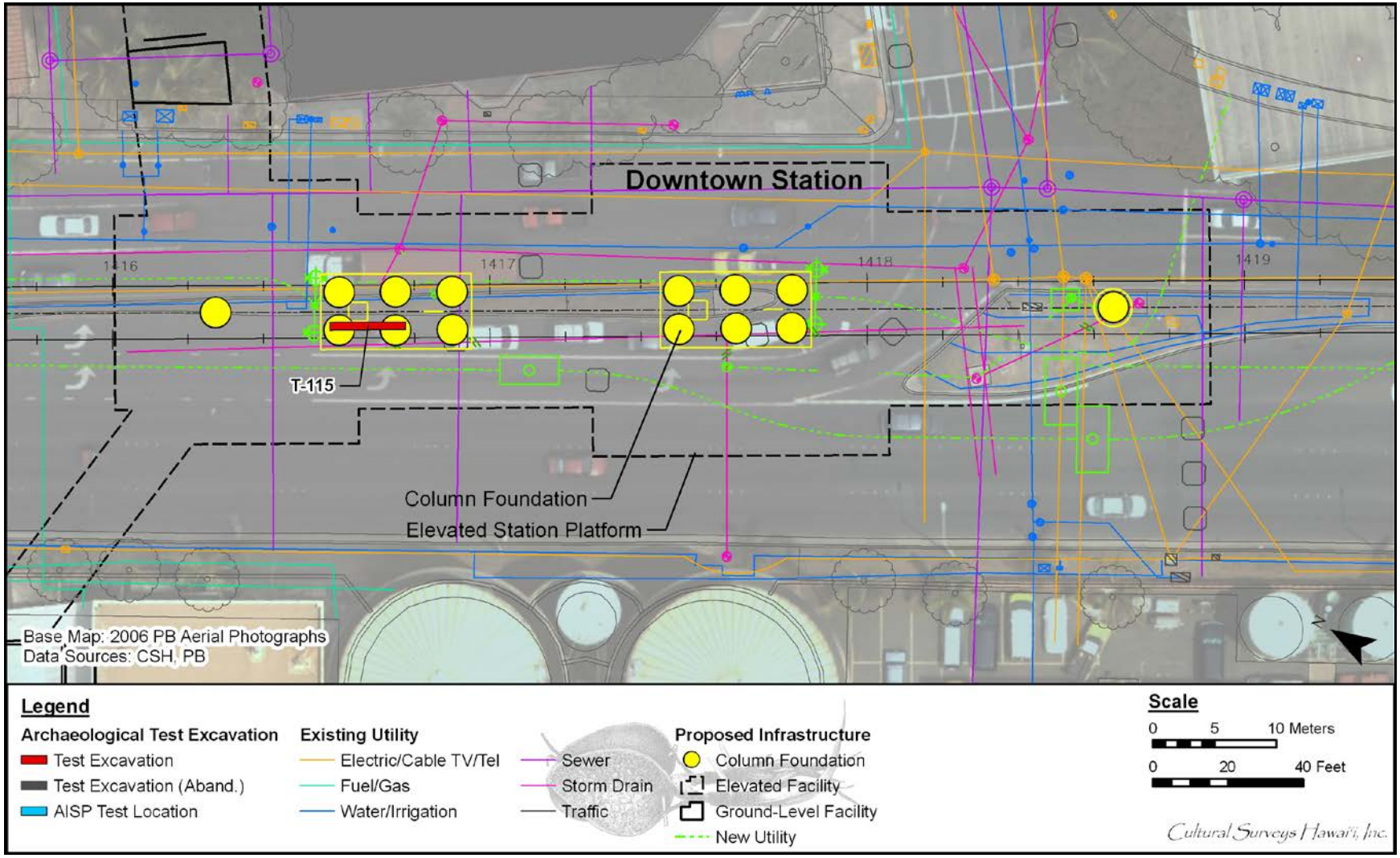

Figure 63. Downtown Station, detail of column foundation layout at Nimitz Highway location of actual AIS test excavations

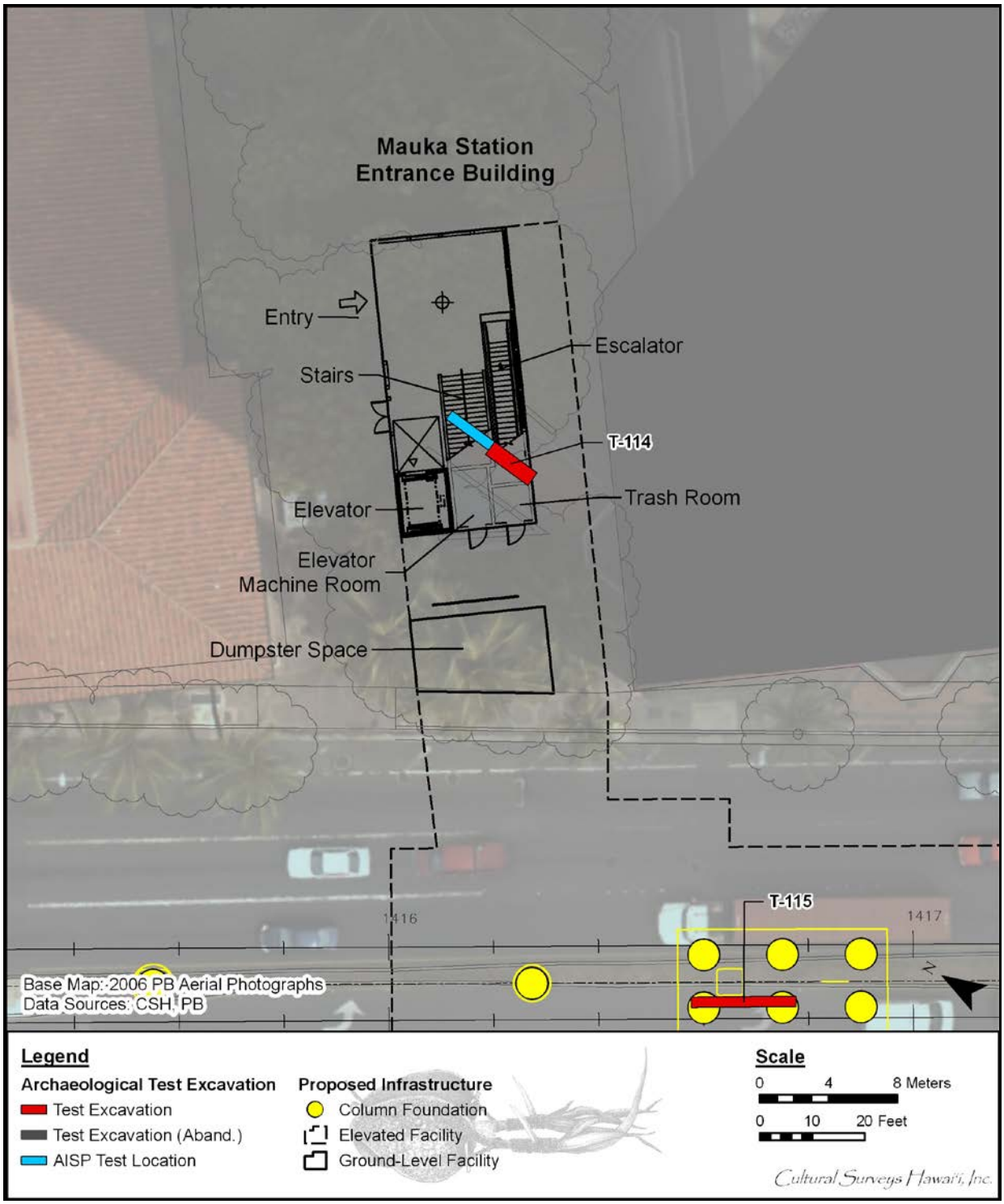

Figure 64. Downtown Station, detail of (*mauka*) Station Entrance Building at *mauka* side of Nimitz Highway showing locations of proposed AISP and actual AIS test excavations

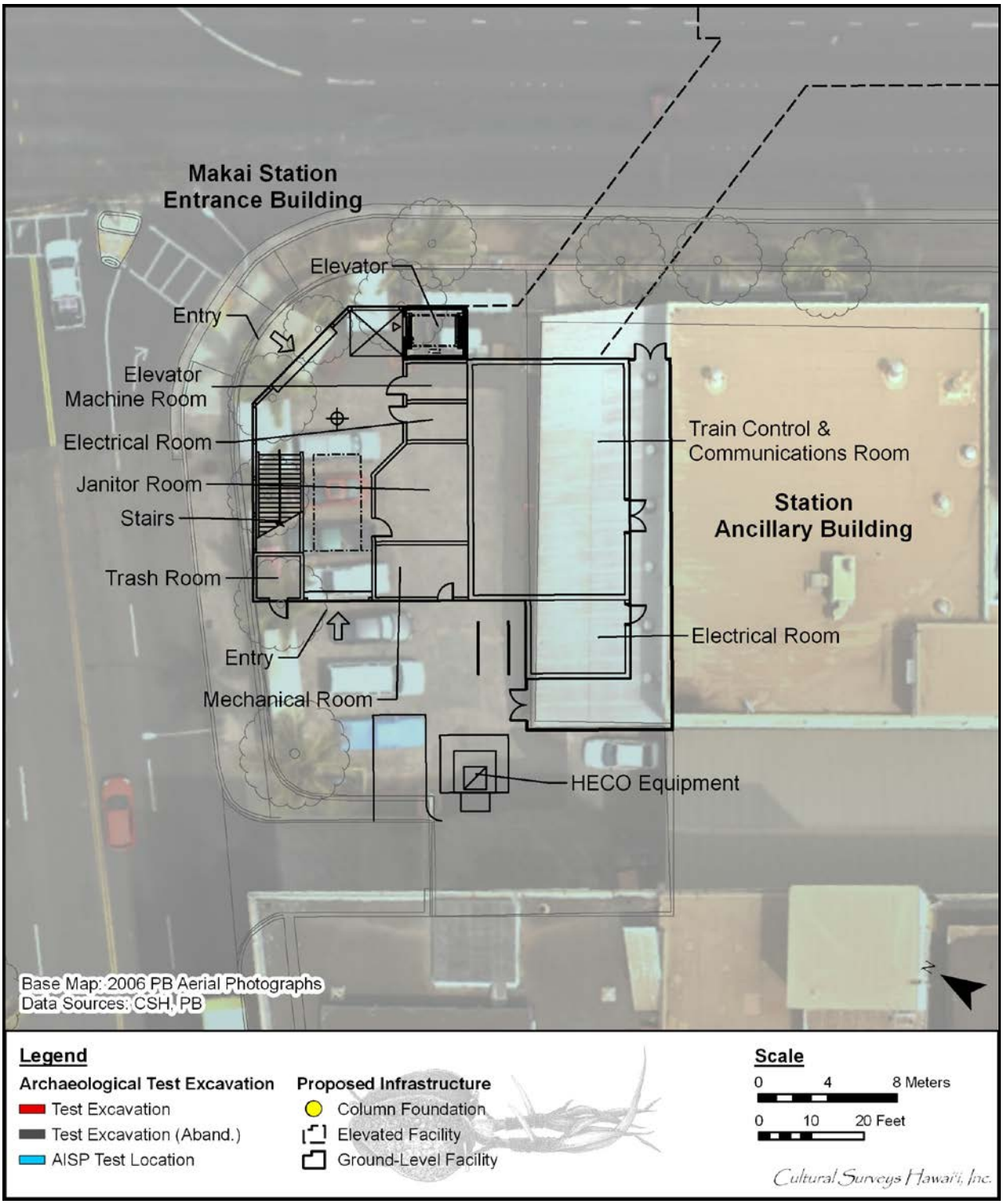

Figure 65. Downtown Station, detail of *(makai)* Station Entrance Building at *makai* side of Nimitz Highway showing that no testing was conducted at the (*makai*) Station Entrance Building due to its location seaward of the former shoreline and constraints

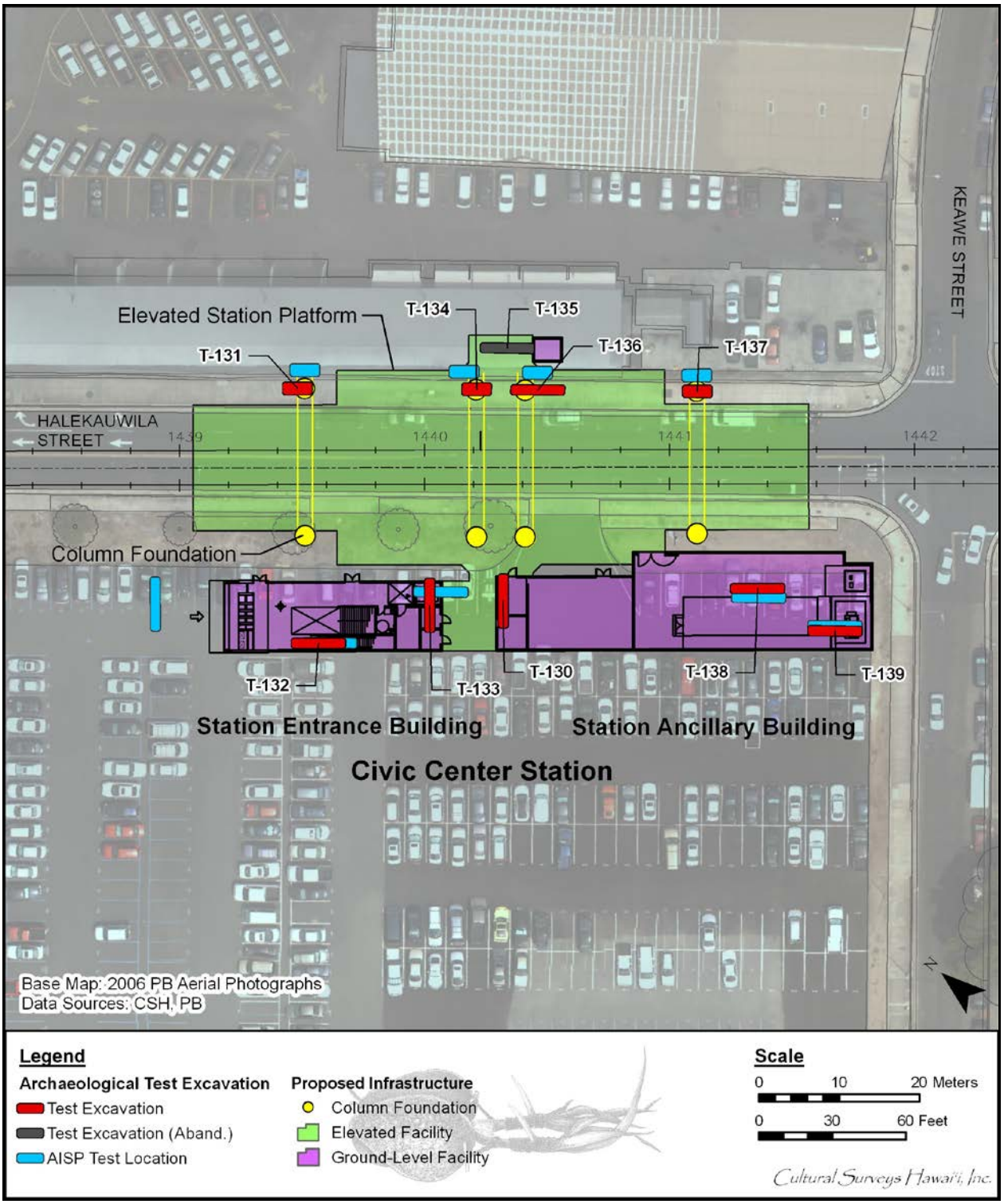

Figure 66. Civic Center Station (at Halekauwila Street just northwest of Keawe Street), aerial photograph showing overlay of transit station infrastructure (see following figures for details) and locations of proposed AISP and actual AIS test excavations

Figure 67. Civic Center Station location of *mauka* column foundations and infrastructure, Halekauwila Street at left, view to northwest

Figure 68. Civic Center Station location of *makai* column foundations, Halekauwila Street at right, view to northwest

Figure 69. Civic Center Station, (*makai*) Station Entrance Building location (note: repaved rectangles of recent archaeological test excavations), view to northwest

Figure 70. Civic Center Station, (*makai*) Station Entrance Building location (note: repaved rectangles of recent archaeological test excavations, Halekauwila Street at upper left), view to southeast

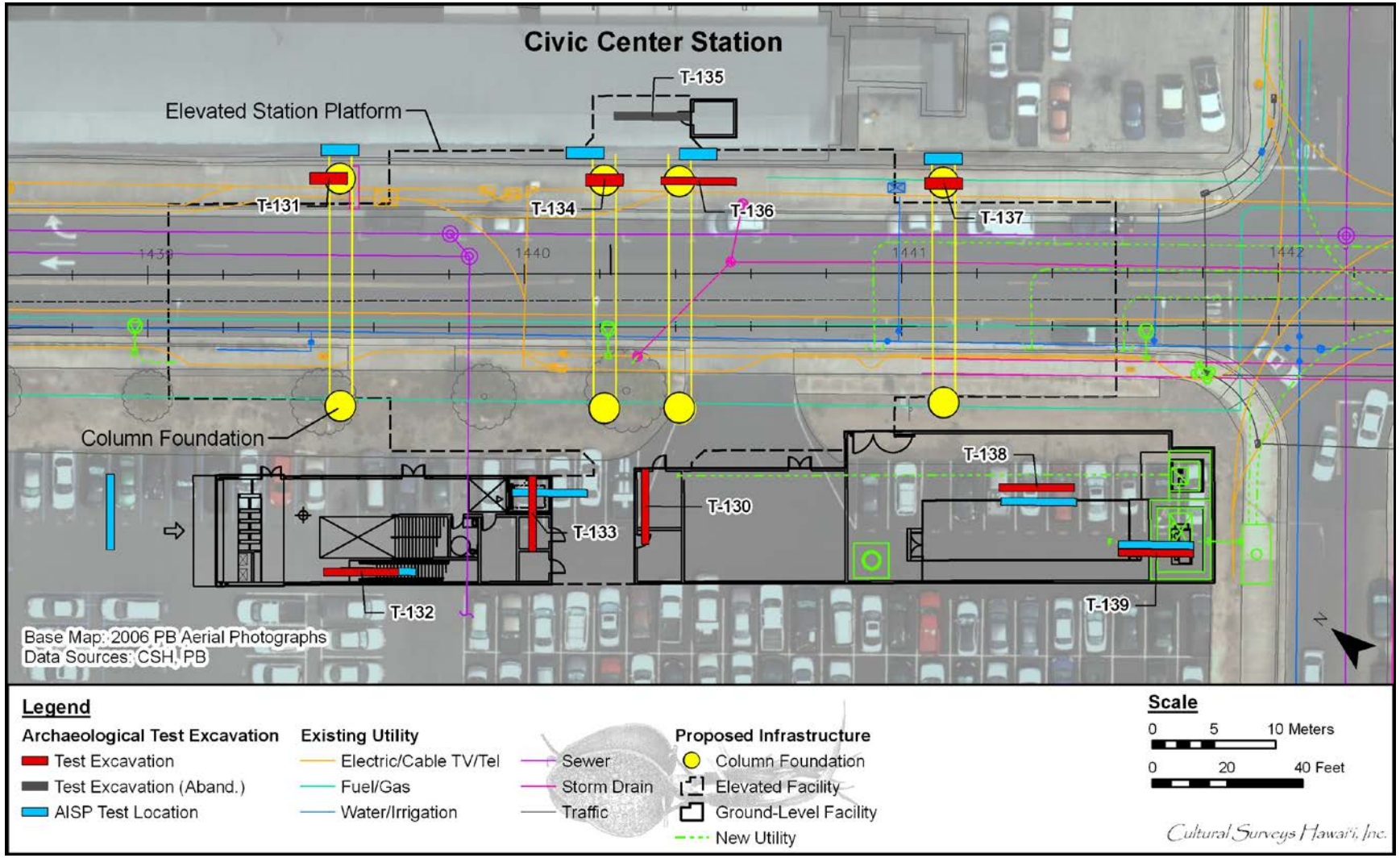

Figure 71. Civic Center Station, detail of column foundation layout showing locations of proposed AISP and actual AIS test excavations

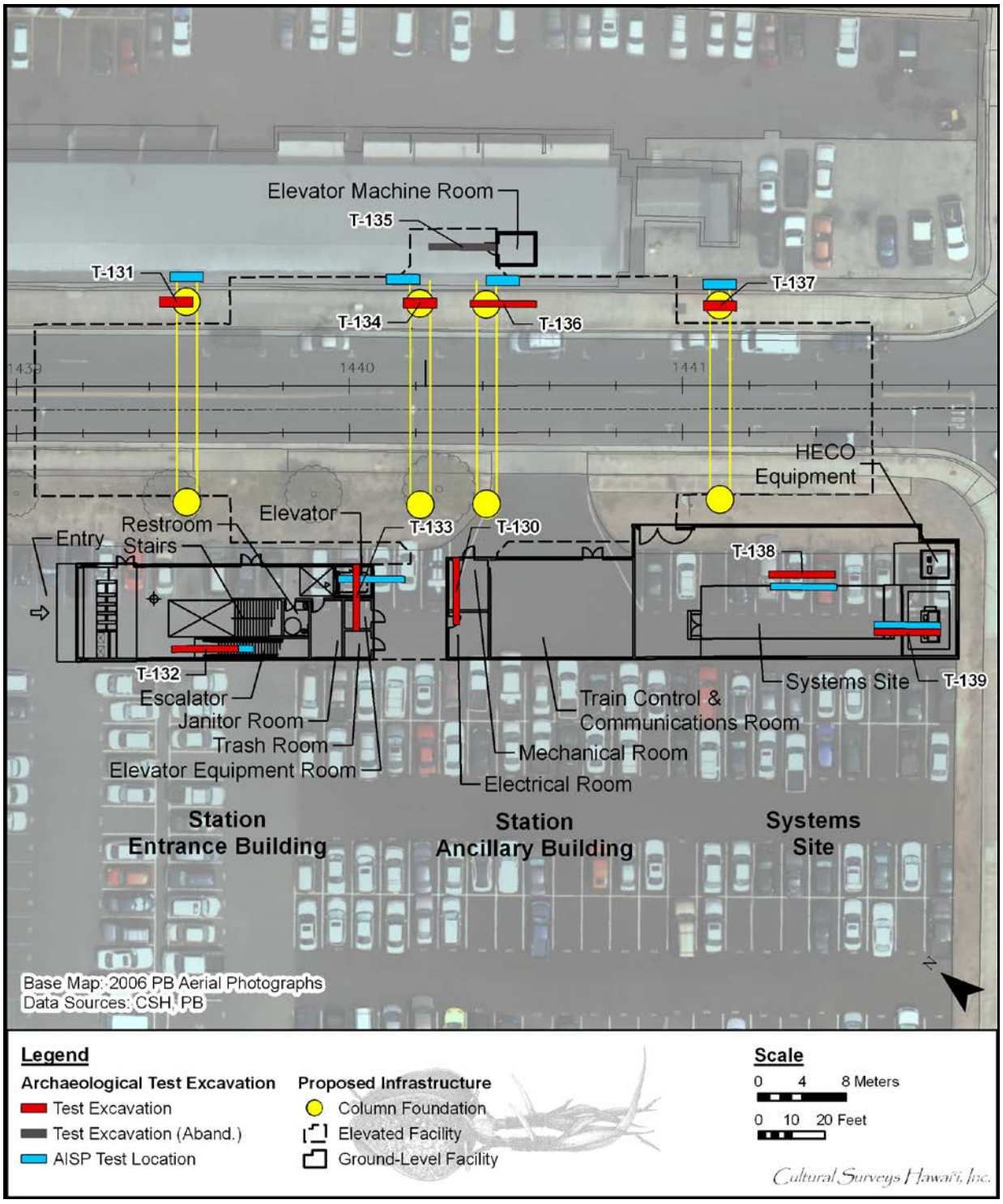

Figure 72. Civic Center Station, detail of (*makai)* Station Entrance Building (at *makai* side of Halekauwila Street northwest of Keawe Street), showing locations of proposed AISP and actual AIS test excavations

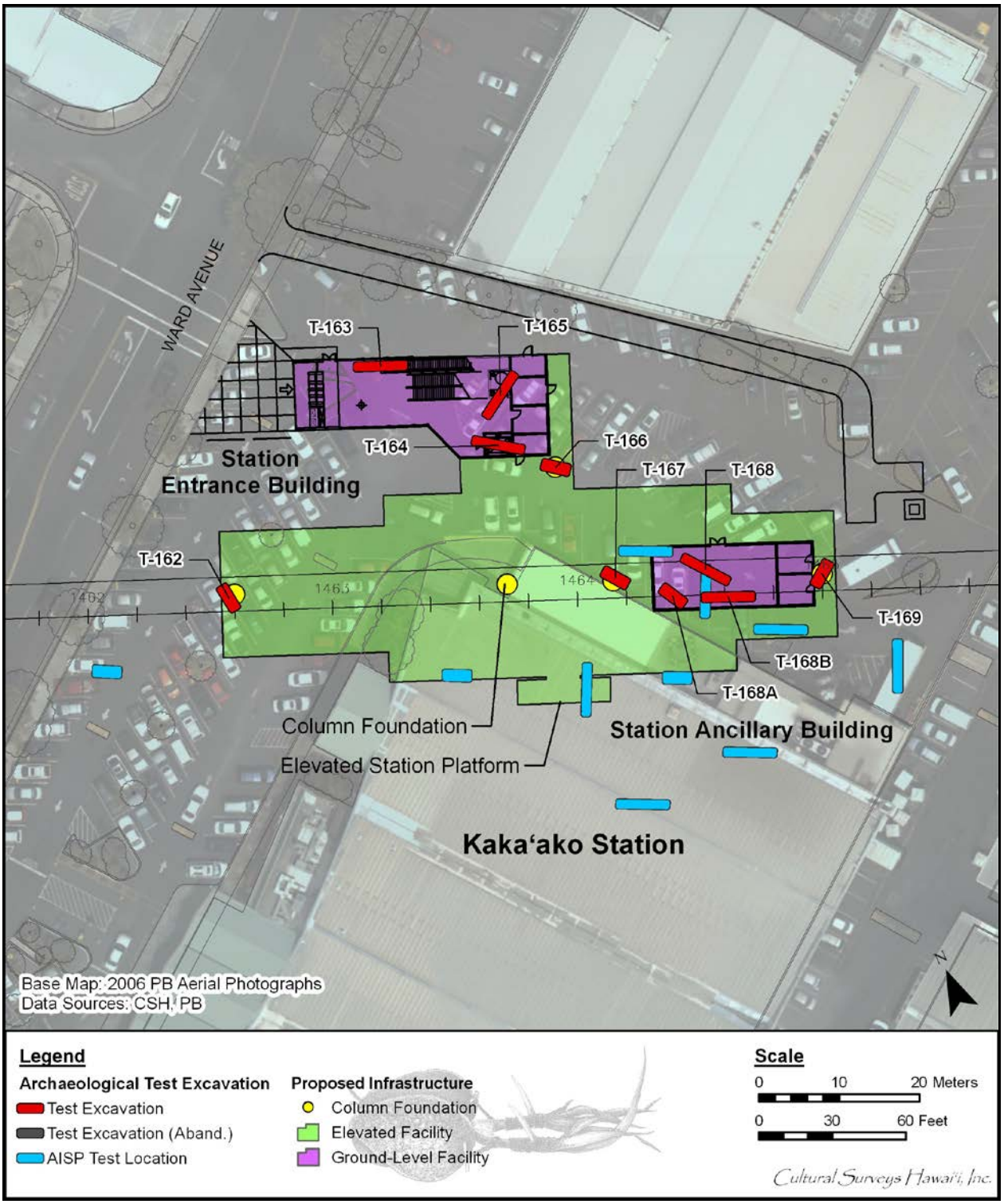

Figure 73. Kaka‘ako Station (just southeast of Ward Avenue and southwest of Queen Street), aerial photograph showing overlay of transit station infrastructure (see following figures for details) and locations of proposed AISP and actual AIS test excavations

Figure 74. Kaka‘ako Station, view toward central column foundation location, view to south

Figure 75. Kaka‘ako Station, view of northeast portion of station (parking lot), Ross Dress for Less at right, view to south

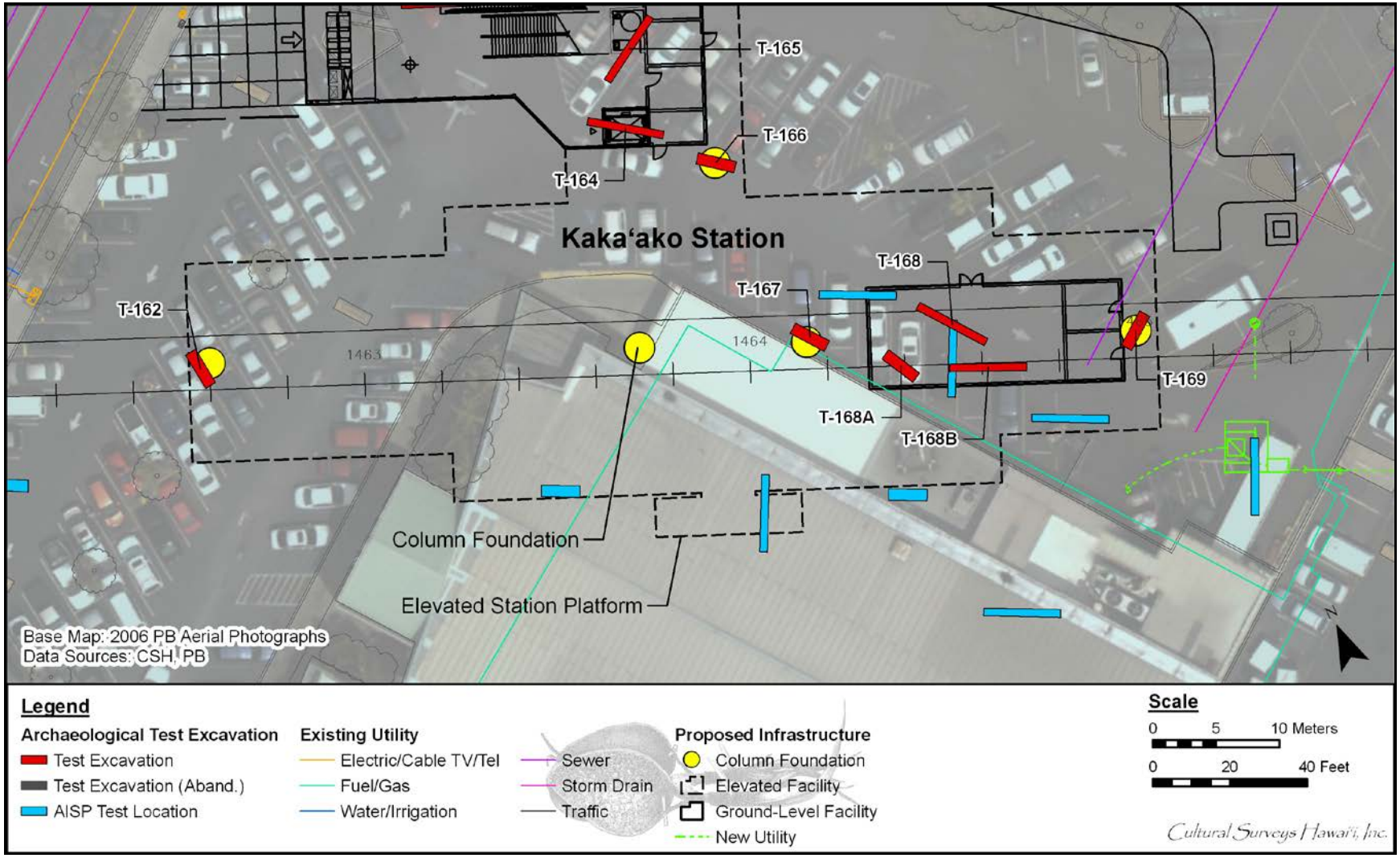

Figure 76. Kaka‘ako Station, detail of column foundation layout showing locations of proposed AISP and actual AIS test excavations

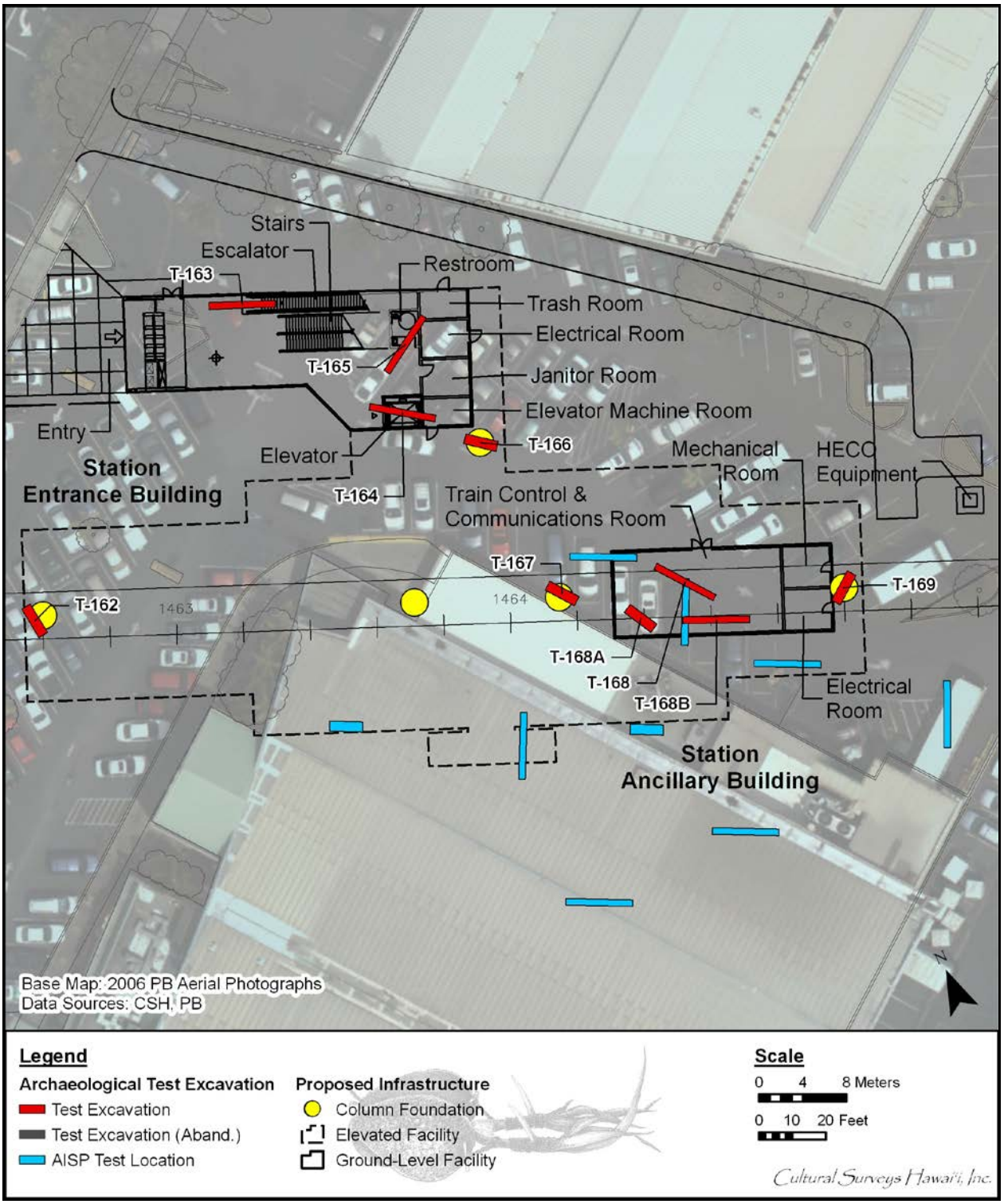

Figure 77. Kaka‘ako Station, detail of building foundation layout showing locations of proposed AISP and actual AIS test excavations

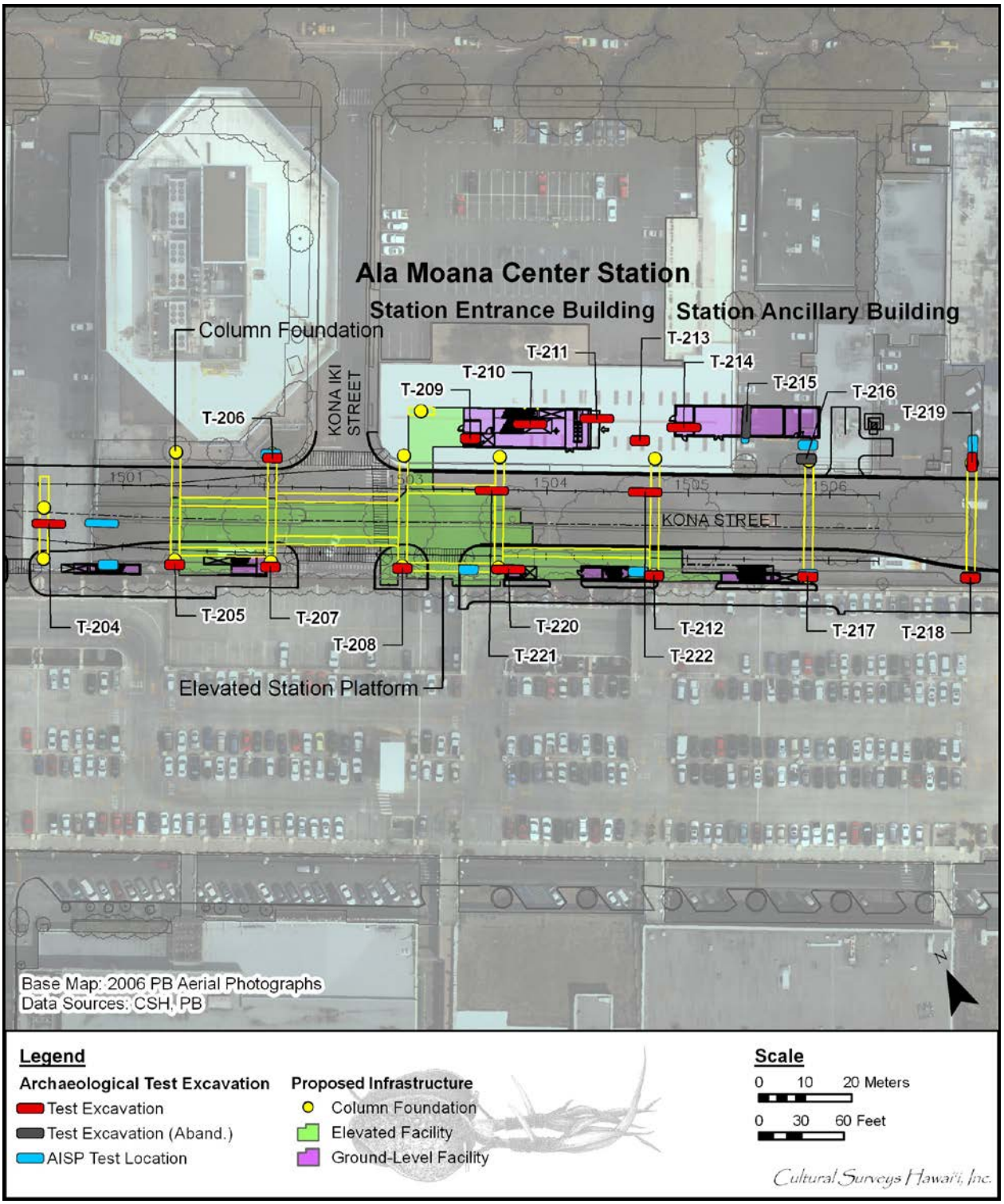

Figure 78. Ala Moana Center Station (at Kona Street just southeast of Kona Iki Street), aerial photograph showing overlay of transit station infrastructure (see following figures for details) and locations of proposed AISP and actual AIS test excavations

Figure 79. General view of Ala Moana Center Station, saddle column foundation locations flanking Kona Street (from Kona Iki Street intersection), view to southeast

Figure 80. 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 81. Ala Moana Center Station, column foundation location (in front of Tattoo Hawai‘i), view to east

Figure 82. Ala Moana Center Station, column foundation location (in side lot by Nail Boutique), view to east

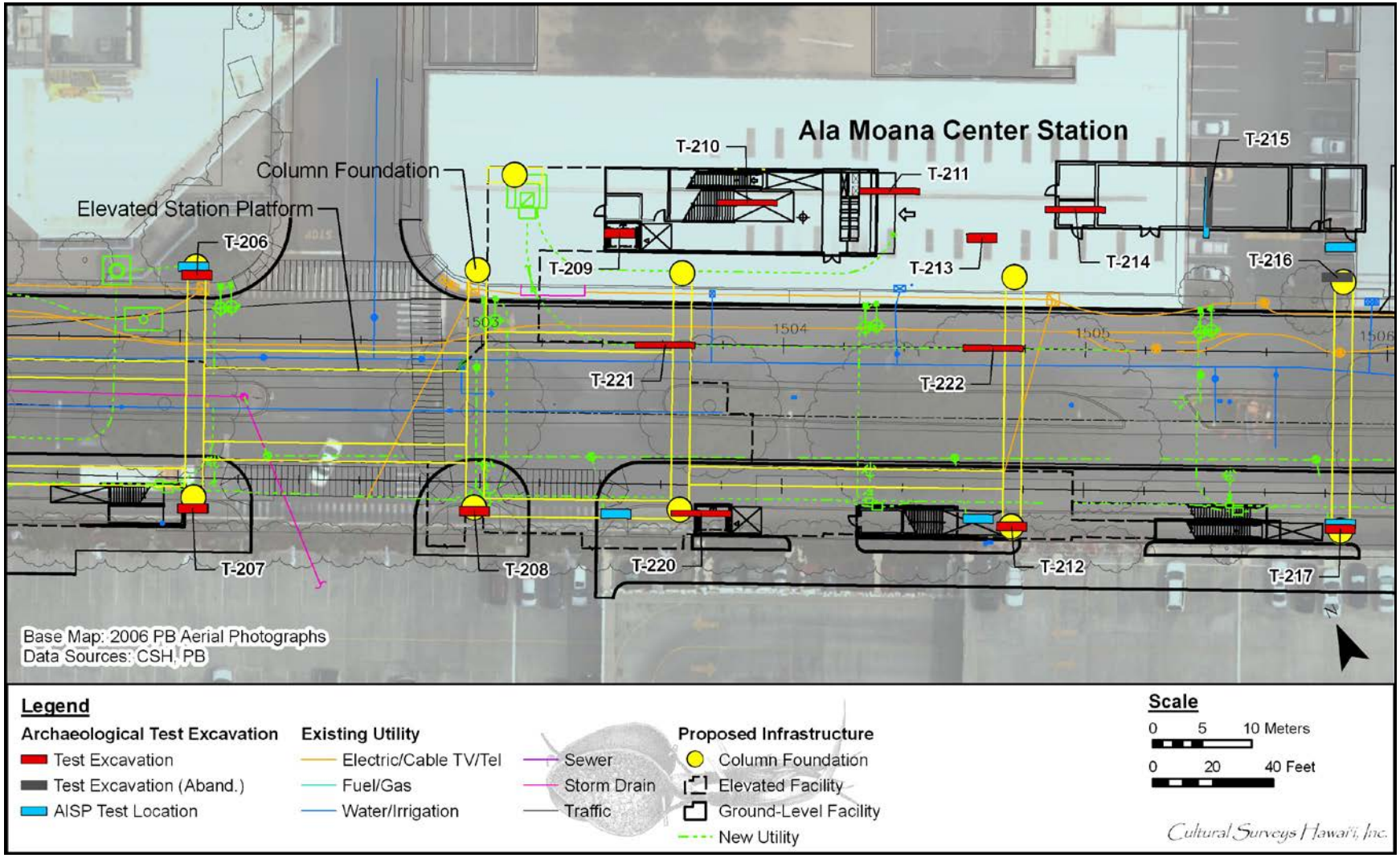

Figure 83. Ala Moana Center Station, detail of column foundation layout showing locations of proposed AISP and actual AIS test excavations

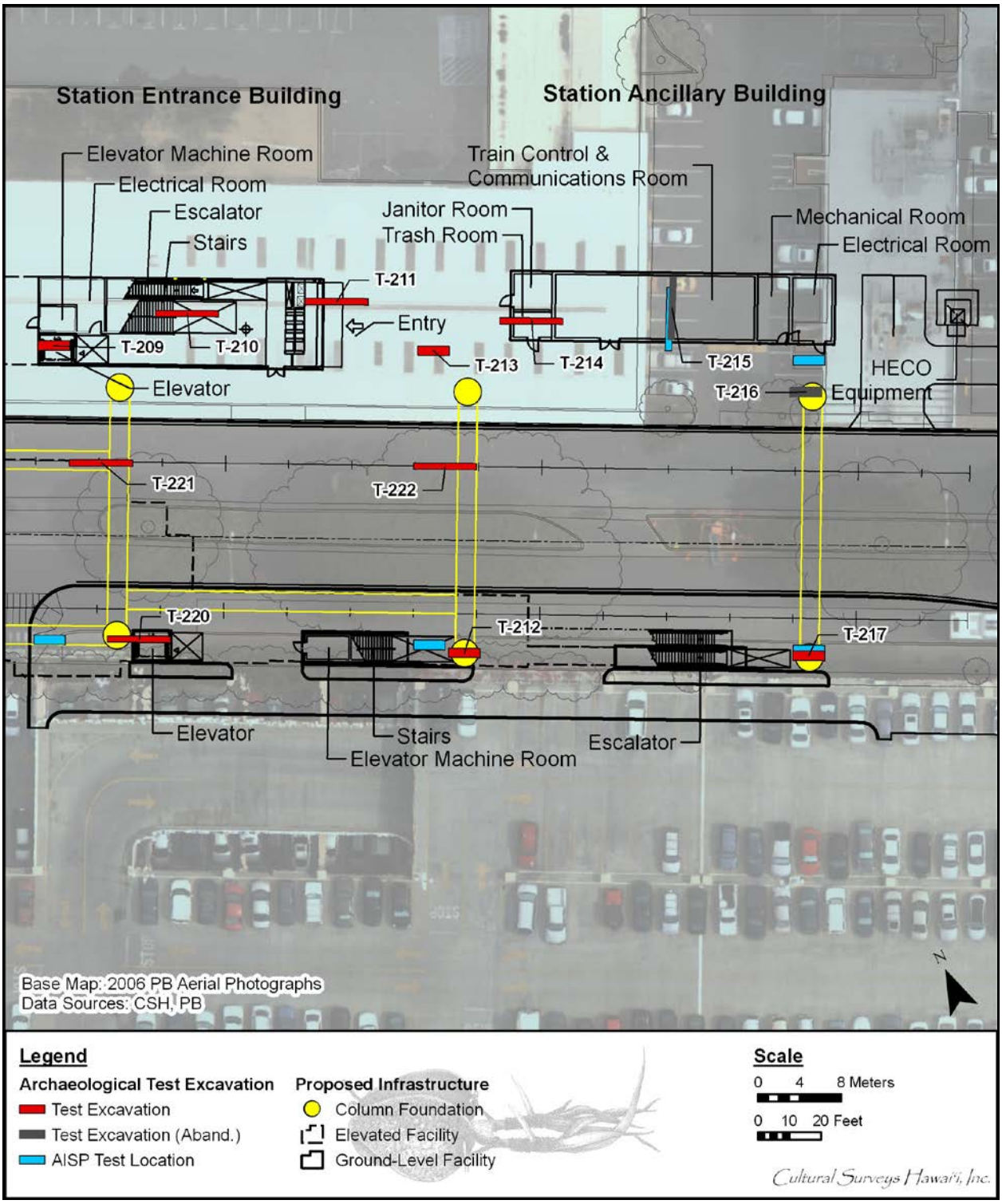

Figure 84. Ala Moana Center Station, detail of (*mauka*) Station Ancillary Building foundation layout and Station Entrance Building foundation layout showing locations of proposed AISP and actual AIS test excavations

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

The current AIS study area, which consists of Section 4 and the easternmost portion of Section 3 (east of Kalihi Stream), includes approximately 163 guideway column foundations, generally spaced approximately 120 feet apart over the approximately 4.3-mile-long (6.9 km) study area.

Ninety-five (95) test excavations were excavated in station footprints/foundations or columns directly associated with the nine City Center stations. These are described in detail in Section 3.4 and Table 5, above. Sixty-two (62) test excavations were carried out in non-station column foundations. Additionally, 103 test excavations targeted areas of utility relocations. Table 6 presents a percent breakdown of test excavations by project component.

Table 6. Percent Breakdown of Test Excavations by Project Component Tested

Project Component Tested	Percentage of Total Test Excavations
Guideway Columns	24.8
Stations (including station buildings, platforms, and columns)	34.0
Utility relocations	41.2

Subsurface testing occurred following the pedestrian survey of the study area and GPR survey of the specific testing areas (refer to the earlier Research Design and Methods Section 2). Additional testing was considered in areas near any test excavation where archaeological cultural resources were identified, or where testing results indicated the likelihood of archaeological cultural resources. The extent of additional testing was made in consultation with the SHPD and project engineers (see discussion in Section 3.3, above). The test excavations for guideway column foundations are distributed throughout the study area and focused on areas of intensive traditional Hawaiian activity.

Table 7 and Figure 85 through Figure 111 provide a high level of detail regarding the guideway column foundation and utility relocation test excavations in the study area. Table 7 lists the locations of guideway column foundation and utility relocation test excavations, as well the locations of transit station test excavations, discussed above in Section 3.4. The transit station test excavations listed in the table are in bold to identify them as such. The figures not only depict the locations of test excavations, but provide insight into how the test excavation locations were chosen—for example, they show the specific project component or feature that is tested by each test excavation. For the guideway column foundations and utility relocations, test excavations were chosen based on considerations of previous archaeological studies, identified cultural resources, LCAs, the former shoreline, and constraints due to the heavily built-up and urbanized environment, including existing utility corridors. Guideway column foundations and utility relocations in areas of previous subsurface work and areas located seaward of the former shoreline (which would contain only fill materials—such as in the vicinity of the Downtown Station) had much fewer test excavations. The results of previous archaeological studies

informed on whether or not particular areas contained evidence of traditional Hawaiian or post-Contact activities. Areas with identified cultural resources and areas within or in the vicinity of LCAs acted as indicators of areas of intensive traditional Hawaiian activity. These areas provided a focus for testing.

In the following figures, the original AISP proposed testing locations are shown in blue, while the actual excavated trenches are shown in red, and abandoned test excavations are shown in black. If the number of blue AISP proposed test excavations is less than indicated on Table 7, this is because the red actual test excavations share the same footprint, and the red actual test excavations cover the AISP proposed test excavations. Proposed utility corridors for the project are shown in lime green, while existing utility corridors are shown in a variety of other colors (orange, blue, teal, pink, purple, and black). Individual test excavation locations were shifted slightly due to built environment constraints, as described and allowed in the City Center AISP (Hammatt et al. 2011).

Table 7. Summary of the Approach for Archaeological Inventory Survey Testing by Construction Sheet (from West to East)

Construction Sheet #/ Portion of Route	**Proposed AISP Testing Locations**		**Actual AIS Testing Locations**			**Comments**
	Excavation Type	**Dimensions**	**Test Excavation #**	**Excavation Type**	**Dimensions**	
Map J30 (Kamehameha Hwy. immediately east of Middle Street Transit Center Station to WB 1269+00)	**Station Column***	**2’ by 20’**	**001**	**Station Column**	**2’ by 20’**	**Test excavations at Middle Street Transit Center Station (see Table 5 above)**
	Station Column	**3’ by 10’**	**002**	**Station Column**	**3’ by 10’**	
	Station Column	**3’ by 10’**	**003**	**Abandoned**	**N/A**	
	Station Column	**2’ by 20’**	**004**	**Station Column**	**3’ by 10’**	
	Station Column	**2’ by 20’**	**005**	**Station Column**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**006**	**Station Building**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**007**	**Station Building**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**008**	**Station Building**	**2’ by 20’**	
	Station Column	**2’ by 20’**	**009**	**Station Column**	**2’ by 20’**	
	Utility Relocation (27” Sewer)	**2’ by 20’**	**010**	**Utility Relocation (27” Sewer)**	**3’ by 10’**	
	Station Building	**2’ by 20’**	**011**	**Station Building**	**2’ by 20’**	
	Utility Relocation (12” Sewer)	2’ by 20’	012	Utility Relocation (12” Sewer)	2’ by 20’	One test excavation proposed and one test excavation completed;

						Straddles Kalihi Stream; Utility line constraints for four western column foundations; Note extensive testing at Middle Street Transit Center Station
Map J31 (Kamehameha Hwy. east of Middle Street Transit Center Station to WB 1279+00)	Guideway Column	3’ by 10’	013	Utility Relocation (12” Sewer)	2’ by 20’	Seven test excavations proposed completed; In area of LCAs; Utility line constraints for column foundations
	Utility Relocation (Storm Drain CB)	3’ by 10’	014	Utility Relocation (12” Sewer)	2’ by 20’	
	Utility Relocation (12” Sewer)	2’ by 20’	015	Utility Relocation (12” Sewer)	2’ by 20’	
	Utility Relocation (24” Water)	2’ by 20’	016	Utility Relocation (24” Water)	2’ by 20’	
	Guideway Column	3’ by 10’	017	Utility Relocation (6” Gas)	2’ by 20’	
	Utility Relocation (24” Water)	2’ by 20’	018	Utility Relocation (24” Water)	2’ by 20’	
	Guideway Column	3’ by 10’	019	Utility Relocation (6” Gas)	2’ by 20’	
Map E3 (Dillingham Blvd. near Laumaka St. and Pu‘uhale Rd. to WB 1289+00)	Guideway Column	3’ by 10’	020	Utility Relocation (6” Gas)	2’ by 20’	Seven test excavations proposed and eight test excavations completed; In area of LCAs; Utility line constraints
	N/A	N/A	020A	Utility Relocation (6” Gas)	2’ by 20’	
	Utility Relocation (6” Gas)	2’ by 20’	021	Utility Relocation (6” Gas)	2’ by 20’	

	Utility Relocation (6” Gas)	2’ by 20’	022	Utility Relocation (6” Gas)	2’ by 20’	
	Guideway Column	3’ by 10’	023	Guideway Column	2’ by 10’	
	Guideway Column	3’ by 10’	024	Guideway Column	2’ by 10’	
	Guideway Column	3’ by 10’	025	Guideway Column	2’ by 10’	
	Guideway Column	3’ by 10’	026	Guideway Column	3’ by 10’	
	Guideway Column	3’ by 10’	027	Guideway Column	3’ by 10’	
Map E4 (Dillingham Blvd. near Kalihi Station to WB 1299+00)	Guideway Column	3’ by 10’	028	Guideway Column	3’ by 10’	Four test excavations proposed and completed; In area of LCAs; Relatively free of utility constraints; Note extensive testing at Kalihi Station
	Guideway Column	3’ by 10’	029	Guideway Column	3’ by 10’	
	Station Column	3’ by 10’	030	Guideway Column	3’ by 10’	
	Station Building	**2’ by 20’**	**031**	**Station Building**	**3’ by 10’**	**Test excavations at Kalihi Station (see Section 0, above)**
	Station Building	**2’ by 20’**	**032**	**Station Building**	**2’ by 20’**	
	Station Column	**3’ by 10’**	**033**	**Station Column**	**3’ by 10’**	
	Station Building	**2’ by 20’**	**034**	**Station Building**	**3’ by 10’**	
	Station Building	**2’ by 20’**	**035**	**Station Building**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**036**	**Station Building**	**3’ by 10’**	
	Station Building	**2’ by 20’**	**037**	**Station Building**	**3’ by 10’**	
	Station Building	**2’ by 20’**	**038**	**Station Building**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**039**	**Station Building**	**2’ by 20’**	

	Station Building	**2’ by 20’**	**040**	**Station Building**	**3’ by 10’**	
	Station Column	**3’ by 10’**	**041**	**Station Column**	**3’ by 10’**	
	Station Building	**2’ by 20’**	**042**	**Station Building**	**2’ by 20’**	
	Guideway Column	**3’ by 10’**	**043**	**Guideway Column**	**3’ by 10’**	
	Utility Relocation (Storm Drain CB)	3’ by 10’	044	Utility Relocation (Storm Drain CB)	3’ by 10’	Four test excavations proposed and completed; In area of LCAs; Relatively free of utility constraints; Note extensive testing at Kalihi Station
Map E5 (Dillingham Blvd. near Kalihi St. to WB 1309+00)	Guideway Column	3’ by 10’	045	Guideway Column	3’ by 10’	Six test excavations proposed and completed; In area of LCAs; Utility line constraints
	Guideway Column	3’ by 10’	046	Guideway Column	3’ by 10’	
	Guideway Column	3’ by 10’	047	Guideway Column	3’ by 10’	
	Utility Relocation (Storm Drain CB)	3’ by 10’	048	Utility Relocation (Electrical Line)	2’ by 20’	
	Utility Relocation (Storm Drain CB)	3’ by 10’	049	Utility Relocation (Electrical Manhole)	3’ by 10’	
	Utility Relocation (Electric Box)	3’ by 10’	050	Utility Relocation (Electrical Box)	3’ by 10’	
Map E6 (Dillingham Blvd. near McNeil St. to WB 1319+00)	Utility Relocation (Storm Drain CB)	3’ by 10’	051	Utility Relocation (Electrical Manhole)	2’ by 20’	Three test excavations proposed and completed; Utility line constraints for all seven column foundations
	Utility Relocation (Storm Drain CB)	3’ by 10’	052	Utility Relocation (Electrical	2’ by 20’	

				Manhole)		
	Utility Relocation (Storm Drain CB)	3’ by 10’	053	Utility Relocation (Electrical Manhole)	3’ by 10’	
Map E7 (Dillingham Blvd. near Waiakamilo Rd. and Colburn St. to WB 1329+00)	Guideway Column	3’ by 10’	054	Utility Relocation (Electrical Line)	2’ by 20’	Six test excavations proposed and five test excavations completed; In area of LCAs; Utility line constraints for all seven column foundations
	Utility Relocation (Storm Drain CB)	3’ by 10’	055	Abandoned	N/A	
	Utility Relocation (42” Water)	2’ by 20’	056	Utility Relocation (36” Sewer)	2’ by 20’	
	Utility Relocation (Storm Drain CB)	3’ by 10’	057	Utility Relocation (Electrical Line)	2’ by 20’	
	Utility Relocation (Storm Drain CB)	3’ by 10’	058	Utility Relocation (42” Water)	2’ by 20’	
	Utility Relocation (42” Water)	2’ by 20’	059	Utility Relocation (Electrical Manhole)	2’ by 20’	
Map E8 (Dillingham Blvd. west of Kapālama Station to WB 1339+00)	**Station Building**	**2’ by 20’**	**060**	**Station Building**	**2’ by 20’**	**Test excavations at Kapālama Station (see Section** 0**, above)**
	Station Building	**2’ by 20’**	**061**	**Station Building**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**062**	**Station Building**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**063**	**Station Building**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**064**	**Station Building**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**065**	**Station Building**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**066**	**Station Building**	**2’ by 20’**	

	Station Building	**2’ by 20’**	**067**	**Station Building**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**068**	**Station Building**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**069**	**Station Building**	**2’ by 20’**	
	Utility Relocation (Storm Drain CB)	**3’ by 10’**	**070**	**Utility Relocation (Storm Drain CB)**	**3’ by 10’**	
	Station Building	**2’ by 20’**	**071**	**Station Building**	**3’ by 10’**	
	Utility Relocation (42” Water)	2’ by 20’	072	Utility Relocation (42” Water)	2’ by 20’	Three test excavations proposed and completed; Adjacent to Kapālama Stream and an area of LCAs; Utility line constraints; Note extensive testing at Kapālama Station
	Utility Relocation (42” Water)	2’ by 20’	073	Utility Relocation (Electrical Line)	2’ by 20’	
Map E9 (Dillingham Blvd. near Ala Kawa St. to WB 1349+00)	Utility Relocation (36” Sewer)	2’ by 20’	074	Utility Relocation (Electrical Manhole)	2’ by 20’	Seven test excavations proposed and completed; Dense area of LCAs; Utility line constraints for all seven column foundations
	Utility Relocation (36” Sewer)	2’ by 20’	075	Utility Relocation (36” Sewer)	2’ by 20’	
	Utility Relocation (36” Sewer)	2’ by 20’	076	Utility Relocation (Electrical Line)	2’ by 20’	
	Utility Relocation (36” Sewer)	2’ by 20’	077	Utility Relocation (36” Sewer)	2’ by 20’	
	Utility Relocation (8” Sewer)	2’ by 20’	078	Utility Relocation (8” Sewer)	2’ by 20’	
	Guideway Column	3’ by 10’	079	Utility Relocation	2’ by 20’	

				(Electrical Line)		
	Utility Relocation (Storm Drain CB)	3’ by 10’	080	Utility Relocation (36” Sewer)	2’ by 20’	
Map E10 (Dillingham Blvd. just west of Iwilei Station to WB 1358+00)	Utility Relocation (Storm Drain CB)	3’ by 10’	081	Utility Relocation (Electrical Manhole)	2’ by 20’	Eight test excavations proposed and completed; Dense area of LCAs; Former Kūwili Fishpond at SE end; Utility line constraints for two other column foundations
	Guideway Column	3’ by 10’	082	Utility Relocation (Electrical Line)	3’ by 10’	
	Utility Relocation (Tel Com Manhole)	2’ by 20’	083	Utility Relocation (Tel Com Manhole)	2’ by 20’	
	Guideway Column	3’ by 10’	084	Guideway Column	3’ by 10’	
	Guideway Column	3’ by 10’	085	Guideway Column	3’ by 10’	
	Guideway Column	3’ by 10’	086	Guideway Column	3’ by 10’	
	Guideway Column	3’ by 10’	087	Guideway Column	3’ by 10’	
Map G11 (Dillingham Blvd. just east of Iwilei Station to WB 1381+00)	**Guideway Column**	**3’ by 10’**	**088**	**Station Column**	**3’ by 10’**	**Test excavations at Iwilei Station (see Section 0, above)**
	Station Building	**2’ by 20’**	**089**	**Station Building**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**090**	**Station Building**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**091**	**Station Building**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**092**	**Station Building**	**2’ by 20’**	
	Guideway Column	3’ by 10’	093	Guideway Column	3’ by 10’	Mostly within former Kūwili Fishpond All eight relatively free of utility constraints Note extensive testing at Iwilei Station
	Guideway Column	3’ by 10’	094	Guideway Column	3’ by 10’	

Map G12 (Nimitz Hwy. near Iwilei Rd. and the west side of Nu‘uanu Stream to WB 1391+00)	Guideway Column	3’ by 10’	095	Guideway Column	3’ by 10’	One test excavation proposed and completed; Adjacent to N side of Nu‘uanu Stream Utility line constraints for other foundations and/or in Kawa or Kūwili Fishponds
Map G13 (Nimitz Hwy. on the east side of Nu‘uanu Stream near the Chinatown Station to WB 1401+00)	**Station Building**	**2’ by 20’**	**096**	**Station Building**	**2’ by 20’**	**Test excavations at Chinatown Station (see Section 0, above)**
	Station Building	**4’ by 20’**	**097**	**Station Building**	**4’ by 20’**	
	Station Building	**2’ by 20’**	**098**	**Station Building**	**2’ by 20’**	
	Station Building	**4’ by 20’**	**099**	**Station Building**	**4’ by 20’**	
	Station Building	**4’ by 20’**	**100**	**Station Building**	**4’ by 20’**	
	Station Building	**4’ by 20’**	**101**	**Station Building**	**4’ by 20’**	
	Utility Relocation (Fiber Optic Line)	2’ by 20’	102	Utility Relocation (Fiber Optic Line)	2’ by 20’	Four test excavations proposed and five test excavations completed; Adjacent to S side of Nu‘uanu Stream; Area of LCAs; Former shoreline extended well inland; Note extensive testing at Chinatown Station
	Utility Relocation (Electric Manhole)	2’ by 20’	103	Utility Relocation (Electrical Manhole)	2’ by 20’	
	Utility Relocation (Fiber Optic Line)	2’ by 20’	104	Utility Relocation (Fiber Optic Line)	2’ by 20’	
	N/A	N/A	104A	Utility Relocation (Fiber Optic Line)	2’ by 20’	
	Guideway Column	3’ by 10’	105	Utility Relocation (Electrical Manhole)	2’ by 20’	

Map G14 (Nimitz Hwy. north of the Downtown Station near Nu‘uanu Ave. and Bethel St. to WB 1411)	Utility Relocation (Electric Manhole)	2’ by 20’	106	Utility Relocation (Electrical Line)	2’ by 20’	Five test excavations proposed and completed; Dense area of LCAs; Major utility constraints
	Utility Relocation (Electric Line)	2’ by 20’	107	Utility Relocation (Electrical Line)	2’ by 20’	
	Guideway Column	3’ by 10’	108	Guideway Column	2’ by 20’	
	Utility Relocation (Electric Manhole)	2’ by 20’	109	Utility Relocation (Electrical Manhole)	2’ by 20’	
	Guideway Column	3’ by 10’	110	Utility Relocation (Electrical Line)	2’ by 20’	
Map G15 (Nimitz Hwy. near the Downtown Station to WB 1420)	Utility Relocation (Electric Line)	2’ by 20’	111	Utility Relocation (Electrical Line)	2’ by 20’	Three test excavations proposed and four completed; Dense area of LCAs; Former shoreline extended well inland; Note testing at Downtown Station
	N/A	N/A	111A	Utility Relocation (Electrical Line)	2’ by 20’	
	Utility Relocation (Electric Line)	2’ by 20’	112	Utility Relocation (Electrical Line)	2’ by 20’	
	Utility Relocation (Electric Line)	2’ by 20’	113	Utility Relocation (Electrical Line)	2’ by 20’	
	Station Building	**2’ by 20’**	**114**	**Station Building**	**3’ by 10’**	**Test excavations at Downtown Station (see Section** 0**, above)**
	Station Column	**2’ by 20’**	**115**	**Station Column**	**2’ by 20’**	
Map G16 (Nimitz Hwy. and Halekauwila St. southeast of the Downtown Station near Mililani St. to WB 1429)	Utility Relocation (Tel Com Manhole)	2’ by 20’	116	Utility Relocation (Tel Com Manhole)	2’ by 20’	Five test excavations proposed and eight test excavations completed; Area of LCAs; Major utility constraints;
	Guideway Column	2’ by 20’	117	Guideway Column	2’ by 20’	
	Utility Relocation (Tel Com Manhole)	2’ by 20’	118	Utility Relocation (Tel Com Manhole)	2’ by 20’	

	Guideway Column	3’ by 10’	119	Guideway Column	3’ by 10’	Note testing at Downtown Station
	N/A	N/A	119A	Utility Relocation (Electrical Line)	3’ by 10’	
	Guideway Column	3’ by 10’	120	Utility Relocation (Electrical Manhole)	2’ by 20’	
	N/A	N/A	120A	Utility Relocation (Electrical Line)	2’ by 20’	
	N/A	N/A	120B	Utility Relocation (Electrical Line	3’ by 10’	
Map G17 (Halekauwila St. at Punchbowl and South Sts., northwest of the Civic Center Station to WB 1438)	Utility Relocation (Fiber Optic Line)	2’ by 20’	121	Utility Relocation (Fiber Optic Line)	2’ by 20’	Seven test excavations proposed and eight test excavations; Major utility constraints; Note extensive testing at Civic Center Station
	Guideway Column	3’ by 10’	122	Guideway Column	3’ by 10’	
	N/A	N/A	122A	Utility Relocation (Electrical Line)	3’ by 10’	
	Guideway Column	3’ by 10’	123	Guideway Column	3’ by 10’	
	Utility Relocation (8” Water)	2’ by 20’	124	Utility Relocation (8” Water)	2’ by 20’	
	Utility Relocation (8” Water)	2’ by 20’	125	Utility Relocation (8” Water)	2’ by 20’	
	Utility Relocation (Electric Manhole)	2’ by 20’	126	Utility Relocation (Electrical Manhole)	2’ by 20’	
	Guideway Column	3’ by 10’	127	Guideway Column	3’ by 10’	
Map G18 (Halekauwila St. in the vicinity of the Civic Center Station to	Guideway Column	3’ by 10’	128	Guideway Column	3’ by 10’	Ten test excavations proposed and 11 test excavations completed;
	Guideway Column	3’ by 10’	129	Guideway Column	3’ by 10’	

WB 1448)						Area of LCAs; Burials reported in vicinity; Significant utility constraints; Note extensive testing at Civic Center Station
	Station Building	**2’ by 20’**	**130**	**Station Building**	**2’ by 20’**	**Test excavations at Civic Center Station (see Section 0, above)**
	Station Column	**3’ by 10’**	**131**	**Station Column**	**3’ by 10’**	
	Station Building	**2’ by 20’**	**132**	**Station Building**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**133**	**Station Building**	**2’ by 20’**	
	Station Column	**3’ by 10’**	**134**	**Station Column**	**3’ by 10’**	
	Station Building	**2’ by 20’**	**135**	**Abandoned**	**N/A**	
	Station Column	**3’ by 10’**	**136**	**Station Column**	**2’ by 20’**	
	Station Column	**3’ by 10’**	**137**	**Station Column**	**3’ by 10’**	
	Station Building	**2’ by 20’**	**138**	**Station Building**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**139**	**Station Building**	**2’ by 20’**	
	Utility Relocation (Electric Manhole)	2’ by 20’	140	Utility Relocation (Electrical Manhole)	2’ by 20’	Ten test excavations proposed and 11 test excavations completed; Area of LCAs; Burials reported in vicinity; Significant utility
	Guideway Column	3’ by 10’	141	Guideway Column	3’ by 10’	
	Utility Relocation (Electric Manhole)	2’ by 20’	142	Utility Relocation (Electrical Manhole)	2’ by 20’	

	Guideway Column	3’ by 10’	143	Guideway Column	3’ by 10’	constraints; Note extensive testing at Civic Center Station
	Guideway Column	3’ by 10’	144	Guideway Column	3’ by 10’	
	Guideway Column	3’ by 10’	145	Guideway Column	3’ by 10’	
	Guideway Column	3’ by 10’	146	Guideway Column	3’ by 10’	
	N/A	N/A	146A	Guideway Column	3’ by 10’	
	Utility Relocation (Electric Manhole)	2’ by 20’	147	Utility Relocation (Electrical Manhole)	2’ by 20’	
Map G19 (Halekauwila St. between Cooke and Kamani Sts. to WB 1458)	Guideway Column	3’ by 10’	148	Guideway Column	3’ by 10’	Nine test excavations proposed and 11 test excavations completed; Area of LCAs; Burials reported in vicinity; Major utility constraints
	N/A	N/A	148A	Guideway Column	3’ by 8’	
	Utility Relocation (Electric Manhole)	2’ by 20’	149	Utility Relocation (Electrical Manhole)	2’ by 20’	
	Utility Relocation (24” Storm Drain)	2’ by 20’	150	Utility Relocation (24” Storm Drain)	2’ by 20’	
	Utility Relocation (8” Sewer)	2’ by 20’	151	Utility Relocation (8” Sewer)	2’ by 20’	
			151A	Utility Relocation (8” Sewer)	2’ by 20’	
	Utility Relocation (8” Sewer)	2’ by 20’	152	Utility Relocation (8” Sewer)	2’ by 20’	
	Utility Relocation (8” Sewer)	2’ by 20’	153	Utility Relocation (8” Sewer)	2’ by 20’	
	Utility Relocation (8” Sewer)	2’ by 20’	154	Utility Relocation (8” Sewer)	2’ by 20’	

	Utility Relocation (6” Sewer)	2’ by 20’	155	Utility Relocation (6” Sewer)	2’ by 20’	
	Utility Relocation (6” Sewer)	2’ by 20’	156	Utility Relocation (6” Sewer)	2’ by 20’	
Map G20 (Kaka‘ako Station vicinity to WB 1468)	Utility Relocation (Electric Manhole)	2’ by 20’	157	Utility Relocation (Electrical Manhole)	3’ by 10’	Seven test excavations proposed and eight test excavations completed; Relatively free of utility constraints, but existing buildings over eastern portion; Note extensive testing at Kaka‘ako Station
	Guideway Column	3’ by 10’	158	Guideway Column	3’ by 10’	
	Guideway Column	3’ by 10’	159	Guideway Column	3’ by 10’	
	Guideway Column	3’ by 10’	160	Guideway Column	3’ by 10’	
	Guideway Column	3’ by 10’	161	Guideway Column	3’ by 10’	
	Station Column	**3’ by 10’**	**162**	**Station Column**	**3’ by 10’**	**Test excavations at Kaka‘ako Station (see Section 0, above)**
	Station Building	**2’ by 20’**	**163**	**Station Building**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**164**	**Station Building**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**165**	**Station Building**	**2’ by 20’**	
	Station Column	**3’ by 10’**	**166**	**Station Column**	**3’ by 10’**	
	Station Building	**2’ by 20’**	**167**	**Station Column**	**3’ by 10’**	
	Station Building	**2’ by 20’**	**168**	**Station Building**	**2’ by 20’**	
	N/A	**N/A**	**168A**	**Station Building**	**3’ by 10’**	
	N/A	**N/A**	**168B**	**Station Building**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**169**	**Station Column**	**3’ by 10’**	
	Station Column	2’ by 20’	170	Guideway Column	3’ by 10’	Seven test excavations proposed and eight test
	N/A	N/A	170 A	Guideway Column	4’ by 8’	

	Guideway Column	3’ by 10’	171	Guideway Column	3’ by 10’	excavations completed; Relatively free of utility constraints, but existing buildings over eastern portion; Note extensive testing at Kaka‘ako Station
Map G21(Queen Street and Kamake‘e Street vicinity to WB 1478)	Guideway Column	3’ by 10’	172	Guideway Column	3’ by 10’	Eight test excavations proposed and 12 test excavations completed; Relatively free of utility constraints, but extant building constraints
	N/A	N/A	172A	Guideway Column	3’ by 10’	
	Guideway Column	3’ by 10’	173	Guideway Column	3’ by 10’	
	Utility Relocation (Tel Com Box)	2’ by 20’	174	Utility Relocation (Tel Com Box)	2’ by 20’	
	N/A	N/A	174A	Utility Relocation (Electrical Line)	2’ by 15’	
	Guideway Column	3’ by 10’	175	Guideway Column	3’ by 10’	
	N/A	N/A	175A	Guideway Column	3’ by 10’	
	Guideway Column	3’ by 10’	176	Guideway Column	2’ by 10’	
	Guideway Column	3’ by 10’	177	Guideway Column	2’ by 10’	
	Guideway Column	3’ by 10’	178	Guideway Column	3’ by 10’	
	N/A	N/A	178A	Guideway Column	3’ by 10’	
	Guideway Column	3’ by 10’	179	Guideway Column	3’ by 10’	
Map G22 (Queen Street/Waimanu Street intersection vicinity to WB 1488)	Guideway Column	3’ by 10’	180	Guideway Column	3’ by 10’	10 test excavations proposed and completed; Burials reported in vicinity;
	Guideway Column	3’ by 10’	181	Guideway Column	3’ by 10’	
	Guideway Column	3’ by 10’	182	Guideway Column	3’ by 10’	

	Guideway Column	3’ by 10’	183	Guideway Column	3’ by 10’	Significant utility constraints; *T-195 moved from Map G23 to G22
	Utility Relocation (Tel Com Manhole)	2’ by 20’	184	Utility Relocation (Tel Com Manhole)	2’ by 20’	
	Utility Relocation (Electric Manhole)	2’ by 20’	185	Utility Relocation (Electrical Manhole)	2’ by 20’	
	Utility Relocation (Tel Com Manhole)	2’ by 20’	186	Utility Relocation (Tel Com Manhole)	2’ by 20’	
	Guideway Column	3’ by 10’	187	Guideway Column	3’ by 10’	
	Guideway Column (offset)	3’ by 10’	188	Guideway Column (offset)	3’ by 10’	
	Utility Relocation (Electric Transformer)	2’ by 20’	195*	Utility Relocation (TPSS)	3’ by 10’	
Map G23 (Kona Street in the vicinity of Pensacola and Pi‘ikoi Streets to WB 1498)	Guideway Column	3’ by 10’	189	Guideway Column	3’ by 10’	11 test excavations proposed and completed; Significant building and utility constraints; *T-195 moved to Map G22
	Utility Relocation (Electric Manhole)	2’ by 20’	190	Utility Relocation (Electrical Manhole)	2’ by 20’	
	Utility Relocation (Electric Manhole)	2’ by 20’	191	Utility Relocation (Electrical Manhole)	2’ by 12.5’	
	Utility Relocation (8” Water)	3’ by 10’	192	Utility Relocation (8” Water)	3’ by 10’	
	Utility Relocation (8” Water)	2’ by 20’	193	Utility Relocation (Electrical Line)	2’ by 20’	
	Guideway Column	3’ by 10’	194	Guideway Column	3’ by 10’	

	Guideway Column	3’ by 10’	196	Guideway Column	3’ by 10’	
	Guideway Column	3’ by 10’	197	Guideway Column	3’ by 10’	
	Guideway Column	3’ by 10’	198	Guideway Column	3’ by 10’	
	Utility Relocation (24” Storm Drain)	2’ by 20’	199	Utility Relocation (24” Storm Drain)	2’ by 20’	
Map G24 (Kona Street just northwest of Ala Moana Center to end)	Utility Relocation (24” Storm Drain)	2’ by 20’	200	Utility Relocation (24” Storm Drain)	2’ by 20’	Ten test excavations proposed and seven test excavations completed; Significant building and utility constraints; Note extensive testing at Ala Moana Center Station
	Guideway Column	3’ by 10’	201	Guideway Column	3’ by 10’	
	Utility Relocation (24” Storm Drain)	2’ by 20’	202	Utility Relocation (24” Storm Drain)	2’ by 20’	
	N/A	N/A	202A	Utility Relocation (24” Storm Drain)	2’ by 20’	
	Guideway Column	3’ by 10’	203	Guideway Column	3’ by 10’	
	Utility Relocation (24” Storm Drain)	2’ by 20’	204	Utility Relocation (24” Storm Drain)	2’ by 20’	
	Guideway Column	**3’ by 10’**	**205**	**Station Column**	**3’ by 10’**	**Test excavations at Ala Moana Center Station (see Section 0, above)**
	Guideway Column	**3’ by 10’**	**206**	**Station Column**	**3’ by 10’**	
	Guideway Column	**3’ by 10’**	**207**	**Station Column**	**3’ by 10’**	
	Station Column	**3’ by 10’**	**208**	**Station Column**	**3’ by 10’**	
	Station Column	**3’ by 10’**	**209**	**Station Column**	**3’ by 10’**	
	Station Building	**2’ by 20’**	**210**	**Station Building**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**211**	**Station Building**	**2’ by 20’**	
	Station Column	**3’ by 10’**	**212**	**Station Column**	**3’ by 10’**	

	Station Column	3’ by 10’	213	Guideway Column	3’ by 10’	Ten test excavations proposed and seven test excavations completed; Significant building and utility constraints; Note extensive testing at Ala Moana Center Station
	Station Building	**2’ by 20’**	**214**	**Station Building**	**2’ by 20’**	**Test excavations at Ala Moana Center Station (see Section** 0**, above)**
	Station Building	**2’ by 20’**	**215**	**Abandoned**	**N/A**	
	Station Column	3’ by 10’	216	Abandoned	N/A	Ten test excavations proposed and seven test excavations completed; Significant building and utility constraints; Note extensive testing at Ala Moana Center Station
	Station Column	**3’ by 10’**	**217**	**Station Column**	**3’ by 10’**	**Test excavations at Ala Moana Center Station (see Section** 0**, above)**
	Station Column	**3’ by 10’**	**218**	**Station Column**	**3’ by 10’**	
	Station Column	**3’ by 10’**	**219**	**Station Column**	**3’ by 10’**	
	Station Platform	**3’ by 10’**	**220**	**Station Building**	**2’ by 20’**	
	Station Platform	**3’ by 10’**	**221**	**Utility Relocation (Electrical Line)**	**2’ by 20’**	
	Station Building	**2’ by 20’**	**222**	**Utility Relocation (Electrical Line)**	**2’ by 20’**	
	Station Building	2’ by 20’	223	Abandoned	N/A	Ten test excavations proposed and seven test
	Station Building	2’ by 20’	224	Abandoned	N/A	

	Station Platform	3’ by 10’	225	Abandoned	N/A	excavations completed; Significant building and utility constraints; Note extensive testing at Ala Moana Center Station
Map P1 (Punchbowl Street makai of Pohukaina Street)	Utility Relocation (Electric Line)	2’ by 20’	226	Utility Relocation (Electrical Line)	2’ by 20’	Three test excavations proposed and 10 test excavations completed; Utility relocations only
	N/A	N/A	226A	Utility Relocation (Electrical Line)	2’ by 20’	
	N/A	N/A	226B	Utility Relocation (Electrical Manhole)	2’ by 20’	
	N/A	N/A	226C	Utility Relocation (Electrical Manhole)	2’ by 20’	
	N/A	N/A	226D	Utility Relocation (Electrical Manhole)	2’ by 20’	
	Utility Relocation (Electric Manhole)	2’ by 20’	227	Utility Relocation (Electrical Manhole)	2’ by 20’	
	N/A	N/A	227A	Utility Relocation (Electrical Manhole)	2’ by 20’	
	N/A	N/A	227B	Utility Relocation (Electrical Manhole)	2’ by 20’	
	N/A	N/A	228A	Utility Relocation (Electrical line)	2’ by 20’	

Map P2 (Pohukaina Street near South Street)	Utility Relocation (Electric Manhole)	2’ by 20’	228	Utility Relocation (Electrical Manhole)	2’ by 20’	Two test excavations proposed and completed; Utility relocations only
	Utility Relocation (Electric Line)	2’ by 20’	229	Utility Relocation (Electrical Line)	2’ by 20’	
Map P3 (Pohukaina Street near Keawe Street, Coral Street, and Cooke Street)	Utility Relocation (Electric Manhole)	2’ by 20’	230	Utility Relocation (Electrical Manhole)	2’ by 20’	Three test excavations proposed and five test excavations completed; Utility relocations only
	Utility Relocation (Electric Manhole)	2’ by 20’	231	Utility Relocation (Electrical Manhole)	2’ by 20’	
	N/A	N/A	232A	Utility Relocation (Electrical Line)	2’ by 20’	
	Utility Relocation (Electric Manhole)	2’ by 20’	232	Utility Relocation (Electrical Manhole)	2’ by 20’	
	N/A	N/A	232A	Utility Relocation (Electrical Line)	2’ by 20’	

*Items in bold represent test excavations that were conducted at transit stations.

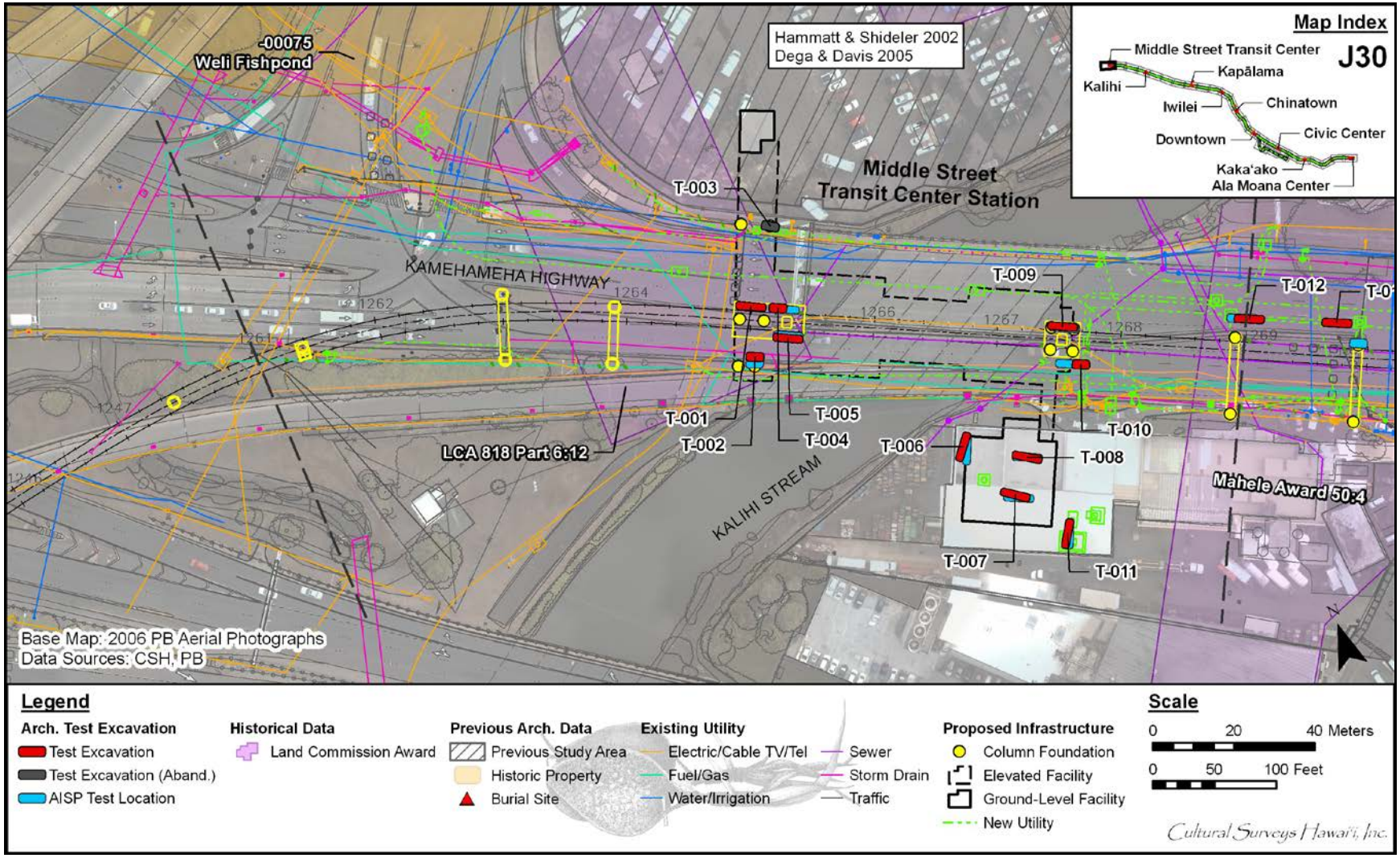

Figure 85. Map J30 (Kamehameha Highway in the immediate vicinity of the Middle Street Transit Center Station) showing locations of proposed AISP and actual AIS test excavations (see also detailed Middle Street Transit Center Station figures, above)

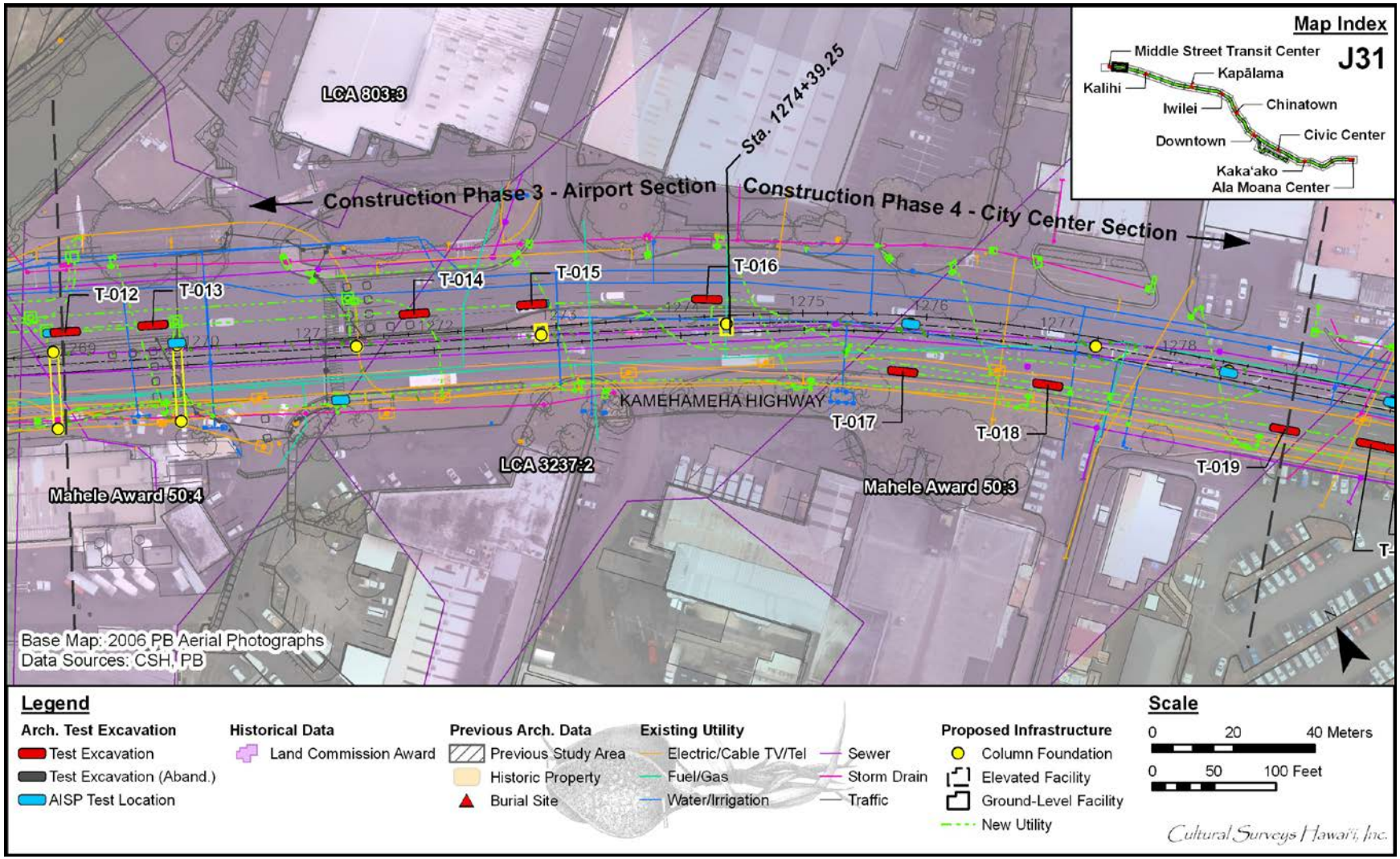

Figure 86. Map J31 (Kamehameha Highway east of Middle Street Transit Center Station) showing locations of proposed AISP and actual AIS test excavations

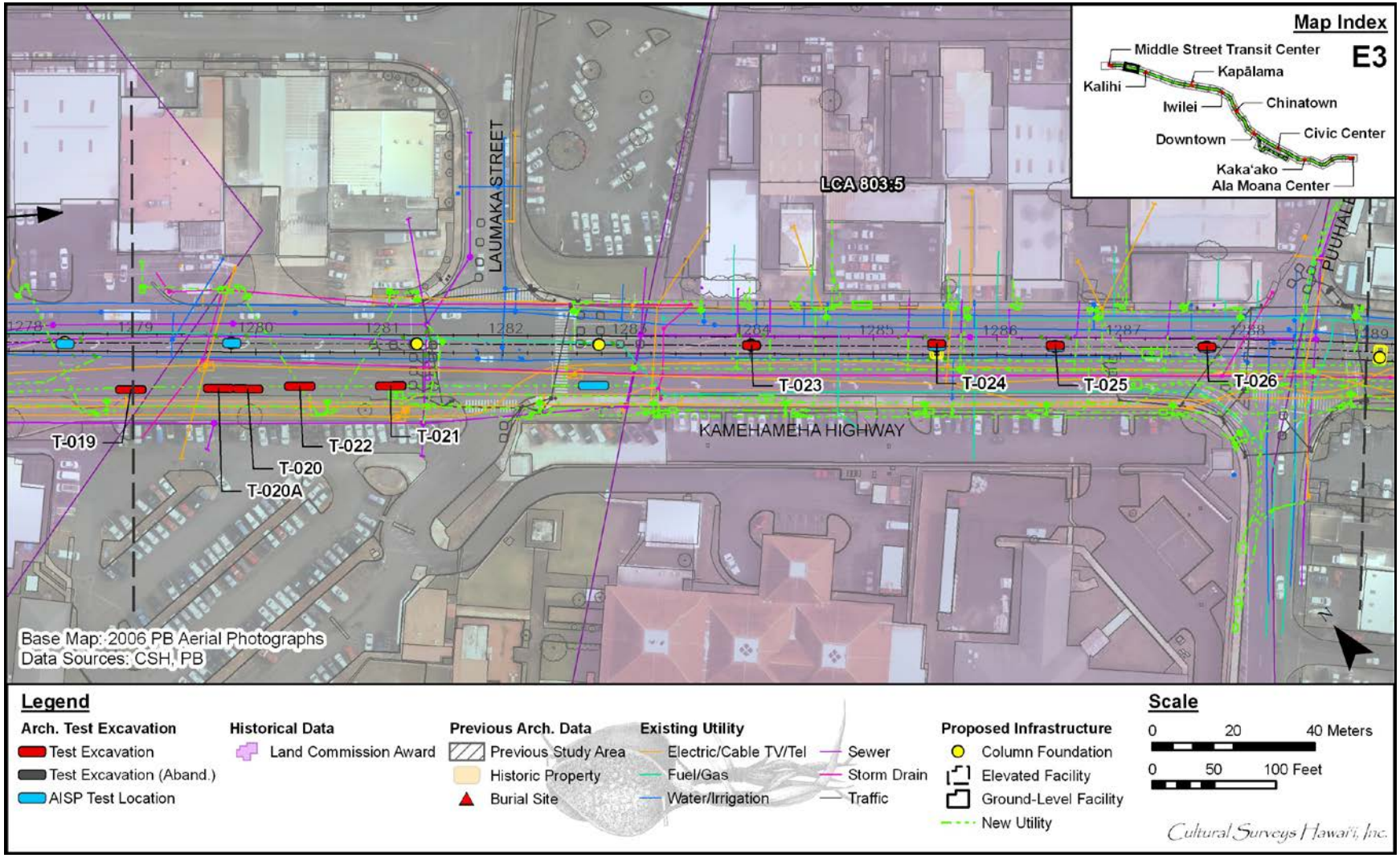

Figure 87. Map E3 (Dillingham Boulevard near Laumaka Street) showing locations of proposed AISP and actual AIS test excavations

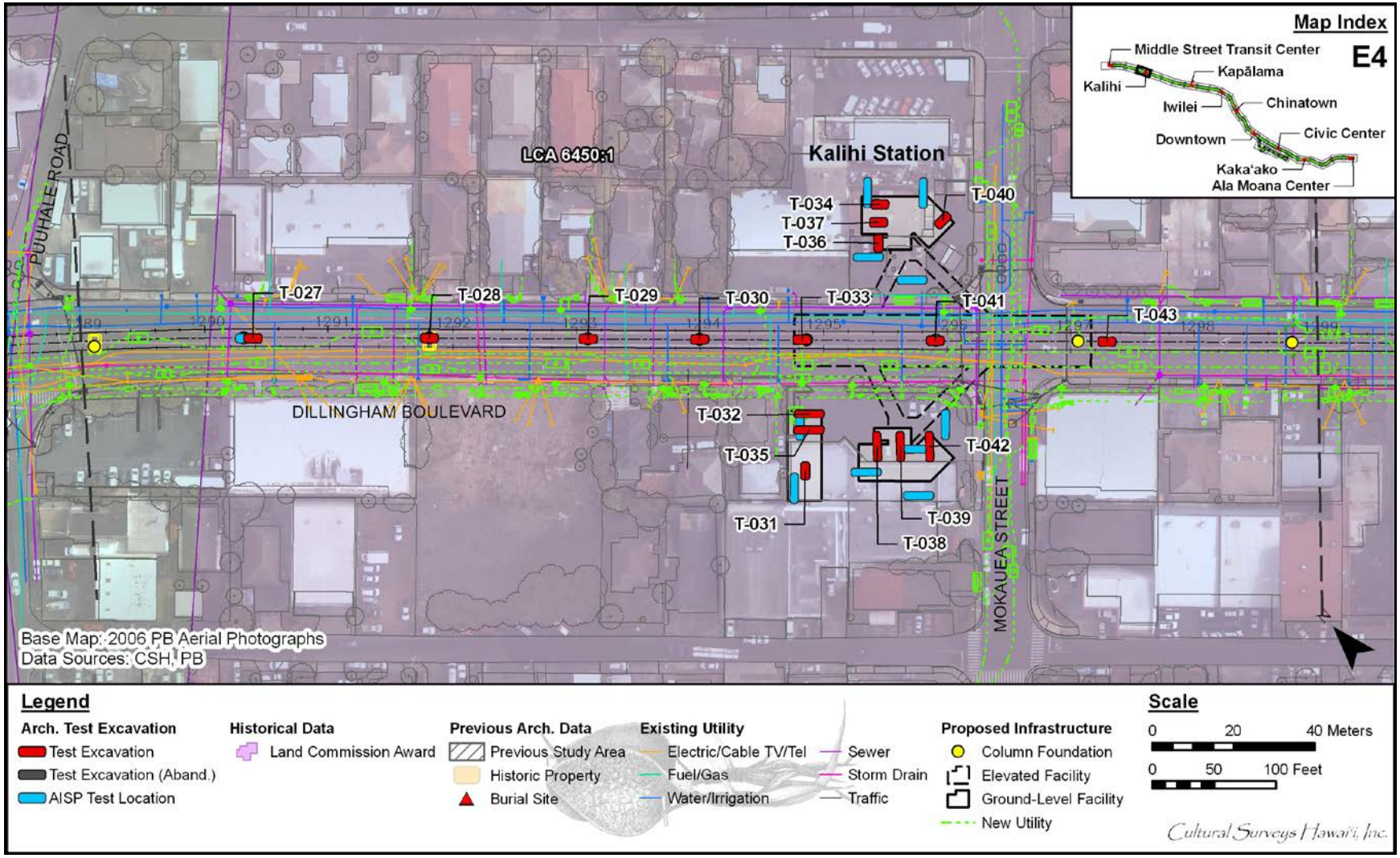

Figure 88. Map E4 (Dillingham Boulevard near Kalihi Station) showing locations of proposed AISP and actual AIS test excavations (see also detailed Kalihi Station figures, above)

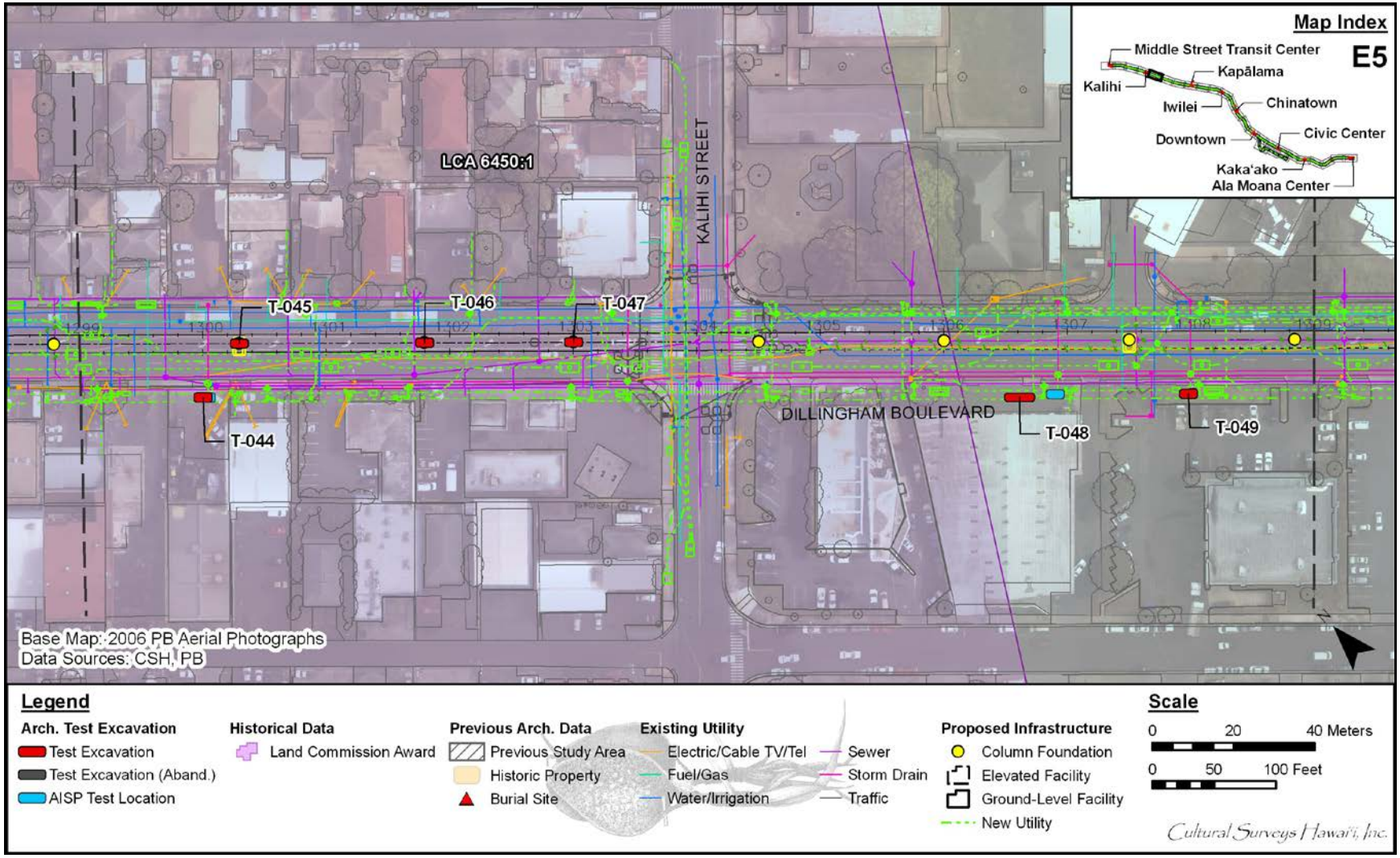

Figure 89. Map E5 (Dillingham Boulevard near Kalihi Street) showing locations of proposed AISP and actual AIS test excavations

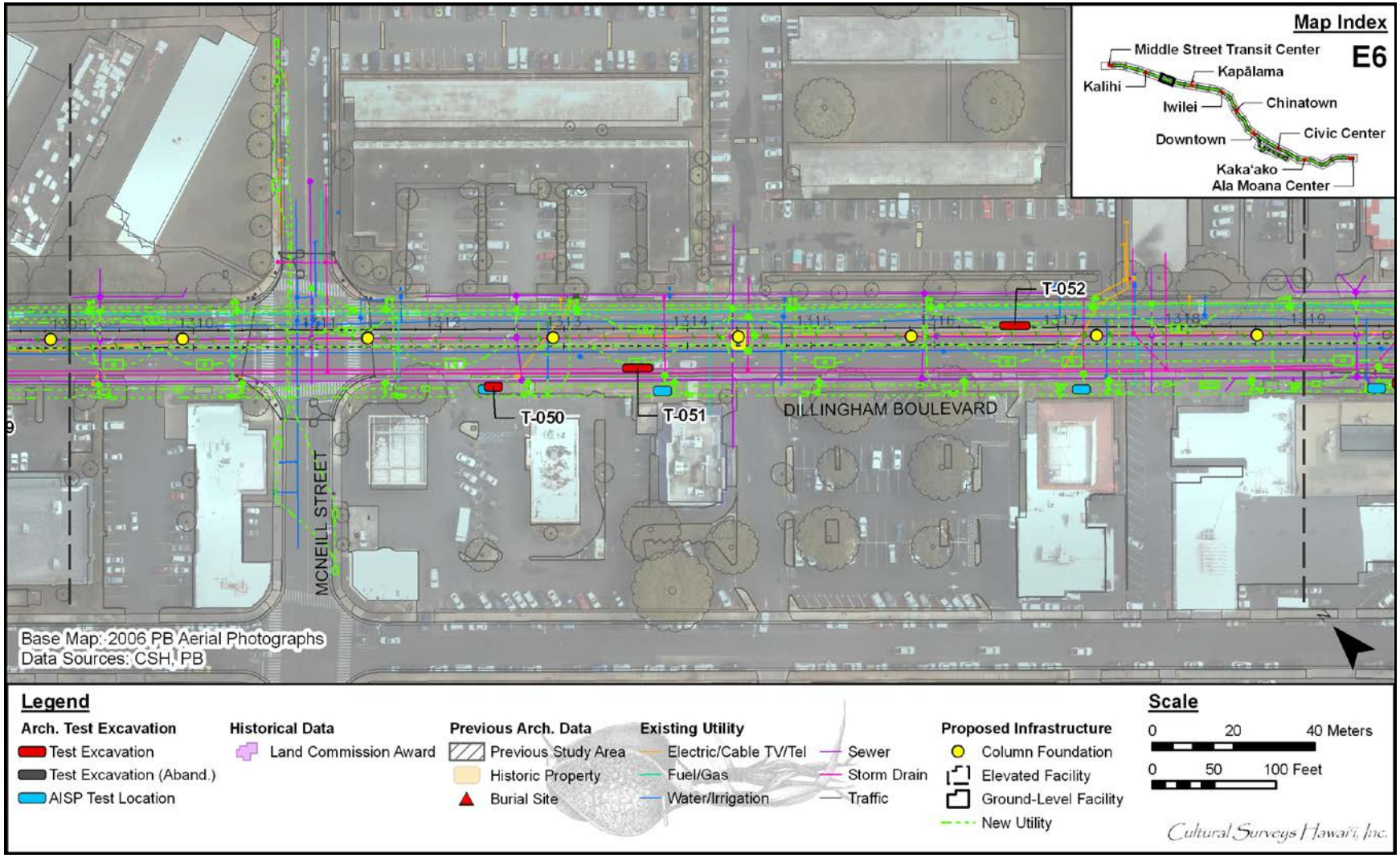

Figure 90. Map E6 (Dillingham Boulevard near McNeill Street) showing locations of proposed AISP and actual AIS test excavations

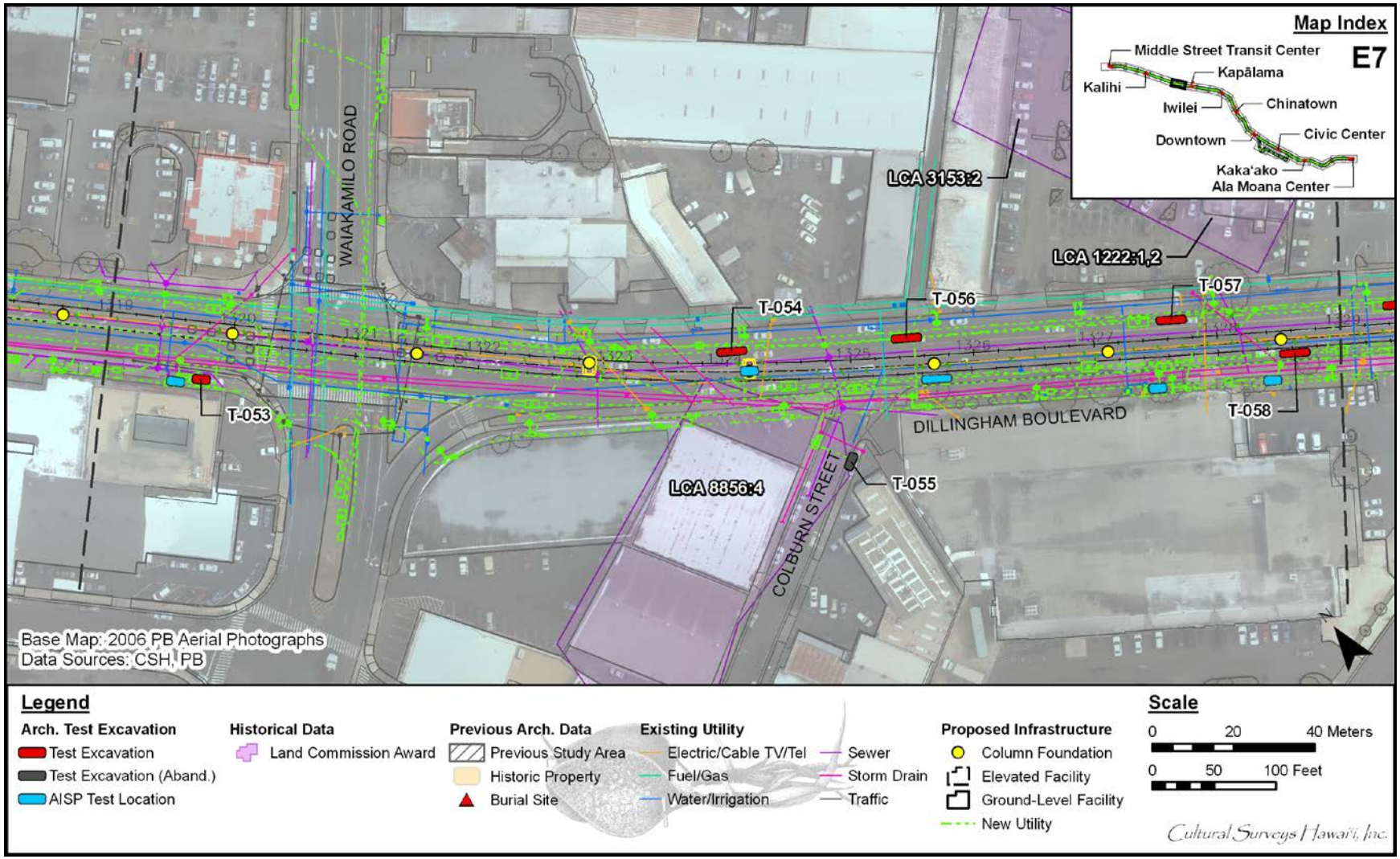

Figure 91. Map E7 (Dillingham Boulevard near Waiakamilo Road showing locations of proposed AISP and actual AIS test excavations

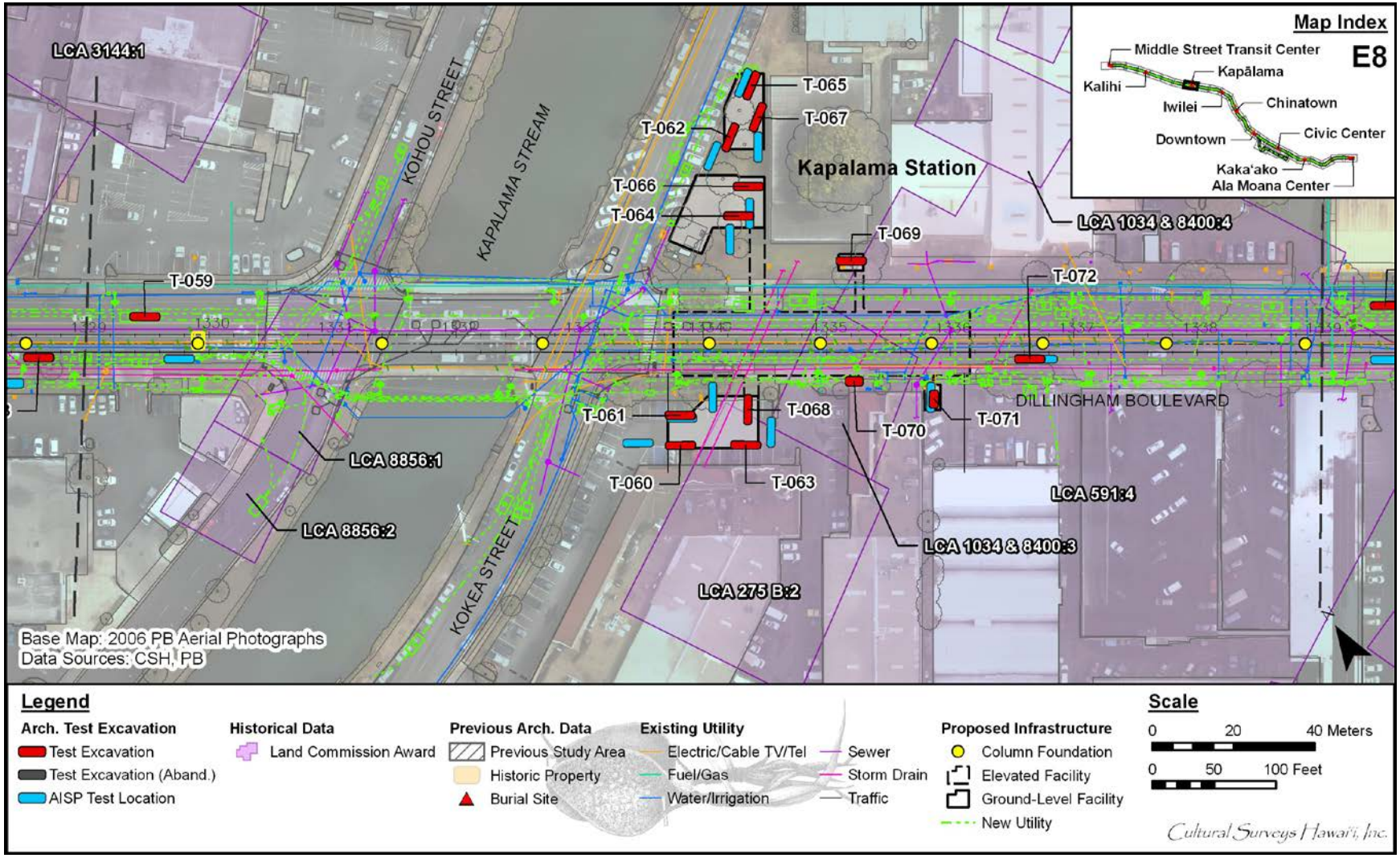

Figure 92. Map E8 (Dillingham Boulevard near Kapālama Station) showing locations of proposed AISP and actual AIS test excavations (see also detailed Kapālama Station figures, above)

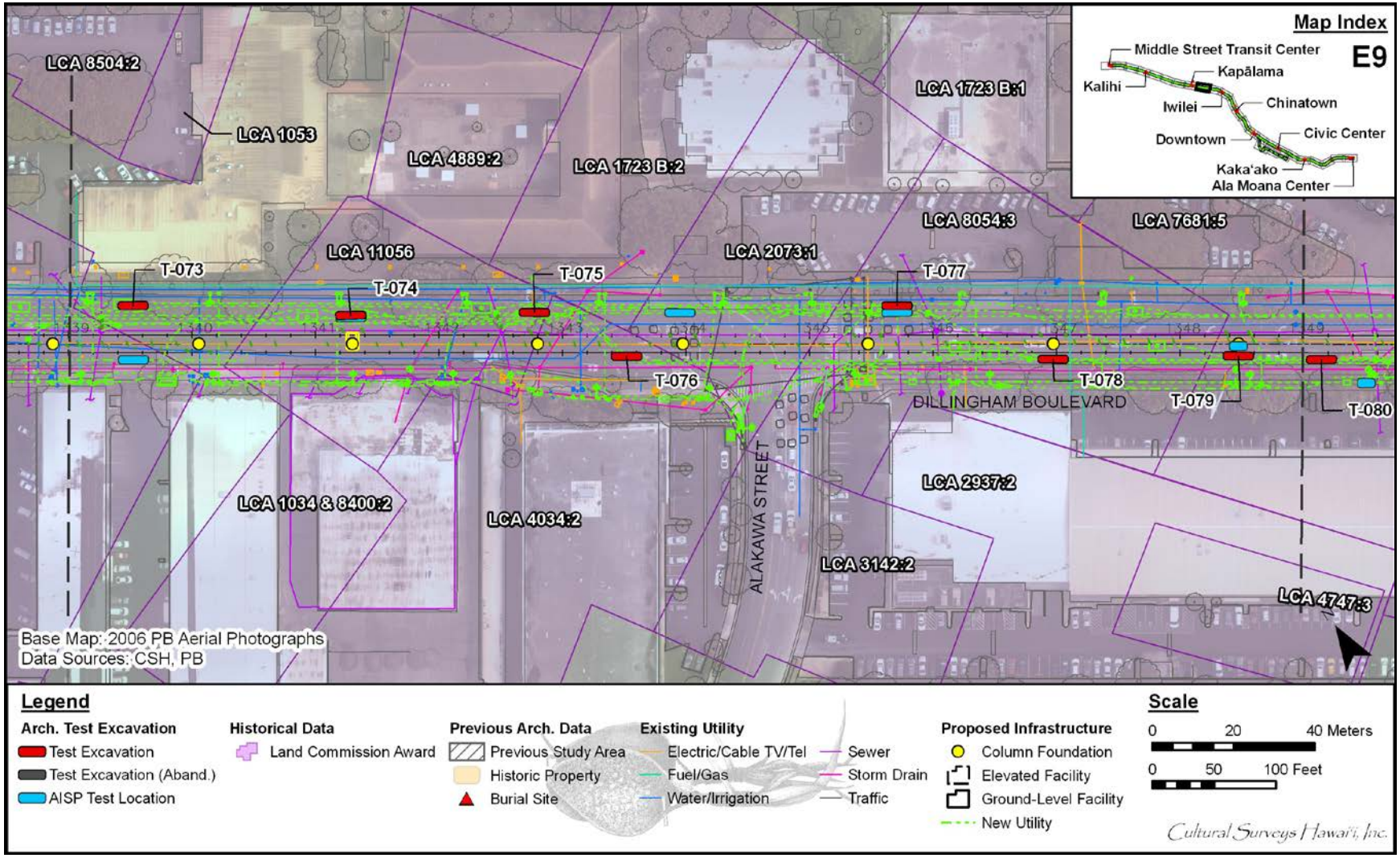

Figure 93. Map E9 (Dillingham Boulevard near Ala Kawa Street) showing locations of proposed AISP and actual AIS test excavations

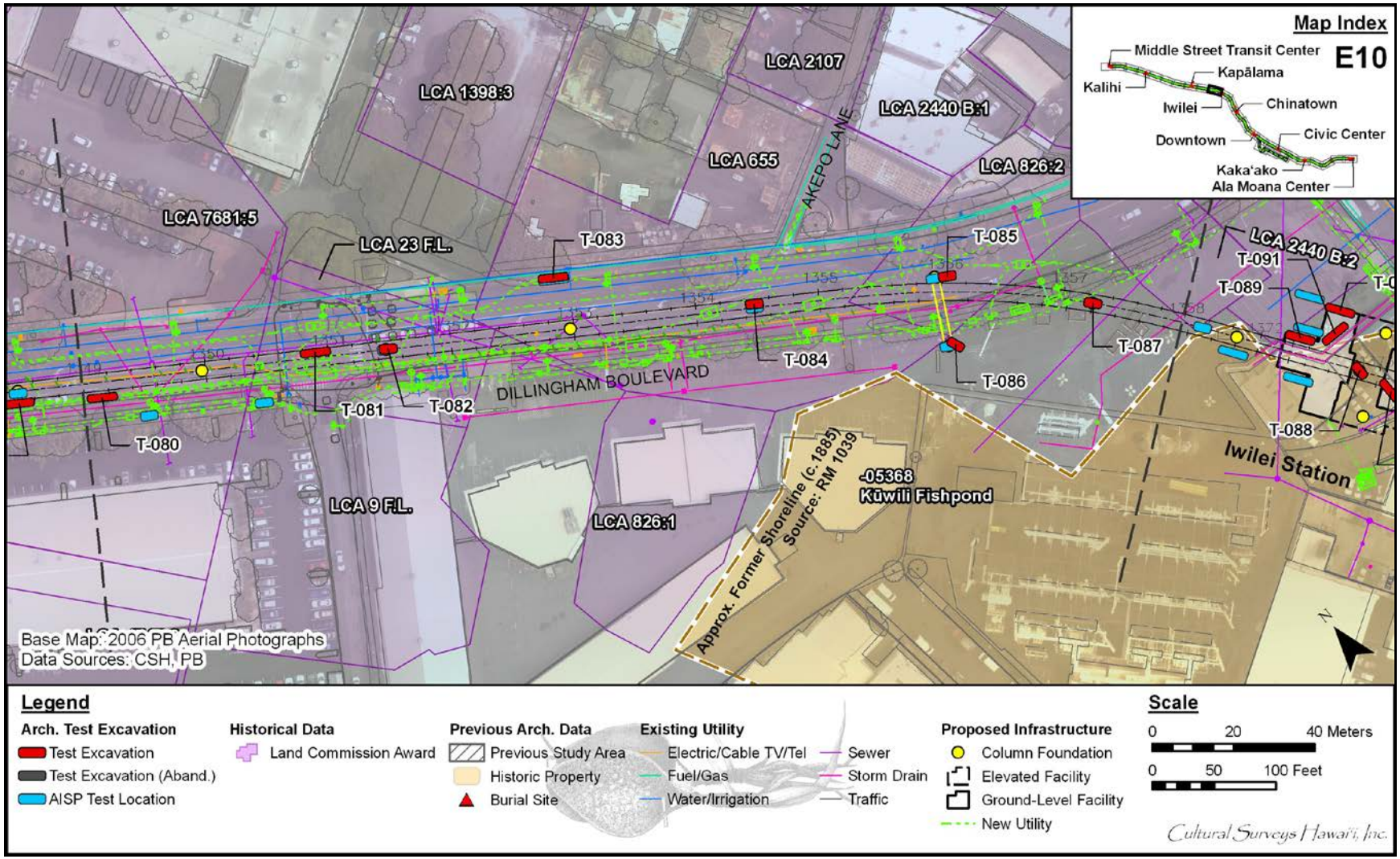

Figure 94. Map E10 (Dillingham Blvd. west of Iwilei Station) showing locations of proposed AISP and actual AIS test excavations (see also detailed Iwilei Station figures, above)

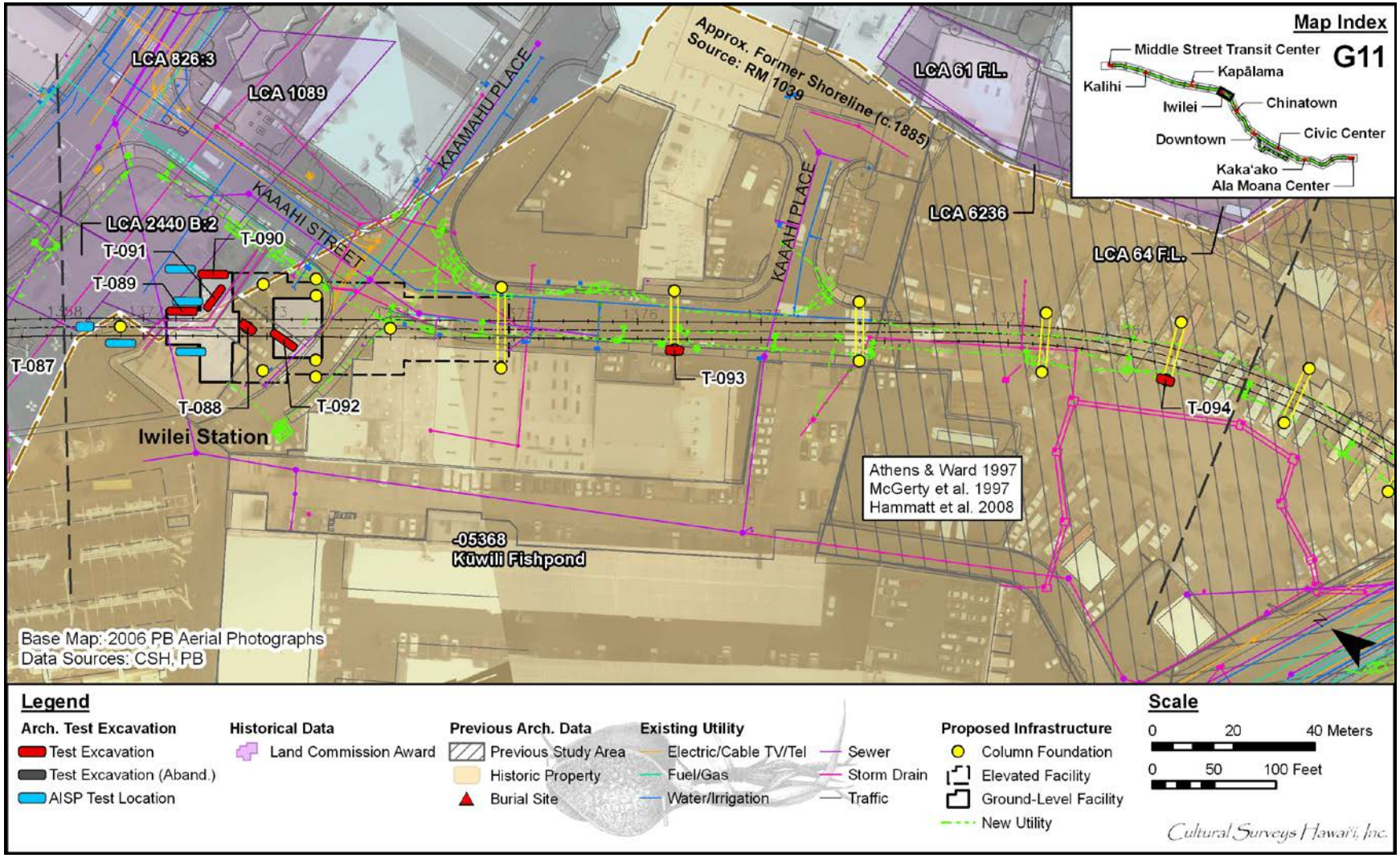

Figure 95. Map G11 (east of Iwilei Station) showing proposed locations of proposed AISP and actual AIS test excavations (see also detailed Iwilei Station figures, above)

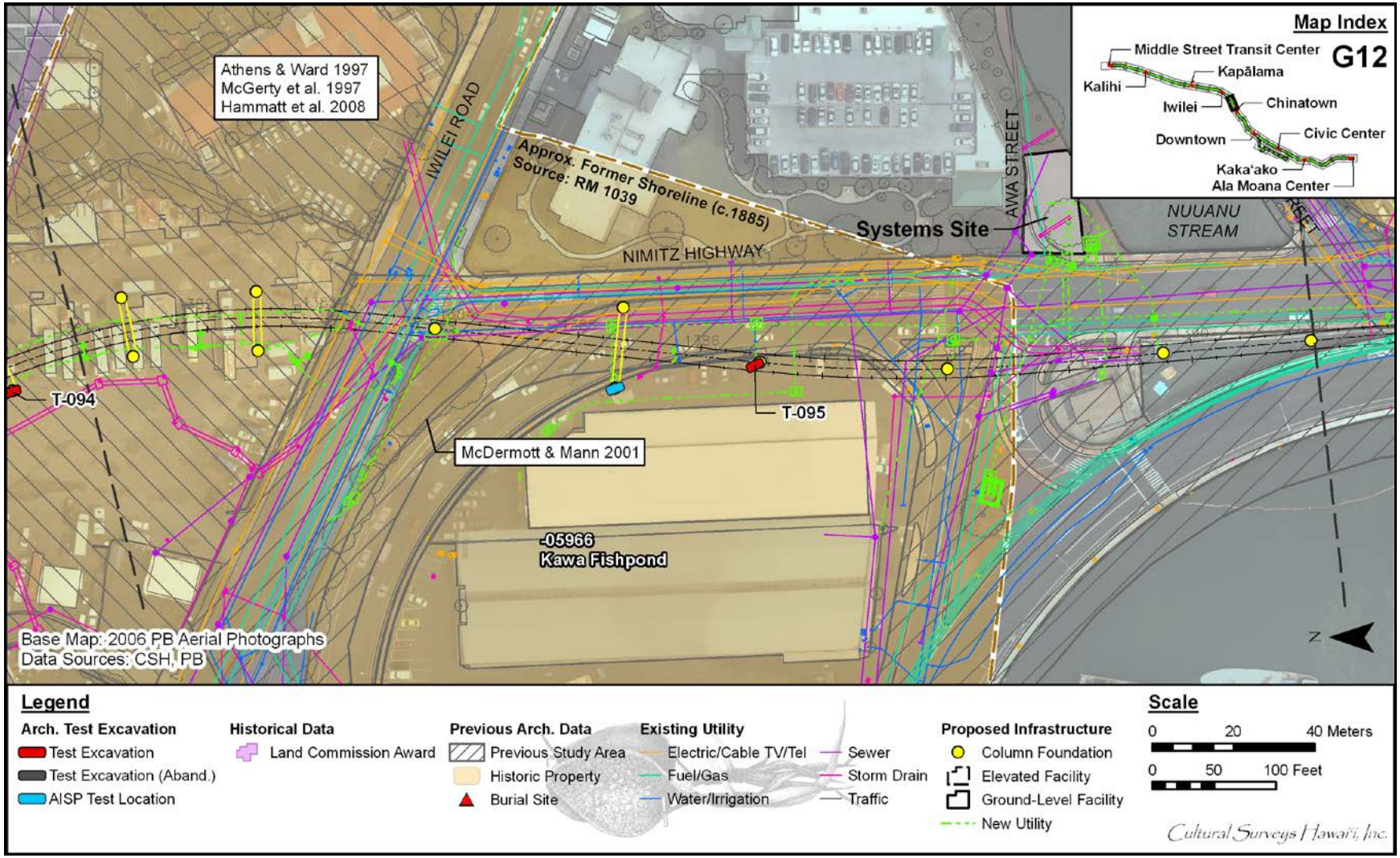

Figure 96. Map G12 (near Iwilei Road and the west side of Nu‘uanu Stream) showing locations of proposed AISP and actual AIS test excavations (note: this entire section was in fishponds or is seaward of the former shoreline)

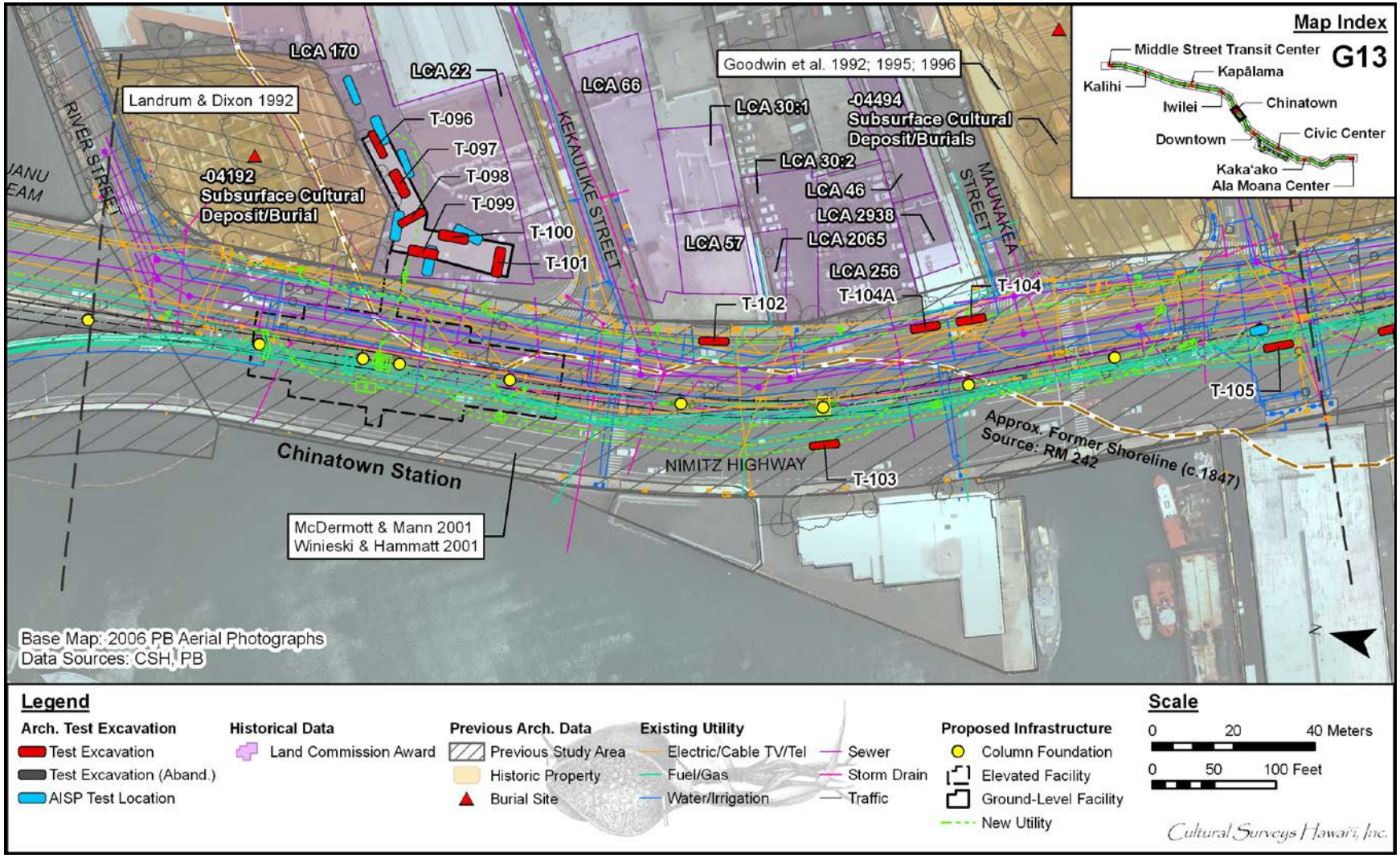

Figure 97. Map G13 (Nimitz Highway on the east side of Nu‘uanu Stream, near Chinatown Station) showing locations of proposed AISP and actual AIS test excavations (see also detailed Chinatown Station figures, above)

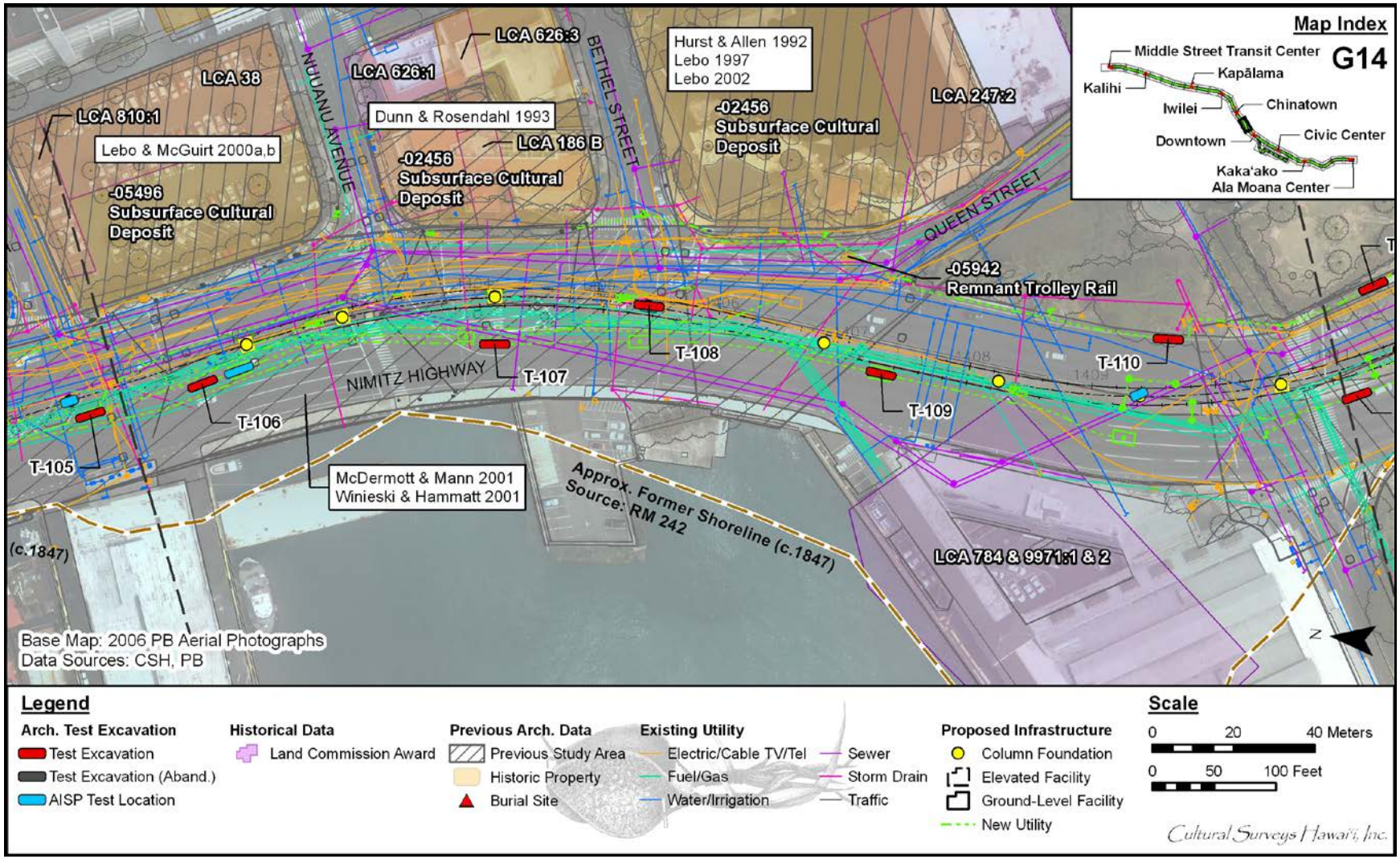

Figure 98. Map G14 (Nimitz Highway near Nu‘uanu Avenue and Bethel Street and north of the Downtown Station) showing locations of proposed AISP and actual AIS test excavations

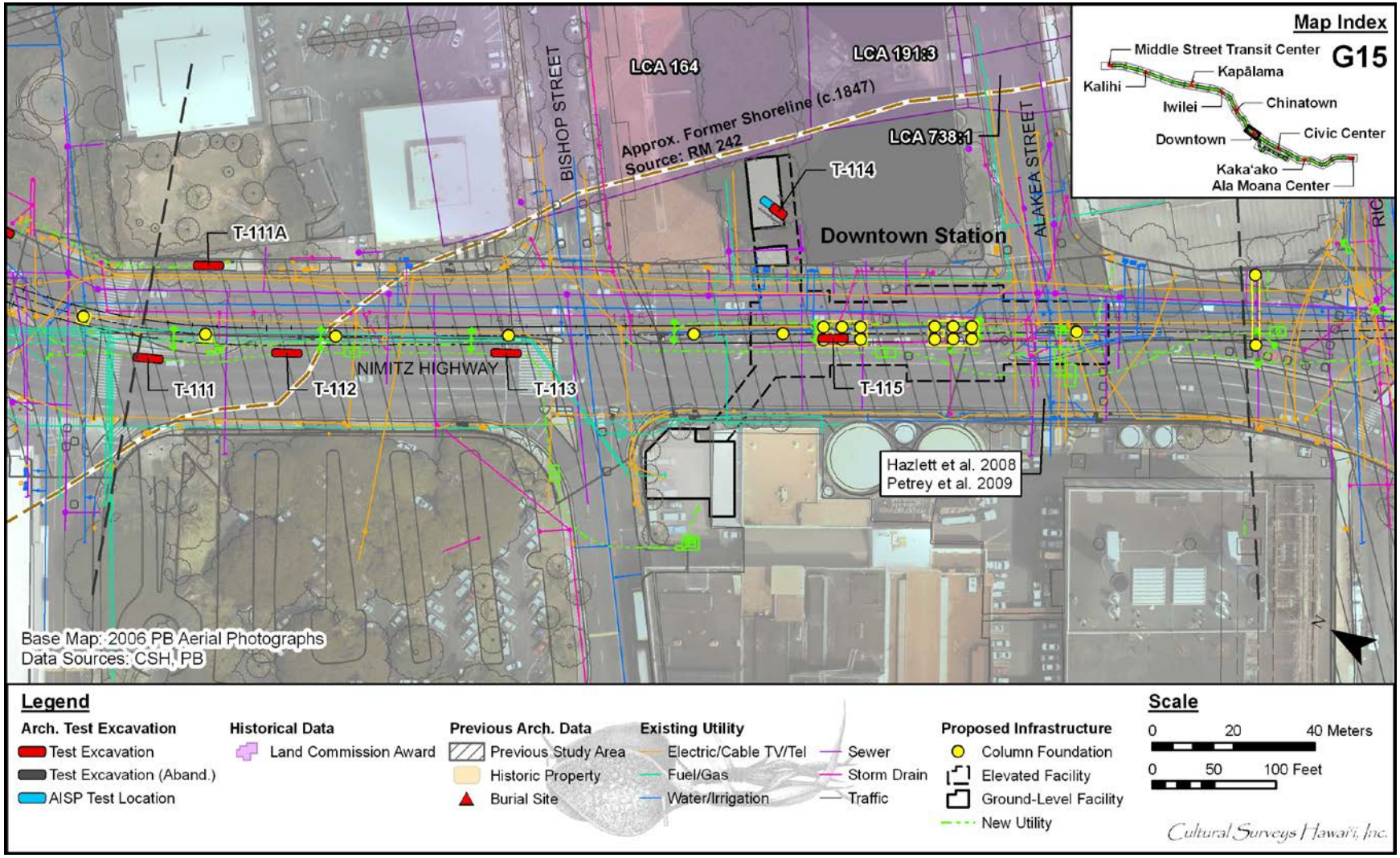

Figure 99. Map G15 (Nimitz Highway near the Downtown Station) showing locations of proposed AISP and actual AIS test excavations (see also detailed Downtown Station figures, above)

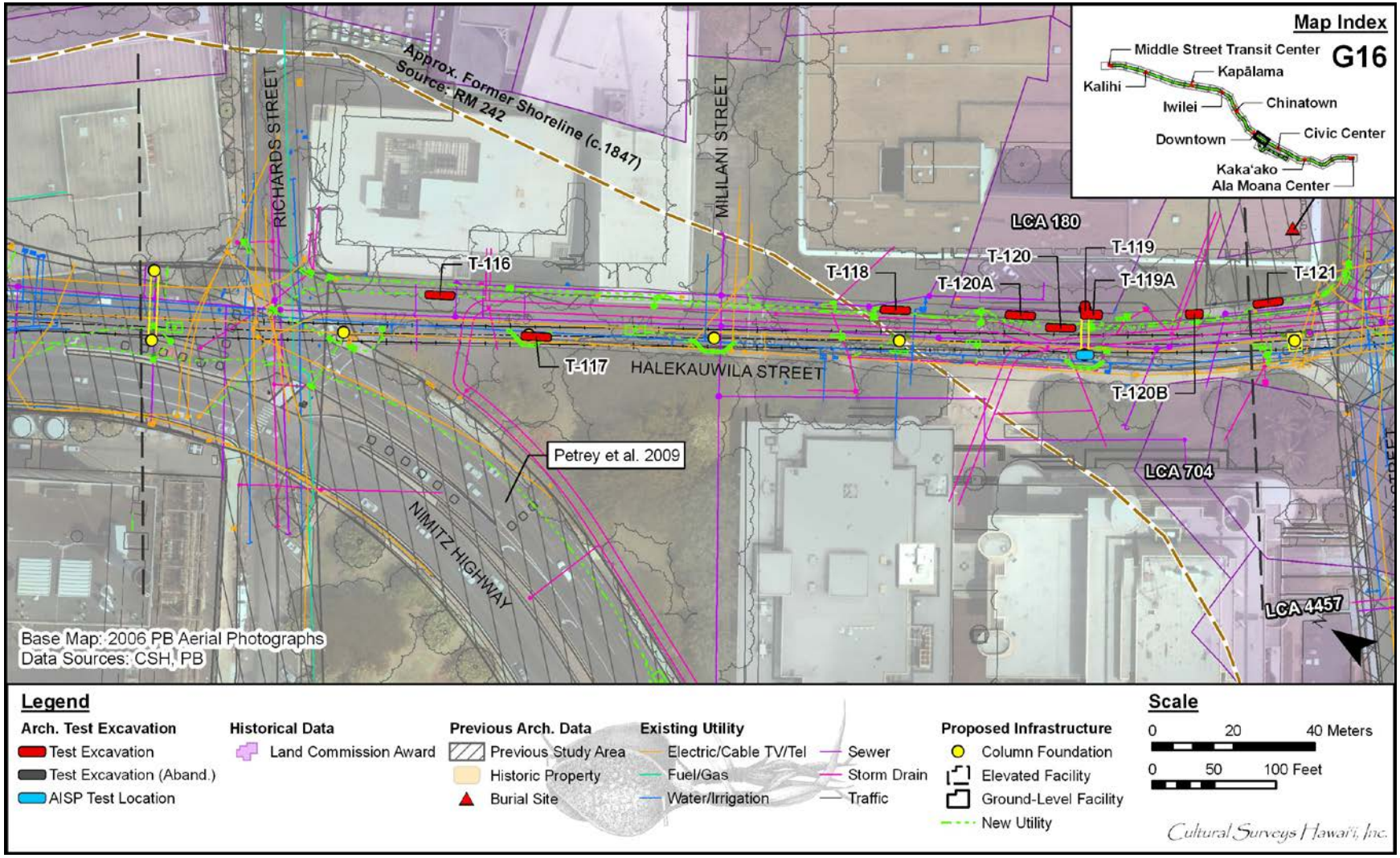

Figure 100. Map G16 (Nimitz Highway and Halekauwila Street southeast of the Downtown Station) near Mililani Street showing locations of proposed AISP and actual AIS test excavations

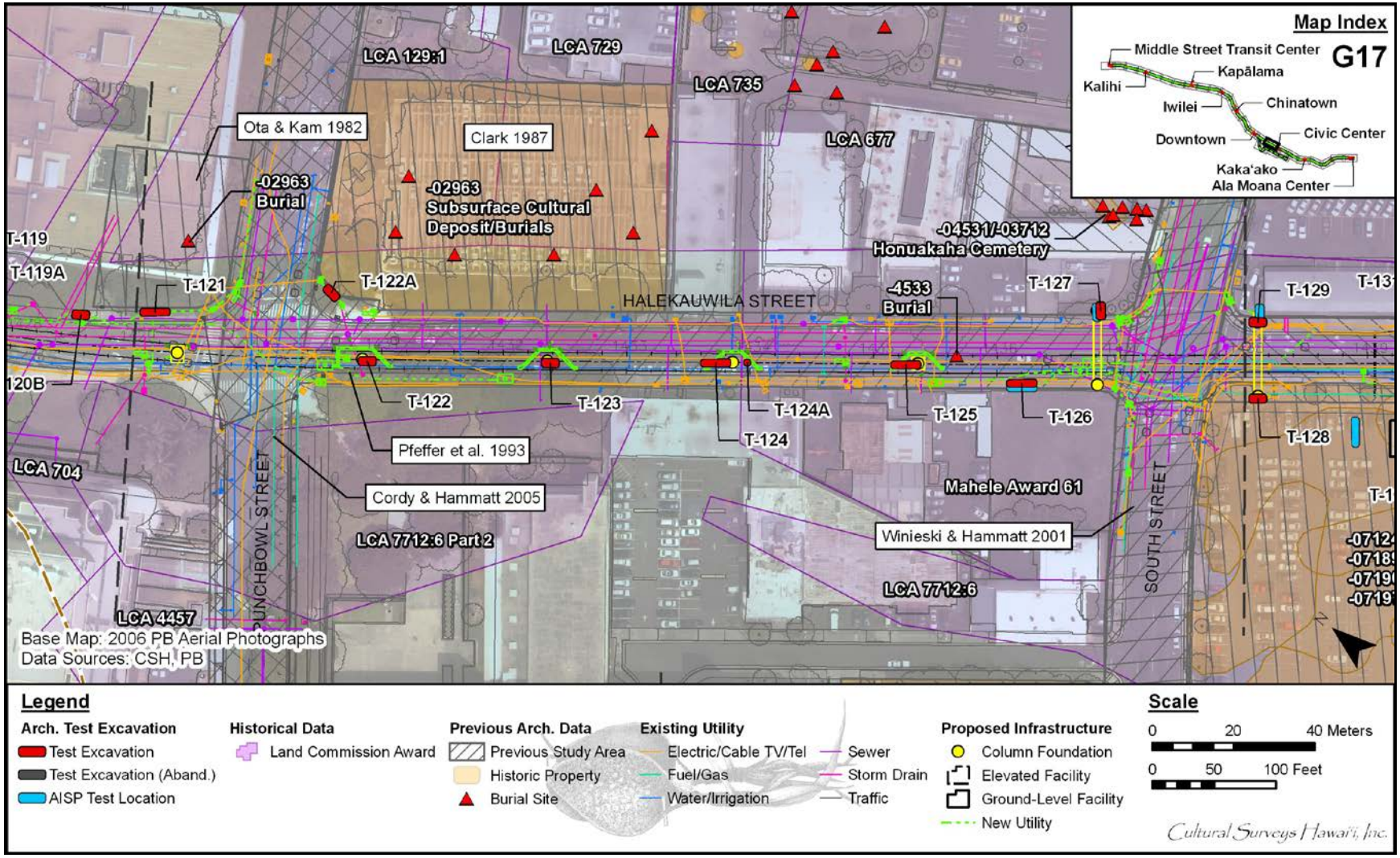

Figure 101. Map G17 (Halekauwila Street northwest of the Civic Center Station) showing locations of proposed AISP and actual AIS test excavations

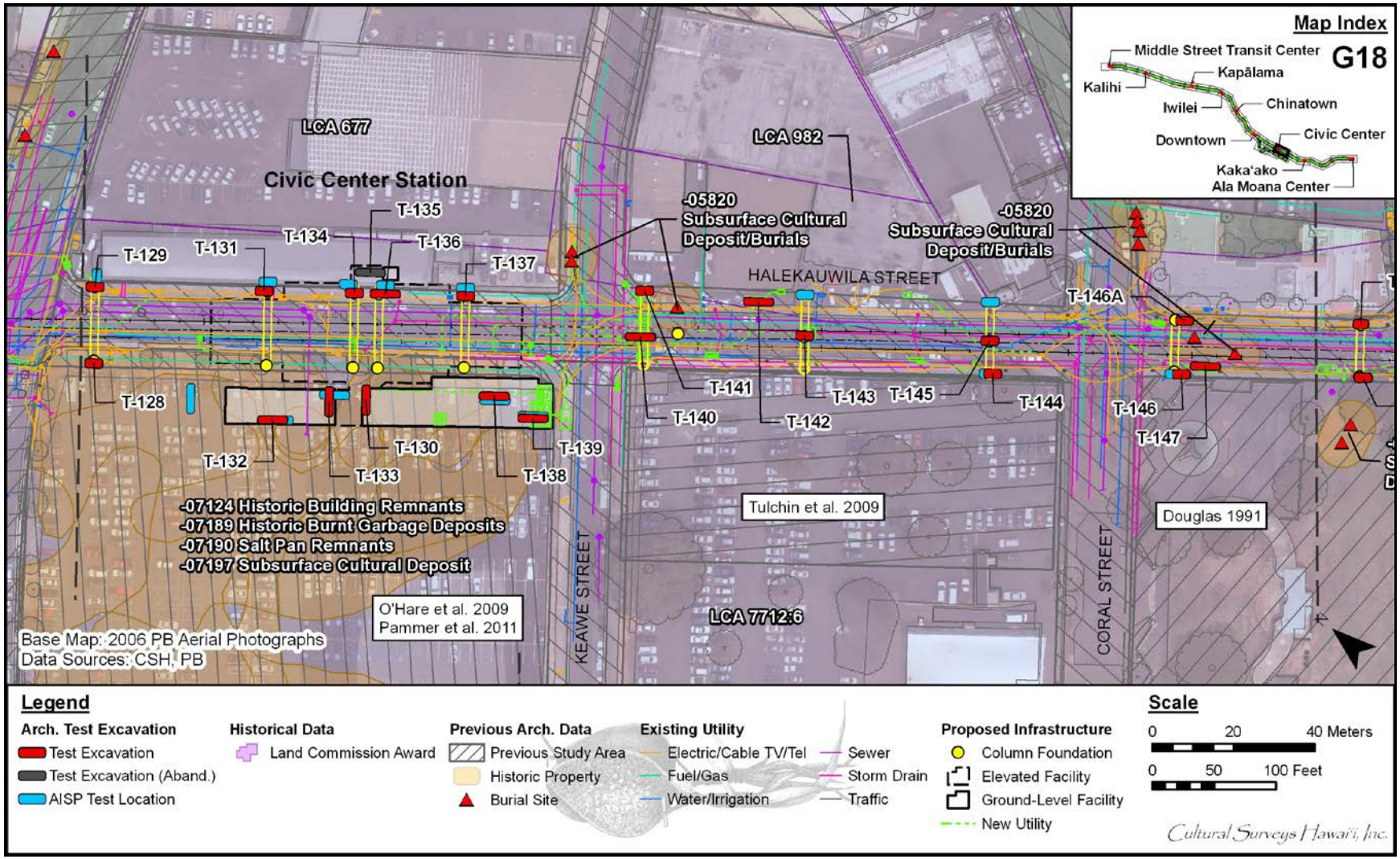

Figure 102. Map G18 (Halekauwila Street in the vicinity of the Civic Center Station) showing locations of proposed AISP and actual AIS test excavations (see also detailed Civic Center Station figures, above)

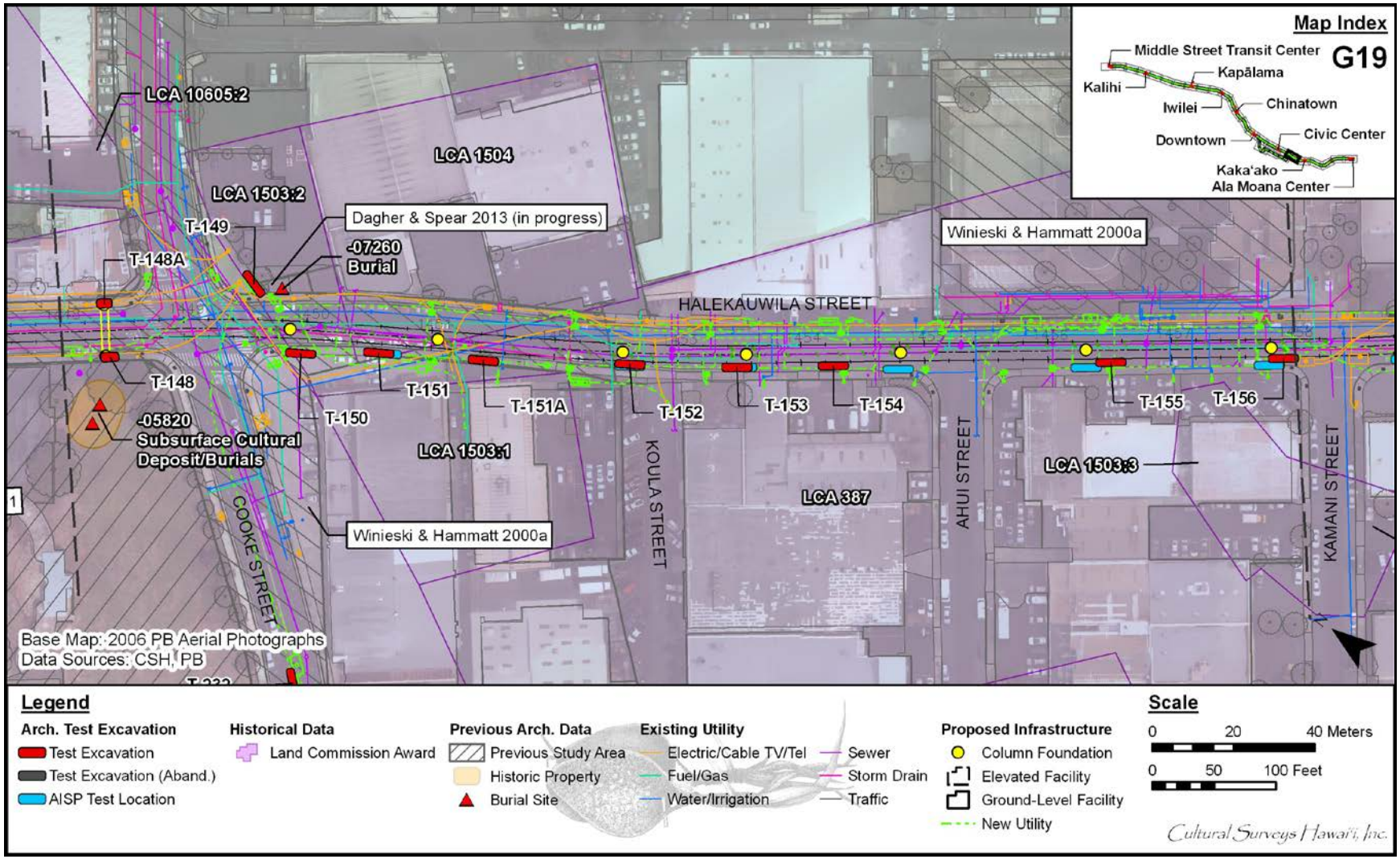

Figure 103. Map G19 (Halekauwila Street between Cooke and Kamani Streets) showing locations of proposed AISP and actual AIS test excavations

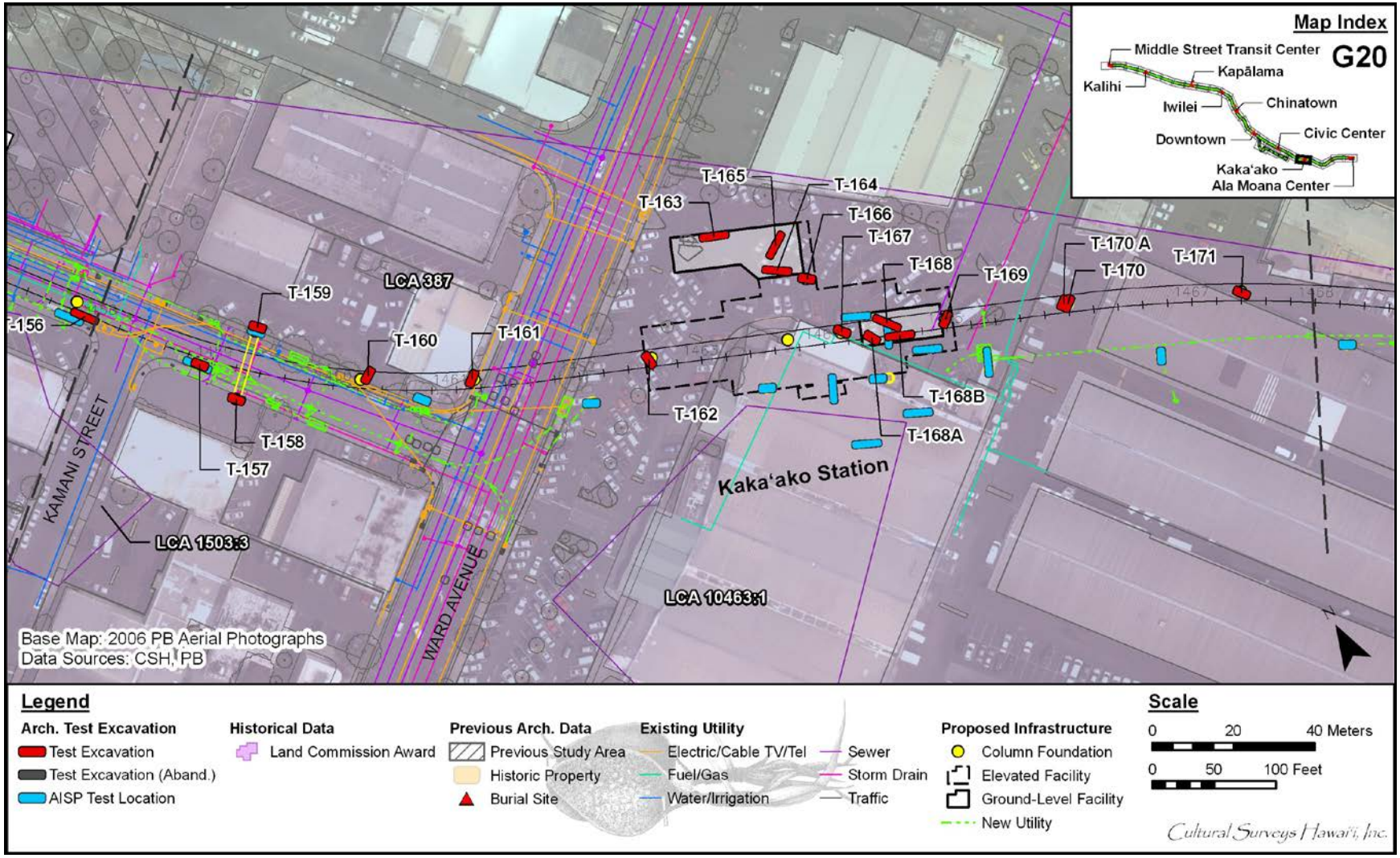

Figure 104. Map G20 (Kaka‘ako Station) vicinity showing locations of proposed AISP and actual AIS test excavations (see also detailed Kaka‘ako Station figures, above)

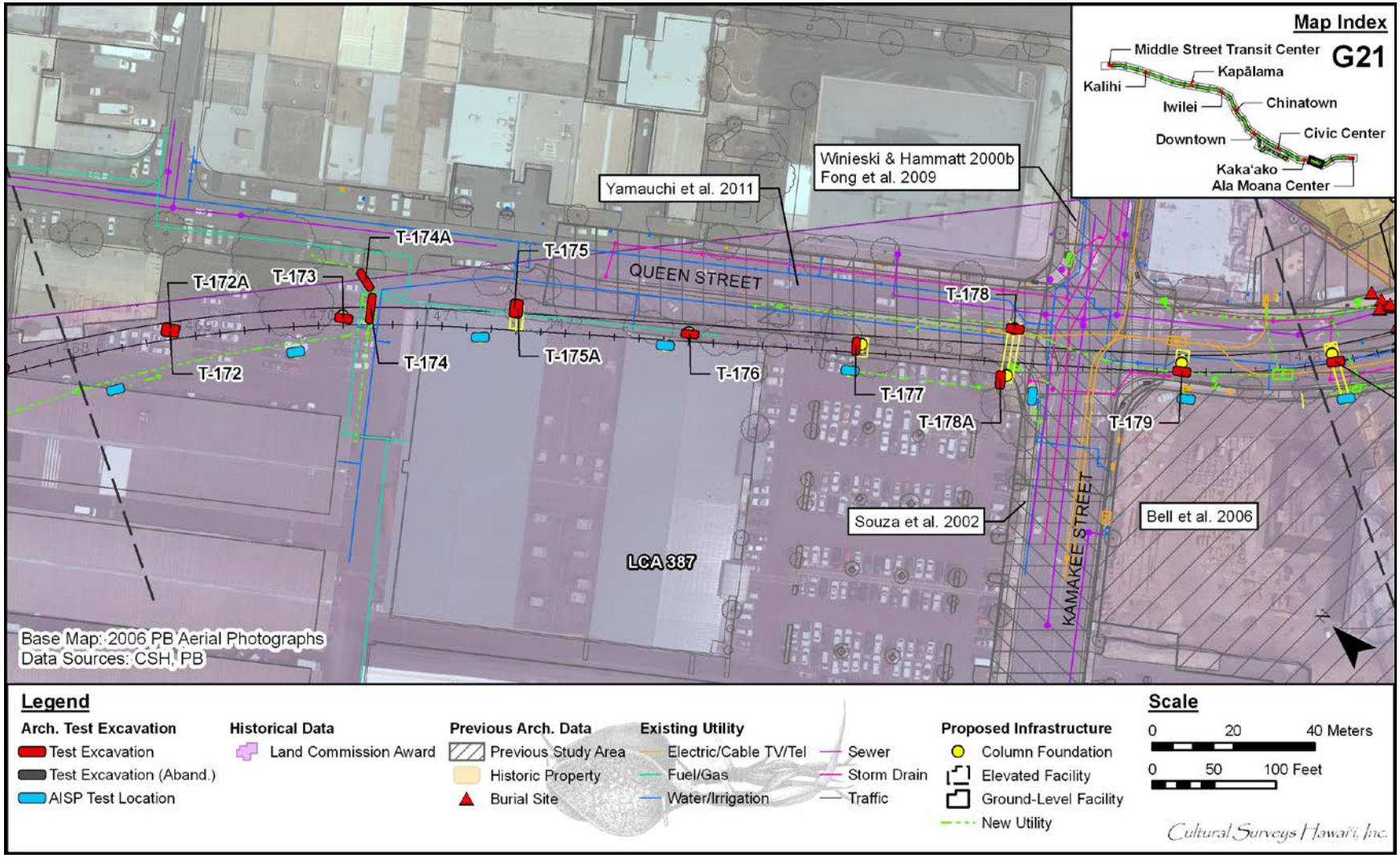

Figure 105. Map G21 (Queen Street and Kamake‘e Street vicinity) showing locations of proposed AISP and actual AIS test excavations

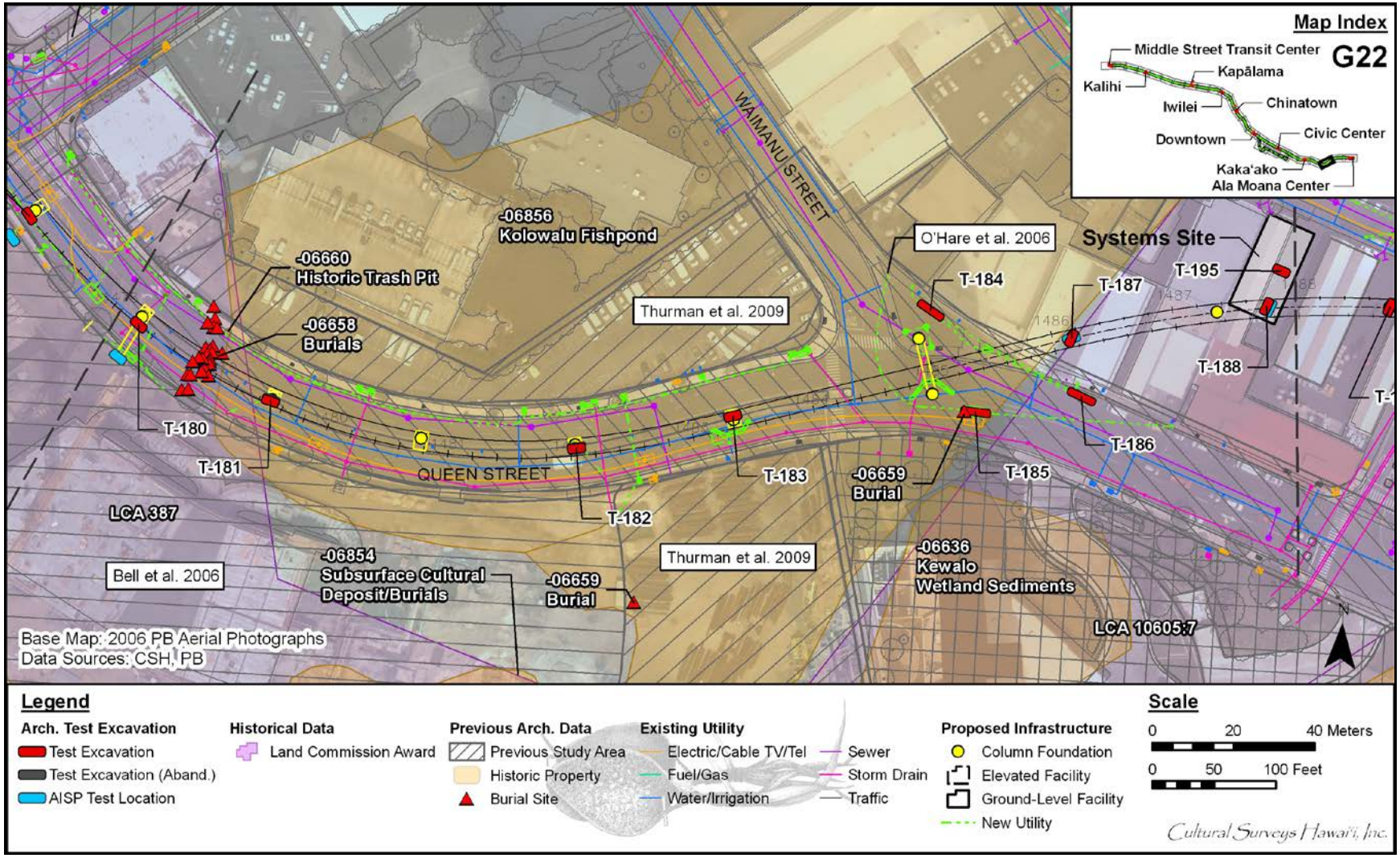

Figure 106. Map G22 (vicinity of Queen and Waimanu Streets intersection) showing locations of proposed AISP and actual AIS test excavations

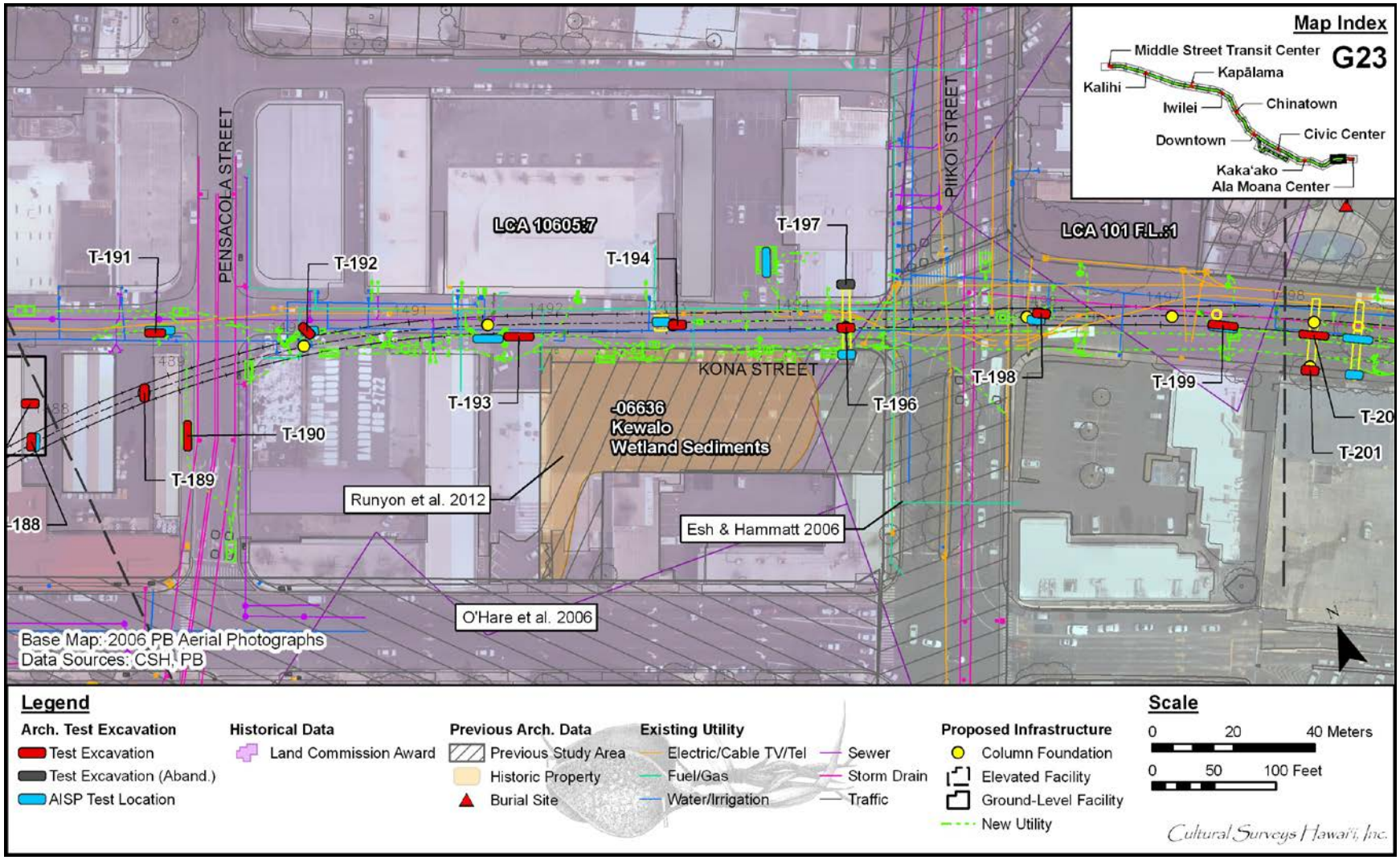

Figure 107. Map G23 (Kona Street in the vicinity of Pensacola and Pi‘ikoi Streets) showing locations of proposed AISP and actual AIS test excavations

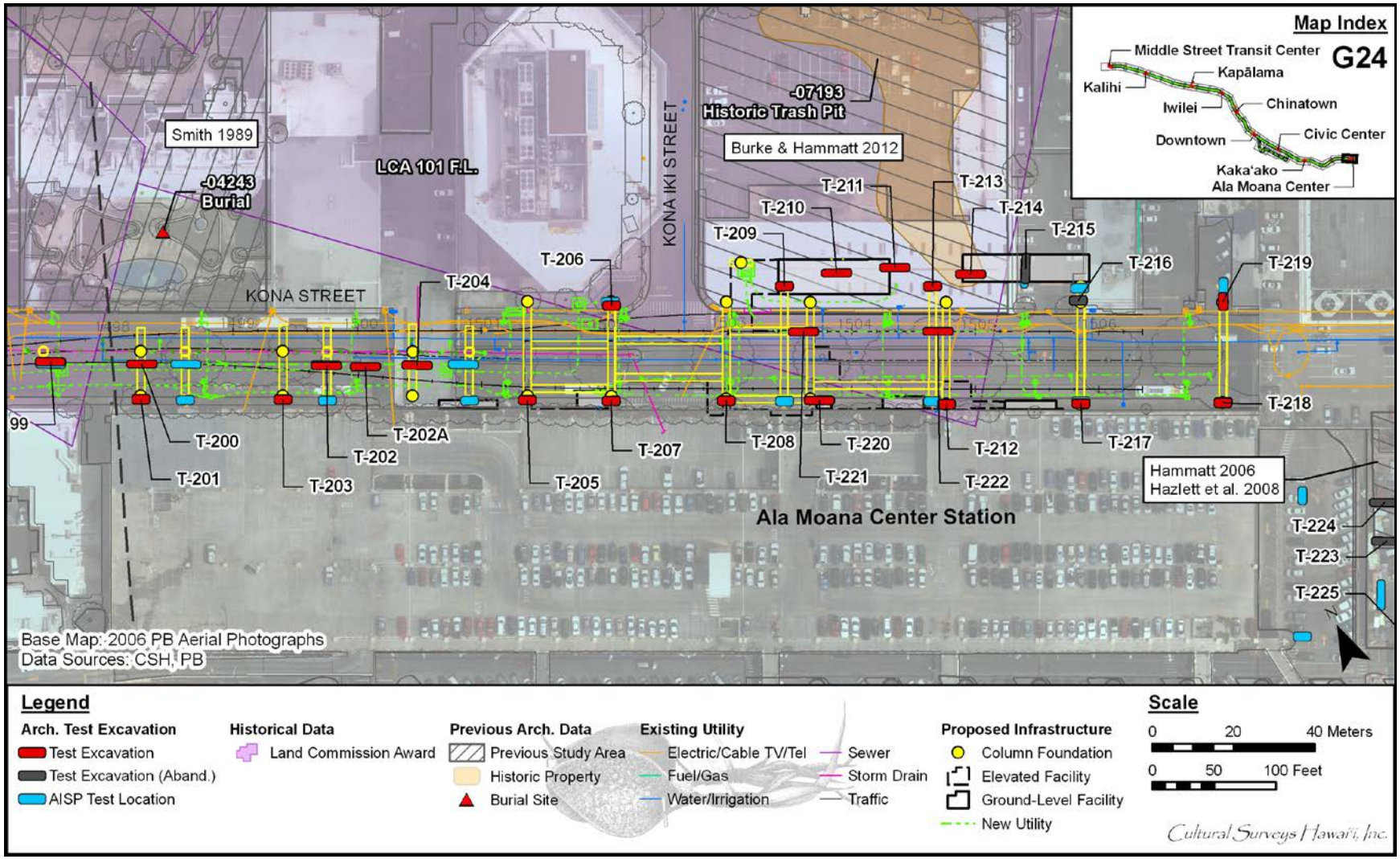

Figure 108. Map G24 (Kona Street just northwest of Ala Moana Station) showing locations of proposed AISP and actual AIS test excavations (see also detailed Ala Moana Station figures, above)

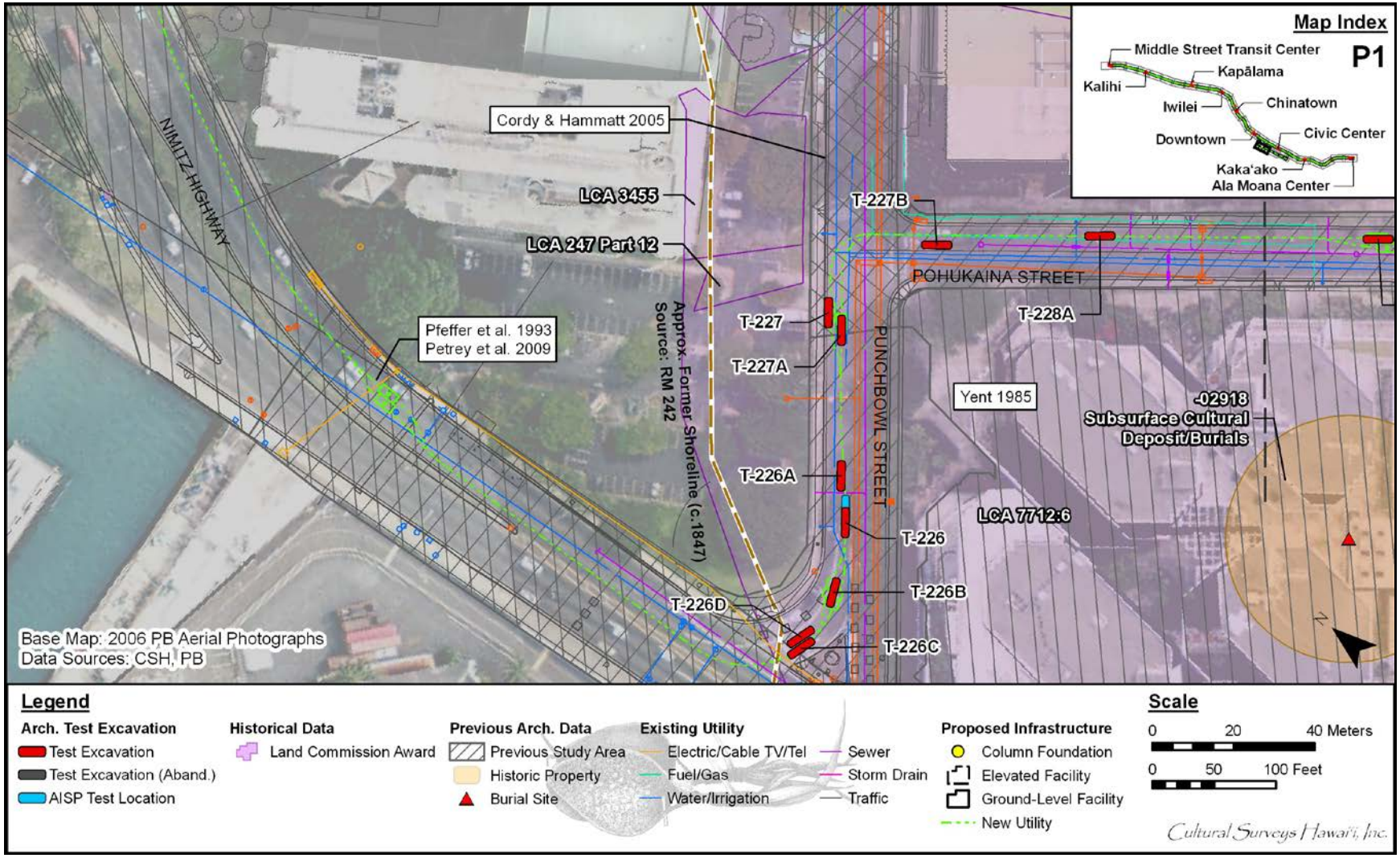

Figure 109. Map P1 (vicinity of Punchbowl and Pohukaina Streets) showing locations of proposed AISP and actual AIS test excavations

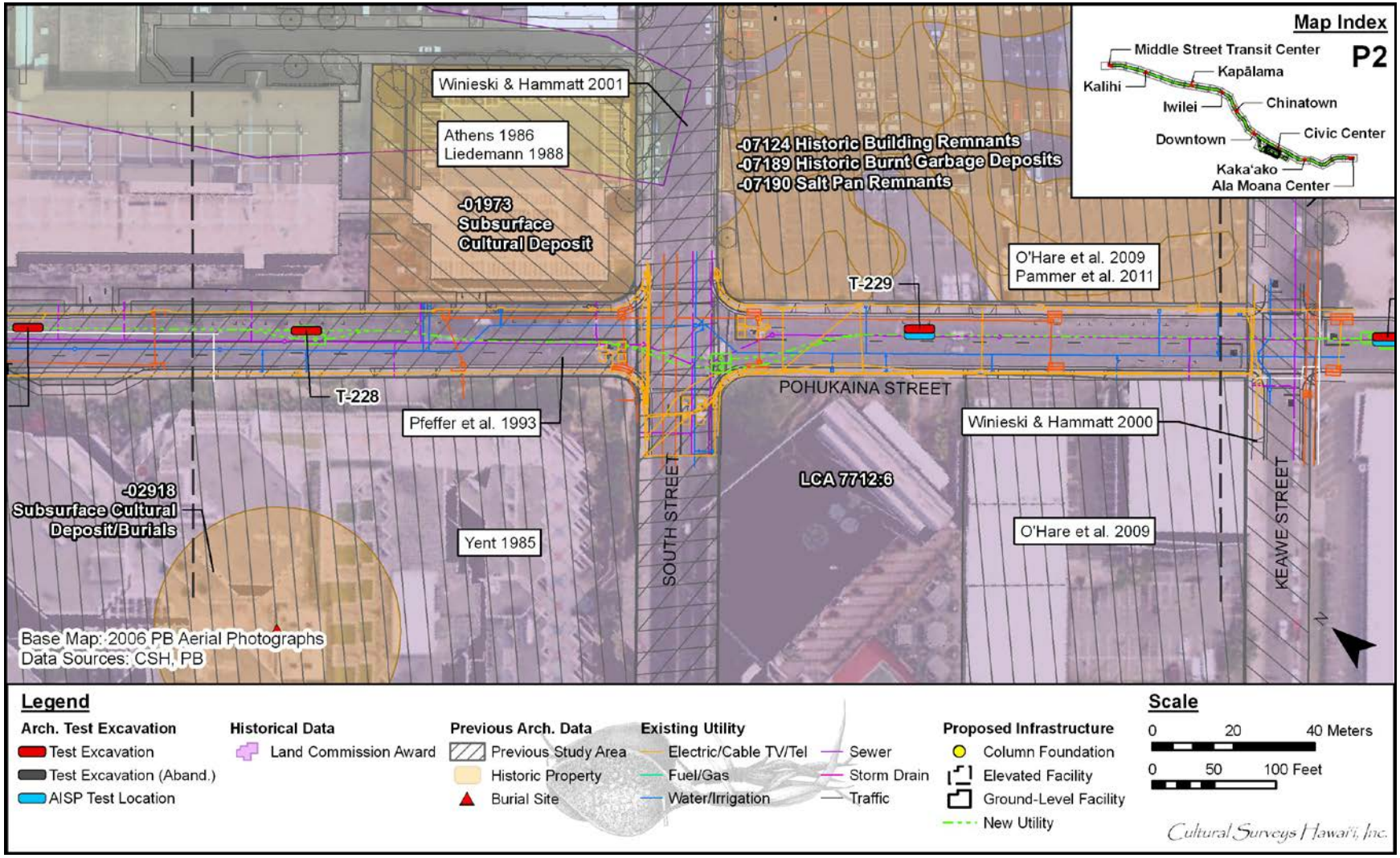

Figure 110. Map P2 (vicinity of Pohukaina and South Streets) showing locations of proposed AISP and actual AIS test excavations

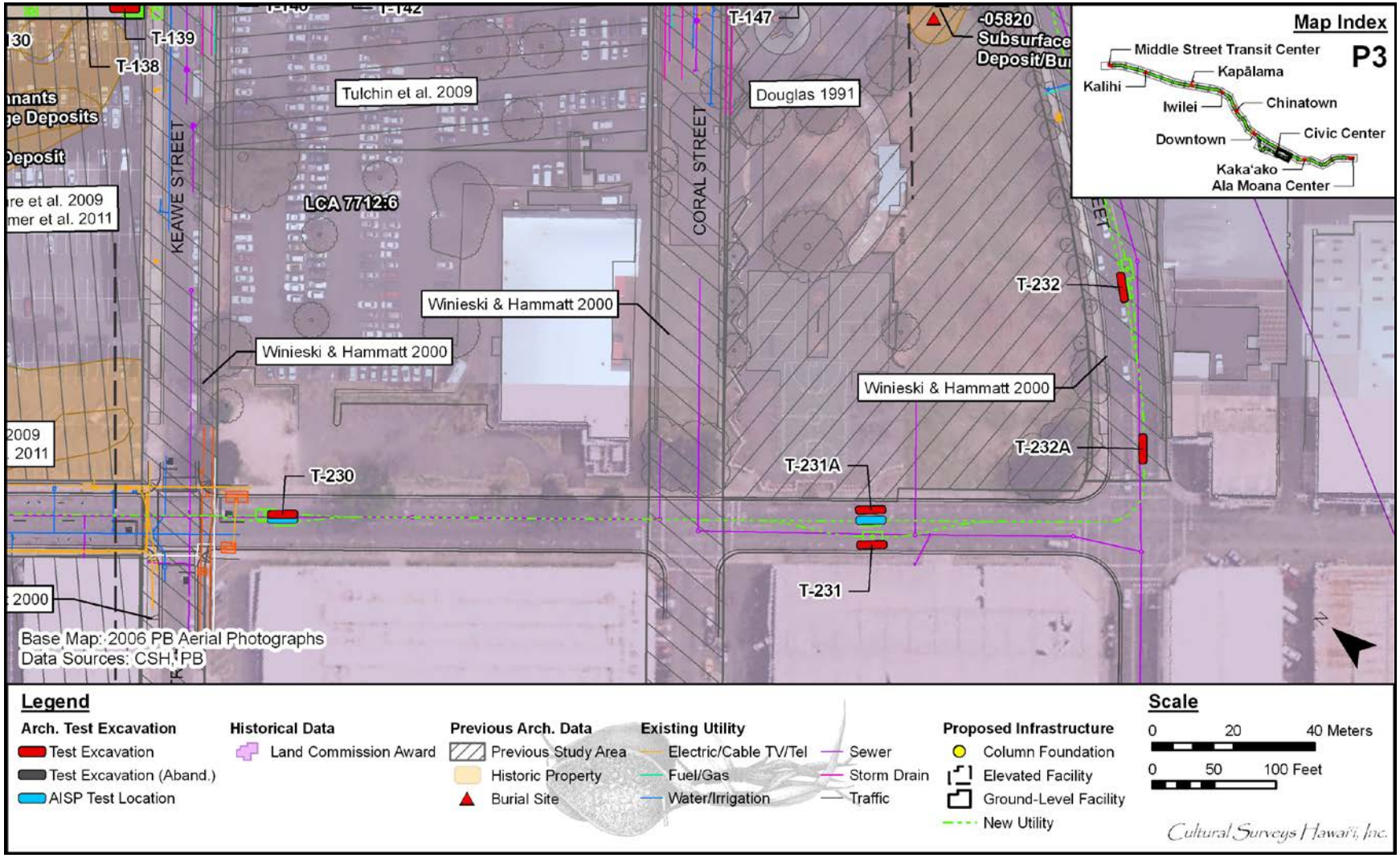

Figure 111. Map P3 (vicinity of Pohukaina , Keawe, Coral, and Cooke Streets) showing locations of proposed AISP and actual AIS test excavations