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# Special Management Area Use Permit and Shoreline Setback Variance Application

## **Area C: Waiau-Halawa**

**Honolulu Rail Transit Project**  
June 2013

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APPLICATION MATERIALS  
Area C: Waiau-Hālawā

I. GENERAL INFORMATION

**A. Applicant (Name, Address, Phone)**

Honolulu Authority for Rapid Transportation  
1099 Alakea Street, Suite 1700  
Honolulu, HI 96813  
(808) 768-6159

**B. Recorded Fee Owner (Name, Address, Phone)**

The Area C: Waiau-Hālawā portion of the Project extends along Kamehameha Highway between the H-1 overpass at the Hawaiian Electric Company (HECO) Waiau power plant to Arizona Street. Certain Project facilities will be built on the following right-of-way (ROW) within Area C: Waiau-Hālawā.

United States of America ROW or McGrew Loop, is controlled by:  
Department of the Navy  
258 Makalapa Drive, Suite 100  
Pearl Harbor, HI 96860-3134

State of Hawai'i ROW for Kamehameha Highway, is controlled by:  
Department of Transportation, Highways Division  
869 Punchbowl Street  
Honolulu, HI 96813  
808-587-2150

City and County ROW for Lipoa Place and Aiea Kai Place, is controlled by:  
Department of Transportation Services  
650 South King Street, 3<sup>rd</sup> Floor  
Honolulu, HI 96813

Hekaha Street ROW is owned by:  
Honolulu Limited Hekaha Street LLC  
3660 Waiālae Avenue #400  
Honolulu, HI 96816

MAGBA Inc.  
225 Queen Street, Suite 10B  
Honolulu, HI 96813

The Project will acquire additional ROW from the following parcel within the Area C: Waiau-Hālawā portion of the Project:

- (1) 9-8-009:017: Owned by Continental Investment Co.  
P.O. Box 488  
Aiea, HI 96701

The Area C: Waiau-Hālawā portion of the Project is restricted to the part of the Project that will be built within the SMA, between the H-1 overpass at the HECO Waiau power plant to Arizona Street (see Attachment C1). In addition, other Project features will be built mauka of the SMA boundary, just outside and adjacent to/abutting the SMA, within the Kamehameha Highway ROW and on other adjacent parcels.

**C. Agent**

Honolulu Authority for Rapid Transportation  
1099 Alakea Street, Suite 1700  
Honolulu, HI 96813  
(808) 768-6159

**D. Tax Map Key**

Project features may be built on the following current Tax Map Keys (TMKs) within the Area C: Waiau-Hālawā portion of the Project.

The portions of these parcels or plats on which Project features will be built may be acquired by the City and designated as ROW. As discussed above, the need for acquisition of additional ROW from these parcels is based on conceptual engineering. The need for ROW acquisition will be further evaluated during Project final design and additional ROW may not be necessary from some of the listed parcels.

- (1) 9-8-003:010: Overhead line relocation to existing utility poles within the HECO Waiau Power Plant. The total land area is 15.249 acres.
- (1) 9-8-007:008: Construction-related activities will require work within Neal S. Blaisdell Park. No ROW acquisition of the 21.354-acre lot will be required.
- (1) 9-8-009:005: The site will be used as a temporary construction yard during construction; the total land area is 2.024 acres.
- (1) 9-8-009:011: Underground traffic signal loops will be installed within the utility/road easement on the site. The total land area is 3.278 acres.
- (1) 9-8-009:017: The Project will result in the full acquisition of this parcel; the total land area is 0.5583 acres. The site will be used as a temporary construction yard prior to construction of the Pearlridge Station makai entry.
- (1) 9-8-009:022: Underground traffic signal loops and minor paving within Hekaha Street ROW. The total land area is 0.379 acres.
- (1) 9-8-14: Underground traffic signal loops and minor paving within the Lipoa Place ROW.
- (1) 9-8-014:05: Underground drain line installed within the site. The total land area is 3.4192 acres.
- (1) 9-8-015: Sidewalk reconstruction and signal loop detectors within the Aiea Kai Place ROW.
- (1) 9-8-015:045: Curb extension and paving at the driveway within the site. The total land area is 1.3097 acres.

- (1) 9-8-019:006: Signal loop detectors within the McGrew Loop ROW. No ROW acquisition required. The total land area is 1.727 acres.
- (1) 9-9-1: Utility relocation and roadway improvements within Kamehameha Highway ROW.
- (1) 9-9-3 and 9-9-12: Construction of project elements within the ROW, including the guideway and utility pole relocation.
- (1) 9-9-003:029: An underground communications duct will connect within the site. The total land area is 25.143 acres.
- (1) 9-9-012:046: Overhead line electrical line relocation to an existing utility pole within the site. The total land area is 0.315 acres.

In addition, other Project features will be built mauka of the SMA boundary, just outside and adjacent to/abutting the SMA (Attachment C1).

- (1) 9-8-010:002: PearlrIDGE Station Mauka Entrance; total land area is 0.45 acres.
- (1) 9-9-003:061: Guideway; total land area is 87.879 acres.
- (1) 9-9-003:071: Aloha Stadium Station and Park-and-Ride; total land area is 7.28 acres.
- (1) 9-9-003:070: Guideway; total land area is 0.87 acres.
- (1) 9-9-003:068: Guideway; total land area is 0.714 acres.

**E. Lot Area**

Please see Item D above.

**F. Agencies Consulted in Making Assessment**

Please see the Introduction to this SMA Use Permit Application for the agencies consulted, and Attachment 2 to this Application for copies of correspondence. Some of the public outreach activities listed took place in the immediate area of the Area C: Waiiau-Hālawā portion of the Project. This included public meetings at Alvah Scott Elementary School.

## II. DESCRIPTION OF THE PROPOSED ACTION

### A. General Description

A National Environmental Policy Act (NEPA) and Hawai'i Revised Statutes (HRS) Chapter 343 compliant Final Environmental Impact Statement (EIS) has been prepared for the Project. The information herein is drawn from preparation of that document, including the technical reports referenced within it that include detailed information concerning the studies performed to support the Final EIS.<sup>1</sup>

#### 1. Brief Narrative Description of Entire Proposed Project

Please see the Introduction to this SMA Application for a description of the entire proposed Project.

#### 2. Relation of Project to Special Management Area

This package discusses the Area C: Waiau-Hālawā portion of the Project. The discussion focuses on Project facilities that will be within the SMA. The Area C: Waiau-Hālawā portion of the Project extends along Kamehameha Highway from the H-1 overpass near the HECO Waiau Power Plant (Project Station 827+50) to Arizona Street (Project Station 1001); this is about 17,400 linear feet (3.3 miles) of the overall 20-mile alignment. The following features are planned to be built within the SMA. Items may change slightly during Final Design.

- Approximately 1,070 linear feet of elevated guideway supported by 13 columns. This is related to an area between Moanalua Freeway and Aloha Stadium. See Attachment C1.
- Relocation of overhead and underground electrical, water, fuel, communications, traffic signals, and street lighting, as well as other utility and roadway improvements. Utilities would include about 5 utility poles and about 10 street light poles.
- The makai entrance of the Pearlridge Station is on TMK 9-8-009:017. The makai entrance of the Pearlridge Station will contain an entry structure (3,295 square feet, 58 feet high), a Train Control and Communications Building and Core Systems Back-Up Operations Control Center (2,720 square feet, 16 feet high), a Traction Power Substation (750 square feet, 16 feet high), miscellaneous equipment and fences, and parking areas for 12 spaces. See Attachment C2.
- A temporary storage yard on TMK 9-8-009:00 5 and 9-8-009:0 17 for construction equipment, office trailers, and material storage for the duration of the construction of the H RTP, mainly during the second phase from Pearl Highlands to Aloha Stadium. See Attachment C1, Drawing No. C-09A.
- Relocation (reconstruction) of the existing bus shelter and bus stop waiting area; four traffic signal poles; replacement of existing underground traffic

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<sup>1</sup> Note that while a Draft Supplemental EIS/Section 4(f) Evaluation was published for the Project on May 30, 2013, it was a limited scope document which addressed certain Section 4(f) matters as required by the U.S. District Court for the District of Hawaii. See *HonoluluTraffic.com v. FTA*, Civ. No. 11-00307 AWT, 2012 WL 5386595 (D. Haw. Nov. 1, 2012). Section 4(f) is a matter of federal law.

signal loop detectors; reconstruction of sidewalks and curbs, pavement resurfacing at the park entrance, and landscaping at Neal S. Blaisdell Park (TMK 9-8-007:00 8). See Attachment C1, Drawing No. C-05.

In addition to the Project features within the SMA, other Project features are adjacent to or abutting the SMA. These adjacent/abutting features, which are illustrated on figures in Attachment C1, are also discussed in this package to a lesser degree. These features include:

- Roughly 100 columns and 15,500 linear feet of elevated guideway supported by those columns.
- The mauka portion of the Pearlridge Station.
- The Aloha Stadium Station, transit center, and park-and-ride. The park-and-ride consists of an at-grade parking area for roughly 600 vehicles. During guideway construction, this area will likely be used as a laydown area.
- Other utility relocations.

### 3. Location Map

Figure 1 illustrates the location of the Area C: Waiau-Hālawā portion of the overall Project. Detail maps of the Project in Area C: Waiau-Hālawā are provided in Attachment C1.

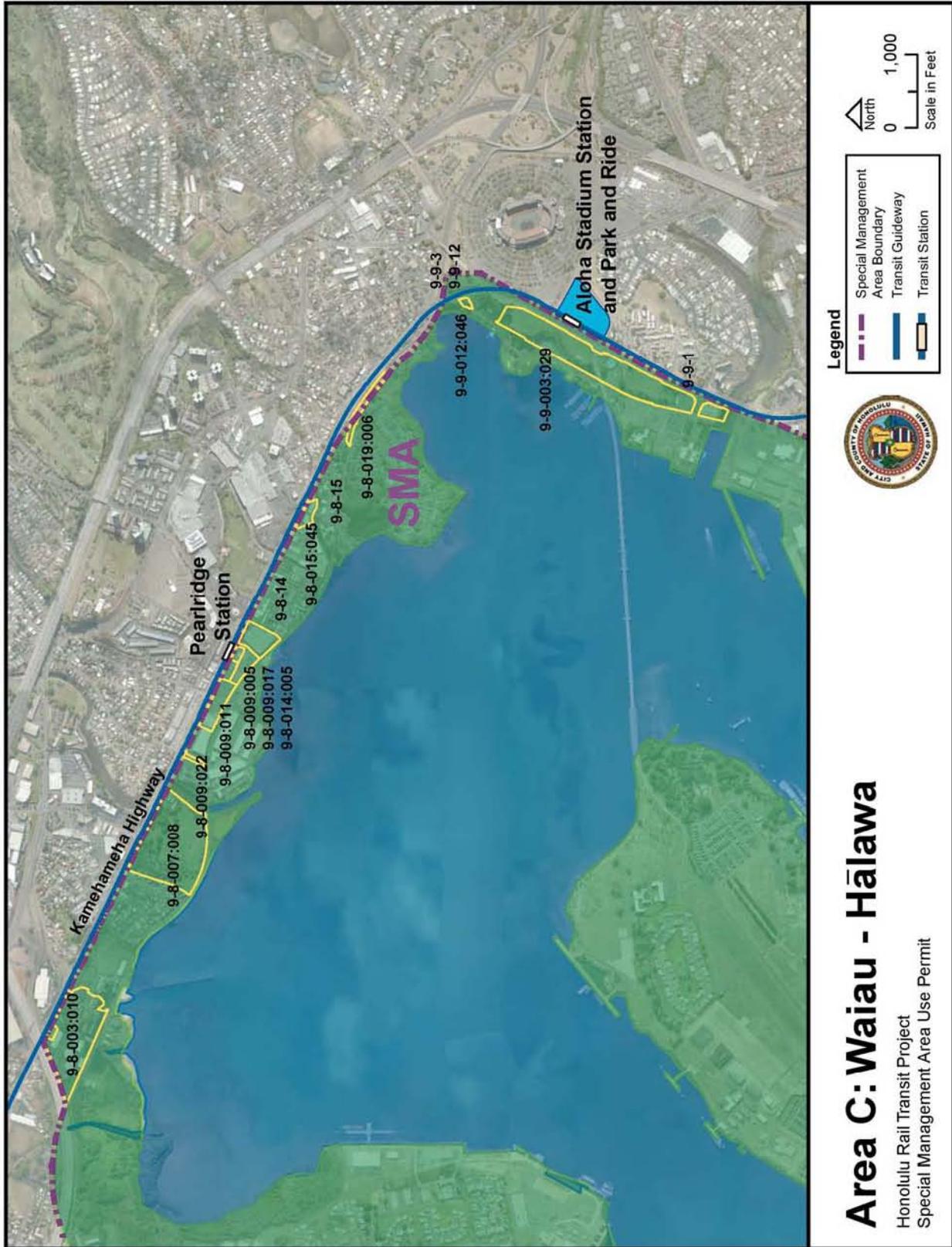


Figure 1: Overview of Area C: Waiau-Hālawā Portion of the Project

#### 4. Land Use Approvals Granted and/or Approvals Required

The following land use and other permits approvals are required for Project construction and/or operation within the Area C: Waiau-Hālawā area.

##### *Federal*

- Agreement for storm drain connection to existing Navy MS4 – construction, dewatering, and operation; ROW access to construct Project: City will seek an easement on Navy property;
- Section 9 of the Rivers and Harbors Act Section 9 Bridge Permit: U.S. Coast Guard has provided advanced approval (December 23, 2008); and
- Rivers and Harbors Act Section 10 Bridge Permit: application to the U.S. Army Corps of Engineers to be submitted.

##### *State*

- Clean Water Act (CWA) Section 402, National Pollutant Discharge Elimination System (NPDES) Permit for stormwater associated with construction activities received on May 25, 2012;
- CWA Section 402, NPDES Permit for dewatering discharges: To be prepared and submitted by contractors as needed;
- CWA Section 402, NPDES Permit for hydrotesting discharges: To be prepared and submitted by contractors as needed;
- Community Noise Permit for the second construction phase, which includes Area C, was issued on February 10, 2011.
- Community Noise Variance for the second construction phase, which includes Area C, was issued on July 13, 2011; and
- Agreement for storm drain connection to existing MS4 – construction, dewatering, and operation; ROW access to construct Project (use and occupancy): City working with Hawai'i Department of Transportation (HDOT) to develop master agreement to be completed prior to construction in highway ROW.

##### *County*

- Special Management Area: On January 26, 2011, the Honolulu City Council adopted Resolution No. 11-7, CD1 for the construction of the portion of the Honolulu High-Capacity Transit Corridor Project in the SMA.
- Shoreline Setback Variance: On September 13, 2011, the Director of the DPP approved SSV No. 2011/SV-3 for the construction of a stormwater outfall drain line/culvert for the MSF for the H RTP in the shoreline setback area.
- On December 20, 2011, the DPP affirmed the approval of the preceding SSV No. 2011/SV-3. The application was initiated by the DPP to address a deficiency identified in the processing of 2011/SV-3 relating to public notification requirements.
- Grading, grubbing, stockpiling, trenching: To be prepared and submitted by contractors;

- Final Design Phase one-time review of construction plans by various City agencies;
- Final Design Subdivision/Easement: City to submit subdivisions and easements for each construction segment when final design is complete and before construction of segment begins;
- Final Design Flood Hazard District Compliance: To be submitted as required to comply with Flood Hazard District Regulation (Article 9. Special District Regulations, Section 21-9.10) before construction of segment begins; and
- Building Permit – for work outside of ROW: To be submitted by contractor by construction segment as designs become available.

#### *Shoreline Setback*

Within Area C: Waiau – Hālawā, there will be no construction within the 40-foot shoreline setback area.

#### *Environmental Review*

The following documents have been published in compliance with HRS Chapter 343 and/or NEPA:

- An EIS Preparation Notice was published in the Environmental Notice dated December 8, 2005 (RTD 2005);
- The Alternatives Analysis was completed in October 2006 (RTD 2006);
- A Notice of Intent to prepare an EIS was published in the Federal Register in March 2007 (RTD 2007);
- The Draft EIS was published in the Environmental Notice dated November 23, 2008, and in the Federal Register dated November 21, 2008 (RTD 2008u);
- The notice of availability for the Final EIS was published in the Environmental Notice dated July 8, 2010 and in the Federal Register dated June 25, 2010 (RTD 2010);
- The governor of the State of Hawaii accepted the Final EIS on December 16, 2010. Notice of this determination was published in the January 8, 2011 issue of The Environmental Notice.
- The Federal Transit Administration (FTA) completed its review of the public and interagency comments on the Final EIS from the H RTP and issued a Record of Decision (ROD) for the H RTP on January 18, 2011. As stated in the ROD, the H RTP must incorporate all the mitigations for adverse effects presented in the Final EIS, the Section 106 Programmatic Agreement (PA), and the ROD. The PA was executed in January 2011.

#### *Project Consistency with General and Development Plans*

The Area C: Waiau-Hālawā portion of the Project is within the Primary Urban Center Development Plan area, and it, as well as the entire Project, is consistent with applicable objectives and policies of the City and County of Honolulu General Plan (as amended) (DPP 2002a) and the Primary Urban Center Development Plan (DPP 2004). The following sections describe the Project's

consistency with a variety of plans. Attachment 3 is Appendix J of the Final EIS and provides a detailed review of the Project's consistency with land use plans.

*City and County of Honolulu General Plan (as amended)*

As required by the City Charter, the General Plan for the City and County of Honolulu establishes long-range objectives that focus on the social, economic, environmental, and design objectives for the general welfare and prosperity of the residents of O'ahu. The General Plan also establishes broad policies designed to achieve these objectives. Please see Table 7 of Attachment 3 for details.

*Primary Urban Center Development Plan*

The Primary Urban Center Development Plan presents a vision and clear set of planning policies for the area extending from Kāhala to Pearl City across the valley and coastline plains that characterize the island's southern coastline. The Plan is designed as a general framework intended to support more detailed planning at the neighborhood level. Protected views and vistas, including mauka and makai views and views of prominent landmarks in the study corridor, are identified in City development plans, including the Primary Urban Center Development Plan. The Project is consistent with land use objectives included in the plan. The City's general urban design principles protect public views based on the type of view and are applicable to both public streets and public and private structures. Some protected views and vistas will change as a result of the Project, including public views along streets and highways; mauka-makai view corridors; panoramic and significant landmark views from public places; views of natural features, heritage resources, and other landmarks; and view corridors between significant landmarks. The guideway and some stations will partially block mauka-makai public views from streets that intersect with the alignment.

The Project will introduce a new elevated linear visual feature to the corridor and, as a result, changes to some views will be unavoidable. Depending on the degree of view obstruction or blockage, some view changes will be significant. Viewers' responses to these changes will vary with their exposure and sensitivity and depend on the alignment orientation, guideway and station height, and height of surrounding trees and buildings. View changes will be less notable in wider vistas or panoramic views where project elements are smaller components of the larger landscape. Generally, project elements will not be dominant features in these views.

Protected views and vistas identified in the Primary Urban Center Development Plan include Waimano Home Road/Kamehameha Highway Intersection; Ka'ahumanu Street/Kamehameha Highway Intersection; Kaonohi Street/Kamehameha Highway Intersection; Honomanu/Kamehameha Highway Intersection; Bougainville Drive-mauka/makai; Maluna-mauka/makai; Wanaka Street-mauka/makai; Ala Liliko'i Street-mauka/makai; Bishop Street-mauka/makai; Panoramic

views-Punchbowl Lookout toward Diamond Head; Panoramic views-Kaka'ako Waterfront Park toward Punchbowl and the Ko'olau Mountain Range; Cooke Street-mauka/makai; Ward Avenue-mauka/makai; Panoramic views-Kewalo Basin toward the Ko'olau Mountain Range and Punchbowl; Panoramic views-Ala Moana Beach Park toward the Kooalu Mountain Range; Pi'ikoi Street-mauka/makai; Ke'eaumoku Street-mauka/makai; Aina Moana Park (Magic Island)-mauka/makai; and Panoramic views-Ala Wai Canal Promenade toward the Ko'olau Mountain Range.

### Land Use Ordinance

The Project will be consistent with the City and County of Honolulu Land Use Ordinance (LUO). The Project will be constructed almost entirely within existing rights-of-way, and zoning does not regulate such uses. Where elements of the Project will be outside any rights-of-way, the Project is considered a "public use and structure," for the purposes of the LUO, which is a permitted principal use in all zoning districts.

Please see Tables 12 and 13 of Attachment 3 for details.

### Other Plans

Additional land use plans and policies that promote transit-oriented development patterns, pedestrian-friendly environments, and an intermodal transportation network include the following:

- Hawai'i Statewide Transportation Plan (HDOT 2002)
- O'ahu Regional Transportation Plan 2030 (Oahu MPO 2007)

### *Summary of Relationship to Land Use Plans, Policies, and Controls*

Within the Area C: Waiau-Hālawā area, the Project will link Honolulu with outlying developing areas and activity centers that have been designated for future residential and employment growth through the land use plans discussed above.

## **B. Technical Characteristics**

### 1. Use Characteristics

The 3.3-mile portion of the Project in the Area C: Waiau-Hālawā area is part of the larger 20-mile fixed guideway transit system between East Kapolei to Ala Moana Shopping Center. The transit system will operate from roughly 4 a.m. to midnight on the fixed guideway in the Area C: Waiau-Hālawā portion of the Project. Section 2.5 of the Final EIS (Attachment 1) provides additional detail on Project operation.

## 2. Physical Characteristics

Drawings of the Area C: Waiau-Hālawā portion of the Project are provided in Attachment C1. These plans generally illustrate that the Project will consist of an elevated fixed guideway with two sets of tracks. The bottom of the guideway will be roughly 18 to 45 feet above the ground surface, supported by columns that are 6 to 8 feet wide and located approximately every 120 feet. The guideway deck is about 30 feet wide, and incorporates an integrated parapet wall at the edge of the guideway that extends 3 feet above the top of the rail; the parapet wall will reduce noise exposure from transit vehicles to the surrounding area. The Pearlridge Station will rise roughly 58 feet above the ground surface.

The guideway that abuts, but is outside the SMA area will generally be the same as the guideway within the SMA area. The Pearlridge Station will be a typical station with entrances on both the makai and mauka side of Kamehameha Highway; a portion of the makai entrance will be located on TMK 9-8-009:017, which is being acquired in full and is within the SMA. The Aloha Stadium station will be within the shared use parking area just mauka of the SMA. Station conceptual designs are provided in Attachment C2.

## 3. Construction Characteristics

Construction of the Project in Area C: Waiau-Hālawā will occur within the existing highway, primarily in the median. Construction work details will be developed during preliminary and final design. The following primary construction activities will take place:

- Utility relocation, including trenching within the highway. This will be accomplished using backhoes and excavators for the most part.
- Column installation, including drilling a shaft, pouring the foundation, and forming and pouring the column. This will be accomplished using cranes, bucket-auger drill equipment, and concrete.
- Guideway installation, including erection of a “bridge” between each column using pre-cast concrete segments. This will be accomplished using a gantry crane.
- Track and system installation. This will be accomplished using specialized equipment to lay the track plus standard electrical equipment to install the control and power systems.
- Station construction. This will be accomplished using standard building techniques and equipment.

## 4. Utility Requirements

Electrical, stormwater, gas, communications, traffic signals, and other utilities will be relocated within the Area C: Waiau – Hālawā portion of the Project. A portion of the Pearlridge Station will be located within Area C: Waiau – Hālawā, and will require connections to water, sewer, electricity, telecommunications, cable, and other utilities.

At Neal S. Blaisdell Park, existing traffic signal poles will be relocated into the park and will require utility connections to these facilities.

The Aloha Stadium Station and a traction power substation site will be located outside of the SMA but adjacent or abutting the Area C. Utility connections to those facilities will be required but only the electrical and communications service connection will occur within the SMA; the electricity and communications connection will occur in the 'Ewa-bound lanes of Kamehameha Highway. Other utility connections for the Aloha Stadium Station will occur on Salt Lake Boulevard, outside of the SMA.

No other utility connections will be made within the Area C: Waiau-Hālawā area.

5. Liquid Waste Disposal

The Pearlridge Station is located partially within Area C: Waiau-Hālawā, and will require connection to the municipal sewer system.

6. Solid Waste Disposal

During the operational phase, the Project will generate solid waste within the Area C: Waiau-Hālawā area because the Pearlridge Station will be partially within the SMA area. The Project will dispose of its solid waste through the Department of Environmental Services according to their schedule.

Prior to construction, the contractor will be required to prepare the following plans and implement them during construction to mitigate potential construction impacts related to wastes:

- Construction Safety and Security Plan
- Construction Health and Safety Plan
- Construction Contaminant Management Plan
- Construction Contingency Plan
- Solid Waste Management Plan

7. Access to Site

During operation, access to the rail system in the Area C: Waiau-Hālawā area will be from the Pearl Highlands, Pearlridge, and Aloha Stadium stations. The Pearlridge station is partially within the Area C: Waiau-Hālawā area. Access to that station will be available on both sides of Kamehameha Highway. The Final EIS Chapter 2, and specifically Figure 2-24 (Attachment 1), provides details regarding access to the station.

During construction, access to the site will be along Kamehameha Highway.

Within the Area C: Waiau-Hālawā area, the Project will not affect access to any site. During construction, short-term access impacts within Area C: Waiau-Hālawā may occur. There are multiple streams in the area, but the Project crosses them outside of the SMA boundary; access will be maintained to the

extent possible during construction and there are multiple access points to the streams, so overall access is not anticipated to be adversely affected. Access to Pearl Harbor and Neal S. Blaisdell Park will be maintained, and access to public recreational resources in this area is also not anticipated to be adversely affected due to the Project.

8. Other Pertinent Information

A Final EIS compliant with NEPA and HRS Chapter 343 has been prepared for the Project. The information herein is drawn from preparation of that document, including the technical reports referenced within it that include detailed information concerning the Project-specific field studies performed to support the EIS process.

**C. Economic and Social Characteristics**

1. Estimated Cost and Time Phasing of Construction

*Estimated Costs*

It is estimated that the cost of construction for the entire 20-mile alignment will be about \$5.16 billion; construction within the SMA will exceed \$500,000.

*Time Phasing of Construction*

Construction on the Project commenced in April 2012. However, construction was halted due to the State Supreme Court lawsuit. Project construction will resume when all necessary approvals are obtained.

2. Other Pertinent Information

A Final EIS compliant with NEPA and HRS Chapter 343 has been prepared for the Project. The information herein is drawn from information used for preparation of that document, including the technical reports that include detailed information concerning the Project-specific field studies performed to support the EIS process.

**D. Environmental Characteristics**

1. Soils

In the Area C: Waiau-Hālawā portion of the Project, multiple soil types can be found along the Project alignment:

- Molokai Silty Loam (MuC) is typical of sloped lands, has slopes of 7 to 15 percent, is well drained, and transmits water at a moderately high level.
- Hanalei Silty Clay (HnB) is typical of alluvial flats, has slopes of 2 to 6 percent, is poorly drained, and transmits water at a moderately high-to-high level.

- Tropaquepts (TR) are typical of floodplains, have slopes of 0 to 2 percent, is poorly drained, and transmits water at a moderately high level.
- Keaau Clay, saline, (KmbA) is typical of toeslopes, has slopes of 0 to 2 percent, is poorly drained, and transmits water at a moderately low to moderately high rate.
- Pearl Harbor Clay (Ph) is typical of coastal plains, has slopes of 0 to 2 percent, is poorly drained, and transmits water at a very low to moderately low rate.
- Honouliuli Clay (HxA) is typical of alluvial flats, has slopes of 0 to 2 percent, is well drained, and transmits water at a very low to moderately high level.
- Waipahu Silty Clay (WzC) is typical of terraces, has slopes of 6 to 12 percent, is well drained, and transmits water at a moderately low to moderately high rate.
- Makalapa Clay (MdB) is typical of slopes, has slopes of 2 to 6 percent, is well drained, and transmits water at a very low to moderately low rate.
- Rock Land (rRK) in this area is a pahoehoe lava flow, has slopes of 5 to 70 percent, is well drained, and transmits water at a low to moderately low rate.
- Fill Land, mixed, (FL) is typical of flats, has slopes of 0 to 3 percent, is well drained, and transmits water at a low to moderately low rate.

The majority of the area is currently developed, and the Project in Area C: Waiau-Hālawā will be constructed primarily within the median of the existing highway. The makai entry of the Pearlridge Station will be constructed on a parcel makai of the existing highway, and utility relocation and the relocation of the existing bus shelter will occur within Neal S. Blaisdell Park.

## 2. Topography

In the Area C: Waiau-Hālawā portion of the Project the topography is generally flat with some sloped areas. No major grading activities will take place within the Area C: Waiau-Hālawā portion of the Project; the existing grade of the highway will remain unchanged.

## 3. Surface Runoff, Drainage, and Erosion Hazard

As the Area C: Waiau-Hālawā area is currently developed, surface runoff in the area travels to a drainage system and/or directly to one of the streams located nearby. The Kamehameha Highway storm drain system is extensive and under the control of the HDOT. The City and County of Honolulu also has an extensive storm drain system serving the surrounding community. The low slopes of the lands here, combined with the soil types and level of development in the area, contribute to a minimal erosion threat.

## 4. Federal FIRM Zone, Land Use Ordinance (LUO) Flood Hazard District, Other Geological Hazards

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) No. 15003C0243G, revised January 19, 2011, shows the Area C:

Waiau – Halawa portion of the Project within Flood Zones AE and A where the alignment crosses Waimalu Stream; A, AE, and AEF at Kalauao Stream; and, XS at Aiea Stream. The FEMA FIRM No. 15003C0331G, revised January 19, 2011, also shows the alignment crossing Zones AE and A at Halawa Stream. In addition, a portion of TMK 9-8-007:008 (Neal S. Blaisdell Park) lies within Flood Zone AE. Flood zone definitions are provided below.

- Flood Zone AE: The flood insurance rate zones that correspond to the 100-year floodplains that are determined in the Flood Insurance Study by detailed methods. In most instances, base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.
- Flood Zone AEF: The area within Zone AEF is reserved to pass the base flood, with the “F” standing for floodway.
- Flood Zone XS: The flood insurance rate zones that correspond to the 500-year floodplains (0.2 percent annual flood risk) that are determined in the Flood Insurance Study by detailed methods.
- Flood Zone D: Areas where flood hazards are undetermined.

The Flood Insurance Rate Maps (FIRMs) indicate that the Area C: Waiau-Hālawā portion of the Project will not cross or be within any flood zones within the SMA.

Floods, hurricanes, earthquakes, and tsunamis can all affect Hawai'i. The International Building Code and the American Association of State Highway and Transportation Officials provide minimum design criteria to address the potential for damages caused by these hazards. The Project will be designed to meet design standards related to natural hazards. Tsunamis are a concern for coastal portions of O'ahu. The State Civil Defense publishes a series of maps showing areas that should be evacuated in the event of a tsunami warning. The Area C: Waiau-Hālawā portion of the Project is not within a tsunami evacuation area.

#### 5. Other Pertinent Information

A survey of street trees was conducted in the study corridor to identify species, size, maturity, condition, and the Project's probable effect on each tree; this information is presented in Section 4.15 of the Final EIS and in the Honolulu High-Capacity Transit Corridor Project Street Trees Technical Report. Trees were also listed as “Notable” or “Excellent”, if applicable. Notable trees are those deemed to be important to the urban landscape character, while Excellent trees are mature trees, without any plantings nearby, that have been allowed to expand to their fullest possible canopy and have not been pruned or affected in such a manner to take away from their appearance.

Coordination with the City Department of Parks and Recreation Division of Urban Forestry and community groups was initiated at the start of the HRS Chapter 343/NEPA process to identify Exceptional Trees along the guideway alignment. Coordination is ongoing as the Project progresses. Results of the survey revealed that no Exceptional street trees in Area C: Waiau-Hālawā will be impacted by the Project. Outside of the SMA but in the vicinity of Area C: Waiau-Hālawā, two monkeypods identified as Excellent trees along Kamehameha

Highway near Pearlridge Center have very large canopies that are approximately 50 feet from the center of the planned guideway and may require minimal pruning.

Planting of trees and other mitigation has been included in the design criteria and Special Provisions for the Project. Street tree pruning, removal, and planting will comply with City ordinances.

### III. AFFECTED ENVIRONMENT

This section discusses both the affected environment and the Project's impacts to the various resources discussed.

#### **A. Brief Description of Subject Site in Relation to Surrounding Area and Description of Surrounding Area**

The Pearlridge Station area is across the street from a major regional shopping destination; there are other commercial and industrial uses near the station. Other nearby uses include a medical center, watercress farm, and a variety of residences. The Pearlridge Station makai entry will be constructed on an approximately 24,319 square-foot site that fronts Kamehameha Highway. The site will be used as a temporary storage yard for the construction of the H RTP until the station is built. The site and surrounding lands are in the I-2 Intensive Industrial District with a 60-foot height limit.

Neal S. Blaisdell Park is a 26-acre park located on the East Loch of Pearl Harbor, makai of Kamehameha Highway. It is owned by the City and County of Honolulu and consists primarily of open space, but also supports amenities such as trails and exercise areas. The site is generally flat and in the P-2 General Preservation District with a 25-foot height limit.

The Aloha Stadium Station area is dominated by the stadium and nearby military uses, but some civilian residential development and neighborhood shopping centers are also present.

Within Area C: Waiau-Hālawā area the Project will primarily be constructed within the median of Kamehameha Highway, and is expected to have little impact on the uses found along Kamehameha Highway. The SMA boundary generally lies on the makai side of Kamehameha Highway, except near Aloha Stadium where it is on the mauka side of the highway.

#### **B. Project Site in Relation to Publicly Owned or Used Beaches, Parks, and Recreation Areas; Rare, Threatened, or Endangered Species and Their Habitats; Wildlife and Wildlife Preserves; Wetlands, Lagoons, Tidal Lands, and Submerged Lands; Fisheries and Fishing Grounds; Other Coastal/Natural Resources**

##### **1. Publicly Owned Beaches, Parks, and Recreation Areas**

###### *Neal S. Blaisdell Park*

Proposed work within Neal S. Blaisdell Park includes relocation (reconstruction) of the existing bus shelter and bus stop waiting area; traffic signal poles; replacement of existing underground traffic signal loop detectors; reconstruction of sidewalks and curbs, pavement resurfacing at the park entrance, and landscaping. Except for the existing bus shelter, which is partially in the park (and the SMA), the structures are currently in the Kamehameha Highway right-of-

way. The proposed construction will be at the entrance to the park, about 900 feet from the shoreline. Public access to the park will be maintained during temporary occupancy activities and construction.

The elevated guideway will be located mauka of the park, within the median of the adjacent highway. Mature trees provide a visual buffer between the mauka border of the park and the highway. The Project will not substantially impair park activities or makai views of the open lawn areas that comprise its setting. There will also be no noise or vibration impacts from the Project. The park is bordered by a busy highway and its significant attributes (makai views), recreational activities, and features will not be substantially impaired.

The City and County of Honolulu Department of Parks and Recreation concurred with the H RTP temporary occupancy and de minimis impact findings for Neal S. Blaisdell Park under Section 4(f) of the Department of Transportation Act on April 29, 2013.

Also found in the Area C: Waiau-Hālawā area is the existing Pearl Harbor Bike Path, but the bike path is generally at least one parcel makai of Kamehameha Highway so there will be no adverse impacts to the path due to the Project in the Area C: Waiau-Hālawā area.

#### *Aloha Stadium*

Just mauka of the SMA, in the vicinity of the Area C: Waiau-Hālawā portion of the Project is Aloha Stadium. The Project's use of Aloha Stadium involves construction of an elevated guideway through a portion of its parking lot along the 'Ewa edge of the property for a rail transit station and bus transit center, as well as a paved and striped shared-use parking lot. The elevated guideway will be about 28 to 30 feet wide and supported by columns that are about 6 to 8 feet in diameter, placed about 120 feet apart.

The base of each of the columns will use approximately 100 square feet. The guideway will carry electrically powered trains and will be about 35 to 40 feet aboveground through this area. The amount of area that will be used by the Project is approximately 2 acres, including land use under the guideway that may continue to be used for parking. In addition, the area for the shared park-and-ride lot and bus transit center will use approximately 4.2 additional acres. The elevated guideway will pass over a small portion of the main parking lot next to Kamehameha Highway. Approximately four columns will be placed in the main parking lot to support the guideway, requiring the removal of approximately four parking spaces. The guideway will cross over Salt Lake Boulevard at Kamehameha Highway, continuing above the existing gravel overflow parking lot, supported by six columns. In the overflow lot, the City will construct a rail station and bus transit center to serve the stadium and will pave and stripe the gravel lot creating about 600 parking spaces that also will be used by patrons during stadium events. Because the Project will permanently incorporate land from the Aloha Stadium parcel into a transportation facility, this will be a direct use.

The Aloha Stadium Authority, Aloha Stadium Manager, and Department of Accounting and General Services have participated in the planning of the

alignment, the station location, and the park-and-ride lot within the boundaries of Aloha Stadium. Coordination will continue during final design and construction to ensure that the Project will result in a net benefit, in terms of both enhanced access and parking.

Although there will be a direct use of the site, a preliminary finding has been made and it is anticipated that the Project will have a de minimis impact on Aloha Stadium. For parks and recreational areas, de minimis is defined in 23 CFR 774.17 as an impact that would not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f). Therefore, the Project will not adversely affect Aloha Stadium.

2. Rare, Threatened, or Endangered Species and Their Habitats/Wildlife and Wildlife Preserves

Coordination with governmental agencies and the literature review indicate that there are no designated critical habitats within the Area C: Waiau-Hālawā portion of the Project. Beyond the open agriculture (and abandoned agriculture) fields of the 'Ewa Plain, a few relatively undeveloped properties exist where the vegetation present is non-maintained landscaping or ruderal weeds growing on highly disturbed sites. One of the less developed areas is within the Area C: Waiau-Hālawā area: Kalauao Springs, which is occupied by the Sumida Watercress Farm.

*Fauna*

Four waterbirds are listed as endangered: the Hawaiian coot (*Fulica alai*), Hawaiian duck (*Anas wyvilliana*), Hawaiian common moorhen (*Gallinula chloropus sandvicensis*), and Hawaiian stilt (*Himantopus mexicanus knudseni*). These four species are generally restricted to wetlands (and stream and estuarine areas in some cases) but will visit temporarily flooded areas. The environments in the study corridor where some or all of these species have been observed previously include Kalauao Springs (Sumida Watercress Farm). Observations of these endangered waterbirds during the Project survey in the vicinity of Area C: Waiau-Hālawā was limited to five Hawaiian stilts at Kalauao Springs (Sumida Watercress Farm). Four protected "migratory" waterbirds, including the Pacific Golden Plover (*Pluvialis fulva*), Black-crowned night heron (*Nycticorax nycticorax hoactii*), Ruddy Turnstone (*Arenaria interpres*), and Wandering tattler (*Heteroscelus incanus*), were also observed at Kalauao Springs (Sumida Watercress Farm) during the Project survey. The Migratory Bird Treaty Act (MBTA) protects these species, although they are not listed as threatened or endangered. The closest approach of the Project to Sumida Watercress Farm is the guideway along the median of Kamehameha Highway, the mauka edge of the highway roadbed slope, which forms a dike along the discharge channel at the lower end of the wetland. There will be no physical impacts on this small wetland from the nearby guideway beyond shading. Therefore, the Project will not adversely affect any of the species found at Kalauao Springs (Sumida Watercress Farm).

Although no waterbirds were observed at Waiau Springs during the Project survey, the wetland might be conducive as habitat for Hawaiian coot and Hawaiian moorhen, and Black-crowned night heron are likely to visit this wetland. There will be no physical impacts on this small wetland from the nearby guideway beyond shading. Therefore, the Project will not adversely affect any of the species that may be found at Waiau Springs.

#### *Flora*

There are no rare, threatened, or endangered floral species in the Area C: Waiau-Hālawā area. The only endangered plant known in the study corridor is ko'oloa'ula (*Abutilon menziesii*), which does not occur within this area.

### 3. Wetlands, Lagoons, Tidal Lands, and Submerged Lands

In the Area C: Waiau-Hālawā area, there are three wetland areas in the vicinity of the Project.

1. Waiau Springs. This wetland is located mauka of Kamehameha Highway and, therefore, outside of the SMA. The Project is located along the median of Kamehameha Highway makai of Waiau Springs wetland, but not within the SMA. The southern border (closest to the Project) of the wetland lies along the base of the fill slope from Kamehameha Highway. Land surrounding the wetland is being used by residents for subsistence vegetable gardening and, in some areas of the wetland, pondfield culture of kalo (*Colocasia esculenta*) and ung-choi (*Ipomoea aquatica*) is carried out at a subsistence level. Waiau Springs stream and wetland supports fish species such as mollies, guppies, koi, and cichlids (including tilapia). The edge of an existing retaining wall for the roadway is approximately 20 feet from the limits of the wetland. The Project will clear-span Waiau Springs and will not encroach upon the wetland boundary located to the north of Kamehameha Highway. Therefore, no impacts are anticipated as the wetland is beyond the Project limits and Waiau Springs flows within a culvert under Kamehameha Highway and will not be disturbed.
2. Kalauao Springs (Sumida Watercress Farm). This wetland is located mauka of Kamehameha Highway and, therefore, outside of the SMA. Sumida Watercress Farm at Pearlridge is a historic pondfield farm operating within a wetland fed by Kalauao Springs. This wetland is extensively developed into rectangular pondfields used for the commercial production of watercress. The closest approach of the Project to the farm is the guideway along the median of Kamehameha Highway, the mauka edge of the highway roadbed slope, which forms a dike along the discharge channel at the lower end of the wetland. The edge of an existing retaining wall for the roadway is approximately 20 feet from the limits of the wetland.
3. 'Aiea Bay State Recreational Area Wetland. The Project guideway is approximately 200 feet mauka of the tidal wetland (formally a dense mangrove forest) fringing 'Aiea Bay. 'Aiea Stream has formed a depositional delta off the shore here, which supports the growth of salt-

tolerant plants (mangrove and pickleweed). Recovery of the mangrove removed in 2007 is well underway, as juvenile mangrove plants colonize the tidal mud flat. Due to the distance between the Project and this wetland, the Project will have no impact on it.

Although some shading impacts to wetlands are anticipated, these are minimal and limited to increased duration of early morning and late afternoon shadows during several mid-winter months. There will be no adverse impacts on wetlands due to the Project in the Area C: Waiau-Hālawā area.

#### 4. Fisheries and Fishing Grounds

The entire Pearl Harbor area was once a thriving, bountiful traditional cultural resource. Many streams (e.g. Honouliuli, Waipio, Waikele, Waiawa, Waiau, and Kalauao) flowed into Pearl Harbor, bringing nutrients and life to native gobi, whose life cycle included moving from the mountains to the sea of spawning/mating, and to other endemic fish. These brackish estuaries also provided a rich environment for indigenous fish such as mullet, clams, and oysters. The ancient Hawaiians took advantage of these rich areas by constructing vast networks of fishponds (loko) to nurture these natural resources. The Hawaiian fishpond was, and remains, a superior example of the engineering prowess of native Hawaiians. No other indigenous people throughout the world refined these enclosed seafood resources like the native Hawaiians. There were several types of fishpond structures, built and used according to the natural resources available in the area. For example, the windward side of the Island of Oahu was known for a multitude of stonewall fishponds (loko kuapā) and the leeward coast often used the naturally-occurring sand dunes for their fishpond structures (loko pu'uone).

Historic fishponds in the Waiau area and elsewhere in the study corridor were identified in the Archaeological, Cultural, and Historic Resources Technical Reports (RTD 2008) that were prepared to support the EIS. These technical reports noted that because of the exponential increase in Oahu's population and the scarcity of land, most fishponds have been destroyed, dredged, or filled to make way for urban expansion.

The report states that few marine resources remain unchanged in the study area. No intact marine resources were identified in the study corridor, except for subsurface fishponds that may have surviving infrastructure. Fishponds that remain today are outside of the project's area of potential effect, and the ecological assessments did not identify any adverse impacts to historical fishponds in the Waiau area. Any archaeological finds will be handled in accordance with the process outlined in the Programmatic Agreement.

The Project in Area C: Waiau-Hālawā will not impact the use or availability of coastal or stream-based fishing grounds used because of the distance between the Project and the coast in this area, and the linear nature of the streams that allow for access at multiple locations.

5. Other Coastal/Natural Resources

The Project will not adversely affect the opportunities for public enjoyment and use of any recreational, coastal, or natural resources within the Area C: Waiiau-Hālawā area.

**C. Relation to Historic, Cultural, and Archaeological Resources**

1. Archaeological

The archaeological study area was determined and three general categories of archaeological resources that could be affected were identified: burials, pre-contact archaeology, and post-contact archaeology. There is a moderate chance of encountering burials, as well as pre- and post-contact archaeological resources in the Area C: Waiiau-Hālawā area. Subsurface features and deposits, including iwi kupuna or Hawaiian burials, that have not been previously identified may be affected by the Project.

An archaeological inventory study (AIS) which covers the 4.1-mile long transit corridor, stations, and park-and-ride facility along Kamehameha Highway from Farrington Highway (at the location of the future Pearl Highlands Station) to Kalaloa Street, was approved by SHPD in May 2012. The AIS identified subsurface cultural deposits (lo'i sediments) along Kamehameha Highway between Kuleana Road and Kaahumanu Street (SIHP # 50-80-09-7150) which are recommended National/Hawaii Register-eligible under Criterion D. Project construction, such as excavation and removal of portions of this subsurface deposit, will likely adversely affect a small portion of SIHP # 50-80-09-7150.

To mitigate potential adverse effect to archaeological cultural resources within the project area, project construction within Construction Phase 2 will proceed under an archeological monitoring program (AMP) which was also approved by SHPD in May 2012. The AMP recommended monitoring for pre- and post-contact subsurface cultural deposits during construction in the area around SIHP # 50-80-09-7150. The AMP also identified two other locations in Area C: Waiiau-Hālawā for monitoring during construction, including the area around the future Pearlridge Station between Kanuku Street and Kahale Street. The area from the Moanalua Freeway on-ramp to the Moanalua Road overpass, which includes the removed Makai section of the 'Aiea Cemetery, is also recommended for monitoring. All other areas along Phase 2 are recommended for weekly spot checks and on-call monitoring.

If, in the unlikely event that subsurface cultural deposits or human skeletal remains are encountered during the course of project-related construction activities, all work in the immediate area should stop and the State Historic Preservation Officer (SHPO) will be notified in accordance with Federal and State laws. If archaeological resources are identified during construction, the City will minimize impacts.

## 2. Cultural

Archival and ethnographic research shows that most of the traditional cultural resources within the Area C: Waiau-Hālawā portion of the Project have been heavily damaged or destroyed through previous development, with the exception of streams in the Pearl City area. Short-term effects are related to site work or construction-related activity and usually only temporarily affect access or operation of identified resources. Potential long-term effects on cultural resources include permanent modification, such as displacement, damage, or destruction.

HART completed Traditional Cultural Property (TCP) studies for the first three construction phases of the project (East Kapolei to Middle Street). In July 2012, the FTA determined that there are no adverse effects on eligible TCPs for the Project between East Kapolei and Middle Street. No adverse effects as a result of the Project have been identified for any previously identified cultural resources in Area C: Waiau-Hālawā. No new National Register-eligible Traditional Cultural Properties have been identified in Area C: Waiau-Hālawā.

In the "Determination of Eligibility and Finding of Effect for Previously Unidentified Traditional Cultural Properties in Sections 1-3," dated May 25, 2012, HART identified 22 sites within the project area of potential effect (APE). Of these, two resources have been identified as NRHP-eligible historic properties of religious and cultural significance to Native Hawaiian organizations. These properties meet National Register criteria and have sufficient integrity to convey the integral link between tradition and place. The two eligible sites are Huewaipi (#28) and Kuki'iahu (#31).

Huewaipi is a spring that feeds the Waiau wetlands in Waimalu, which is currently used for subsistence farming and gardening. Historic maps indicate that the wetland site was also once a lo'i. The spring, wetland and lo'i are related as one larger, single site. As a whole, the site inclusive of Huewaipi and Waiau wetlands meets NRHP criterion A for its association to the lo'i, and traditional agricultural practices. The Project will construct an elevated guideway within Kamehameha Highway. No stations or ancillary buildings are proposed near the site. As a wetland, the Project environmental constraint mapping already identifies the site as a no-work area. The site is surrounded on all sides by non-historic commercial and residential properties, utility lines and Kamehameha Highway which compromises the site's integrity of feeling and setting, and the guideway will not alter any historic views.

Kuki'iahu is the name of the battle between Kaeokulani and Kalanikupule where Kaeokulani was killed. Kaeokulani was a ruling chief of Maui, Lanai and Molokai and originally from Kauai. Kalanikupule was a ruling chief of Oahu. This wahi pana is the location of a historically significant battle involving historically significant people. Therefore, it meets NRHP criteria A and B. The site is situated in the same area as the Sumida Watercress Farm. Sumida Watercress Farm has already been identified as eligible for nomination to the NRHP. As an element of the site, Kuki'iahu meets NRHP eligibility criteria A and B, but the subsequent development of wetland agriculture and establishment of the

watercress farm has eliminated all elements of integrity. Therefore, Kuki'iahu is a noncontributing element of the site's NRHP eligibility.

Neither site will be directly impacted by the Project. A finding of No Adverse Effect was made for the two properties. Therefore, no mitigation specific to adverse effects is required.

### 3. Historical

Through agency coordination, the Project's APE was defined generally as one parcel deep from the fixed guideway alignment in the Area C: Waiau-Hālawā portion of the Project. The APE also includes parcels immediately adjacent to all facilities associated with the fixed guideway system, including a traction power substation.

#### *Historical Resources within the Area C: Waiau-Hālawā Area*

In the Area C: Waiau-Hālawā area, there are six historic resources. These resources are all makai of Kamehameha Highway and therefore within the SMA. Figure C-HR in Attachment C1 illustrates the location of these historic resources.

- HECO Waiau Plant (TMK 9-8-003:010). The HECO Waiau Plant is an electric power generation plant that was constructed in 1938. The property was determined eligible for the National Register of Historic Places (NRHP) under Criterion A for its association with the history of electric power generation on O'ahu. The guideway will be constructed in the median of Kamehameha Highway just mauka of the HECO Waiau Plant. The makai edge of the guideway will be approximately 40 feet from the mauka edge of the Plant boundary and will be elevated approximately 40 to 60 feet above grade. There will be no adverse effect on this resource.
- United States Naval Base, Pearl Harbor National Historic Landmark (TMK various; State Inventory of Historic Places (SIHP) # 80-13-9992). The Project alignment will be located adjacent to the Pearl Harbor National Historic Landmark (NHL). The Project station in this area (Aloha Stadium) was designed to touch down on the mauka side of the highway to avoid any Project facilities being placed within the NHL property. The elevated guideway will not substantially impair the visual and aesthetic qualities of the NHL property that qualify it for protection under Section 4(f), as the primary views of the NHL and lochs are from ground level. Although there will be no direct use of this resource, through agency coordination, it has been determined that the Project will cause undefined effects to the integrity of the setting, feeling, and association of this resource. Therefore, the Project will have an adverse effect on this resource under Section 106 of the National Historic Preservation Act. The following features are the features within the Pearl Harbor NHL that are nearest the Project and within the SMA:
  - Bombproof Switch Station – Facility B-6 (TMK 9-9-003:038). The Bombproof Switch Station, built in 1942, is a two-story reinforced

concrete building with thick walls, square massing, and a flat roof. A bursting chamber on the top of the building was designed to allow bombs to expend their explosive force on the roof or in the chamber so they would not penetrate the shelter below. The structure is eligible under Criterion A for its association with defensive building efforts completed after the Japanese attack on Pearl Harbor. The makai edge of the guideway will be approximately 250 to 300 feet from the mauka edge of the Historic building, and will be elevated approximately 50 feet above grade. The Project will have no effect on this resource.

- Richardson Recreation Center Pool Complex (Swimming Pool – Facility S-21; Recreation – Facility 1; Bath House/Locker Room – Facility 2; Handball Court – Facility S-20) (TMK 9-9-003:029). The Richardson Recreation Center Pool Complex, built in 1941, offers recreational opportunities for visiting and resident Navy personnel. In recent years, the property has undergone extensive physical changes to its World War II appearance, although it still serves its original recreational function. The Project will be located on Kamehameha Highway, mauka of the Richardson Recreation Center Pool Complex. The makai edge of the guideway will be approximately 100 to 150 feet from the mauka edge of the Pool Complex, and the guideway will be elevated approximately 30 to 35 feet above grade. There will be no adverse effect on this resource.
- Fuel Oil Pump-out Pump House – Facility S-386 (TMK 9-9-001:001). The Fuel Oil Pump-out Pump House, built in 1942, is a small, modest, utilitarian concrete building with a box-like form and flat roof. The recently completed determination of eligibility states that it is eligible under Criterion C for its association with the Red Hill fuel system developed during World War II. This pump house drained pipelines between the fuel pier and the underground receiving pump house. However, although the SHPD concurred with this finding, it appears that this building should be eligible under Criterion A. Thus, the effects evaluation considered impacts to the property's significance under both Criteria A and C. The makai edge of the guideway will be approximately 125 feet from the mauka edge of the building and will be elevated approximately 40 to 45 feet above grade. There will be no adverse effect on this resource.
- Publications Printing Office and Plant – Facility 550/District Printing Plant (TMK 9-9-001:008). The Publications Printing Office and Plant/District Printing Plant were built in 1946 after the end of World War II, although it was designed before that time to accommodate the massive increase in printed registered publications. The building exhibits elements of the International Style of architecture and features cast-in-place concrete walls; a 1949 addition is located on the Koko Head side. The building was determined to be eligible under Criterion A because it "indirectly

represents an important aspect of wartime military logistics.” The Project will be located on Kamehameha Highway mauka of the Publications Printing Office and Plant/District Printing Plant. The makai edge of the guideway will be approximately 75 to 100 feet from the mauka edge of the building, and will be elevated approximately 30 to 35 feet above grade. The building is located in a low topographical area, with Kamehameha Highway and the guideway located substantially above the building’s ridgeline, and vegetation screens the building from Kamehameha Highway. There will be no adverse effect on this resource.

#### *Historical Resources in the Vicinity of Area C: Waiau-Hālawā*

The following resources are located in the Area C: Waiau-Hālawā area but are either within the Kamehameha Highway ROW or within mauka of Kamehameha Highway and, therefore, not within the SMA.

- Nishi Service, (TMK 9-8-006:024). This resource is on the mauka side of Kamehameha Highway. The Nishi Service building is a single-story, masonry service station building constructed in 1950. The property was determined eligible for the NRHP under Criterion C as a good example of an automobile service station constructed in Hawai‘i during the 1950s. The Project will include construction of an elevated, fixed-guideway rail structure in the median of Kamehameha Highway makai of the Nishi Service property. The mauka edge of the guideway will be approximately 50 feet from the makai edge of the service canopy attached to the building, and will be elevated approximately 35 feet above grade. There will be no adverse effect on this resource.
- Waimalu Stream Bridge (TMK none). This bridge is within Kamehameha Highway, and just mauka of Area C: Waiau – Hālawā. The Waimalu Stream Bridge (originally built in 1936 and modified in 1945) is eligible for nomination to the NRHP under Criterion A for its association with the roadway infrastructure development of Kamehameha Highway in the Pearl City and ‘Aiea areas. This crossing at Waimalu Stream was integral to the development of this transportation route and has contributed to the development of the area. The Project entails the construction of an elevated guideway in the median of Kamehameha Highway, whose supports will be placed on both sides of the bridge, but not within the bridge structure. The guideway will be about 30 feet above the bridge and overhang portions of each interior lane. There will be no direct impacts to the bridge. The elevated guideway will not substantially impair the visual and aesthetic qualities, as the primary views of the bridge are from ground level.

The Project will not substantially impair the features or attributes that contribute to the bridge’s NRHP eligibility. Nevertheless, it was determined that the Project will cause effects to the integrity of the setting, feeling, and association of this resource; therefore, there will be an adverse effect on this resource. A Section 106 Programmatic Agreement (PA) was executed in January 2011, and mitigation includes Historic

American Engineering Record (HAER) documentation and completion of National Register nomination for this resource. In accordance with Stipulation V of the PA, HART transmitted HAER documentation for the Waimalu Stream Bridge to the U.S. Department of the Interior, National Park Service in January 2013 (HAER No. HI-115, Waimalu Bridge).

- Waimalu Shopping Center (TMK 9-8-022:074, 9-8-022:081). This resource is on the mauka side of Kamehameha Highway. The Waimalu Shopping Center, constructed in 1963, is a two-story shopping center with roof sections composed of parallel barrel arches. The property was determined eligible for the NRHP under Criterion A for its association with the early development of strip malls in Hawai'i and under Criterion C because its distinctive arched roof is characteristic of the intent of Hawaiian architects during the period to produce modern buildings, such as those on the mainland. It is considered eligible as a result of the effort to evaluate properties that will achieve the age of 50 years before Project construction. The Project will include construction of an elevated, fixed-guideway rail structure in the median of Kamehameha Highway makai of the Waimalu Shopping Center. The mauka edge of the guideway will be approximately 50 feet from the makai edge of the shopping center property boundary and parking lot and approximately 150 feet from the building, and will be elevated approximately 30 to 35 feet above grade. There will be no adverse effect on this resource.
- Sumida Watercress Farm (TMK 9-8-016:047). The farm is on the mauka side of Kamehameha Highway. The Sumida Watercress Farm is a 10.7-acre agricultural property used to cultivate watercress. The property contains numerous watercress beds (lo'i) that are partitioned by low berms. Kalauao Spring, a natural artesian spring, is channeled through the beds. The property was determined eligible for the NRHP under Criterion A for its association with the history of diversified agriculture in the Pearl City area, as well as under Criterion C for its distinctive method of construction using artesian spring water and as a rural historic landscape "reflecting the occupational activities of wetland agriculture." The Project will include construction of an elevated, fixed-guideway rail structure in the median of Kamehameha Highway makai of the Sumida Watercress Farm. The mauka edge of the guideway will be approximately 50 feet from the makai edge of the farm boundary and will be elevated approximately 35 to 40 feet above grade. There will be no adverse effect on this resource.
- Kalauao Springs Bridge (TMK none). This bridge is within and a part of Kamehameha Highway, and just mauka of Area C: Waiau – Hālawa. The Kalauao Springs Bridge is eligible for nomination to the NRHP under Criterion A for its association with the roadway infrastructure development of Kamehameha Highway in the Pearl City and 'Aiea areas. This crossing at Kalauao Springs was integral to developing the highway as an effective transportation route and has contributed to the development of this area. The Project entails the construction of an elevated guideway in the median of Kamehameha Highway, whose supports will be placed on both sides of the stream, and not within the bridge structure. The

guideway will be about 30 feet above the bridge and there will be no physical or direct impacts to the bridge. The area is surrounded by shopping malls and other urban development. The elevated guideway will not substantially impair the visual and aesthetic qualities, as the primary views of the bridge are from ground level.

The Project will not substantially impair the features or attributes that contribute to the bridge's NRHP eligibility. Nevertheless, it was determined that the Project will cause effects to the integrity of the setting, feeling, and association of this resource; therefore, there will be an adverse effect on this resource. A Section 106 Programmatic Agreement (PA) was executed in January 2011, and mitigation includes Historic American Engineering Record (HAER) documentation and completion of National Register nomination for this resource. In accordance with Stipulation V of the PA, HART transmitted HAER documentation for the Kalauao Springs Bridge to the U.S. Department of the Interior, National Park Service in January 2013 (HAER No. HI-116).

- Kalauao Stream Bridge (TMK none). This bridge is within and a part of Kamehameha Highway, and just mauka of Area C: Waiau – Hālawā. Kalauao Stream Bridge is eligible for nomination to the NRHP under Criterion A for its association with the roadway infrastructure development of Kamehameha Highway in the Pearl City and 'Aiea areas. This crossing at Kalauao Stream was integral to developing the highway as an effective transportation route and has contributed to the development of this area. The Project entails the construction of an elevated guideway in the median of Kamehameha Highway, whose supports will be placed on both sides of the stream, and not within the bridge structure. The guideway will be about 30 feet above the bridge and there will be no physical or direct impacts to the bridge. The area is surrounded by shopping malls and other urban development. The elevated guideway will not substantially impair the visual and aesthetic qualities, as the primary views of the bridge are from ground level.

The Project will not substantially impair the features or attributes that contribute to the bridge's NRHP eligibility. Nevertheless, it was determined that the Project will cause effects to the integrity of the setting, feeling, and association of this resource; therefore, there will be an adverse effect on this resource. A Section 106 Programmatic Agreement (PA) was executed in January 2011, and mitigation includes Historic American Engineering Record (HAER) documentation and completion of National Register nomination for this resource. In accordance with Stipulation V of the PA, HART transmitted HAER documentation for the Kalauao Stream Bridge to the U.S. Department of the Interior, National Park Service in January 2013 (HAER No. HI-117).

- Akiona House (Quonset) (TMK 9-8-018:041). This resource is on the mauka side of Kamehameha Highway. The Akiona House (Quonset) is a corrugated-metal Quonset hut that was moved to its present location in 1948. The property was determined eligible for the NRHP under Criterion C as a rare surviving example of a World War II Quonset hut reused for

residential purposes at the conclusion of the war. The Project will include construction of an elevated, fixed-guideway rail structure in the median of Kamehameha Highway makai of the Akiona House. The mauka edge of the guideway will be approximately 100 feet from the makai edge of the property boundary and from the building, and will be elevated approximately 30 feet above grade. The Project will have no effect on this resource.

- Forty Niner Saimin Restaurant (TMK 9-8-018:042). The restaurant is on the mauka side of Kamehameha Highway. The Forty Niner Saimin building is a flat-roofed, single-story restaurant building that was constructed in 1947. The property was determined eligible for the NRHP under Criterion A for its association with the early commercialization of saimin, a plantation culinary staple, and under Criterion C as an intact example of an early post-war commercial building 'Ewa of Honolulu. The Project will include construction of an elevated, fixed-guideway rail structure in the median of Kamehameha Highway makai of the Forty Niner Saimin building. The makai edge of the guideway will be approximately 100 feet from the mauka edge of the property boundary and from the building, and will be elevated approximately 30 feet above grade. There will be no adverse effect on this resource.
- Kamehameha Highway Bridge over Hālawā Stream (mauka span) (TMK none). This bridge is within and a part of Kamehameha Highway, and just mauka of Area C: Waiau – Hālawā. The Kamehameha Highway Bridge over Hālawā Stream was built in 1945 and is a concrete deck girder bridge with six spans and a pierced concrete parapet. The end stanchions have a stepped design. The bridge is eligible under Criterion A for its association with World War II-era infrastructure improvements in the vicinity of Pearl Harbor Naval Base. Although bridges are generally assessed in their entirety, the SHPD has determined that only the mauka span is eligible for the NRHP. The Project will be directly makai of the Kamehameha Highway Bridge over Hālawā Stream. The mauka edge of the guideway will be approximately 10 feet from the makai edge of the bridge, and will be elevated approximately 40 to 45 feet above grade. There will be no adverse effect on this resource.
- Facility 250, CINCPACFLT Headquarters – NHL (TMK 9-9-002:004). This resource is on the mauka side of Kamehameha Highway. The CINCPACFLT Headquarters NHL was built in 1942, with a third story added in 1945. The building is individually listed on the NRHP (SIHP # 80-13-1384), although the NRHP documentation does not address eligibility criteria. It is also individually designated as a NHL. The building is eligible for inclusion in the NRHP for its association with the development of Pearl Harbor Naval Base. The elevated guideway will be about 650 feet makai from the building and 40 to 45 feet above grade. Due to topography, the Project will be minimally visible from select vantage points within the property's boundary. The rather dense vegetation will screen the Project from the CINCPACFLT Headquarters. There will be no physical or direct impacts to the building and the Project will not eliminate primary views of this historically significant building. The

Project will not substantially impair the features or attributes that contribute to the resource's NRHP eligibility. As a result, there will be no use of this resource. Nevertheless, it was determined that the Project will cause effects to the integrity of the setting, feeling, and association of this resource; therefore, there will be an adverse effect on this resource.

A Programmatic Agreement (PA) was prepared in consultation with the State Historic Preservation Officer and the Section 106 consulting parties to outline measures to minimize and mitigate the Project's effects on this and other resources. See Attachment 6 for a copy of the executed PA.

**D. Coastal Views from Surrounding Public Viewpoints and from the Nearest Coastal Highway Across the Site to the Ocean or Coastal Landform**

The Project in the Area C: Waiau-Hālawā area will result in the installation of the guideway and columns in the median of Kamehameha Highway, the nearest coastal highway. Most of the makai views are already obstructed by existing development. However, from Kaahumanu Street at Kamehameha Highway, looking makai, the bulk and scale of the guideway and columns will be dominant features, potentially obstructing views of the tree canopies in Neal S. Blaisdell Park. But, distant views of the shoreline or the park from the roadways will only be intermittently obstructed by the guideway columns for vehicles or pedestrians traveling along the westbound lanes of the highway.

Near Aloha Stadium on Kamehameha Highway, makai views from the highway will be intermittently blocked by the guideway support columns. Changes in makai views are not expected to be dramatic or substantial, and the distant views of the shoreline from the roadways will be less affected and are not expected to be dramatic here. In the vicinity of Area C: Waiau – Hālawā, Kamehameha Highway is already a prominent feature in makai views, but the guideway will be a noticeable change. Project elements will change panoramic views, as well.

The makai portion of the elevated Pearlridge Station, at about 58 feet in height, will be a noticeable change. Within this area there are distant views of the shoreline, however, existing buildings already obstruct most of the makai views of the shoreline from Kamehameha Highway. Further, the entry structure is in the I-2 Intensive Industrial District and will be constructed within the allowable 60-foot height limit.

**E. Quality of Receiving Waters and Ground Water (Including Potable Water) Resources. Describe Effects on the Groundwater Recharge Cycle within the Groundwater Control Area, Show Existing and Proposed Well Locations with Pumping Estimates. Describe Effects on Receiving Waters – Streams and Ocean Waters**

Streams

The Project will not cross any streams within the Area C: Waiau-Hālawā area. Nearby, abutting but outside of the SMA area, the Project will cross Waimalu Stream, Kalauao Springs, Kalauao Stream, and 'Aiea Stream along Kamehameha Highway; all are on the Hawai'i State Department of Health's (HDOH) 303(d) List of Impaired Waters (HDOH

2008). The Project will clear span these streams, not have a direct impact on any of these streams and/or springs, and accordingly, there will be no adverse impacts.

Also abutting but outside of the SMA area, the Project will cross Halawa Stream, with one guideway support column located in the stream below the Ordinary High Water Mark. The Halawa Stream is also on the HDOH 303(d) List of Impaired Waters, and is non-tidally influenced. During engineering and design, it was determined that there would be a reduction in visual intrusion and cost savings if shorter spans were used in the vicinity of Halawa Stream. The visual intrusion consideration was particularly important because of the adjacency of the guideway at Halawa Stream to the World War II Valor in the Pacific National Monument (Pearl Harbor Historic Sites).

With BMPs, the placement of the piers is not expected to have any consequences on the Halawa Stream estuarine environment or its fauna beyond a loss of approximately 36 square feet or of 0.002 acre of mud bottom. Because the guideway lies immediately between existing viaducts and will be elevated about 30 feet above the water and existing bridges, shading on the stream will be minimal. The existing westbound (mauka) roadway bridge is supported by 27 piers within the stream, while the recently-constructed eastbound bridge is supported by a solid wall-type pier. Additional details and mitigation will be developed through the Section 404 and 401 permitting process.

#### Marine Waters

The Area C: Waiau-Hālawā portion of the Project is not adjacent to any marine waters.

#### Flood Zones

The Project will not cross any flood zones in the Area C: Waiau-Hālawā area. In the vicinity of the Area C: Waiau-Hālawā area, but not within the SMA, the Project will cross multiple flood zones. The Project will not cause significant floodplain encroachment as defined by U.S. Department of Transportation Order 5650.2. Any impacts to floodplains caused by the Project will be mitigated through design to comply with current flood zone regulations.

#### Groundwater

In the Area C: Waiau-Hālawā area, the Project overlies the Pearl Harbor Aquifer Sector of the Southern O'ahu Basal Aquifer (SOBA). The Project meets the coordination requirements of Section 1424(e) of the Safe Drinking Water Act, in accordance with the 1984 Sole Source Aquifer Memorandum of Understanding between the Environmental Protection Agency (EPA) and the U.S. Department of Transportation. A Water Quality Impact Assessment was reviewed by EPA, and EPA concurred that contamination of the SOBA will not occur (letter dated March 27, 2009, located in Attachment 2). The construction methods and Best Management Practices (BMPs) employed and the presence of an upward hydraulic gradient in the area will protect the groundwater, and there will be no adverse effect to groundwater quality.

Caprock overlies the SOBA and impedes the escape of groundwater from this basaltic aquifer. Water in the caprock is brackish and not potable, though the water in the upper portion of the caprock has a low enough salinity to be used for irrigation. Beneath the caprock and underlying all of southern O'ahu, the SOBA is heavily used because it

contains large supplies of fresh water. The boundary between non-drinking water aquifers and underground sources of drinking water is referred to as the underground injection control line by the HDOH; in the Area C: Waiau-Hālawā area, the Project will be mauka of the underground injection control line. The Project alignment will be downgradient of active drinking water wells on the island and the overall groundwater flow direction is seaward. HDOH's Safe Drinking Water Branch publishes groundwater contamination maps, which includes the locations of water wells. Most of these water wells are located mauka of the alignment, and all wells makai of the alignment are either inactive or used for irrigation. Potential contamination from the guideway will not migrate to drinking water wells. These wells are drawing from a depth of several hundreds of feet below ground surface (bgs), and the Project shafts will not penetrate near those depths.

Subsurface conditions in the Area C: Waiau-Hālawā area generally consists of alluvium overlying residuals tuffs that are underlain by basalt bedrock. Historical information shows that soils and a soil-like saprolite mantle vary in depth from as little as 20 feet to upwards of 60 feet, and the underlying bedrock is of variable weathering. However, there are several reaches (e.g., in the area of Waimalu and Kalauao Streams) that consist of 5- to 10-foot-thick fills placed over harbor mud and underlain and depth by old alluvium, volcanic tuff, and 'mudrock' or basalt bedrock. The harbor mud in these two areas is known to extend down to depths of about 100 feet below ground surface (bgs) before older alluvium or weathered basalt is encountered. Groundwater elevations along this nearshore portion of the alignment have been observed to be at elevation +20 feet above mean sea level in the western end and decrease eastward to about elevation +10 feet mean sea level. Relative to existing ground surface conditions, which range from about elevation +100 feet to about elevation +10 feet, the depth to groundwater through this portion of the alignment has been measured at 10 to 30 feet bgs. Exceptions to these typical groundwater depths have been observed where a combination of low existing ground elevations and artesian flows from the basalt bedrock penetrated resulted in artesian flows rising above existing ground. Basalt is likely to be encountered between 20 and 60 feet bgs.

Two general foundation construction methods will be used to support the aerial guideway structure: single drilled shafts that will be integral with columns, and driven piles that will require pile caps for connection to columns. Drilled shafts will be used for most of the alignment because they can be installed faster, require a smaller area of soil disturbance, and are quieter to install than driven piles. At this time, all shafts within the Area C: Waiau-Hālawā area are planned to be installed using the drilled shaft method. The drilled shafts will be 6 feet in diameter, and the depth of the shaft will depend on local soil conditions. Foundation depths are expected to range from about 60 feet in good ground areas to 100±20 in the areas where soft ground has been observed. In the immediate area of Hālawā Stream, foundations could be as deep as 150 feet, owing to the deeply incised and in-filled channel observed there. Some shafts or piles in the area will penetrate the basalt while others will be placed in surficial deposits. In places where the piles or shaft will extend into the basalt, the penetration will only be a few tens of feet at most; piers or piles will never penetrate deep into the basalt. Drinking water pumped from the SOBA comes from depths much greater than those anticipated or practical for pile foundations. In the Area C: Waiau-Hālawā area some foundations may penetrate slightly into the basalt.

Groundwater in the shafts or excavations for pile caps could be contaminated with petroleum products or other chemicals. These contaminants will be removed from water pumped from the excavations in accordance with standards established by the HDOH. Petroleum products might require the use of oil/water separators, strippers, or other remediation techniques. The water removed from the excavations or shafts must either be returned to the groundwater system or added to the stormwater drainage system. Any water discharged into the drainage system and surface water bodies will require an NPDES Dewatering Permit. This discharge must meet water quality standards. A monitoring program will ensure compliance with water quality standards. An NPDES Construction Stormwater Permit that has been obtained by the Project will ensure proper handling of hazardous materials and other pollutants.

Construction of each pier is expected to take less than one week, and the shafts will only be open long enough to install a rebar cage in the completed shaft and fill it with concrete. Once the shaft is filled with concrete, it is unlikely that an open pathway that could allow surficial contaminants to travel down the side of the shaft will remain, because the flowable concrete used for shaft construction will seal against the ground. Casing will be required at drilled shaft excavations that extend through soft or loose surficial deposits. Where these unstable deposits extend to considerable depth, the casing may be incorporated into the shaft's structural design. Additionally, where drilled shaft completion depths extend below static water levels, the fluid levels within the excavation must be maintained until concreting is complete for excavation stability. The counterbalancing fluid may simply be water and naturally derived cuttings, or specially formulated drilling mud. In areas of loose sands or soft clays, casings or drilling fluids such as environmentally inert polymer slurry may be necessary to maintain the integrity of the drilled hole during construction. In either case, this fluid will be managed in accordance with BMPs to protect the environment from uncontrolled releases. Construction-derived wastes will be managed in accordance with prevailing regulations. Uncontrolled releases will not be allowed. Slurry will be recycled through a de-sander and reused. Water will be collected and treated as needed prior to disposal or reuse. No contaminated soils will be disposed of in the Sole Source Aquifer area. No long-term impacts to the SOBA are anticipated.

The Project will slightly increase impermeable surfaces in the Area C: Waiiau-Hālawā area. By installing permanent BMPs, most of the runoff will be directed back into the ground to recharge the groundwater system, resulting in little change in the amount of infiltration. In this way, although runoff from surrounding surfaces may enter the groundwater system along a different path than previously, the groundwater recharge needed to sustain the aquifer system will continue. Therefore, the Project will not result in any long-term changes to groundwater levels. Runoff from the guideway itself is expected to be relatively free of pollutants and will not threaten groundwater quality.

**F. Include Suitable and Adequate Location and Site Maps**

Please see Attachments C1 and C2.

**G. Other Pertinent Information**

A Final EIS, compliant with NEPA and HRS Chapter 343, has been prepared for the Project. The information herein is drawn from information used for preparation of that document, including the technical reports that include detailed information concerning the Project-specific field studies performed to support the Final EIS.

## IV. PROJECT IMPACTS

This section discusses impacts within the Area C: Waiau-Hālawā area specifically. The Introduction portion of the SMA application provides a Project-wide discussion of impacts related to Coastal Zone Management objectives and SMA guidelines.

### A. Coastal Zone Management Objectives

The text in italics below is copied directly from HRS Section 205A-2, Coastal Zone Management Program; Objectives and Policies.

#### 1. Recreational Resources

A. *Provide coastal recreational opportunities accessible to the public.*

Section 4.5 of the Final EIS (Attachment 1) describes the Project's effect on parks and recreation areas. Please see Section III.B.1 for details regarding publicly owned beaches, parks, and recreation areas and Section III.B.5 for details regarding other coastal/natural resources in the Area C: Waiau-Hālawā area.

While the portion of the Project in the Area C: Waiau-Hālawā area does not provide any new coastal recreational opportunities for the public, it will not adversely affect the existing coastal recreational resources or their uses by the public. Neal S. Blaisdell Park and 'Aiea Bay State Recreational Area will remain accessible to the public. Overall, the Project will improve the availability of access to existing and future parks and recreational facilities along the alignment.

#### 2. Historic Resources

A. *Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.*

Section 4.16 of the Final EIS (Attachment 1) discusses the Project's effect on archaeological, cultural, and historic resources. Please see Section III.C for details regarding historic resources in the Area C: Waiau-Hālawā area.

There is a moderate chance of encountering burials, as well as pre- and post-contact archaeological resources in the Area C: Waiau-Hālawā area. The historic HECO Waiau Plant is within the Area C: Waiau-Hālawā area, but the Project will not have an adverse effect on this resource. The United States Naval Base, Pearl Harbor NHL will experience an adverse effect due to the Project. Specific resources within the NHL near the Project are: (a) the Bombproof Switch Station; (b) the Richardson Recreation Center Pool Complex; (c) Fuel Oil Pump-out Pump House

Facility S-386; and (d) the Publications Printing Office and Plant. The Project will not have an adverse effect on any of these resources.

Outside of the Area C: Waiau-Hālawā area, but in the general vicinity, the Project will have an adverse impact on three bridges (Waimalu Stream Bridge, Kalauao Springs Bridge, and Kalauao Stream Bridge) and the CINCPACFLT Headquarters. The CINCPACFLT Headquarters is within the Pearl Harbor NHL.

Because the Project will result in adverse effects on some resources and avoidance is not possible, a PA was prepared in consultation with SHPO and the Section 106 consulting parties to outline measures to minimize and mitigate the Project's effects on these resources.

3. Scenic and Open Space Resources

- A. *Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.*

Section 4.8 of the Final EIS (Attachment 1) identifies the Project's impacts and mitigation measures related to protected views. Scenic impacts associated with the Project in and near the Area C: Waiau-Hālawā area include a potential change in the setting of a historic resource, alteration of 'Ewa-Koko Head and mauka-makai views, and the introduction of Project components that are out of scale or character with their setting. The guideway will present makai view obstructions toward the shoreline. The elevated Pearlridge Station and Transit Center of about 40 feet above the highway will be a noticeable change, altering views and contrasting with the scale of the surrounding environment. Some views of the shoreline will be blocked from viewpoints near the station. Overall, visual effects near the station will be moderate because Project elements will blend with the surrounding commercial character, which is a heavily used transportation corridor with one- and two-story businesses and warehouses.

4. Coastal Ecosystems

- A. *Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.*

Section 4.14 of the Final EIS (Attachment 1) discusses the Project's effect on water quality, which could impact coastal ecosystems. Please see Section III.B.4 and III.B.5 for details regarding coastal/natural resources in the Area C: Waiau-Hālawā area.

The Project will not have an adverse impact on coastal ecosystems. There will be no direct drainage into Pearl Harbor in the Area C: Waiau-Hālawā portion of the Project, due to the distance between the alignment and the coast. The Project is being designed to ensure minimal environmental impacts throughout the alignment, through the use of construction and permanent BMPs. Stormwater runoff will be filtered

through landscaped median areas and sedimentation collars where possible. Stormwater will be filtered through downspout filters and specially designed bioinfiltration units near water bodies on the HDOH 303(d) list of water quality limited segments. Permanent BMPs will be installed as part of the Project to address stormwater quality before the water is discharged to streams or existing storm drain systems. The BMPs will promote a natural, low-maintenance, sustainable approach to managing and increasing stormwater quality. At a minimum, all stormwater downspouts from the guideway will include erosion control BMPs and energy dissipation devices to prevent any scour of landscaped medians.

5. Economic Uses

- A. *Provide public or private facilities and improvements important to the State's economy in suitable locations.*

Section 4.3 of the Final EIS (Attachment 1) discusses the Project's effect on economic activity. To accomplish the economic development objectives for O'ahu's urban corridor, suitable infrastructure must be developed. The Project will result in improved infrastructure and long-term benefits to residents, businesses, and commuters. The portion of the Project within the Area C: Waiau-Hālawā area will not adversely affect coastal-dependent economic activities.

6. Coastal Hazards

- A. *Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.*

The portion of the Project within the Area C: Waiau-Hālawā area is not located in a tsunami evacuation zone, thus representing no associated risk. The Project is being designed to applicable standards and specifications regarding storm weather and associated risks. Erosion is not anticipated to be an issue in this area, due to the slight slopes, as well as the soil types and level of development. Sea level rise may have an impact on the Project, due to its fairly low elevation, but that impact is not expected to occur until sometime in the future. According to Project engineers' estimates, based on a general analysis of the topography and contours in the area, sea level would have to rise more than 10 feet to have an impact on the portion of the Project in the Area C: Waiau-Hālawā area. Subsidence is not expected to be an issue in the area, according to initial geological findings; Project foundations, the columns on which the guideway sits, will be installed to a depth sufficient to prevent subsidence. The Project is not anticipated to increase pollution.

7. Managing Development

- A. *Improve the development review process, communication, and public participation in the management of coastal resources and hazards.*

The Project will require State and City permits and approvals that include provisions for public participation and ensure protection of coastal resources, as described in Section 4.21 of the Final EIS (Attachment 1). The Project will also provide necessary infrastructure to accommodate existing and planned future travel demand. The Project is consistent with the transportation and land use elements of adopted State and Local government plans.

8. Public Participation

- A. *Stimulate public awareness, education, and participation in coastal management.*

Chapter 8 of the Final EIS (Attachment 1) discusses the Project's public outreach activities. Agencies, non-governmental groups, and the public have been engaged throughout the Project's planning process, as required by Federal and State laws. Various public outreach activities were held near the Area C Waiau – Hālawā area, as discussed above in Section I.F.6.

9. Beach Protection

- A. *Protect beaches for public use and recreation.*

The portion of the Project within the Area C: Waiau-Hālawā area is adjacent to Neal S. Blaisdell Park and 'Aiea Bay State Recreational Area, but will not have a direct impact on these resources. The Project will not affect coastal erosion in this area.

10. Marine Resources

- A. *Promote the protection, use, and development of marine and coastal resources to assure their sustainability.*

The portion of the Project within the Area C: Waiau-Hālawā area is not adjacent to or abutting a shoreline and will not affect marine resources.

**B. SMA Guidelines**

The text in italics below is copied directly from ROH Chapter 25-3.2, Review Guidelines.

*The following guidelines shall be used by the council or its designated agency for the review of developments proposed in the SMA.*

- a) *All development in the special management area shall be subject to reasonable terms and conditions set by the council to ensure that:*
- 1) *Adequate public access, by dedication or other means, to and along the publicly owned or used beaches, recreation areas and natural reserves is provided to the extent consistent with sound conservation principles;*

Please see Section III.B.1 for details regarding publicly owned beaches, parks, and recreation areas in the Area C: Waiau-Hālawā area.

The portion of the Project within the Area C: Waiau-Hālawā area will not adversely affect access to and along publicly owned beaches, recreation areas, and natural reserves. Temporary modifications to access public recreation areas will be required for public safety during construction; however, public access will be maintained. The parks, streams, and springs along Kamehameha Highway will not experience any direct or adverse impacts due to the Project, and will remain open and accessible during Project construction and operation. Once constructed, the Project will increase mobility and improve options to access public recreation areas, such as public beaches and parks.

- 2) *Adequate and properly located public recreation areas and wildlife preserves are reserved;*

The portion of the Project within the Area C: Waiau-Hālawā area will not adversely affect or diminish the quality of public recreation areas or wildlife preserves; there are no wildlife preserves in the Area C: Waiau-Hālawā area.

- 3) *Provisions are made for solid and liquid waste treatment, disposition and management which will minimize adverse effects upon special management area resources; and*

For the portion of the Project within the Area C: Waiau-Hālawā area HART will ensure that proper containment, treatment, and disposal methods for solid and liquid wastes are followed during construction and operation of the Project in accordance with Federal, State, and local regulations as discussed in the Final EIS (Attachment 1) Section 4.12 Hazardous Waste and Materials. There will be no adverse impacts to SMA resources.

- 4) *Alterations to existing land forms and vegetation; except crops, and construction of structures shall cause minimum adverse effect to water resources and scenic and recreational amenities and minimum danger of floods, wind damage, wave damage, storm surge, landslides, erosion, sea level rise, siltation or failure in the event of earthquake.*

The portion of the Project within the Area C: Waiau-Hālawā area will not have an adverse effect on water resources. During construction (as describe in the Final EIS (Attachment 1) Section 4.18.10 Construction Phase Effects Water Resources), temporary BMPs for the management of stormwater will be designed, installed, and maintained to reduce the potential for impacts to water resources from erosion and other construction activities. Permanent BMPs also will be designed and installed on downspouts that drain the guideway near HDOH 303(d) listed impaired waters, including Waimalu Stream, Kalauao Springs, Kalauao Stream, and 'Aiea Stream. The Project will avoid or minimize impacts on

recreational and scenic amenities where reasonable. The Project will not impact floodways, cause wind damage, wave damage, storm surges, landslides, erosion of coastal resources, sea level rise, or siltation. The Project is designed to meet seismic standards and other natural hazards as applicable.

b) *No development shall be approved unless the council has first found that:*

- 1) *The development will not have any significant adverse environmental or ecological effect except as such adverse effect is minimized to the extent practicable and clearly outweighed by public health and safety, or compelling public interest. Such adverse effect shall include but not be limited to the potential cumulative impact of individual developments, each one of which taken in itself might not have a significant adverse effect and the elimination of planning options;*

In the Area C: Waiau-Hālawā area, there will be no significant adverse environmental or ecological impacts due to the Project as discussed in the Final EIS (Attachment 1) Section 4.13.3 Ecosystems Environmental Consequences and Mitigation. The Project design includes measures to avoid and minimize impacts to the environment, and there will be no significant cumulative impact from the Project within the SMA. The Project's impacts are outweighed by the Project's benefit of providing additional mobility in the study corridor, as well as improving corridor travel reliability, access, and transportation equity.

- 2) *The development is consistent with the objectives and policies set forth in Section 25-3.1 and area guidelines contained in HRS Section 205A-26;*

As discussed above, the portion of the Project within the Area C: Waiau-Hālawā area is consistent with the objectives and policies set forth for SMAs.

- 3) *The development is consistent with the county general plan, development plans and zoning. Such a finding of consistency does not preclude concurrent processing where a development plan amendment or zone change may also be required;*

The portion of the Project within the Area C: Waiau-Hālawā area is consistent with all plans and zoning, as discussed above in Section II.A.4 and Attachment 3.

- 4) *That the development has been adequately planned to minimize the risk from coastal hazards such as tsunamis, hurricanes, wind, storm waves, flooding, erosion, and sea level rise; and*

The portion of the Project within the Area C: Waiau-Hālawā area has been adequately planned and designed to the extent practical to minimize the risk from coastal hazards and is not located in a tsunami evacuation zone. The Project design meets applicable standards and specifications regarding storm weather and construction in floodplains. Temporary and

permanent BMPs will minimize the risk to coastal areas from erosion. According to Project engineers' estimates, based on a general analysis of the topography and contours in the area, sea level would have to rise more than 10 feet to have an impact on the portion of the Project in the Area C: Waiau-Hālawā area.

- 5) *That the development does not impede public access to the shoreline or beach area.*

The portion of the Project within the Area C: Waiau-Hālawā area will not impede public access to the shoreline or beach area. Short-term access changes to Neal S. Blaisdell Park and 'Aiea Bay State Recreational Area may arise during construction, but the Project will not impede public access to the shoreline or beach area. Conversely, the Project will increase mobility and thereby access to such areas outside of the Area C: Waiau-Hālawā area.

- c) *The council shall seek to minimize, where reasonable:*

- 1) *Dredging, filling or otherwise altering any bay, estuary, salt marsh, river mouth, slough or lagoon;*

The Project will not require any of the above activities in the Area C: Waiau-Hālawā area.

- 2) *Any development which would reduce the size of any beach or other area usable for public recreation;*

In the Area C: Waiau-Hālawā area, the Project will not reduce or impact any beaches or areas usable for public recreation because it will be constructed within the median of an existing highway.

- 3) *Any development which would reduce or impose restrictions upon public access to tidal and submerged lands, beaches, portions of rivers and streams within the special management area and the mean high tide line where there is no beach;*

The portion of the Project within the Area C: Waiau-Hālawā area will not result in any reductions or restrictions on public access to tidal and submerged lands, beaches, portions of rivers and streams within the SMA, and the mean high tide line where there is no beach. Outside of the Area C: Waiau-Hālawā area, the Project will span Waimalu Stream, Kalauao Springs, Kalauao Stream, 'Aiea Stream, and Hālawā Stream. These streams will not be directly impacted, and access to them will be maintained. Public access to the shoreline in that area will not be reduced or restricted by the Project, due to the distance between the fixed guideway and the shoreline.

- 4) *Any development which would substantially interfere with or detract from the line of sight toward the sea from the state highway nearest the coast; and*

The portion of the Project within the Area C: Waiau-Hālawā area will require the installation of the guideway and columns in the median of Kamehameha Highway, the State highway nearest the coast in this area; also required will be the construction of the Pearlridge Station and Transit Center. As Kamehameha Highway is at-grade and the fixed guideway on columns, the support columns will present intermittent makai view obstructions across the highway toward the shoreline. However, most views in this area comprise a wider panoramic scene consisting of an urban environment. The elevated Pearlridge Station and Transit Center, at roughly 58 feet above the highway, will be a noticeable change, altering views and contrasting with the scale of the surrounding environment. Some views of the shoreline will be blocked from viewpoints near the station. Most views in this area comprise a wider panoramic scene consisting of an urban environment and are already obstructed by existing buildings. Overall, the Project has minimized its visual intrusion to the extent possible.

An evaluation of the SMA Coastal Views is provided in Section 4.8 of the Final EIS (Attachment 1; page 4-103).

- 5) *Any development which would adversely affect water quality, existing areas of open water free of visible structures, existing and potential fisheries and fishing grounds, wildlife habitats, or potential or existing agricultural uses of land.*

The portion of the Project within the Area C: Waiau-Hālawā area will not adversely affect water quality in this area. Section 4.14 and 4.18.10 of the Final EIS (Attachment 1) discuss BMPs to be employed during operation and construction of the Project, respectively, to limit water quality impacts. The streams are spanned by the fixed guideway and not directly impacted; also, these streams already contain visible structures and modifications. The Project will not have an adverse impact on Pearl Harbor in this area due to the distance between the guideway and the coast. Existing and potential fishing grounds are likely coastal or associated with one of the streams; there will be no interference with any of these areas due to the Project. The Project will not have an adverse effect on any wildlife habitats or potential or existing agricultural uses of land, as it will be constructed in the median of an existing highway.

## V. MITIGATION MEASURES

The Project Mitigation Monitoring Program is included as Attachment 4.

Attachment C1: SMA Plans

- C-00 to C-23: SMA Line Plan Sheets
- C-FZ: Flood Zones
- C-HR: Historic Resources

Attachment C2: Pearlridge Station Makai Station Building Drawings

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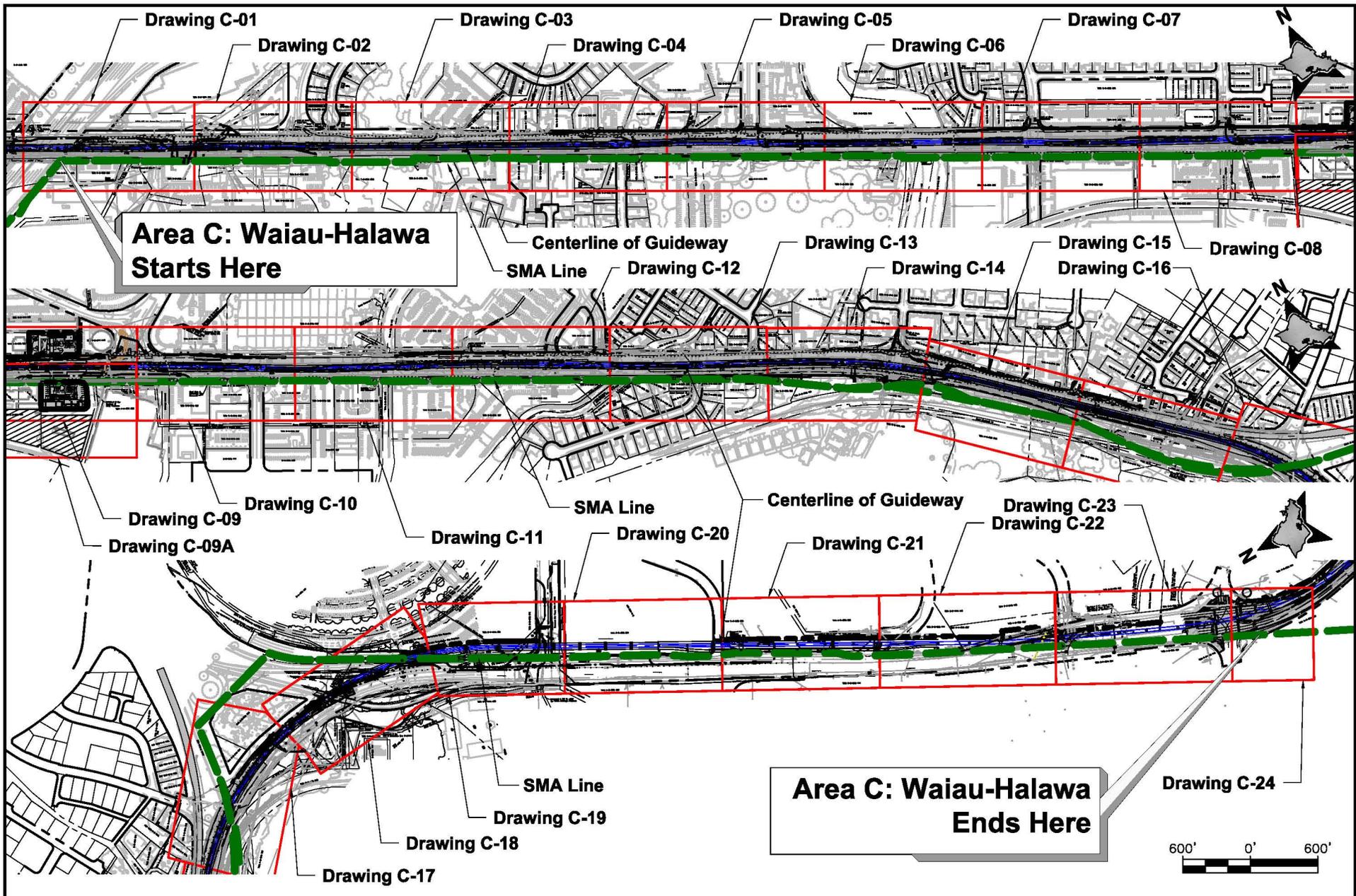
# Special Management Area Use Permit and Shoreline Setback Variance Application

## Attachment C1: Area C SMA Plans

**Honolulu Rail Transit Project**  
June 2013

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**HONOLULU  
RAIL TRANSIT PROJECT**

SPECIAL MANAGEMENT AREA  
**AREA C  
OVERVIEW**

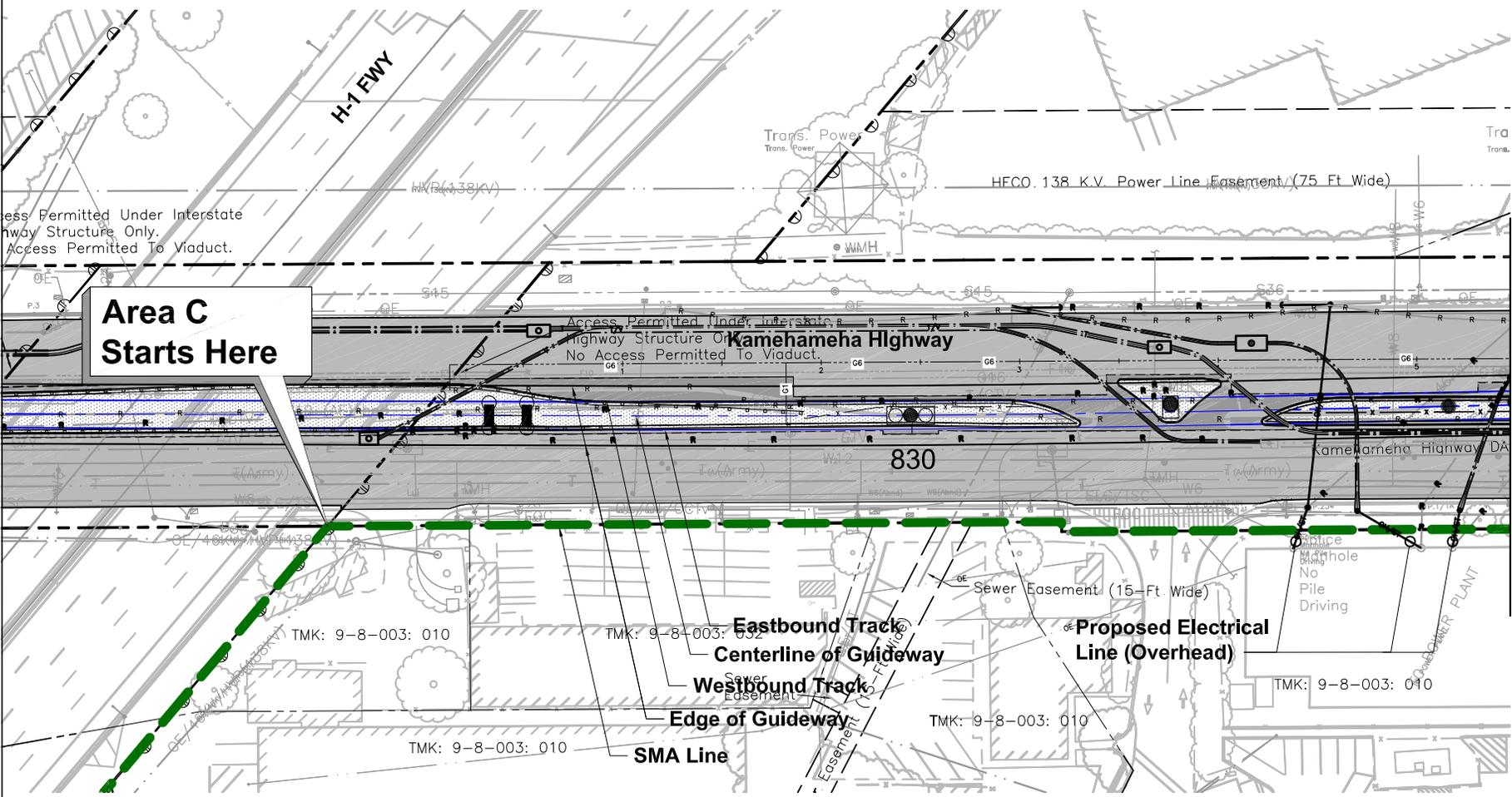
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Drawing No:

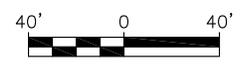
**C-00**

Date:

5-20-2013



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See Dwg. No. C-02



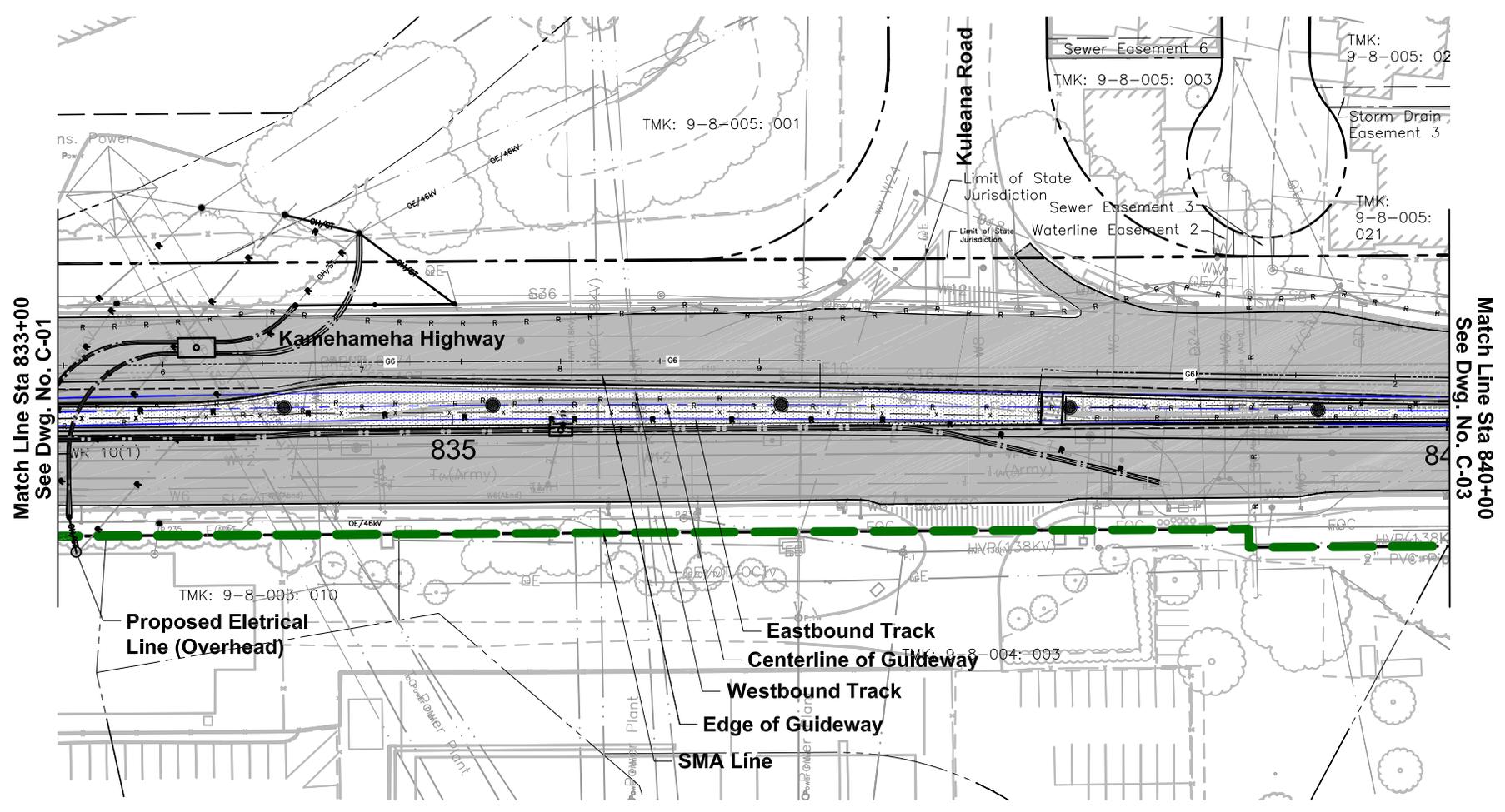
**HONOLULU  
RAIL TRANSIT PROJECT**

SPECIAL MANAGEMENT AREA  
**AREA C  
PLAN**

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**C-01**

Date:  
5-20-2013

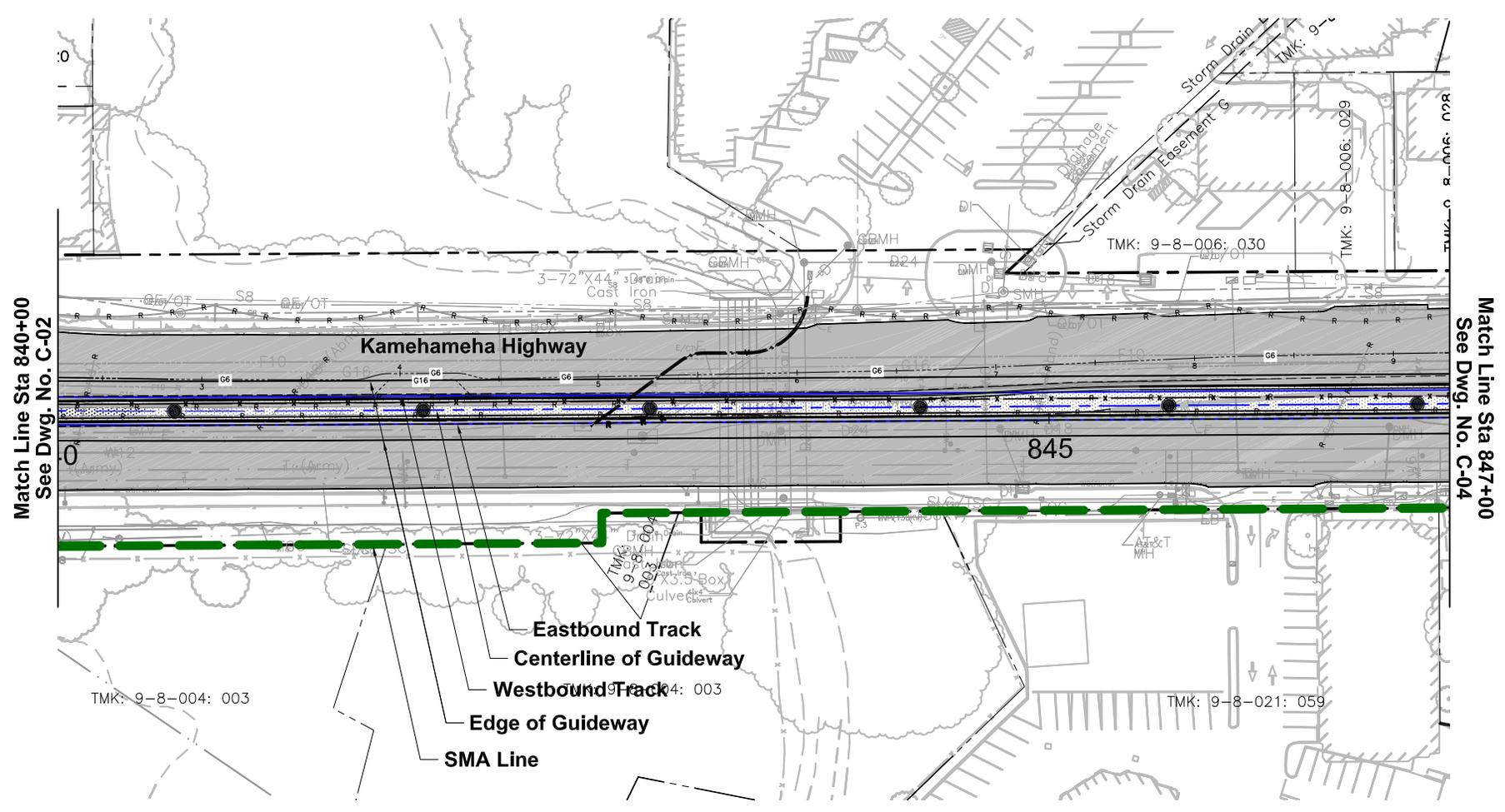


**HONOLULU  
RAIL TRANSIT PROJECT**

**SPECIAL MANAGEMENT AREA  
AREA C  
PLAN**

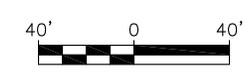
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Drawing No:  
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Date:  
5-20-2013



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See Dwg. No. C-02

Match Line Sta 847+00  
See Dwg. No. C-04

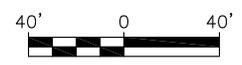
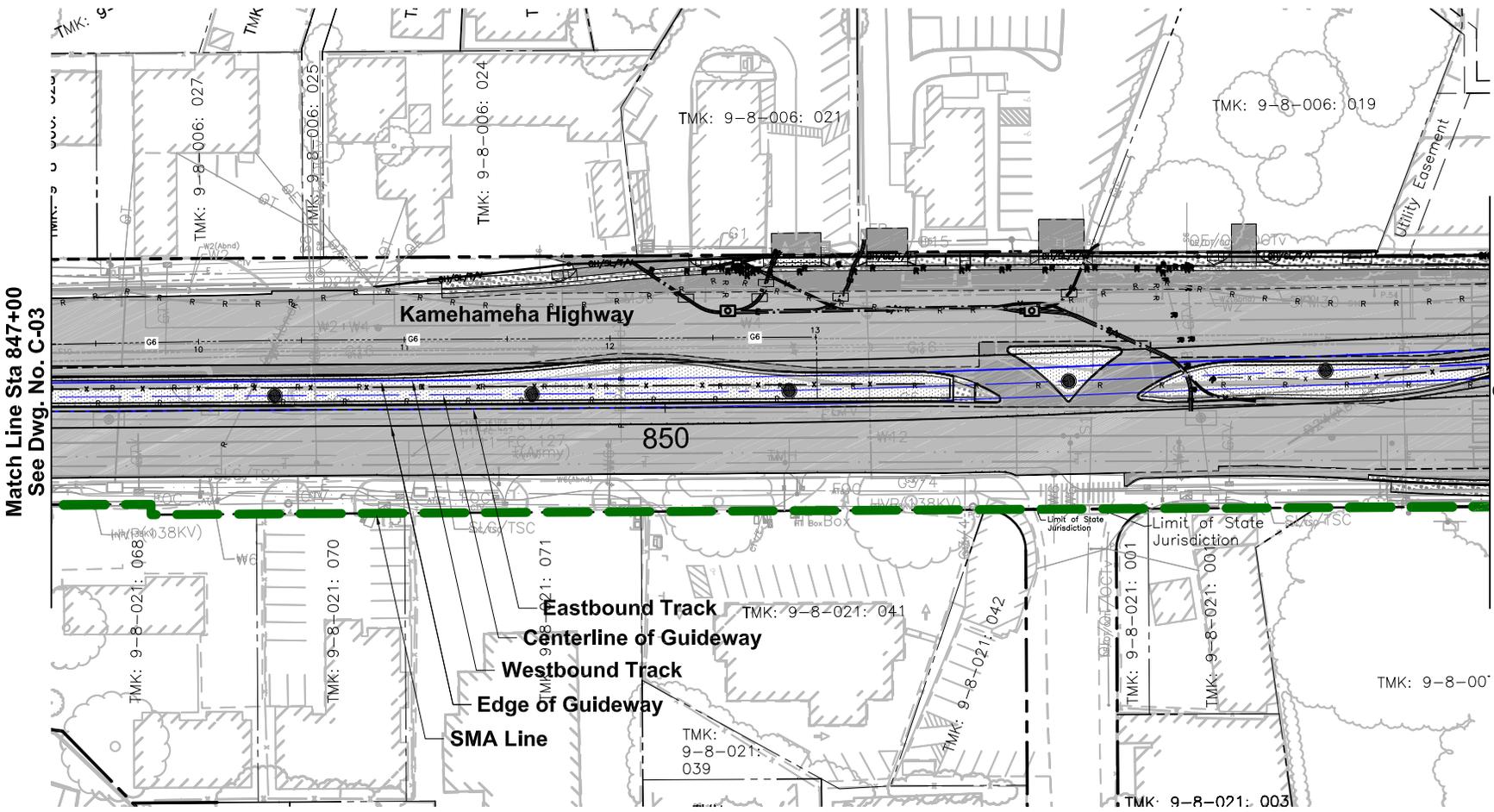


**HONOLULU  
RAIL TRANSIT PROJECT**

SPECIAL MANAGEMENT AREA  
**AREA C  
PLAN**

STA 840+00 TO STA 847+00

Drawing No:  
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Date:  
5-20-2013



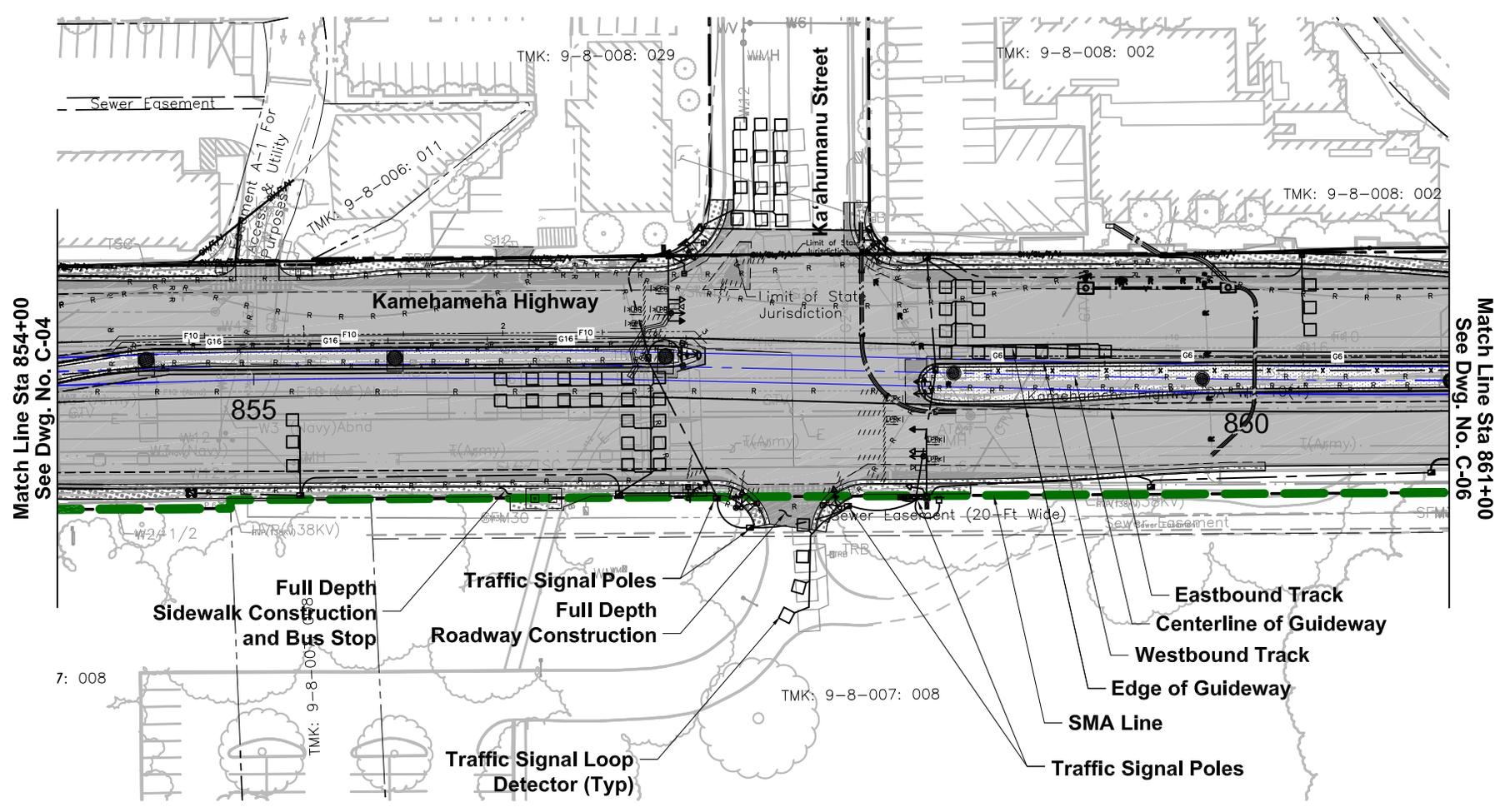
**HONOLULU  
RAIL TRANSIT PROJECT**

**SPECIAL MANAGEMENT AREA  
AREA C  
PLAN**

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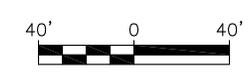
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Date:  
5-20-2013



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See Dwg. No. C-06

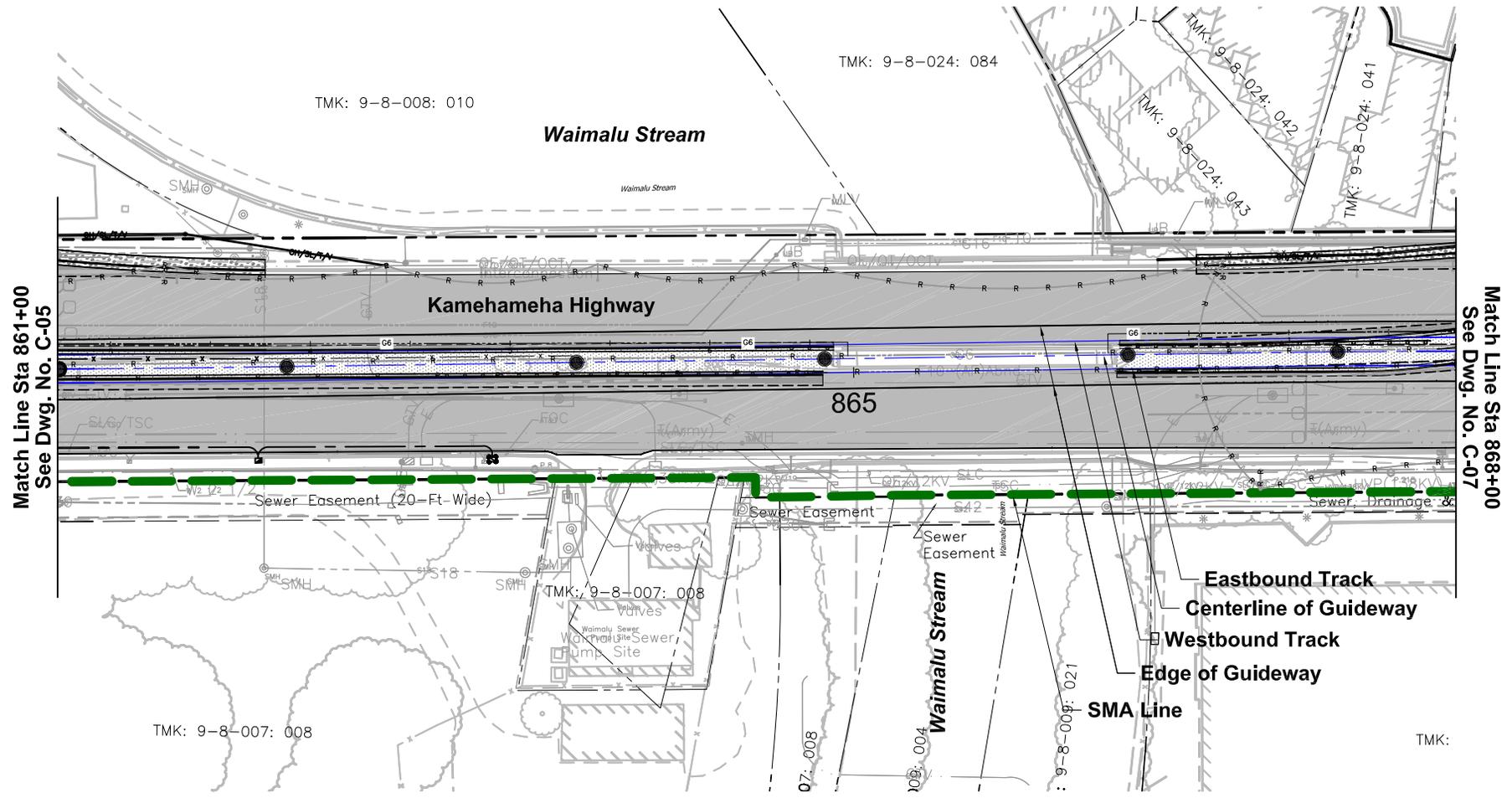


**HONOLULU  
RAIL TRANSIT PROJECT**

SPECIAL MANAGEMENT AREA  
**AREA C  
PLAN**

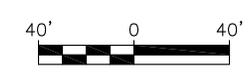
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Drawing No:  
**C-05**  
Date:  
5-20-2013



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See Dwg. No. C-05

Match Line Sta 868+00  
See Dwg. No. C-07

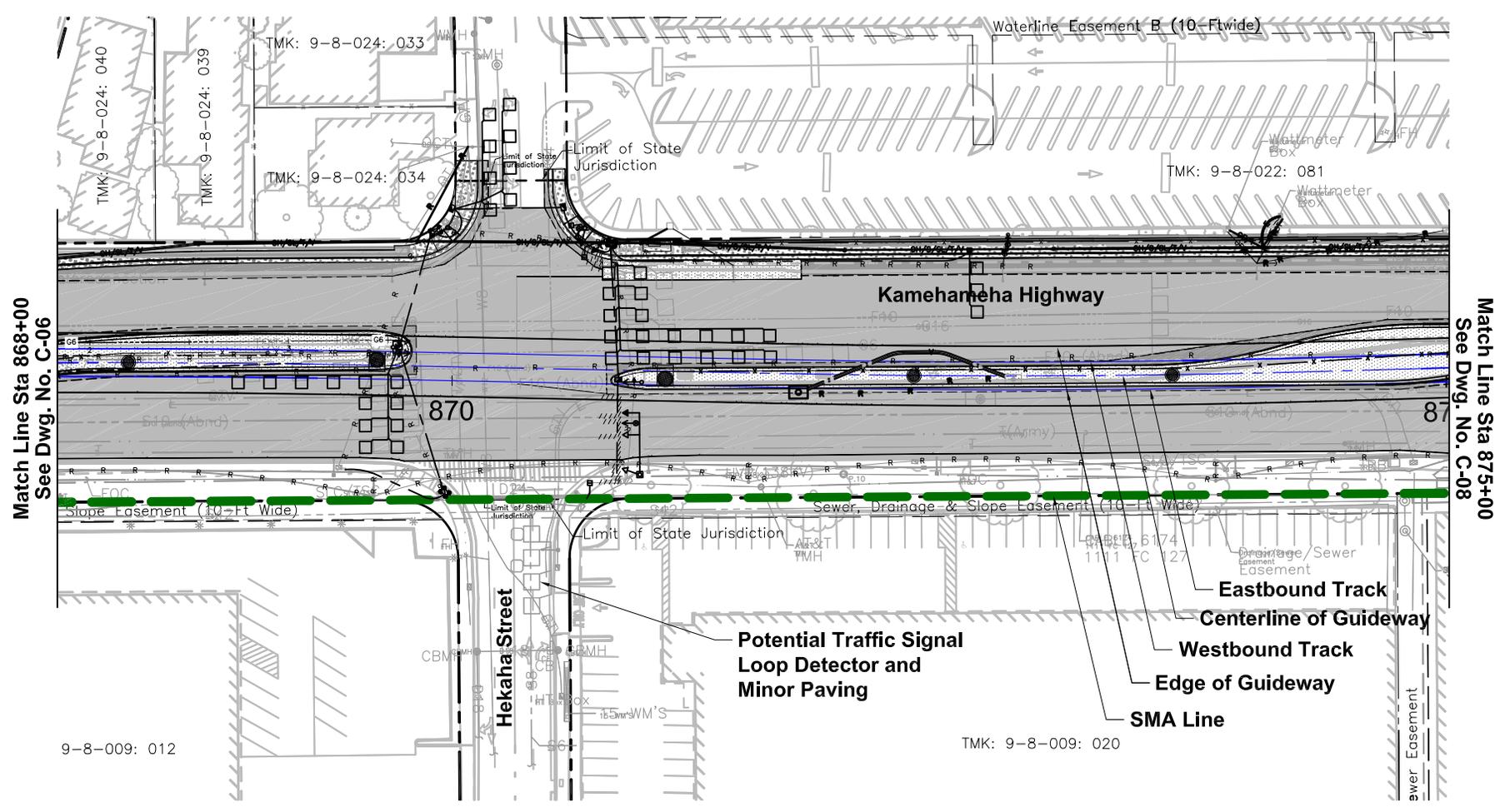


**HONOLULU  
RAIL TRANSIT PROJECT**

**SPECIAL MANAGEMENT AREA  
AREA C  
PLAN**

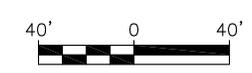
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Date:  
5-20-2013



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See Dwg. No. C-08

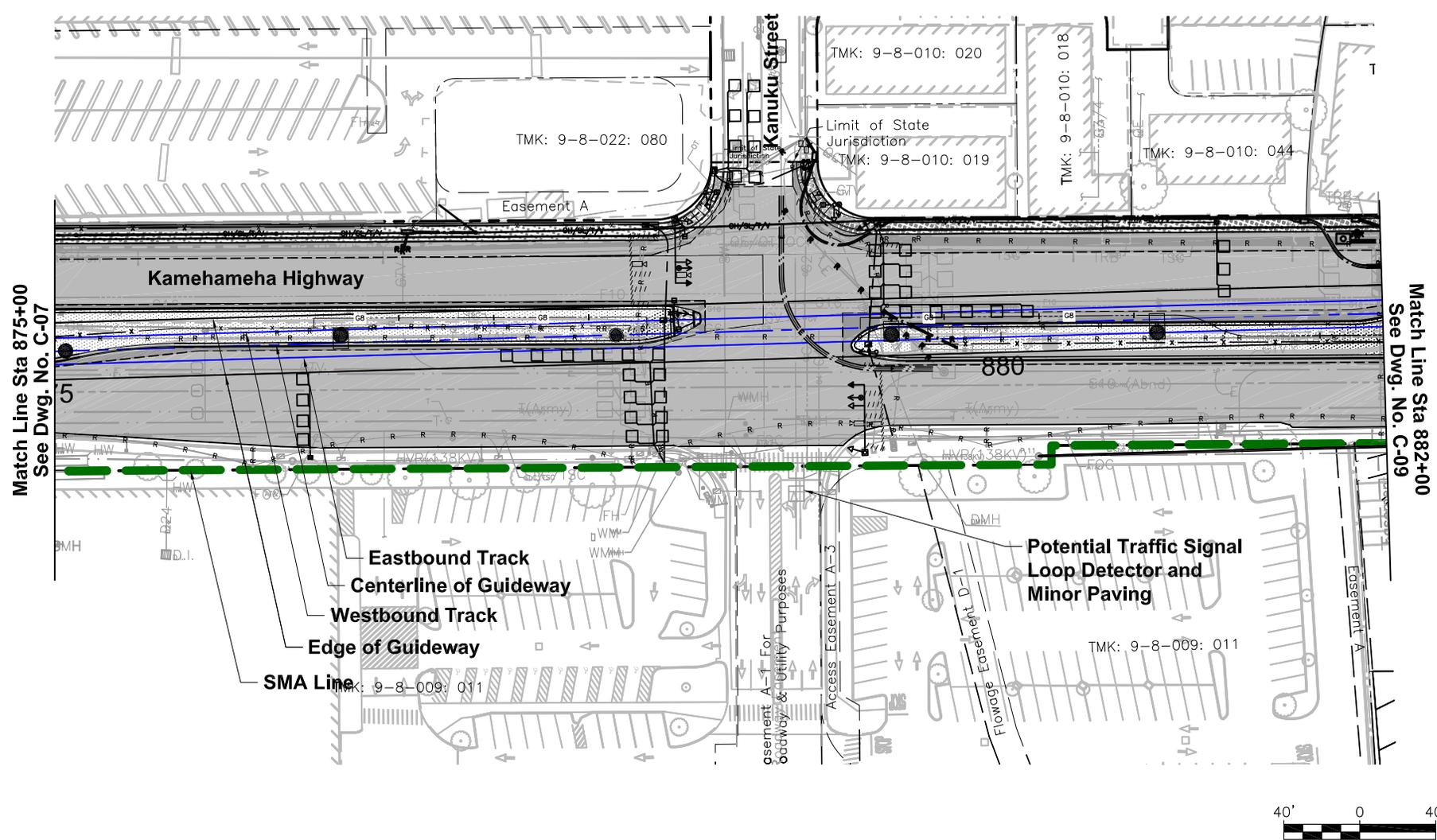


**HONOLULU  
RAIL TRANSIT PROJECT**

SPECIAL MANAGEMENT AREA  
**AREA C  
PLAN**

STA 868+00 TO STA 875+00

Drawing No:  
**C-07**  
Date:  
5-20-2013



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See Dwg. No. C-07

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See Dwg. No. C-09

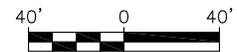
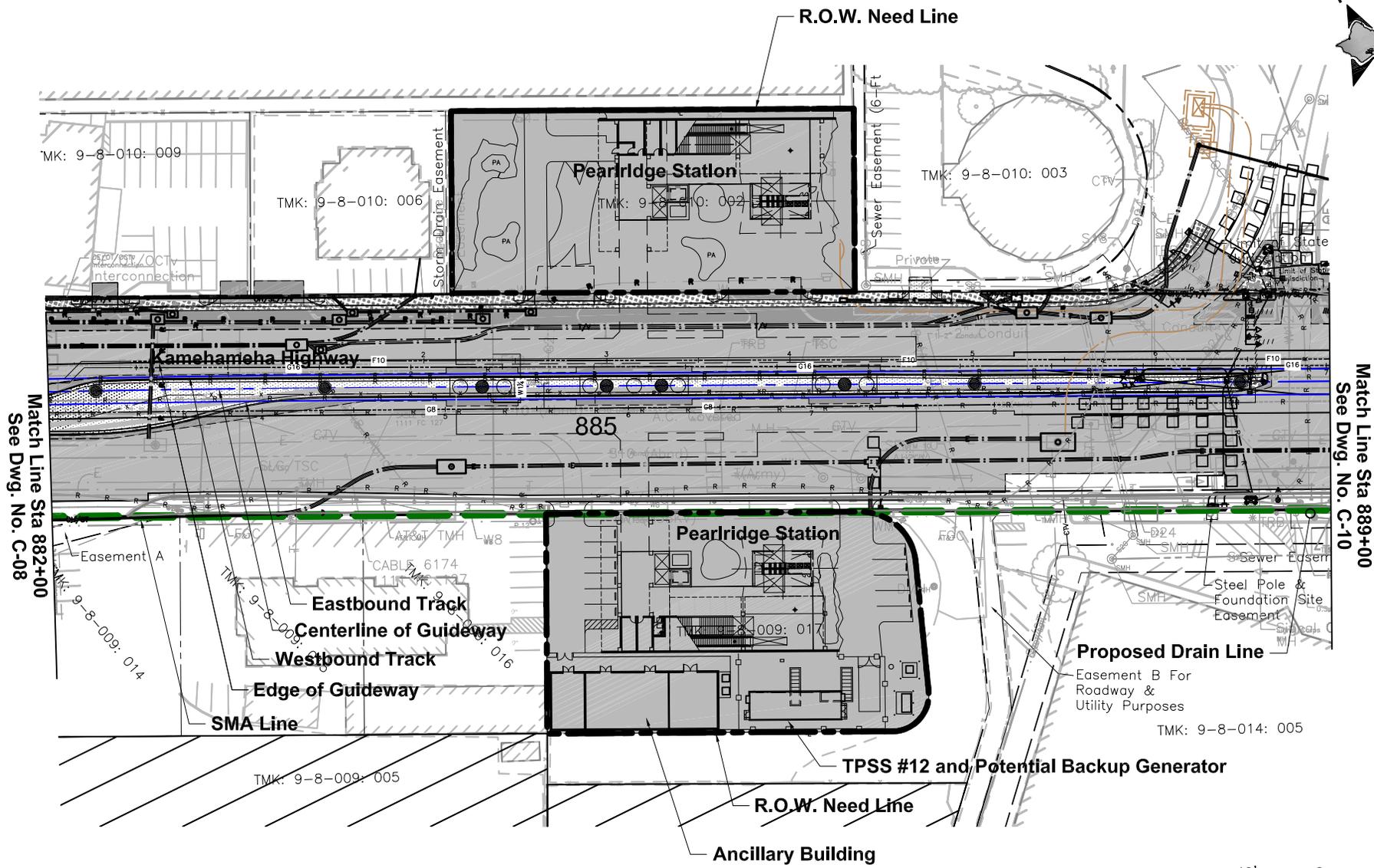


**HONOLULU  
RAIL TRANSIT PROJECT**

**SPECIAL MANAGEMENT AREA  
AREA C  
PLAN**

STA 875+00 TO STA 882+00

Drawing No:  
**C-08**  
Date:  
5-20-2013

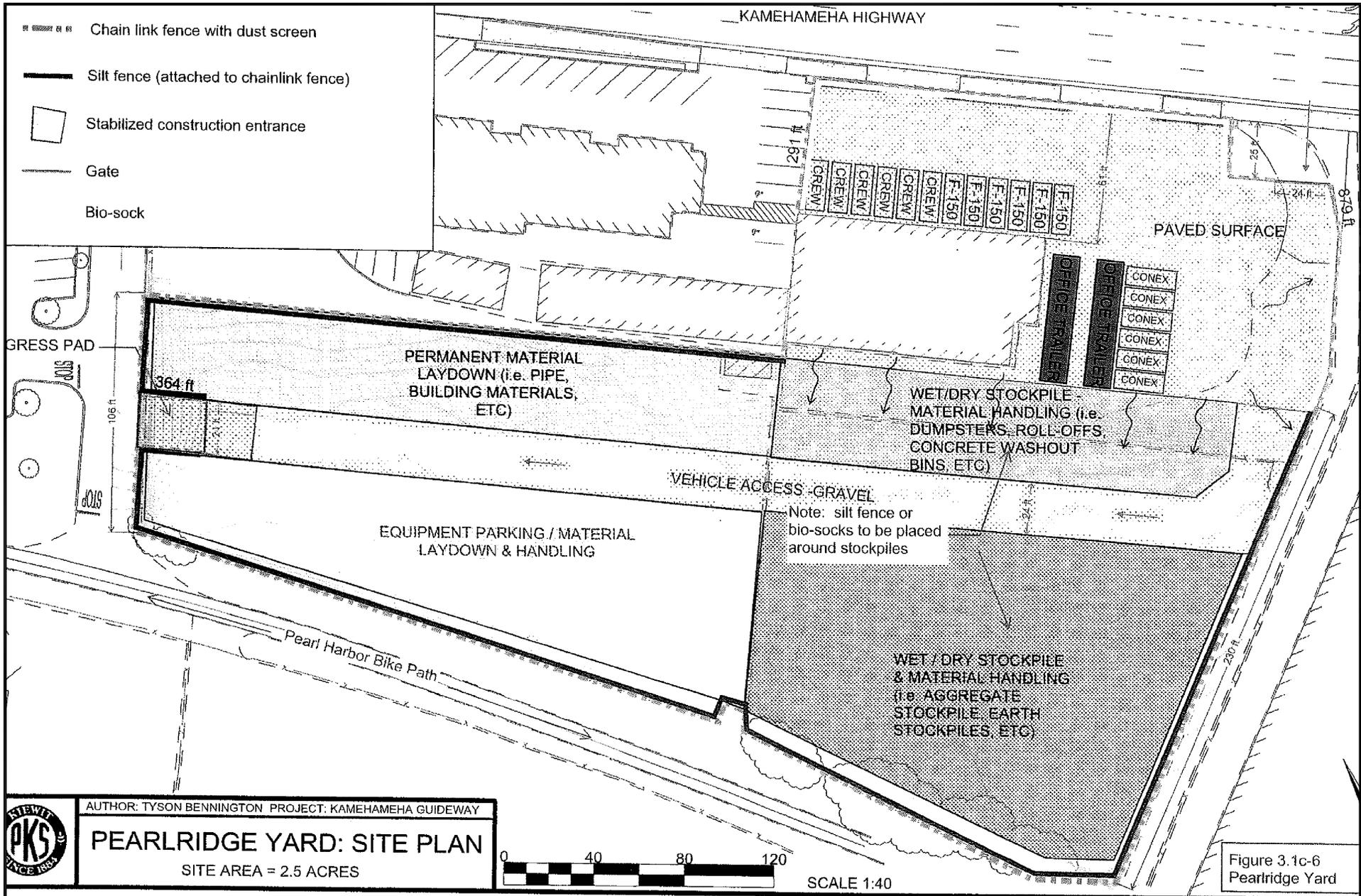


**HONOLULU  
RAIL TRANSIT PROJECT**

SPECIAL MANAGEMENT AREA  
**AREA C  
PLAN**

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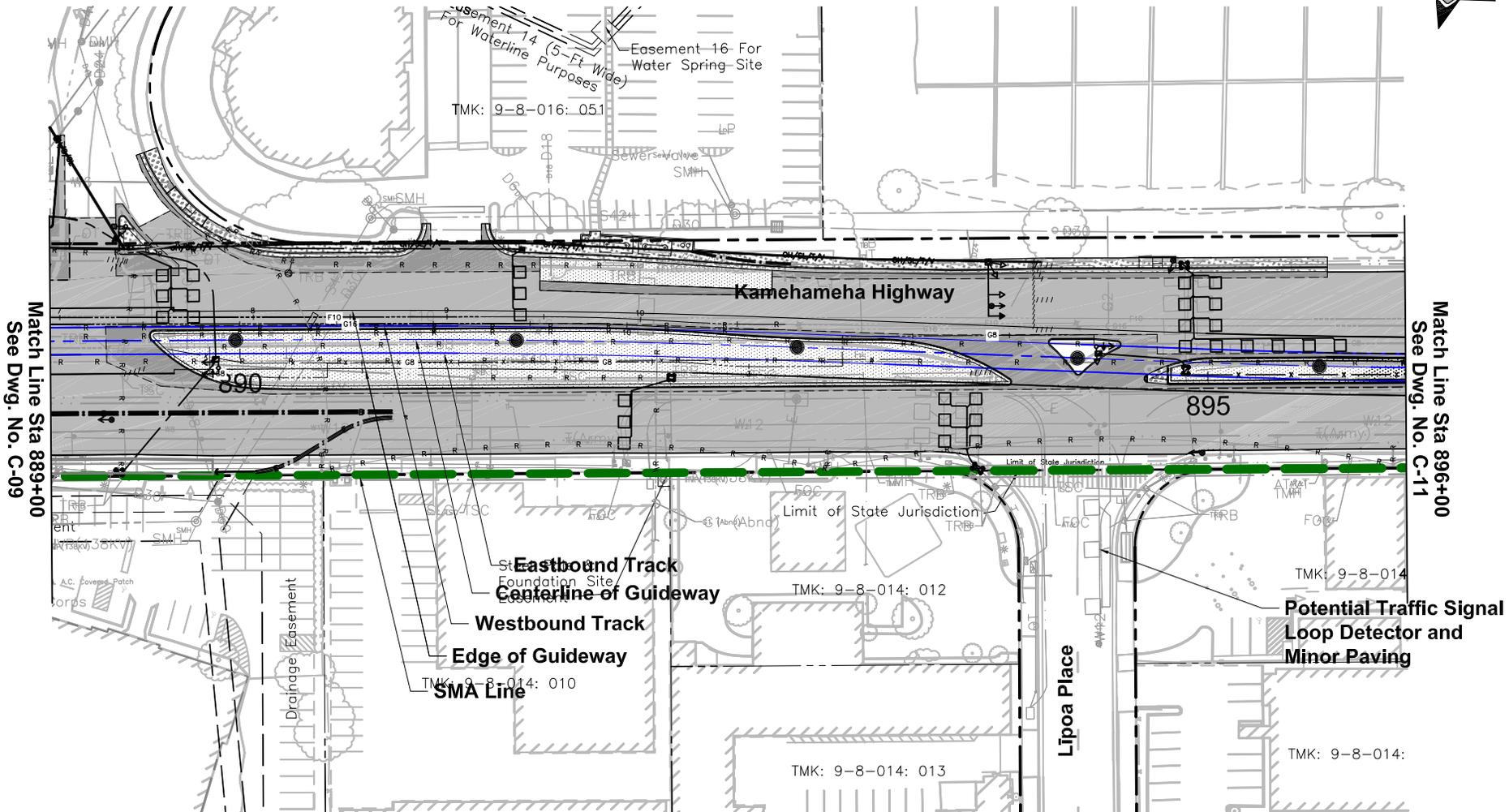
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5-20-2013



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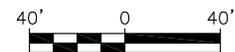
SPECIAL MANAGEMENT AREA  
**AREA C PLAN**  
 TEMPORARY CONSTRUCTION YARD

Drawing No:  
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 Date:  
 05-20-2013



Match Line Sta 889+00  
See Dwg. No. C-09

Match Line Sta 896+00  
See Dwg. No. C-11



**HONOLULU  
RAIL TRANSIT PROJECT**

SPECIAL MANAGEMENT AREA  
**AREA C  
PLAN**

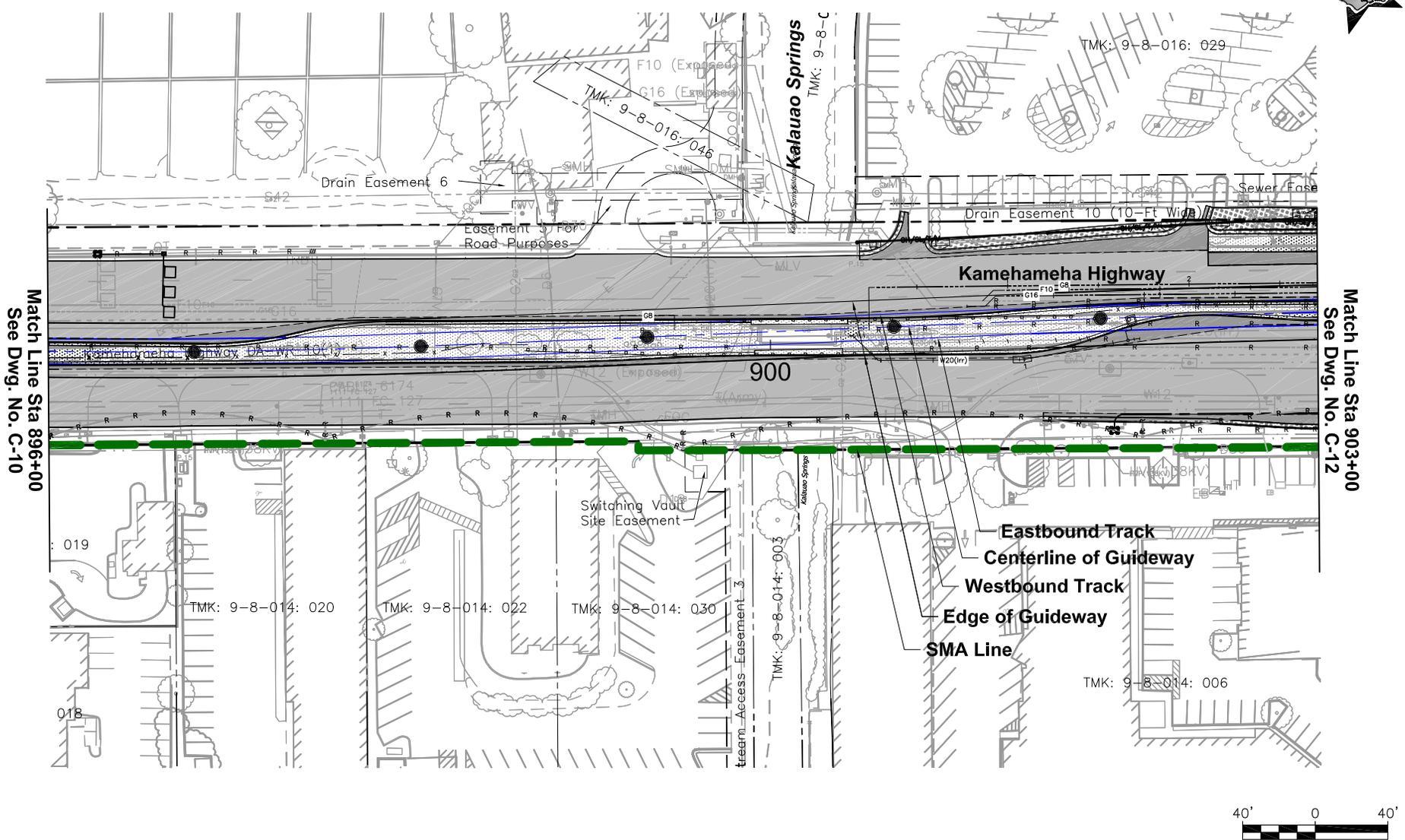
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Date:

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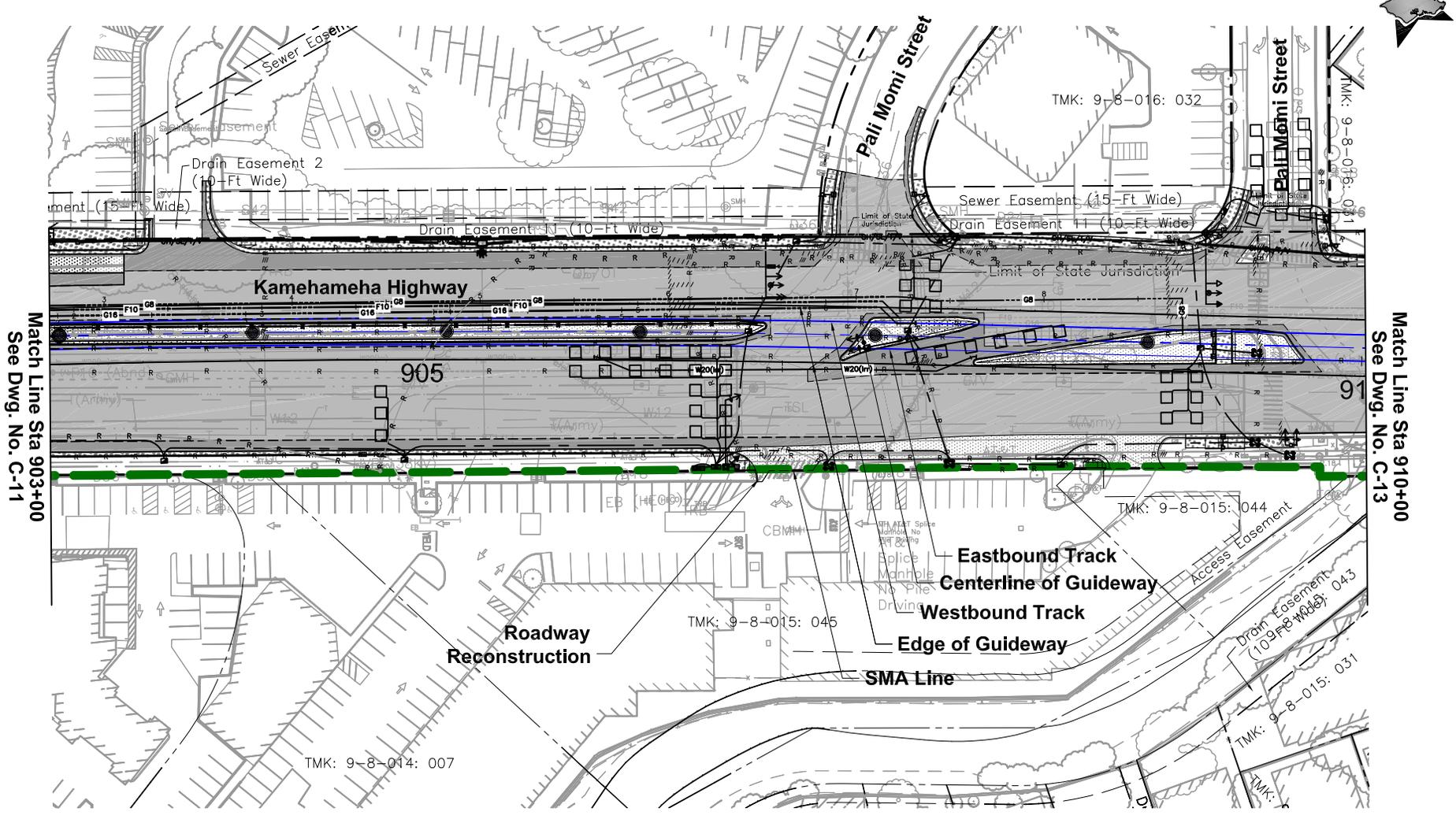
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RAIL TRANSIT PROJECT**

SPECIAL MANAGEMENT AREA  
**AREA C  
PLAN**

STA 896+00 TO STA 903+00

Drawing No:  
**C-11**

Date:  
5-20-2013



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See Dwg. No. C-11

Match Line Sta 910+00  
See Dwg. No. C-13

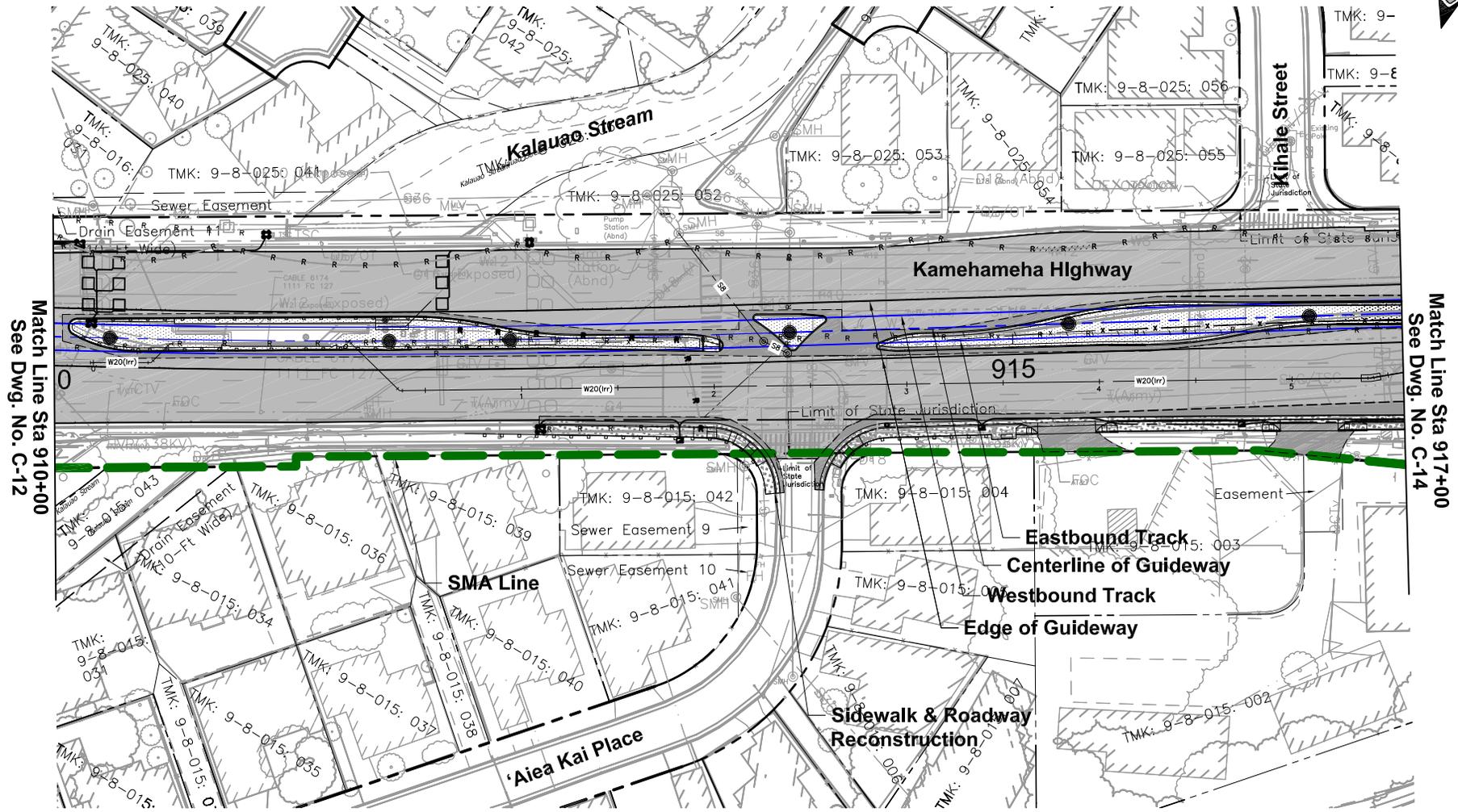


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RAIL TRANSIT PROJECT**

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**AREA C  
PLAN**

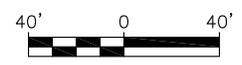
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Date:  
5-20-2013



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See Dwg. No. C-12

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See Dwg. No. C-14

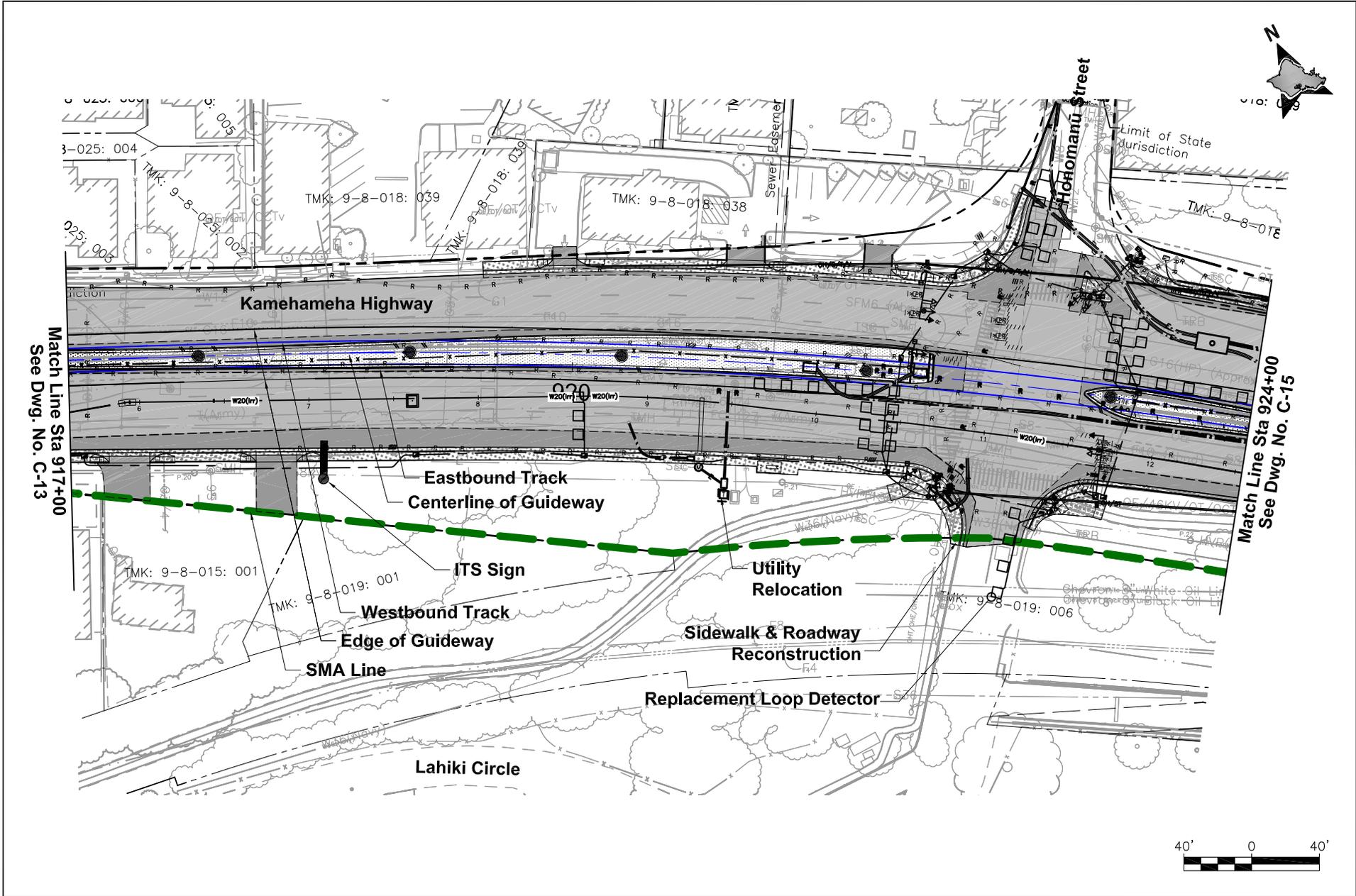


**HONOLULU  
RAIL TRANSIT PROJECT**

**SPECIAL MANAGEMENT AREA  
AREA C  
PLAN**

STA 910+00 TO STA 917+00

Drawing No:  
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Date:  
5-20-2013



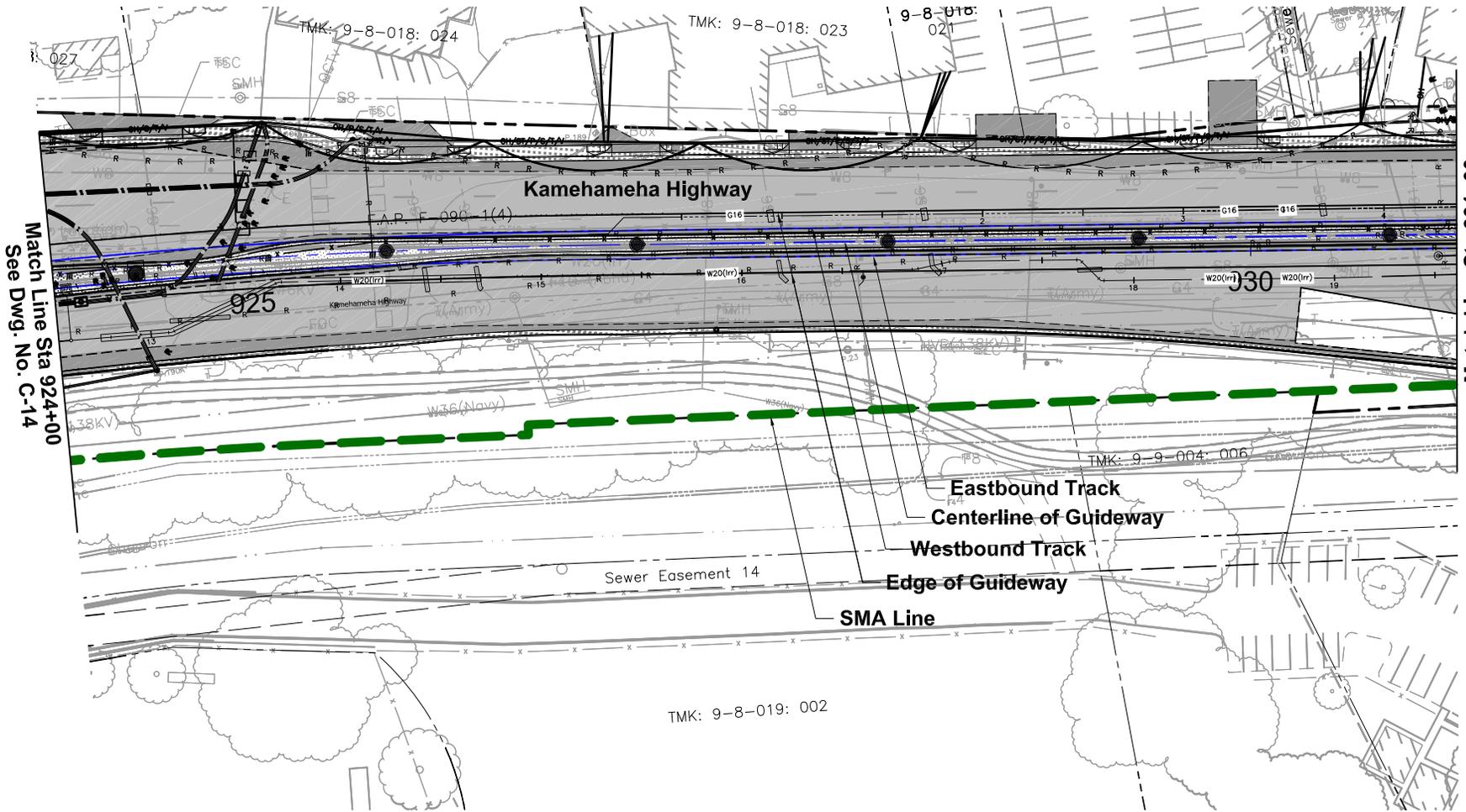
**HONOLULU  
RAIL TRANSIT PROJECT**

**SPECIAL MANAGEMENT AREA  
AREA C  
PLAN**

STA 917+00 TO STA 924+00

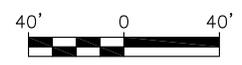
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Date:  
5-20-2013



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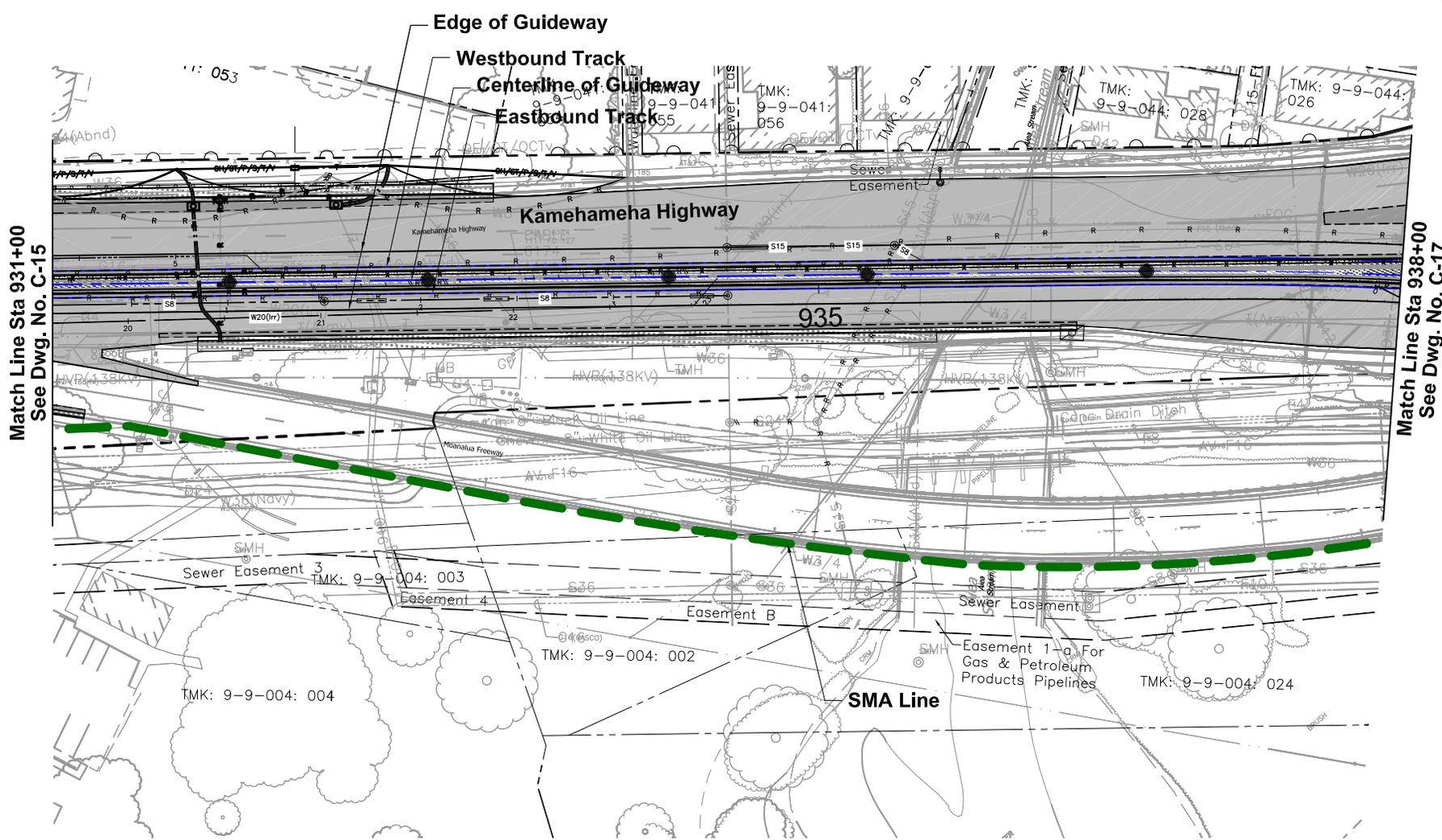
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RAIL TRANSIT PROJECT**

**SPECIAL MANAGEMENT AREA  
AREA C  
PLAN**

STA 924+00 TO STA 931+00

Drawing No:  
**C-15**

Date:  
5-20-2013



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See Dwg. No. C-15

Match Line Sta 938+00  
See Dwg. No. C-17



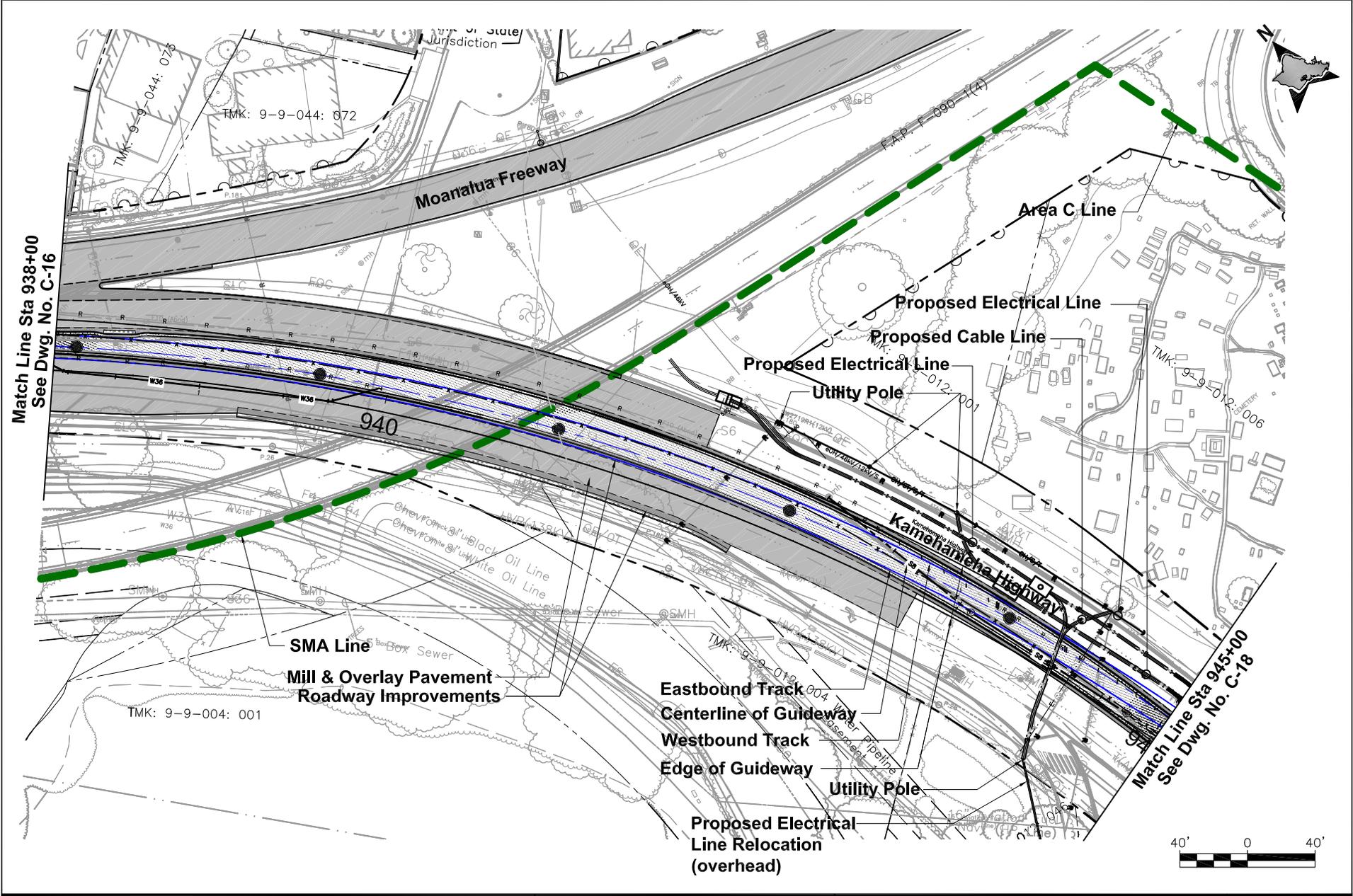
**HONOLULU  
RAIL TRANSIT PROJECT**

**SPECIAL MANAGEMENT AREA  
AREA C  
PLAN**

STA 931+00 TO STA 938+00

Drawing No:  
**C-16**

Date:  
5-20-2013



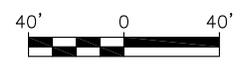
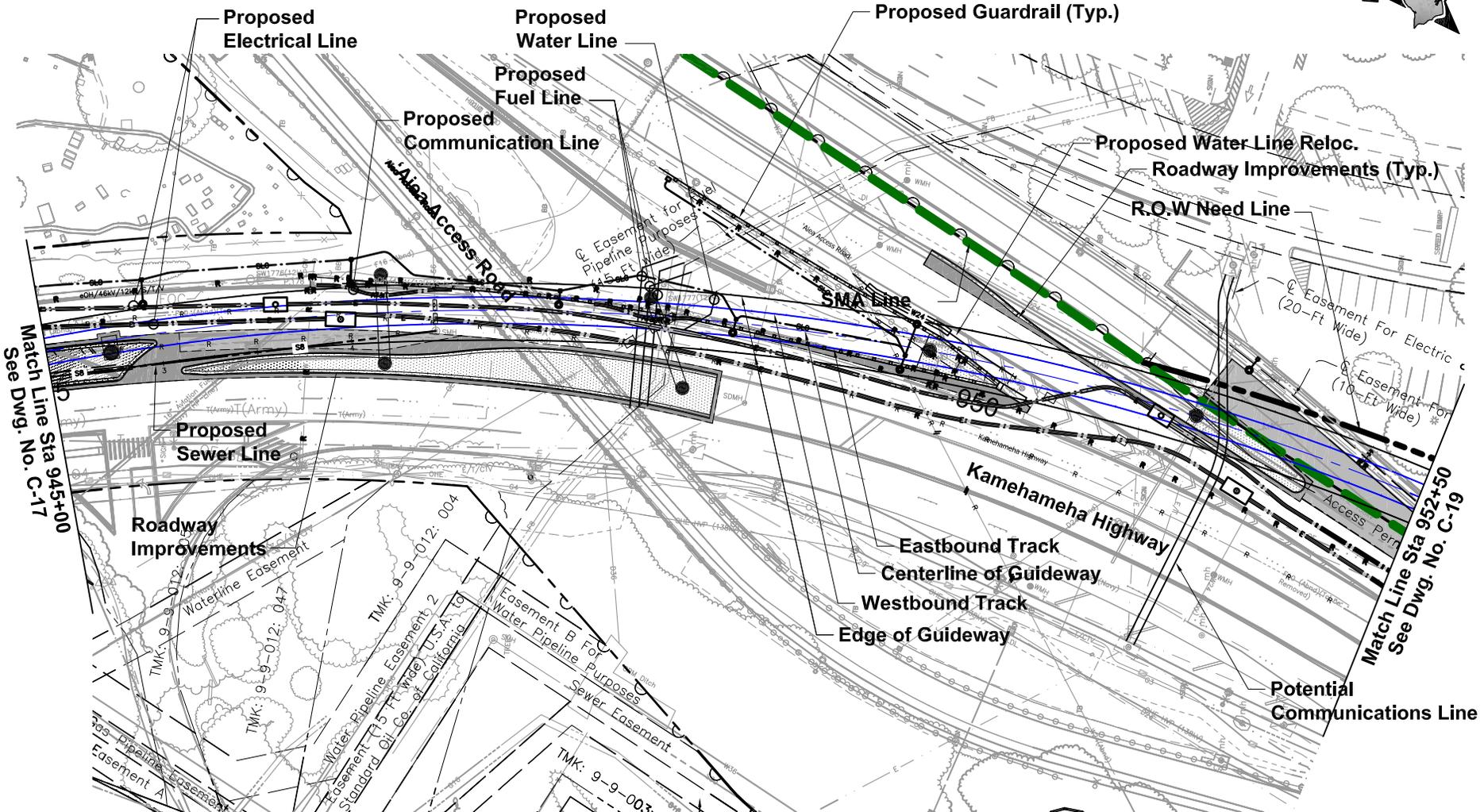
**HONOLULU  
RAIL TRANSIT PROJECT**

SPECIAL MANAGEMENT AREA  
**AREA C  
PLAN**

STA 938+00 TO STA 945+00

Drawing No:  
**C-17**

Date:  
5-20-2013

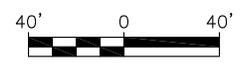
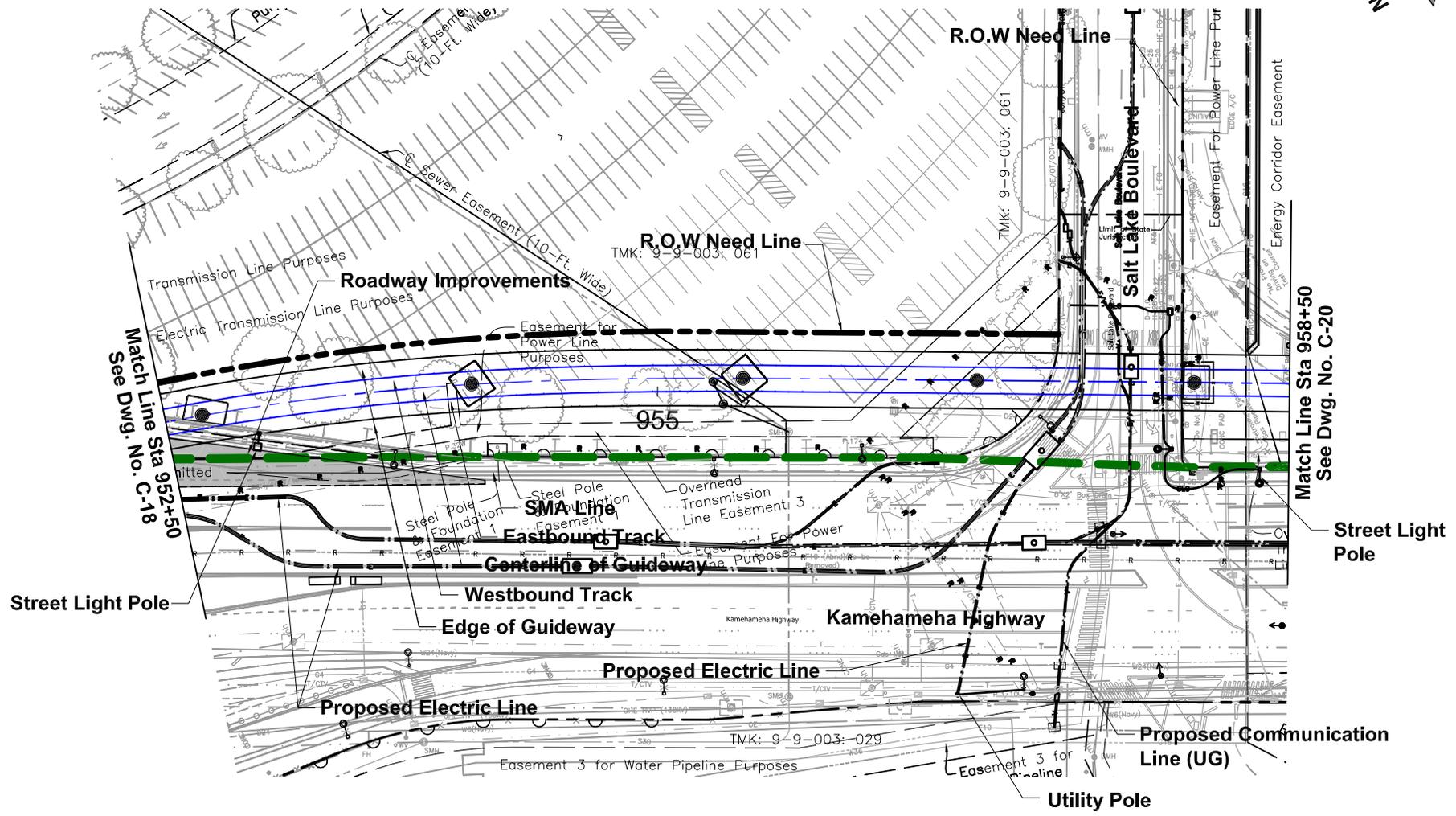


**HONOLULU  
RAIL TRANSIT PROJECT**

**SPECIAL MANAGEMENT AREA  
AREA C  
PLAN**

STA 945+00 TO STA 952+50

Drawing No:  
**C-18**  
Date:  
5-20-2013



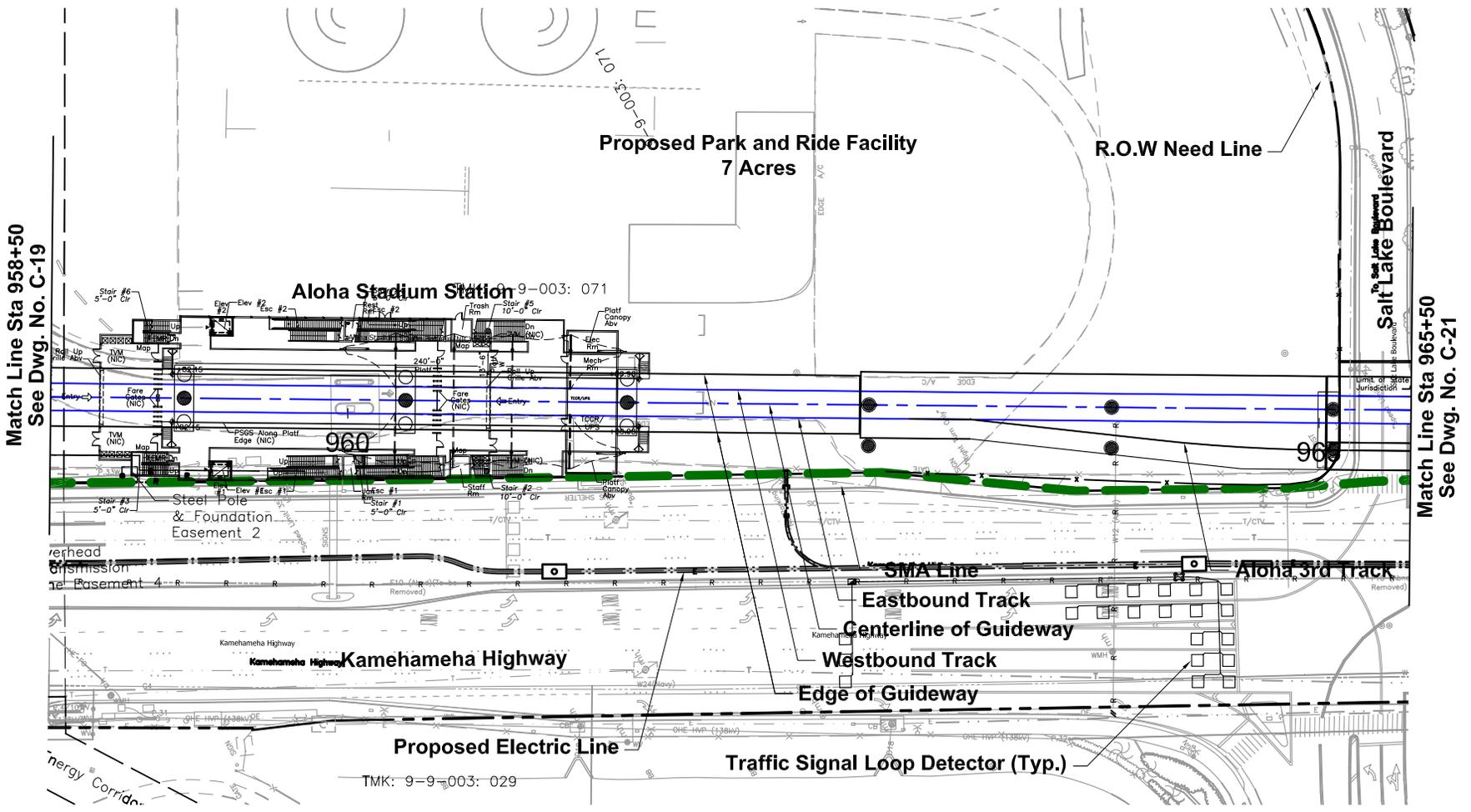
**HONOLULU  
RAIL TRANSIT PROJECT**

SPECIAL MANAGEMENT AREA  
**AREA C  
PLAN**

STA 952+50 TO STA 958+50

Drawing No:  
**C-19**

Date:  
5-20-2013



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See Dwg. No. C-19

Match Line Sta 965+50  
See Dwg. No. C-21



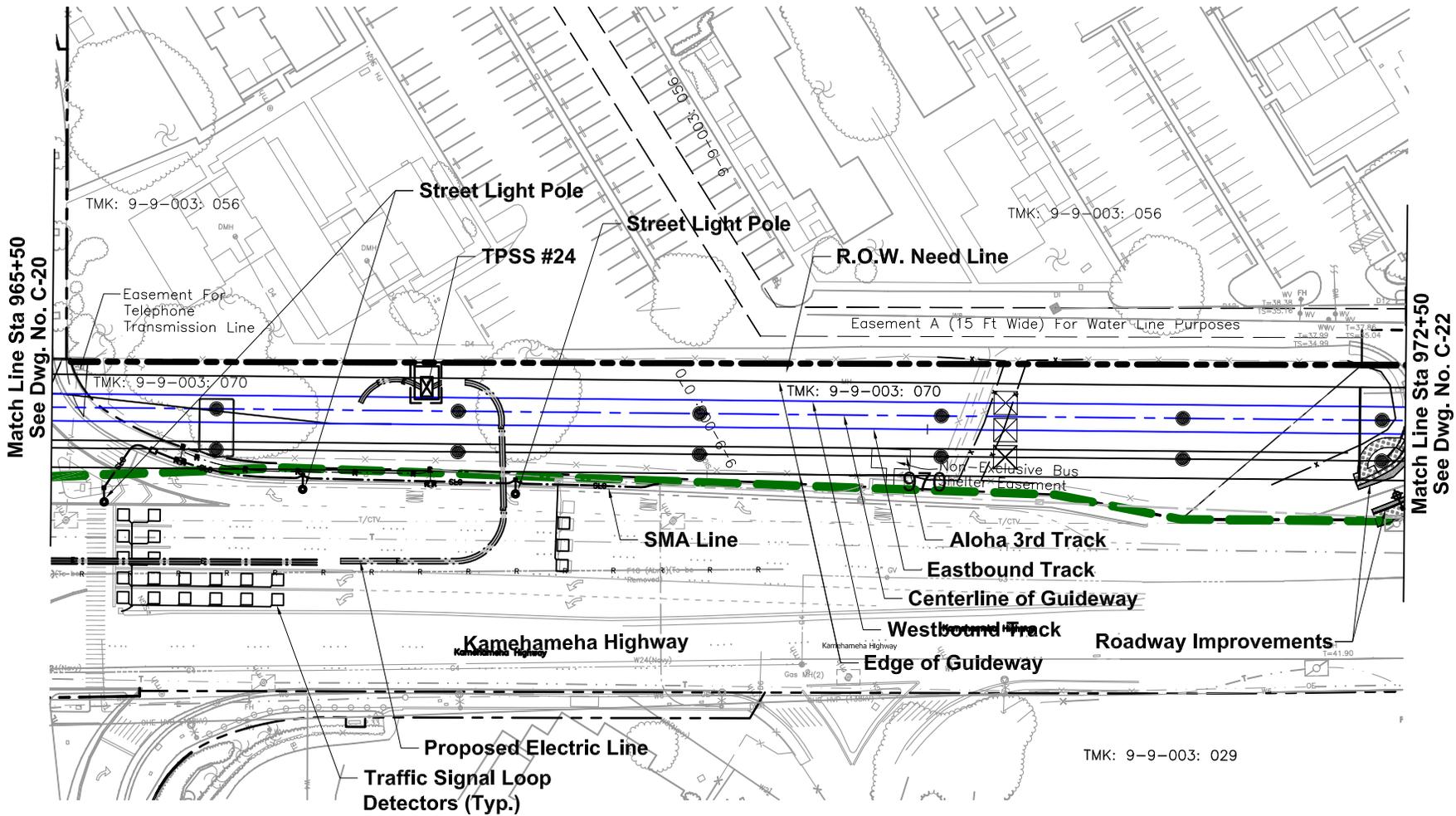
**HONOLULU  
RAIL TRANSIT PROJECT**

**SPECIAL MANAGEMENT AREA  
AREA C  
PLAN**

STA 958+50 TO STA 965+50

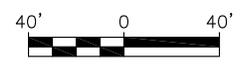
Drawing No:  
**C-20**

Date:  
5-20-2013



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See Dwg. No. C-20

Match Line Sta 972+50  
See Dwg. No. C-22



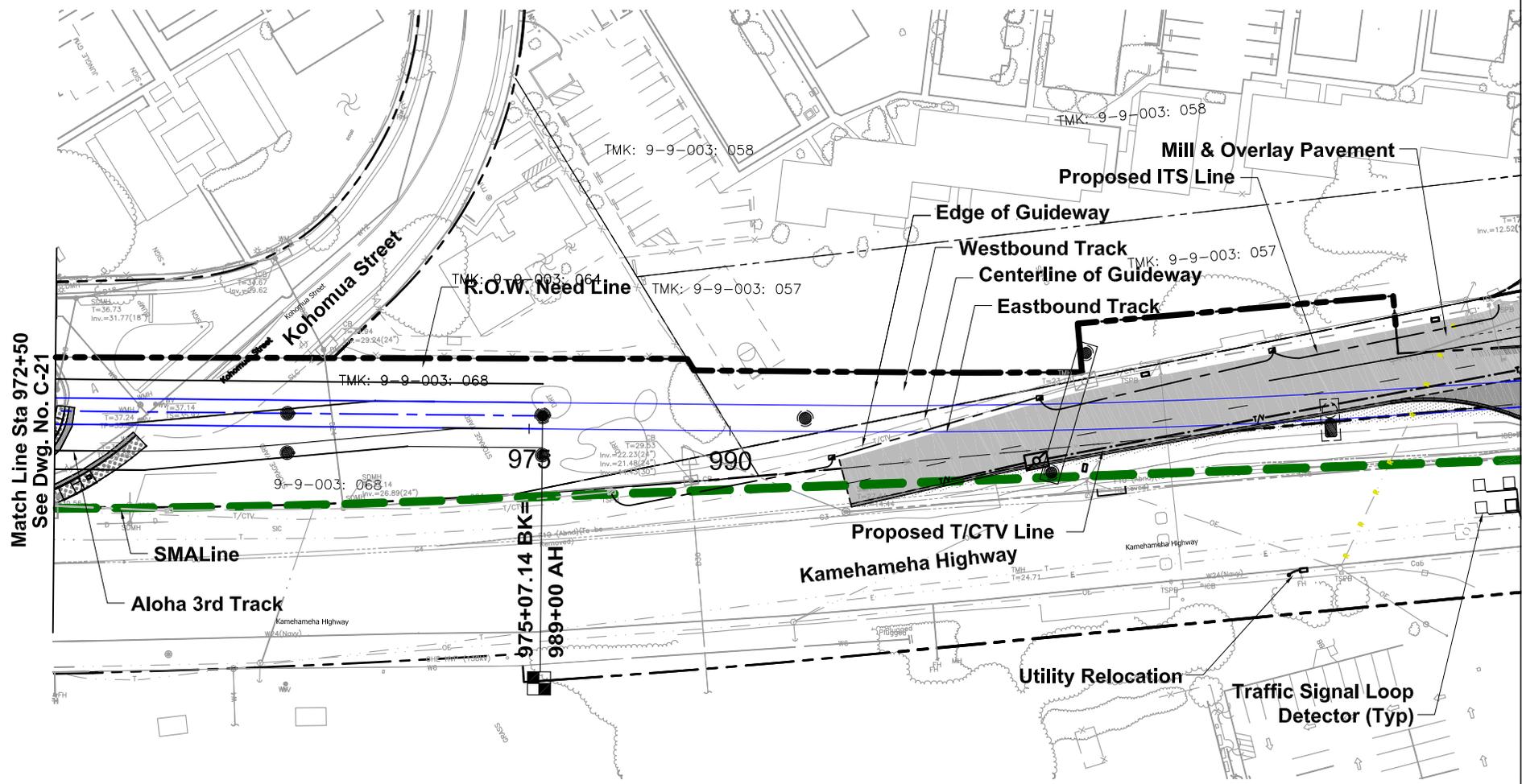
**HONOLULU  
RAIL TRANSIT PROJECT**

**SPECIAL MANAGEMENT AREA  
AREA C  
PLAN**

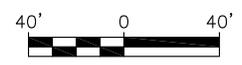
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Drawing No:  
**C-21**

Date:  
5-20-2013



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See Dwg. No. C-21



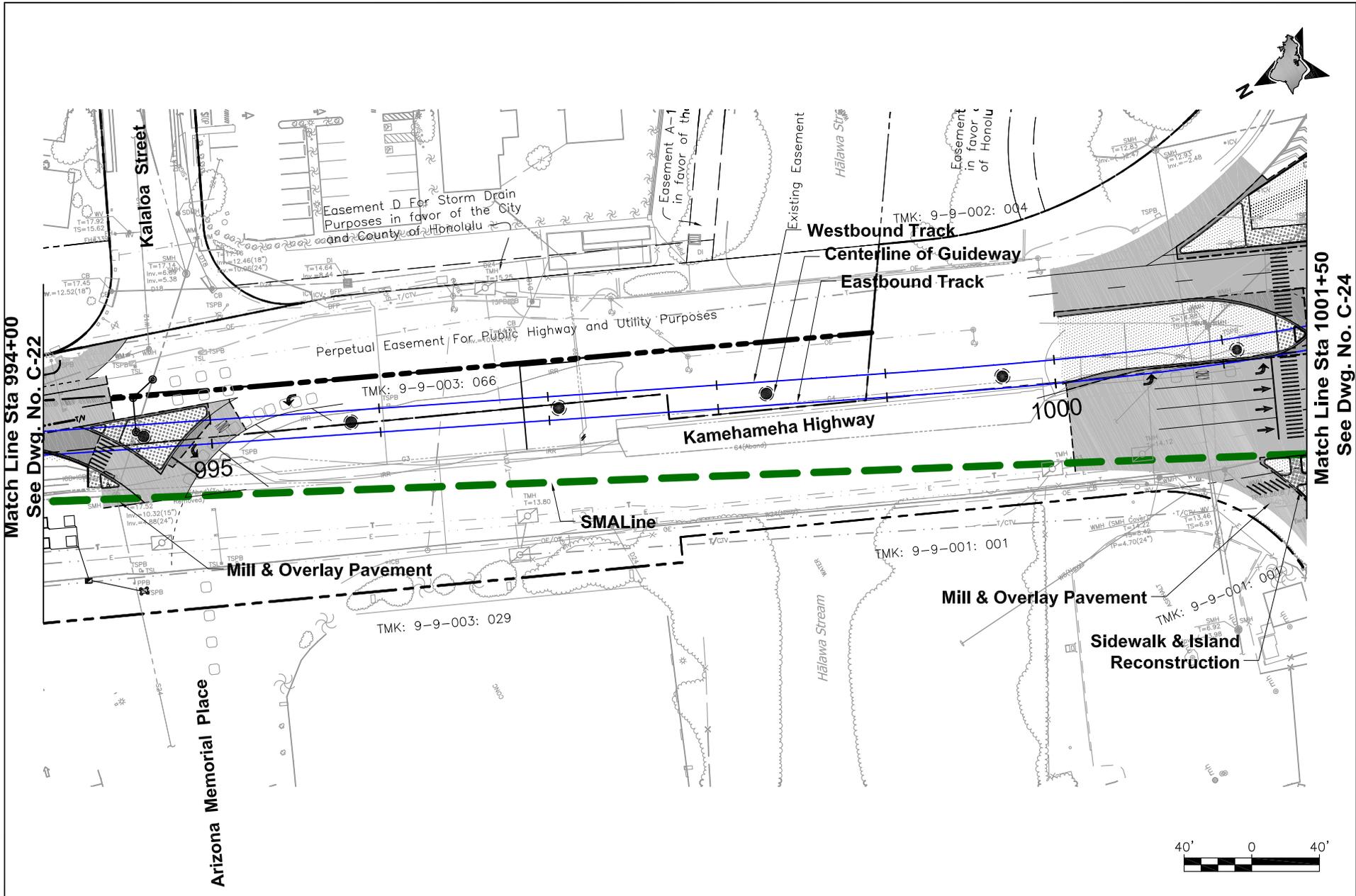
**HONOLULU  
RAIL TRANSIT PROJECT**

**SPECIAL MANAGEMENT AREA  
AREA C  
PLAN**

STA 972+50 TO STA 994+00

Drawing No:  
**C-22**

Date:  
5-20-2013



**HONOLULU  
RAIL TRANSIT PROJECT**

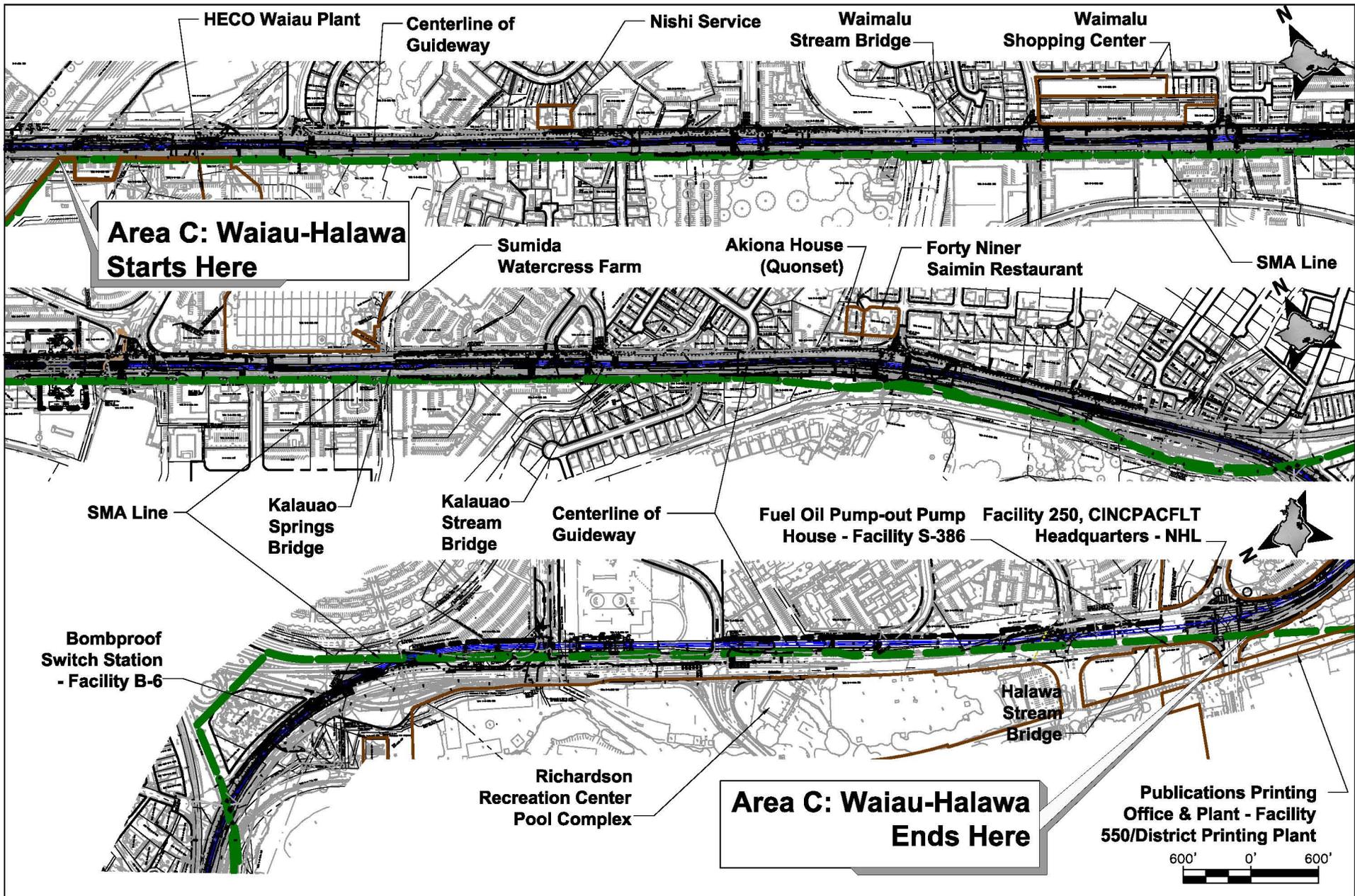
SPECIAL MANAGEMENT AREA  
**AREA C  
PLAN**

STA 994+00 TO STA 1001+50

Drawing No:  
**C-23**

Date:  
5-20-2013





**HONOLULU  
RAIL TRANSIT PROJECT**

**SPECIAL MANAGEMENT AREA  
AREA C  
HISTORIC RESOURCES**

STA 826+00 TO STA 1005+00

Drawing No:

**C-HR**

Date:

5-20-2013



**HONOLULU  
RAIL TRANSIT PROJECT**

**SPECIAL MANAGEMENT AREA  
AREA C  
FLOOD ZONES (2011)**

STA 826+00 TO STA 1005+00

Drawing No:

**C-FZ**

Date:

05-20-2013

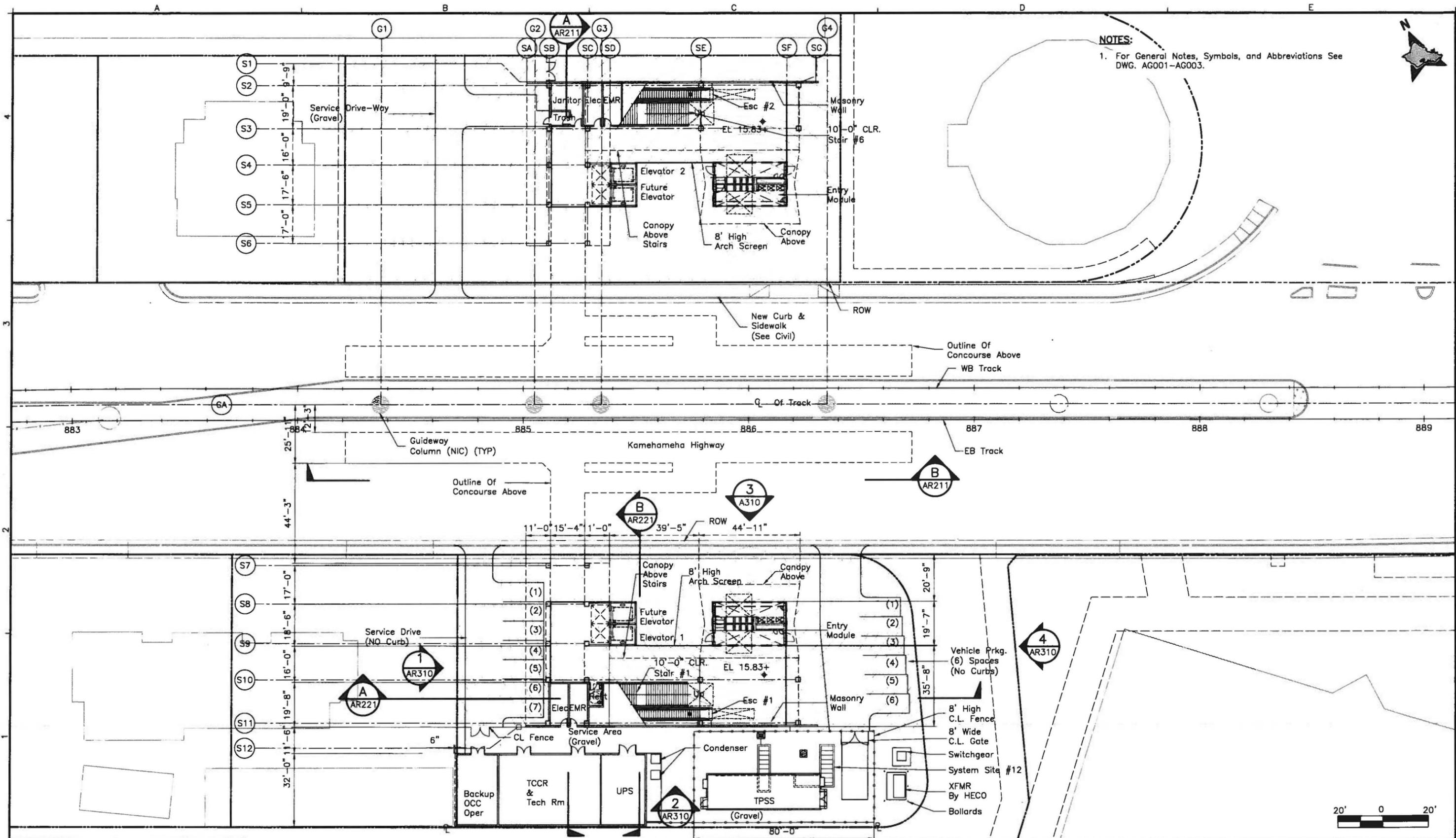
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Special Management Area Use Permit and  
Shoreline Setback Variance Application

Attachment C2:  
Updated Pearlridge Station Drawings

**Honolulu Rail Transit Project**  
June 2013

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**NOTES:**  
 1. For General Notes, Symbols, and Abbreviations See DWG. AG001-AG003.



Rev	By	Date	Description
A	JA	04-22-13	NTP 1B - Revision to PE Submission

Designed: M Peika  
 Drawn: M Saupan  
 Checked: J Arias  
 Approved: M Peika  
 Date: 04-19-13

**HONOLULU RAIL TRANSIT PROJECT**  
 HONOLULU AUTHORITY FOR RAPID TRANSPORTATION

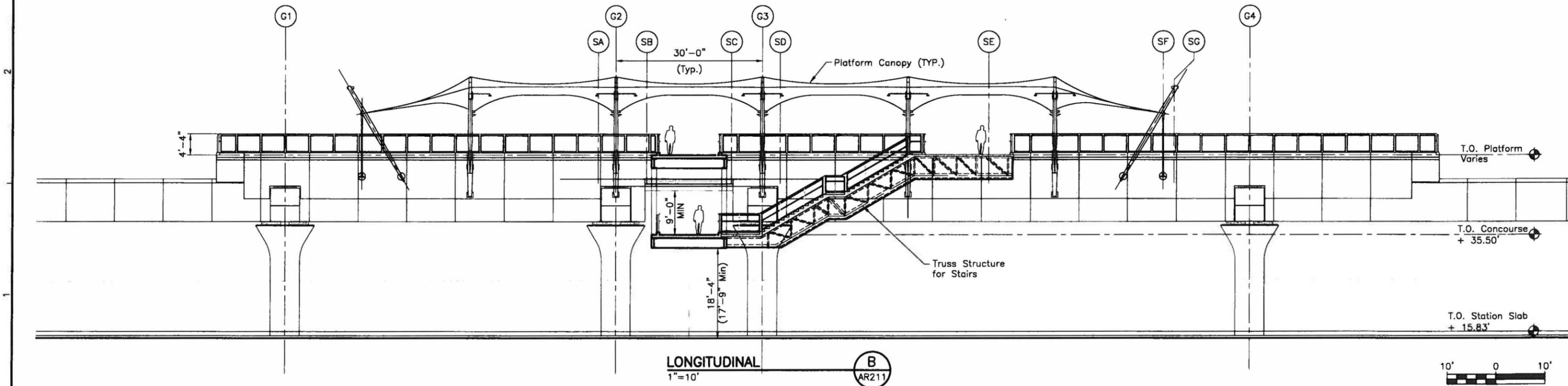
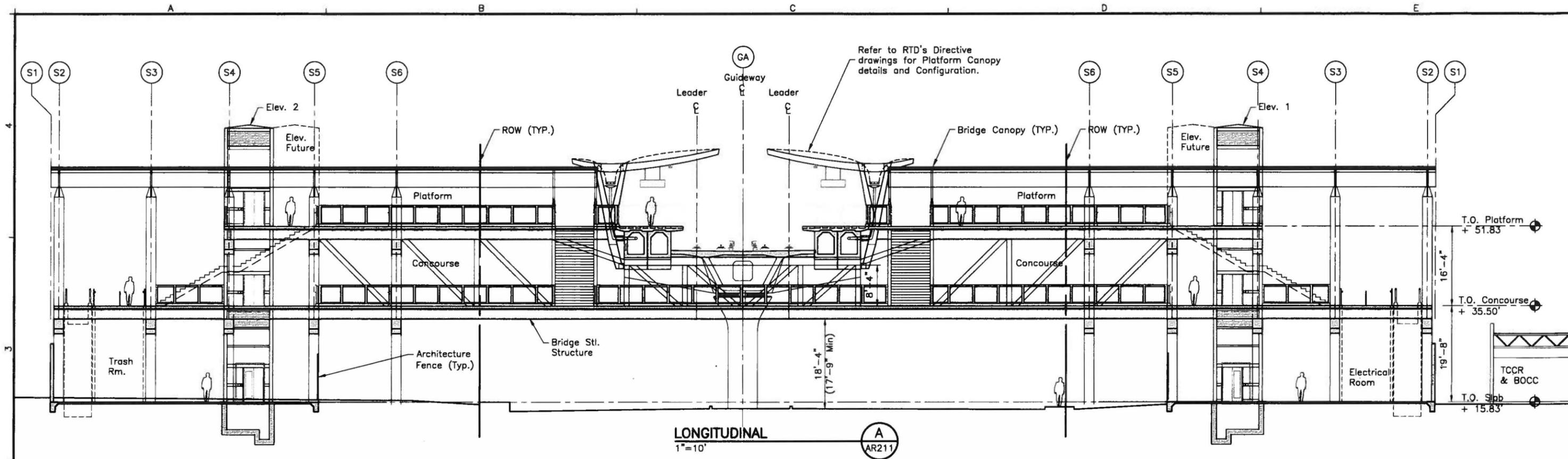
Prime Consultant: **Anil Verma Associates, Inc.**  
 841 Bishop Street, Suite 1888, Honolulu, HI 96813  
 Phone: (808) 369-8108 www.anilverma.com

Subconsultant:

**PEARLRIDGE STATION**  
**GROUND FLOOR PLAN**

Contract No.: SC-HRT-1200111  
 CADD File: SD1-H03-AR110  
 Drawing No: AR110 Rev.  
 Scale: 1" = 20'  
 Page No. 9 of 40





Rev	By	Date	Description
A	JA	04-22-13	NTP 1B - Revision to PE Submission

Designed: M Peika  
 Drawn: M Saupan  
 Checked: J Arias  
 Approved: M Peika  
 Date: 04-19-13

**HONOLULU RAIL TRANSIT PROJECT**  
 HONOLULU AUTHORITY FOR RAPID TRANSPORTATION

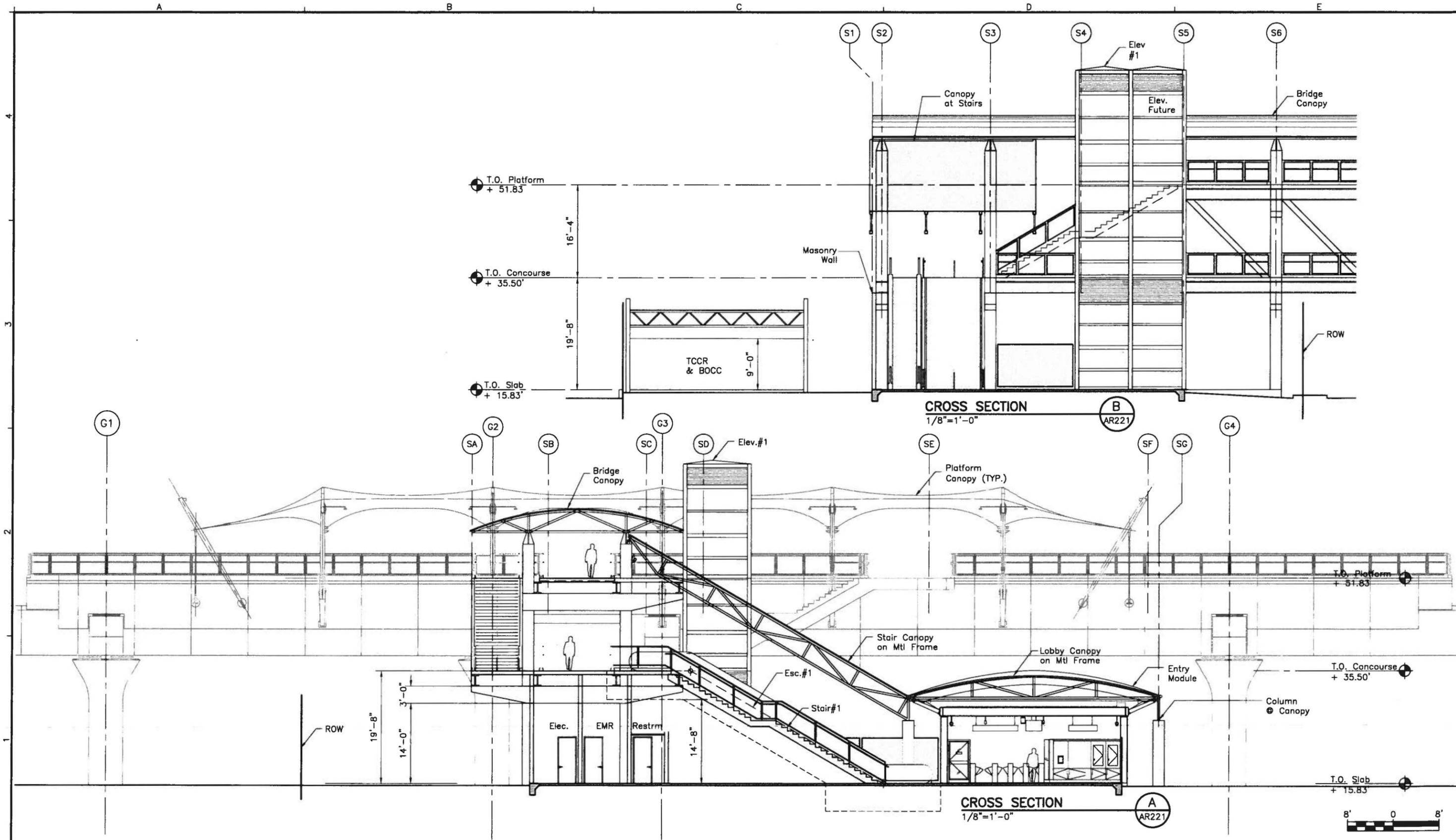
Prime Consultant: **Anil Verma Associates, Inc.**  
 841 Bishop Street, Suite 1888, Honolulu, HI 96813  
 Phone: (808) 369-8108 www.anilverma.com

Subconsultant:

For reduced prints, original page size in inches: 0 1 2 3 4

**PEARLRIDGE STATION**  
**LONGITUDINAL SECTIONS**

Contract No.: SC-HRT-1200111  
 CADD File: SD1-H05-AR211  
 Drawing No: AR211 Rev. A  
 Scale: 1" = 10'  
 Page No. 8 of 40



Rev	By	Date	Description
A	JA	04-22-13	NTP 1B - Revision to PE Submission

Designed:	M Peika
Drawn:	M Saupan
Checked:	J Arias
Approved:	M Peika
Date:	04-19-13

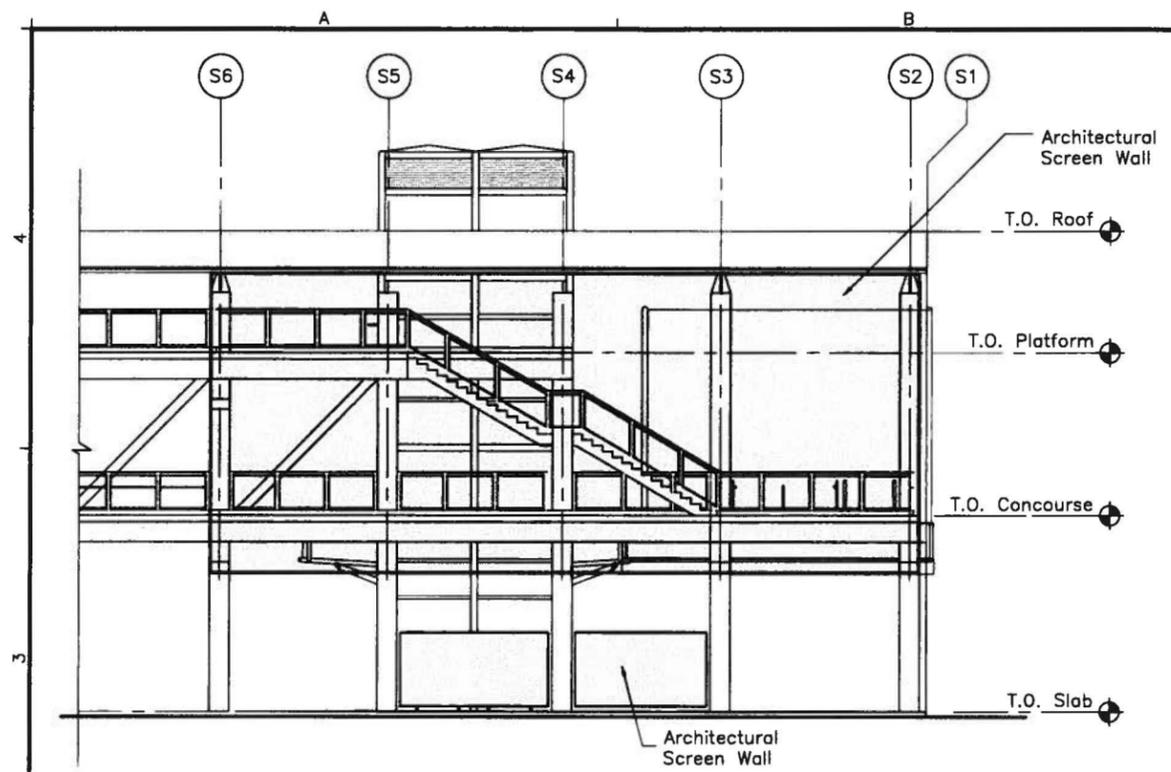
**HONOLULU RAIL TRANSIT PROJECT**  
HONOLULU AUTHORITY FOR RAPID TRANSPORTATION

Prime Consultant:	Subconsultant:
<b>Anil Verma Associates, Inc.</b>	
841 Bishop Street, Suite 1888, Honolulu, HI 96813 Phone: (808) 369-8108 www.anilverma.com	

For reduced prints, original page size in inches: 0 1 2 3 4 5 6 7 8 9 10

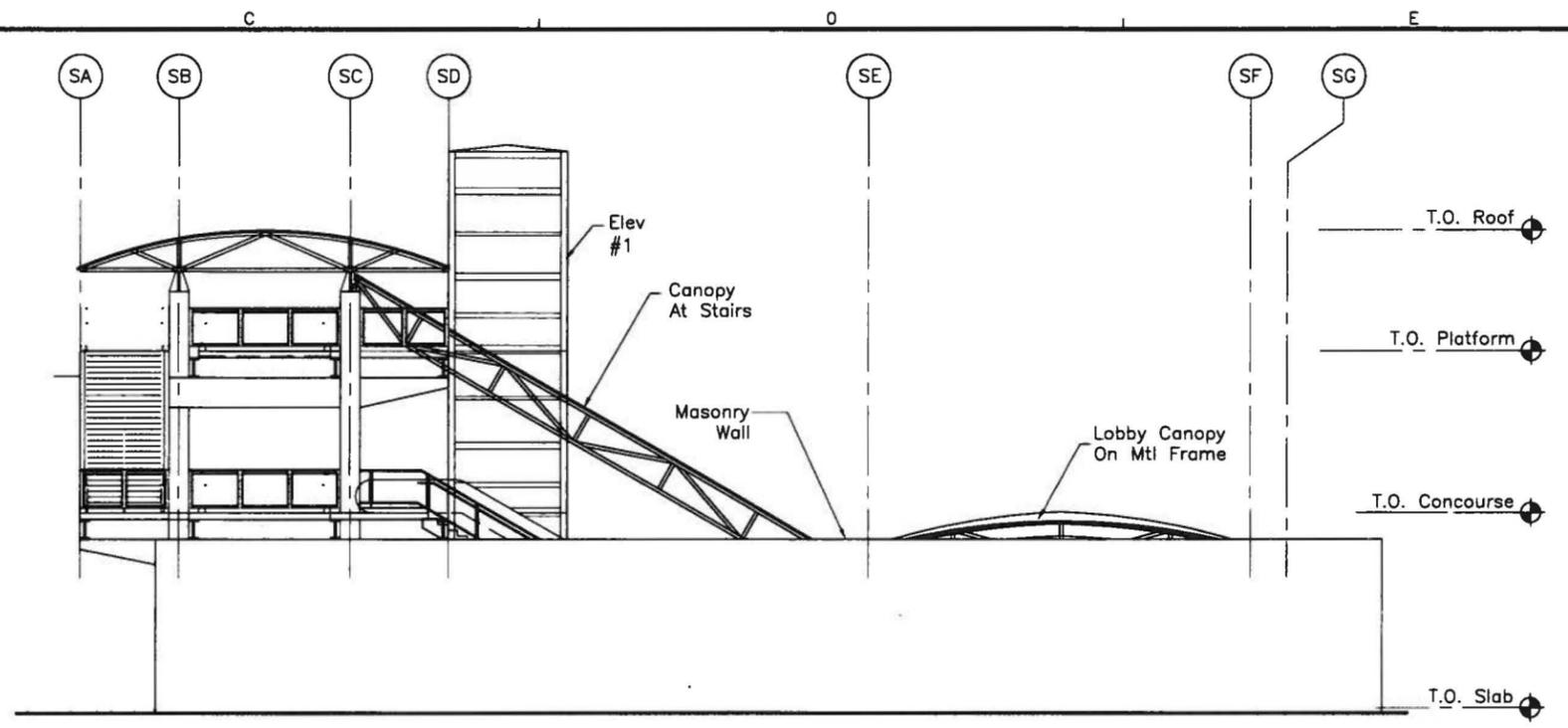
**PEARLRIDGE STATION**  
**CROSS SECTIONS**

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Drawing No: AR221	Rev. A
Scale: 1/8" = 1'-0"	
Page No. 9 of 40	



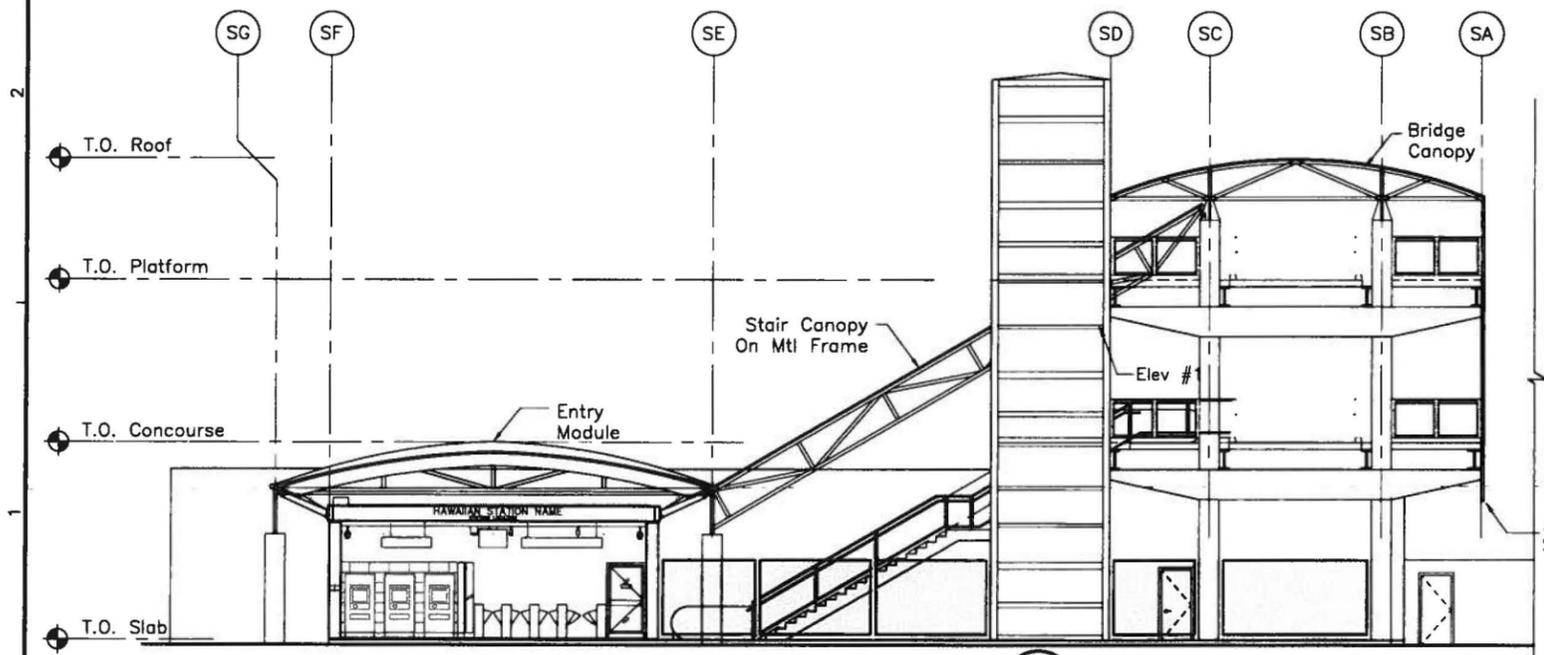
**WEST ELEVATION**  
1"=10'

1 AR110  
AR120  
AR130



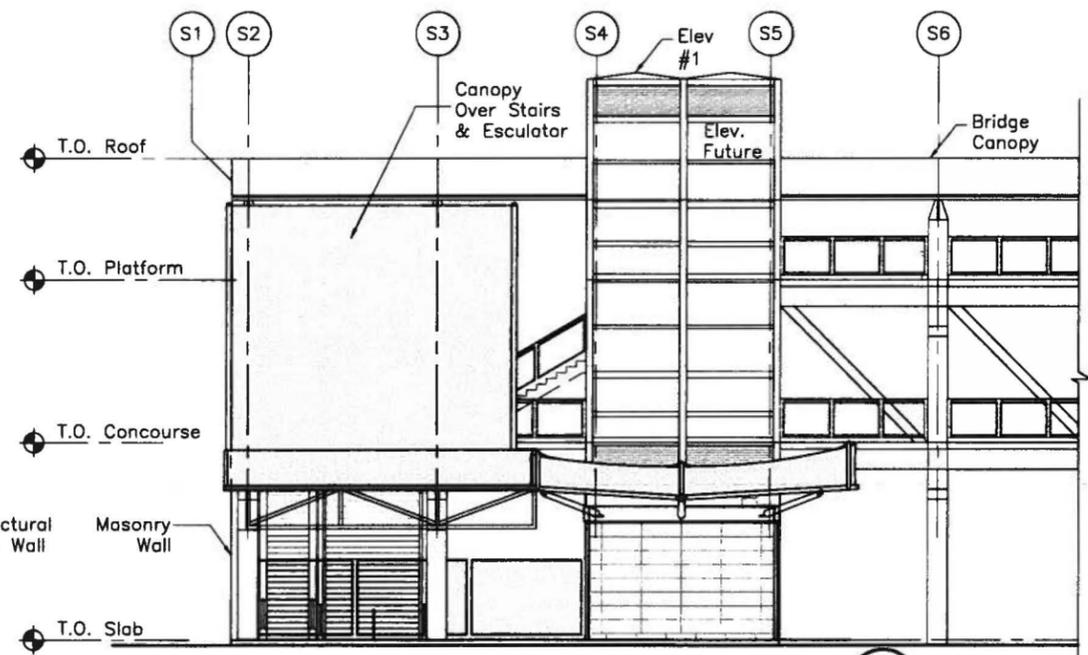
**SOUTH ELEVATION**  
1"=10'

2 AR110  
AR120  
AR130



**NORTH ELEVATION**  
1"=10'

3 AR110  
AR120  
AR130



**EAST ELEVATION**  
1"=10'

4 AR110  
AR120  
AR130



Rev	By	Date	Description
A	JA	04-22-13	NTP 1B - Revision to PE Submission

Designed: M Peika  
 Drawn: M Saupan  
 Checked: J Arias  
 Approved: M Peika  
 Date: 04-19-13

**HONOLULU RAIL TRANSIT PROJECT**  
 HONOLULU AUTHORITY FOR RAPID TRANSPORTATION

Prime Consultant: **Anil Verma Associates, Inc.**  
 841 Bishop Street, Suite 1888, Honolulu, HI 96813  
 Phone: (808) 369-8108 www.anilverma.com

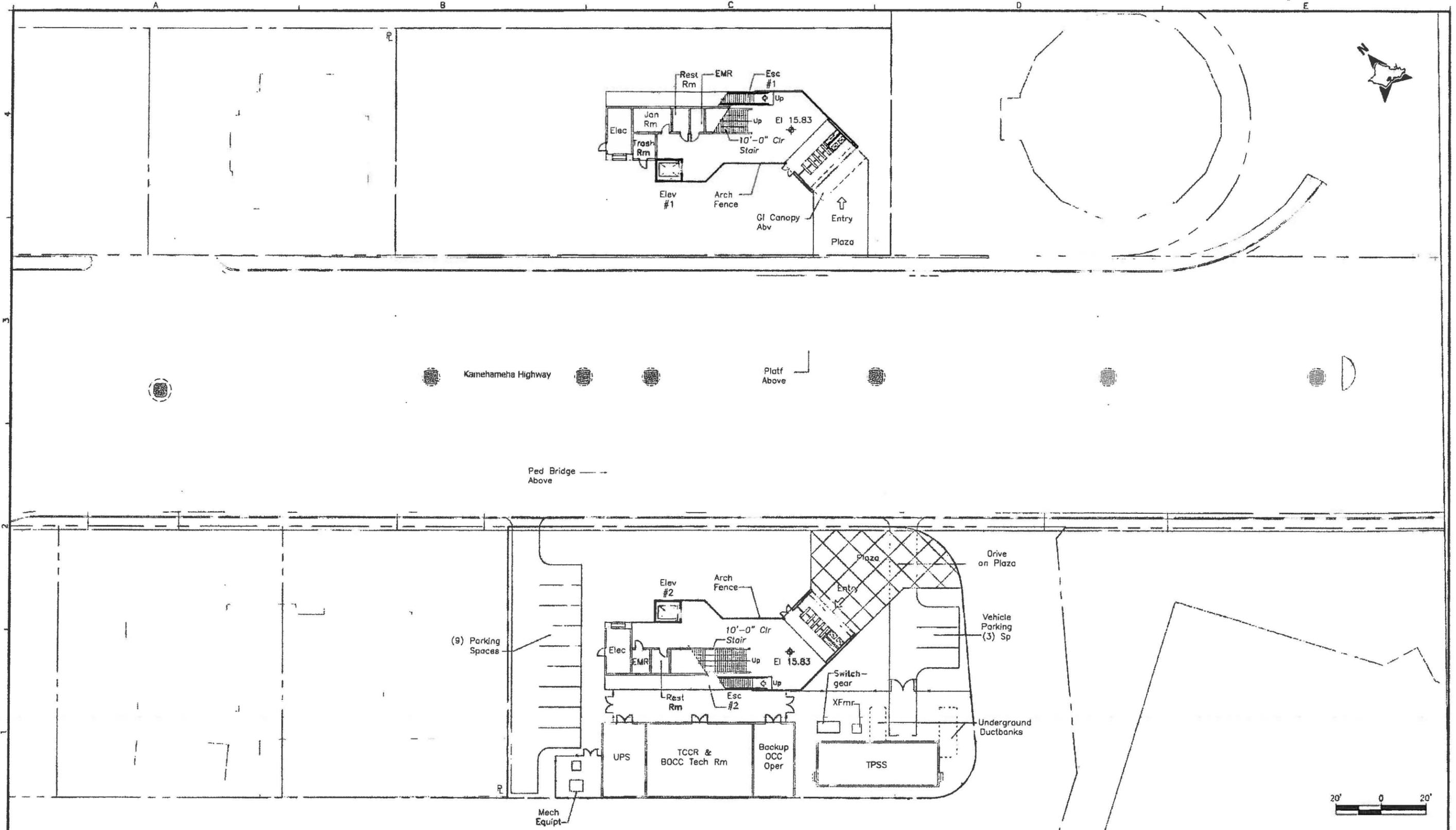
Subconsultant:

For reduced prints, original page size in inches: 0 1 2 3 4

**PEARLRIDGE STATION**  
**EXTERIOR ELEVATIONS**

Contract No.: SC-HRT-1200111  
 CADD File: SD1-H06-AR310  
 Drawing No: AR310 Rev. A  
 Scale: 1" = 10'  
 Page No. 10 of 40

Kaim Station Group - Contract Manager  
 Mike Yoshida  
 Cheryl



Rev	By	Date	Description

Designed: K Parmar  
 Drawn: M Pursley  
 Checked: T Man  
 Approved: K Parmar  
 Date: 08-06-12

**HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT**  
 HONOLULU AUTHORITY FOR RAPID TRANSPORTATION (HART)

Prime Consultant:  
**PARSONS BRINCKERHOFF**  
 1003 Bishop Street, Suite 2250 - Honolulu, HI 96813

Subconsultant:

For reduced prints, original page size in inches: 6 12 18 24 30 36 42 48 54 60 66 72 78 84 90 96 102 108 114 120

**PEARLRIDGE STATION**  
**GROUND LEVEL PLAN**  
**Option 2 - REV**

Contract No.: FD-340	Rev.
CADD File: SD1-H03-AR002.Opt.2.Rev.3	
Drawing No.: AR002	
Scale: 1"=40'	
Page No.:	of