DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 768-8000 • FAX: (808) 768-6041
DEPT. WEB SITE: www.honoluludpp.org • CITY WEB SITE: www.honolulu.gov

PETER B. CARLISLE
MAYOR

DAVID K. TANOUE
DIRECTOR

ROBERT M. SUMITOMO
DEPUTY DIRECTOR

(LK)

NOTICE OF APPLICATION AND PUBLIC HEARING

This is to inform you that we are reviewing an application for a Special Management Area (SMA) Major Use Permit to allow the construction of the Honolulu High-Capacity Transit Corridor (HHCTC) Project. The total guideway length will be about 20 miles, about 1.6 miles of which lie within the SMA, which requires a Major SMA permit. See the enclosed map showing the portions of the rail alignment in the SMA, including a description of the proposed work.

APPLICANT:	City and County of Honolulu, Department of Transportation Services
LANDOWNER:	Various
AGENT:	City and County of Honolulu, Department of Transportation Services, Rapid Transit Division (DTS-RTD)
LOCATION:	See attached map.
TAX MAP KEY:	1-1-3: 3, 4, 6, 138; 9-4-1; 9-4-8: 30; 9-4-11; 9-4-11: 37, 61; 9-6-1: 1; 9-6-3:1; 9-8-9: 5, 11, 14, 15, 16, 17, 20; 9-8-14: 5, 6, 10, 12; 9-8-15: 45; 9-9-3; 9-9-12
FILE NO.:	2010/SMA-57
ACCEPTANCE DATE:	December 15, 2010

In accordance with Revised Ordinances of Honolulu (ROH), Chapters 25, the Department of Planning and Permitting (DPP) will conduct two public hearings regarding this application on the following dates and locations:

- Wednesday, January 5, 2011 at 10 a.m., at the Aloha Stadium Hospitality Room, 99-500 Salt Lake Boulevard, Aiea, Hawaii 96701; and

- Thursday, January 6, 2011 at 10 a.m., at the Keehi Lagoon Hall (Disabled American Veterans), 2685 North Nimitz Highway, Honolulu, Hawaii 96819.

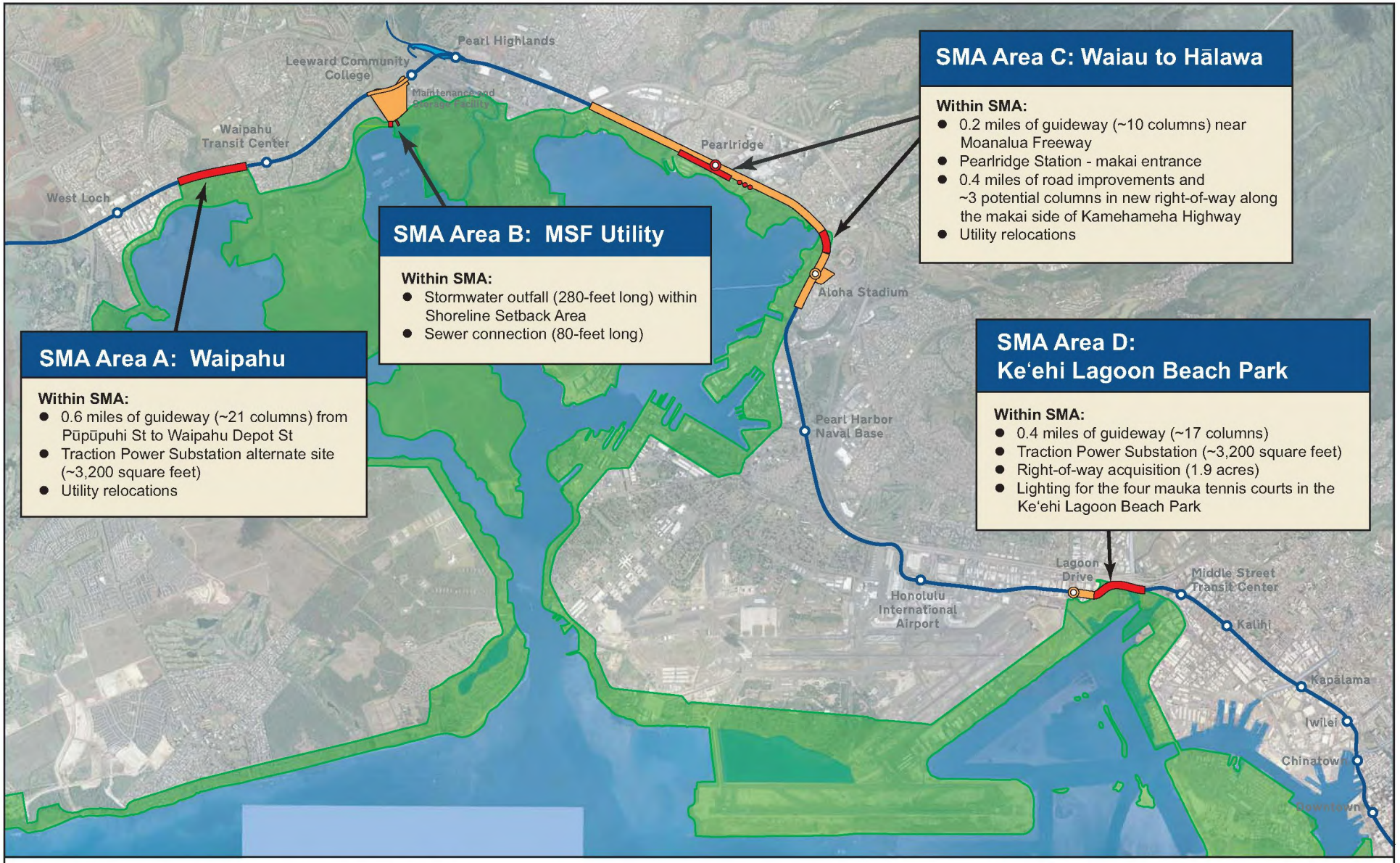
The public hearing will also be advertised in the Honolulu Star-Advertiser. All interested persons are invited to attend. Any disabled persons requiring special assistance should contact the DTS-RTD at least two working days prior to the scheduled hearing at 566-2299 for details.

You may review the application material at the DPP, Permit and Zoning Records Access, First Floor, Frank F. Fasi Municipal Building, 650 South King Street, during office hours, 7:45 a.m. to 4:30 p.m., Monday through Friday. The application material is also available at www.honolulutransit.org. We have attached a map of the proposed project's location as a reference.

Those persons desiring to testify may register prior to the public hearing at the public hearing site and are encouraged to submit one copy of their testimony in writing. Attendance at the public hearing is not necessary to submit testimony. Written testimony which is received by the DPP at the above address prior to the public hearing will be considered in the evaluation of the application.

Should you have any questions regarding the project, please contact Lynne Kauer of our staff at 768-8011 and refer to the above file number.

Attachment (location map)



LOCATION MAP - SPECIAL MANAGEMENT AREA

Honolulu High-Capacity Transit Corridor Project

TAX MAP KEY(S): Varies
FOLDER NO.: 2010/SMA-57

Date Prepared: December 2010
Prepared by: Department of Planning & Permitting, City and County of Honolulu
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Map Legend

- Within SMA
- Adjacent to SMA
- Outside SMA
- SMA Area

Vicinity Map

SITE
N
0 0.25 0.5 1 Mile

CITY AND COUNTY OF HONOLULU
DEPARTMENT OF PLANNING & PERMITTING
650 South King Street
Honolulu, Hawaii 96813

LAND USE PERMITS DIVISION MASTER APPLICATION FORM

Additional data, drawings/plans, and fee requirements are listed on a separate sheet titled "Instructions for Filing". *PLEASE ASK FOR THESE INSTRUCTIONS.*

All specified materials described in the "Instructions for Filing" and required fees must accompany this form; incomplete applications will delay processing. You are encouraged to consult with Zoning Division staff in completing the application. Please call the appropriate phone number given in the "Instructions for Filing."

Please print legibly or type the required information.

SUBMITTED FEE: $ N/A (C&C Project)

PERMIT/APPROVAL REQUESTED (Check one or more as appropriate):

Cluster:
- ☐ Agricultural
- ☐ Country
- ☐ Housing

Conditional Use Permit:
- ☐ Minor ☐ Major

☐ **Existing Use**: _____ (Indicate Type of Use)

☐ **Minor Shoreline Structures Permit**

☐ **Modify Approved Permit**: _____ (Indicate Reference File No.)

☐ **Plan Review Use**

Planned Development:
- ☐ Housing
- ☐ Commercial (WSD Only)
- ☐ Resort (WSD Only)

☐ **Shoreline Setback Variance**

Special District Permit:
- ☐ Minor ☐ Major

_____ (Indicate District)

☐ Downtown Height >350 Feet

Special Management Area Use Permit:
- ☐ Minor ☑ Major

☐ **Variance** from LUO Sec.(s): _____

☐ **Waiver** from LUO Sec.(s): _____

☐ **Zoning Adjustment**, LUO Sec.(s): _____

☐ **201G Project**

TAX MAP KEY(S): Please see attached list for TMKs and all related information requested.
LOT AREA: _____
ZONING DISTRICT(S): _____ **STATE LAND USE DISTRICT**: _____
STREET ADDRESS/LOCATION OF PROPERTY: _____

RECORDED FEE OWNER:
Name (& title, if any) _____
Mailing Address _____
Phone Number _____
Signature _____

PRESENT USE(S) OF PROPERTY/BUILDING: _____

PROJECT NAME (if any): Honolulu High-Capacity Transit Corridor Project (HHCTCP)

APPLICANT:
Name Wayne Y. Yoshioka
Mailing Address City and County of Honolulu - DTS
650 S. King St., 3rd Floor, Honolulu, HI 96813
Phone Number (808) 768-8303
Signature _____

AUTHORIZED AGENT/CONTACT PERSON:
Name Kenneth Toru Hamayasu
Mailing Address DTS-Rapid Transit Division
1099 Alakea Street, 17th Floor
Phone Number 768-8344
Signature _____

REQUEST/PROPOSAL (Briefly describe the nature of the request, proposed activity or project):
SMA: Some elements and portions of the overall 20-mile Project will be constructed within the SMA boundary, as discussed in the attached application.

Conclusion:
The construction of the Project has been determined to be in the public interest.

POSSE JOB NO. _____

DPP - C:\TEMP\USEFORM2.WPD/POSSE Doc. No. 17990 (REV. November 30, 2001)

SMA: Within the Special Management Area (SMA), the Project will result in work within the following parcels.

TMK	Lot Area (acres)	Zoning District	State Land Use District	Street Address or Location of Property	Recorded Fee Owner and Contact	Present Use of Property or Building
SMA A						
N/A				Farrington Highway ROW	State Department of Transportation, Highways Division 869 Punchbowl Street Honolulu, HI 96813 (808) 587-2150	Transportation – Highway
N/A				Pahu Street ROW	City and County of Honolulu, Department of Transportation Services 650 South King Street, 3rd Floor Honolulu, HI 96813 (808) 768-8303	Transportation – Street
9-4-011:037	1.116	R-7.5	Urban	94-103 Hula Street	Kuiee Napahuela Estate 2338 Akalakala Street Pearl City, HI 96782	Residential
9-4-011:061	0.047	R-7.5	Urban	NA	State of Hawai'i Department of Land and Natural Resources 1151 Punchbowl Street Honolulu, HI 96813	Undeveloped
SMA B						
9-4-008:030	3.103	A-2	Urban	Makai of Leeward Community College and mauka of the Pearl Harbor Bike Path at Middle Loch.	City and County of Honolulu, Department of Parks and Recreation 1000 Uluohia Street, Suite 309 Kapolei, HI 96707 (808) 768-3003	Vacant
9-6-003:001	3.25	P-2	Urban	A portion of the Pearl Harbor Bike Path	United States of America, Department of the Navy 258 Makalapa Drive, Suite 100 Pearl Harbor, HI 9860-3134	Trail/Bike Path
9-6-001:001	148.328	P-2	Urban	Makai of the Pearl Harbor Bike Path	United States of America, Department of the Navy	Vacant
SMA C						
N/A				Kamehameha Highway ROW	State Department of Transportation, Highways Division 869 Punchbowl Street Honolulu, HI 96813 (808) 587-2150	Transportation – Highway

TMK	Lot Area (acres)	Zoning District	State Land Use District	Street Address or Location of Property	Recorded Fee Owner and Contact	Present Use of Property or Building
9-8-009:020	2.137	IMX-1	Urban	98-33 Kamehameha Highway	Honolulu Ltd. and Magba Inc. 3660 Waialae Avenue #400 Honolulu, HI 96816	Commercial businesses
9-8-009:011	3.278	IMX-1	Urban	98-51 Kamehameha Highway	Healani Land Company P.O. Box 17658 Honolulu, HI 96817	
9-8-009:014	0.2296	I-2	Urban	98-69 Kamehameha Highway	Continental Investment Co. P.O. Box 488 Aiea, HI 96701	
9-8-009:015	0.2755	I-2	Urban	98-73 Kamehameha Hwy	Continental Investment Co.	
9-8-009:016	0.2755	I-2	Urban	98-75 Kamehameha Hwy	Continental Investment Co.	
9-8-009:017	0.5583	I-2	Urban	98-77 Kamehameha Hwy	Continental Investment Co.	
9-8-009:005	2.024	I-2	Urban	98-85 Kamehameha Hwy	Continental Investment Co.	
9-8-014:005	3.4192	I-2	Urban	98-107 Kamehameha Hwy	Bernice Pauahi Bishop Estate Trust P.O. Box 3466 Honolulu, HI 96801	
9-8-014:010	0.8219	I-2	Urban	98-115 Kamehameha Hwy	Bernice Pauahi Bishop Estate Trust	
9-8-014:012	0.4053	I-2	Urban	98-121 Kamehameha Hwy	Bernice Pauahi Bishop Estate Trust	
9-8-014:006	2.0468	B-2	Urban	98-199 Kamehameha Hwy	Nohea Santimer, 2444 Huene Street Honolulu, HI 96817 Brion Zablan, 3330 Keanu Street Honolulu, HI 96816 Ray Lindsey, PO Box 1482 Hilo, HI 96721 Noelani Cobb-Adams, 2444 Huene St. Honolulu, HI 96817 Jill Owens, 2502 Waolani Ave. Honolulu, HI 96817 Others	
9-8-015:045	1.3097	B-2	Urban	98-199 Kamehameha Hwy	Bernice Pauahi Bishop Estate Trust	
SMA D						
1-1-003:006	69.171	P-2	Urban		State Department of Transportation, Airports Division 400 Rodgers Boulevard, 7th Floor Honolulu, HI 96819 (808) 838-8600	Ke'ehi Lagoon Beach Park (managed by City DPR)
1-1-003:004	11.087	P-2	Urban		State Department of Transportation, Airports Division	Pacific War Memorial
1-1-003:003	5.166	P-2	Urban		State Department of Transportation, Airports Division	Vacant/Paint-ball

TMK	Lot Area (acres)	Zoning District	State Land Use District	Street Address or Location of Property	Recorded Fee Owner and Contact	Present Use of Property or Building
1-1-003:138	5	P-1	Urban		State Department of Transportation, Airports Division	Moanalua Stream

APPLICATION MATERIALS

Introduction

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INTRODUCTION

The Honolulu High-Capacity Transit Corridor Project is within or adjacent to the Special Management Area (SMA) in four distinct areas along Oahu's southern coast. The *Honolulu High-Capacity Transit Corridor Project, Final Environmental Impact Statement/Section 4(f) Evaluation*, dated June 2010 (hereinafter, "Final EIS") describes the Project; the Final EIS is included with this application as Attachment 1. The City and County of Honolulu and the Federal Transit Administration (FTA) identified the "Fixed Guideway Alternative from East Kapolei to Ala Moana Center via the Airport", as the preferred alternative for meeting the Purpose and Need over other alternatives, including the No Build Alternative. This alternative is now referred to as "the Project" and includes the construction and operation of a 20-mile fixed guideway rail system. It begins in East Kapolei near the University of Hawai'i at West O'ahu and proceeds via Farrington Highway and Kamehameha Highway, to Aolele Street serving the Airport, to Dillingham Boulevard, to Nimitz Highway, to Halekauwila Street, and ending at Ala Moana Center. See Chapter 2 of the Final EIS (Attachment 1) for additional information about the alternatives considered and description of the Project.

In order to most efficiently discuss each of the four individual areas, this permit application has been prepared as one package with four separate and distinct discussions, one for each of the four areas. The four areas in the SMA are illustrated in Figure 1 and discussed briefly in the subsections below.

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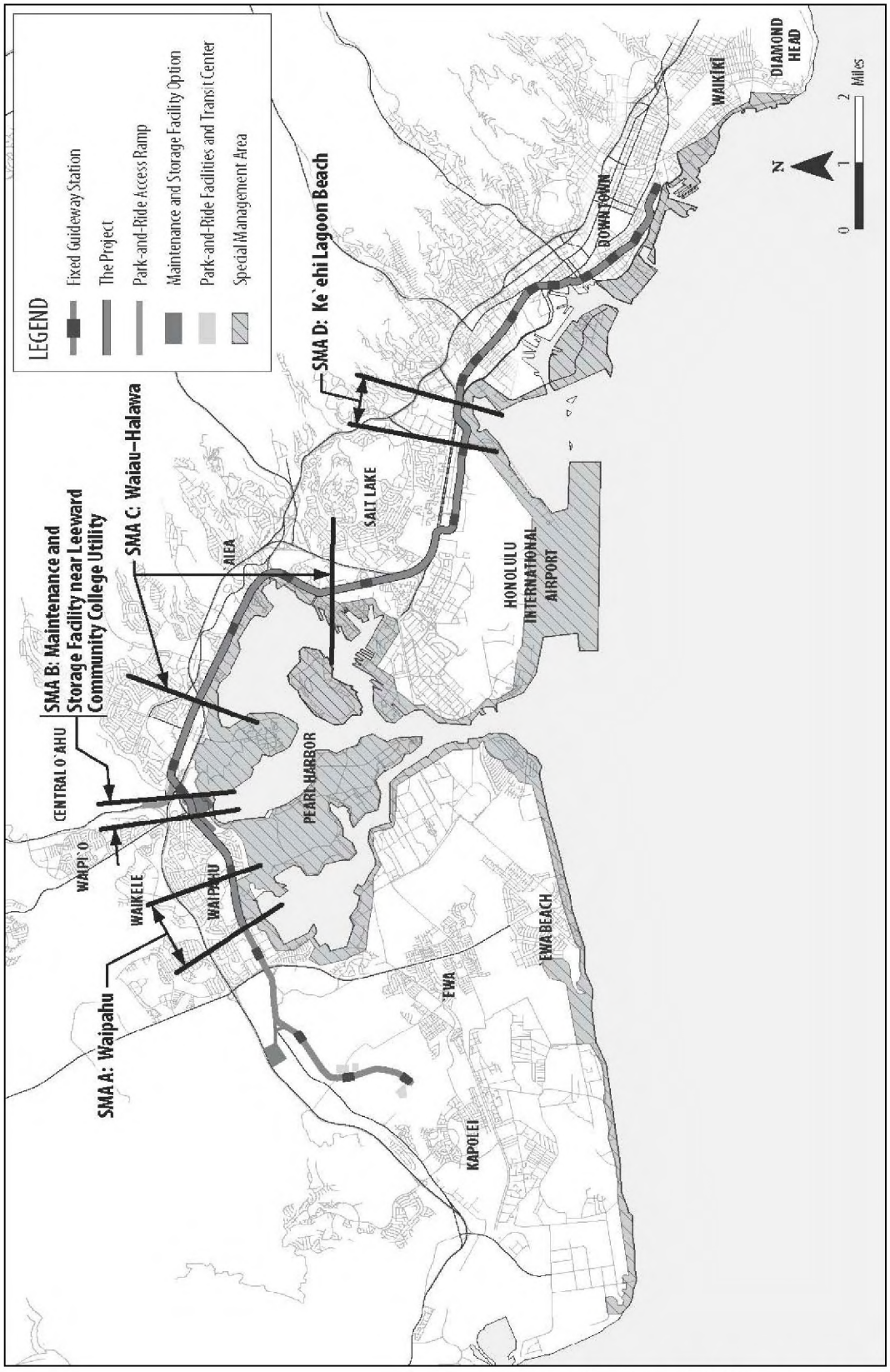

Figure 1: Special Management Areas

Attachments to this application that are numbered (e.g., 1, 2) are common to all four of the SMA discussions and provided once here as attachments rather than multiple times in each attachment. Listed below are the pertinent sections of the SMA Application (numbering is not incorrect, just not continuous), with their corresponding attachments.

Attachments specific to an individual area are titled alphabetically (e.g., A, B, through H) and included within that area's individual discussion.

SMA A: Waipahu

This SMA contains the portion of the Project along Farrington Highway from the vicinity of Pupupuhi Street to the vicinity of Waipahu Depot Road. Attachments A and B go with the SMA A discussion.

SMA B: Maintenance and Storage Facility near Leeward Community College Utility

This SMA contains a stormwater outfall and a sewer line for the proposed maintenance and storage facility (MSF). The MSF is adjacent to the SMA. Attachments C and D go with the SMA B discussion.

SMA C: Waiau – Hālawa

This SMA contains the portion of the Project along Kamehameha Highway from the area between the H-1 overpass and Kaluamoi Drive to the vicinity of Arizona Street/Hālawa Drive. In much of this area, the Project is adjacent to the SMA, but in a few locations Project components are within the SMA. Attachments E and F go with the SMA C discussion.

SMA D: Ke'ehi Lagoon Beach Park

This SMA contains the portion of the Project from where the fixed guideway enters Ke'ehi Lagoon Beach Park. Within the SMA, the Project will traverse both Ke`ehi Lagoon Beach Park and the Pacific War Memorial Site near their mauka property lines. Attachments G and H go with the SMA A discussion.

I. GENERAL INFORMATION

A. Applicant (Name, Address, Phone)

City and County of Honolulu
Department of Transportation Services (DTS)
650 South King Street, 3rd Floor
Honolulu, HI 96813
(808) 768-8303

C. Agent

City and County of Honolulu
Department of Transportation Services Rapid Transit Division (DTS-RTD)

AR00077411

1099 Alakea Street, Suite 1700
Honolulu, HI 96813
(808) 768-8344

F. Agencies Consulted in Making Assessment

The Applicant consulted with various Federal, State, and Local agencies during preparation of the Final EIS. Final EIS (Attachment 1) Section 8.2.2 describes government and agency coordination for the Project and Section 8.4.2 describes agency coordination during Preliminary Engineering/EIS phase of the Project. The Final EIS is provided as Attachment 1 to this application; however, this bound copy of the Final EIS does not include the appendices in hard copy. Please see Appendix F of the Final EIS, provided in hard copy in Attachment 2, for the record of agency correspondence and coordination.

1. Delegation of Authority Letters

The Federal Transit Administration (FTA) delegated to the Department of Transportation Services (DTS) the authority to work directly with State of Hawai‘i, Department of Land and Natural Resources (DLNR), State Historic Preservation Division (SHPD) on FTA's behalf, pursuant to 36 CFR 800.3 – 800.4.

2. Cooperating Agencies

The following agencies are cooperating agencies for the NEPA EIS process:

- U.S. Department of Defense, U.S. Army Garrison - Hawai‘i
- U.S. Department of Defense, U.S. Naval Base Pearl Harbor
- U.S. Department of Transportation, Federal Aviation Administration
- U.S. Department of Transportation, Federal Highway Administration
- State of Hawai‘i, Department of Transportation

3. Participating Agencies

The following agencies are participating agencies for the NEPA EIS process:

- U.S. Department of Defense, U.S. Army Corps of Engineers
- U.S. Department of Agriculture, National Resource Conservation Service
- U.S. Department of Homeland Security, U.S. Coast Guard – 14th Coast Guard District
- U.S. Department of the Interior, Fish and Wildlife Service
- U.S. Department of the Interior, National Park Service
- U.S. Department of the Interior, U.S. Geological Survey Pacific Island Ecosystems Research Center
- U.S. Environmental Protection Agency

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- U.S. Department of Homeland Security, Federal Emergency Management Agency
- State of Hawai‘i Department of Accounting and General Services
- State of Hawai‘i Department of Business, Economic Development, and Tourism
- State of Hawai‘i Department of Defense
- State of Hawai‘i Department of Education
- State of Hawai‘i Department of Hawaiian Home Lands
- State of Hawai‘i Department of Health
- State of Hawai‘i Department of Land and Natural Resources
- State of Hawai‘i Department of Land and Natural Resources, State Historic Preservation Division
- State of Hawai‘i, Hawai‘i Community Development Authority
- State of Hawai‘i, Office of Environmental Quality Control
- State of Hawai‘i, Office of Hawaiian Affairs
- University of Hawai‘i
- O‘ahu Metropolitan Planning Organization

4. Section 106 Consulting Parties

In addition to consultation with the State Historic Preservation Officer (SHPO), the City also consulted with organizations and agencies with concerns regarding archaeological, cultural, and historic areas. This consultation included Hawaiian civic clubs that may have an interest in the Project. Letters sent by the FTA initiated an ongoing consultation process with the following groups (Section 106 consulting parties) to identify resources, consider project effects and develop mitigation to limit adverse effects of the Project. The following parties were consulted during the Section 106 process:

- Advisory Council on Historic Preservation
- U.S. Navy (U.S. Naval Base Pearl Harbor)
- Historic Hawai‘i Foundation
- National Park Service
- National Trust for Historic Preservation
- University of Hawai‘i Historic Preservation Certificate Program
- American Institute of Architects
- Hawai‘i Community Development Authority
- Office of Hawaiian Affairs
- O‘ahu Island Burial Council

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- Hui Malama I Na Kupuna O Hawai‘i Nei
- Royal Order of Kamehameha
- The Ahahui Ka‘ahumanu
- The Hale O Na Ali‘i O Hawai‘i
- The Daughters and Sons of the Hawaiian Warriors
- Association of Hawaiian Civic Clubs
- Ali‘i Pauahi Hawaiian Civic Club
- Ka Lei Maile Ali‘i Hawaiian Civic Club
- King Kamehameha Hawaiian Civic Club
- Nānāikapono Hawaiian Civic Club
- Hawaiian Civic Club of Wahiawa
- Ahahui Siwila Hawai‘i O Kapolei Hawaiian Civic Club
- Waikīkī Hawaiian Civic Club
- Princess Ka‘iulani Hawaiian Civic Club
- Waianae Hawaiian Civic Club
- Merchant Street Hawaiian Civic Club
- Prince Kuhiō Hawaiian Civic Club
- Pearl Harbor Hawaiian Civic Club
- Hawaiian Civic Club of ‘Ewa-Pu‘uloa
- Kalihi-Palama Hawaiian Civic Club
- Hawaiian Civic Club of Honolulu

Between July 28, 2009, and November 13, 2009, FTA and the City invited all consulting parties to participate in a series of meetings to develop a Programmatic Agreement (PA) (see Final EIS (Attachment 1) Section 4.16, Archaeological, Cultural, and Historic, and Appendix H, Section 106 of the National Historic Preservation Act draft Programmatic Agreement). Since the publication of the draft PA in the Final EIS, the Section 106 signatories FTA, SHPO, and Advisory Council on Historic Preservation (ACHP), in coordination with the invited signatories, have participated in additional meetings. FTA, SHPO, and ACHP will finalize the draft PA prior to the Record of Decision (ROD). FTA will distribute the executed PA to the Section 106 consulting parties and invite their signature as concurring parties to the PA. Appendix F of the Final EIS (Attachment 2) includes Section 106 correspondence prior to June 2010.

5. Other Agency Coordination

In addition to the coordinating with the agencies and organizations listed in #2, 3, and 4 above, coordination occurred with the following agencies during the EIS process:

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- City and County of Honolulu Department of Design and Construction
- City and County of Honolulu Department of Parks and Recreation
- State of Hawai‘i Disability and Communication Access Board
- State of Hawai‘i Office of Environmental Quality Control
- State of Hawai‘i Commission on Transportation
- U.S. Department of Commerce, National Marine Fisheries Service
- U.S. Department of Homeland Security, U.S. Immigrations and Customs Enforcement

6. Neighborhood Boards

The following Neighborhood Boards have taken positions on the Project:

- Makakilo/Kapolei/Honokai Hale Neighborhood Board No. 34 supports rail
- Waipahu Neighborhood Board No. 22 passed a motion supporting rail
- Mililani Neighborhood Board No. 35 passed a resolution supporting rail
- Pearl City Neighborhood Board No. 21 supports rail
- ‘Aiea Neighborhood Board No. 20 supports rail
- Āliamanu-Salt Lake Neighborhood Board No. 18 passed a motion supporting rail, including service to Salt Lake
- ‘Ewa Neighborhood Board No. 23 has not determined whether it would support rail; previously supported the rubber tire bus system
- Ala Moana-Kaka‘ako Neighborhood Board No. 11 passed a motion opposing rail and supporting an expanded bus system
- Downtown Neighborhood Board No. 13 has expressed they would support rail.

7. General Public Outreach

The Project public involvement efforts began with the Project’s Alternatives Analysis phase. The EIS preparation notice for this Project was published in the Office of Environmental Quality Control (OEQC) Environmental Notice on December 8, 2005. The Final EIS (Attachment 1) Chapter 8 “Comments and Coordination” describes the overall program for public outreach.

Public involvement activities for the Project are on-going. As of September 2010, these public involvement efforts have included:

- 787 Speakers Bureau presentations given, Coffee Hours held, Community Displays and Events attended, and Transit Advisory Committee meetings attended
- 420 Neighborhood Board meetings attended

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- 80 Community Update presentations, Mayor's Town Meetings, and Rapid Transit Division Workshops held
- 195 TV and/or radio appearances made
- 5 Public Hearings held on the Draft EIS:
  - December 6, 2008 from 9 to 11 a.m. at Kapolei Hale
  - December 8, 2008 from 6 to 8 p.m. at the Neal S. Blaisdell Exhibition Hall
  - December 9, 2008 from 6 to 8 p.m. at Salt Lake District Park
  - December 10, 2008 from 6 to 8 p.m. at the Filipino Community Center
  - December 11, 2008 from 6 to 8 p.m. at Bishop Museum

8. Legislative Background

The major legislative milestones pertaining to the Project are described as follows and in the Final EIS (Attachment 1) Chapter 2:

- January 6, 2007: After review of the *Alternatives Analysis Report* and consideration of public comments, the City Council selected the fixed guideway transit system alternative, including an alignment extending from Kapolei to the University of Hawai'i (UH) at Mānoa with a connection to Waikīkī as the Locally Preferred Alternative on December 22, 2006. Ordinance 07-001 made the City Council's selection law on January 6, 2007. The ordinance authorized the City to proceed with planning and engineering a fixed guideway transit system within these limits and following the alignment defined in the ordinance. The City considered performance of each alternative, ability to meet purpose and need, and ability to avoid and minimize impacts to the natural and built environment in the identification of the. Locally Preferred Alternative. The selection eliminated the Transportation System Management and Managed Lane Alternatives from further consideration.
- February 27, 2007: The City Council passed City Council Resolution 07-039, which directed the first construction project to be fiscally constrained and to extend from East Kapolei to Ala Moana Center via Salt Lake Boulevard.
- May 7, 2008: The City Council passed Resolution 08-97, CD1, approving the revision of the 'Ewa, Central O'ahu, and PUC Public Infrastructure Maps to include symbols for the rapid transit corridor, transit stations, support facilities, and park-and-ride lots for the Project.
- August 20, 2008: The City Council adopted Resolution 08-166, CD1, FD1, initiating an amendment to the Charter regarding transit, specifically asking voters: "Shall the powers, duties, and functions of the city, through its director of transportation services, include establishment of a steel wheel on steel rail transit system?"
- November 4, 2008: Voters approved the charter question on rail by a margin of 53 percent to 47 percent of the ballots cast. The Charter Amendment authorizes the City to proceed with a "steel rail" system.

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January 28, 2009: The City Council passed Resolution 08-261, which authorizes planning, engineering, design, and construction of the Airport Alternative. This resolution superseded Resolution 07-039.

II. DESCRIPTION OF THE PROPOSED ACTION

A. General Description

The Final EIS is a joint NEPA and Hawai'i Revised Statutes (HRS) Chapter 343 document. The information in this application is based on the information and environmental evaluation of Project impacts in the Final EIS and supporting technical reports referenced therein.

1. Brief Narrative Description of Entire Proposed Project

The Project will include the construction and operation of a grade-separated fixed guideway transit system between East Kapolei and Ala Moana Center. From Wai'anae to Koko Head (west to east), the guideway will follow North-South Road and other future roadways to Farrington Highway. Proposed station locations and other project features in this area are shown in Figure 2. The guideway will follow Farrington Highway Koko Head on an elevated structure and continue along Kamehameha Highway to the vicinity of Aloha Stadium (Figure 3).

The guideway will continue past Aloha Stadium along Kamehameha Highway makai to Nimitz Highway and turn makai onto Aolele Street. It will then follow Aolele Street, Ualena Street, and Waiwai Loop Koko Head to reconnect to Nimitz Highway near Moanalua Stream and continue to the Middle Street Transit Center (Figure 4). Koko Head of Middle Street, the guideway will follow Dillingham Boulevard to the vicinity of Ka'aahi Street and then turn Koko Head to connect to Nimitz Highway near Iwilei Road (Figure 5).

The guideway will follow Nimitz Highway Koko Head to Halekauwila Street, then proceed along Halekauwila Street past Ward Avenue, where it will transition to Queen Street. The guideway will cross from Waimanu Street to Kona Street in the vicinity of Pensacola Street. The guideway will run above Kona Street to Ala Moana Center. The total guideway length for the Project will be approximately 20 miles.

The system will use steel wheel on steel rail technology. The vehicles could either be manually operated by a driver or fully automated (driverless). Operating goals for system speed and reliability require that the entire system operate in exclusive right-of-way, with no potential for vehicle or pedestrian conflicts. All parts of the guideway will be elevated, except near Leeward Community College, where it will be at-grade in exclusive right-of-way.

In addition to the guideway, the Project will require the construction of 21 stations and supporting facilities, including the following:

- A maintenance and storage facility (MSF)—The preferred site option for the MSF is a 44-acre vacant site in Waipahu near Leeward Community College (Figure 3). A 41-acre site in the proposed Ho'opili development in 'Ewa is an alternative site (Figure 2). The facility will be located at-grade in a fenced area. Either site will include four buildings, maintenance facilities, a vehicle wash area, storage track, a

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system control center, and employee parking. The buildings will have a combined size of approximately 130,000 square feet and be up to 3 to 4 stories tall. Roadways and parking will require approximately 300,000 square feet of new paved area.

- Park-and-ride facilities—There will be four park-and-ride facilities, including East Kapolei with 900 spaces (Figure 2), UH West O‘ahu with 1,000 spaces (Figure 2), Pearl Highlands with 1,600 spaces in a multi-level structure (Figure 3), and Aloha Stadium with 600 spaces (Figure 4).
- Transit centers—Transit centers would be constructed as stand-alone facilities or as part of park-and-ride lots at UH West O‘ahu, West Loch, Pearl Highlands, and Aloha Stadium. Transit centers are facilities that accommodate transfers between fixed guideway, bus, bicycle, and walking.
- Traction power substations (TPSS)—The Project will require TPSS approximately every mile to provide vehicle propulsion and auxiliary power. Each substation will require an approximately 3,200-square-foot area to access and maintain an approximately 40-foot-long, 16-foot-wide, and 12-foot-high painted steel enclosure that houses transformers, rectifiers, batteries, and ventilation equipment. Each TPSS will be connected to the existing power grid. Many substations will be incorporated into fixed guideway stations. At other locations, the substations may be enclosed within a fence.

The Final EIS (Attachment 1) Sections 2.4 and 2.5 provide additional detail about the Project, including its features, technology, and operating parameters.

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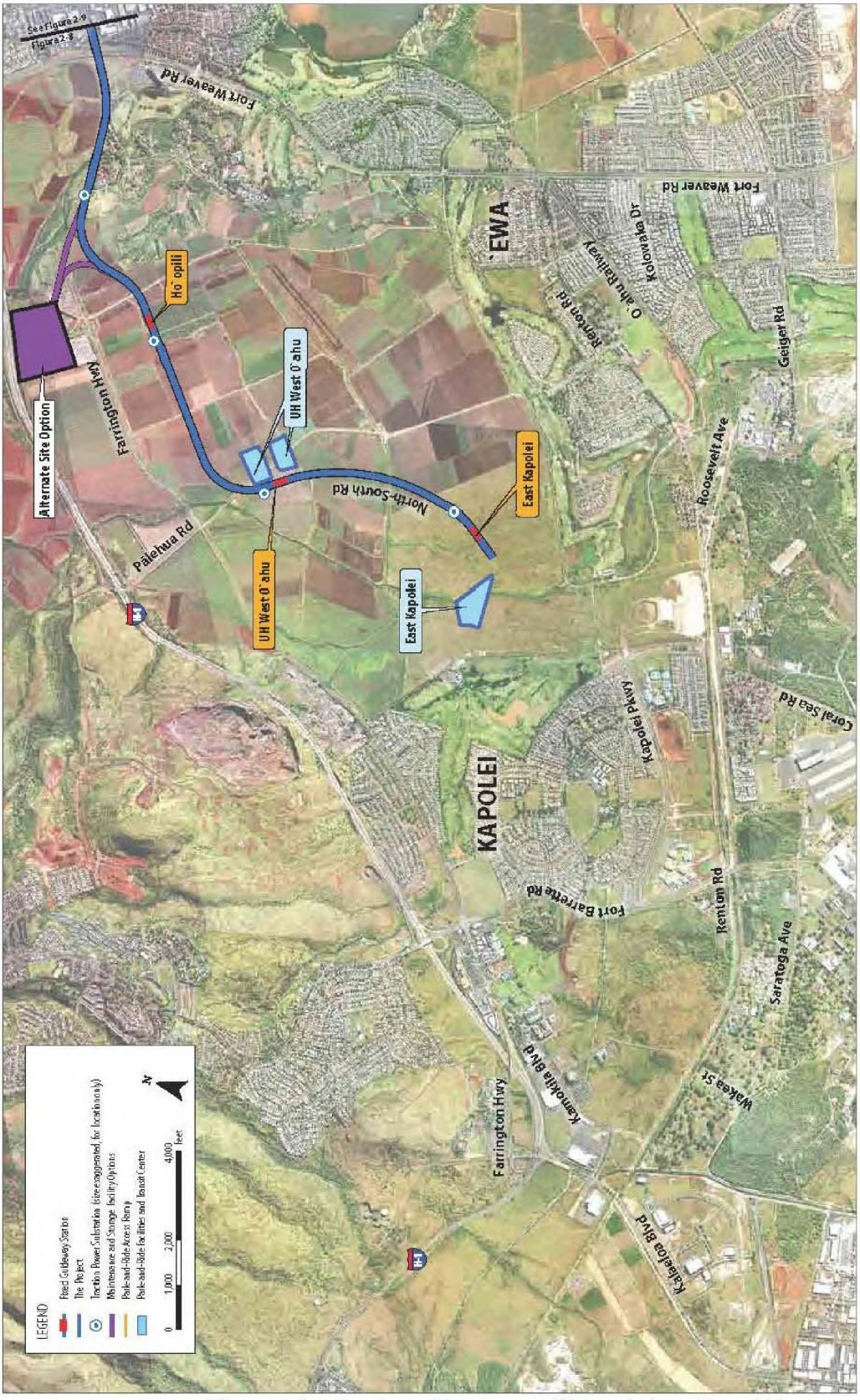

Figure 2: Project Features (Kapolei to Fort Weaver Road)

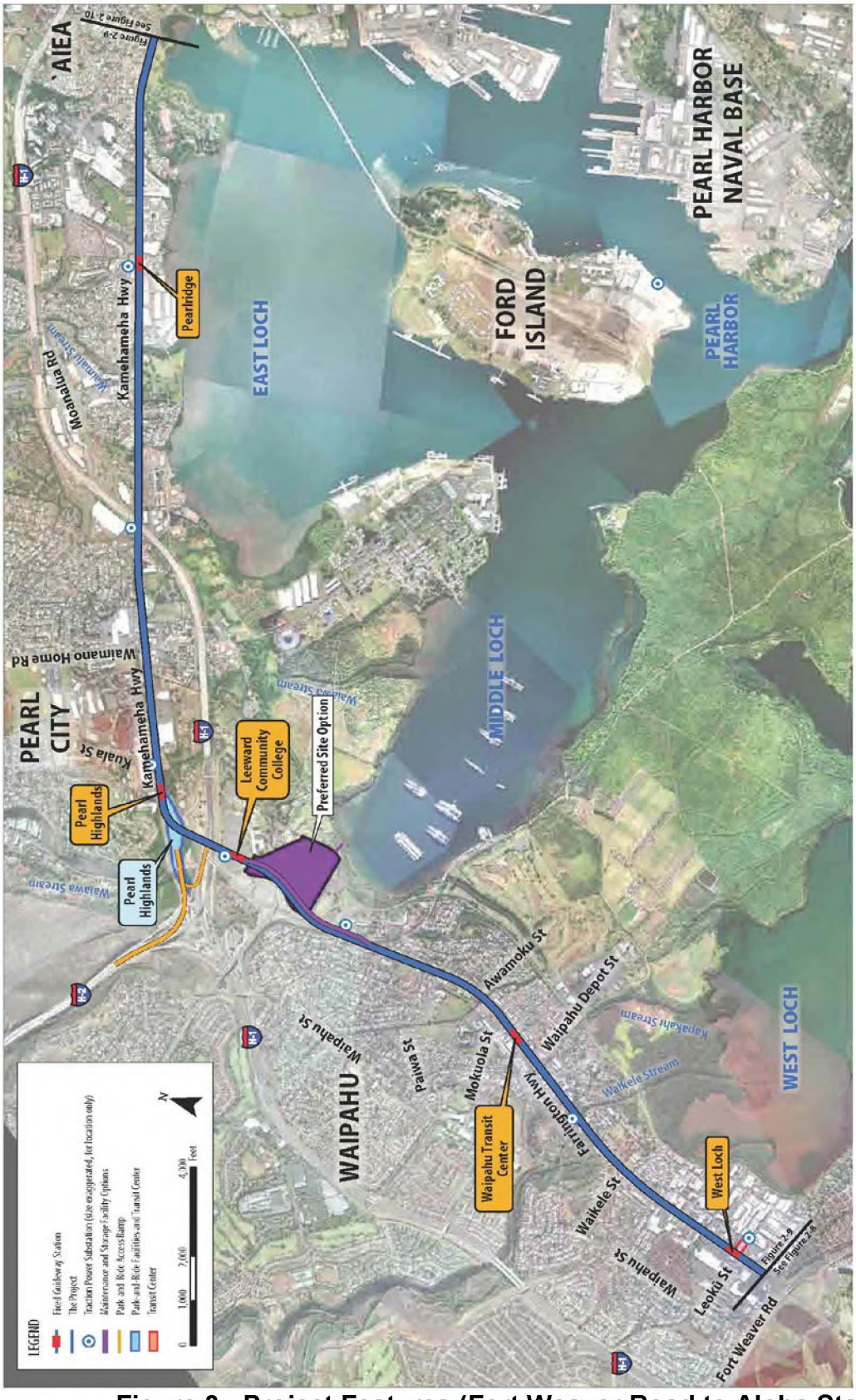

Figure 3: Project Features (Fort Weaver Road to Aloha Stadium)

Figure 4: Project Features (Aloha Stadium to Kalihi)

Figure 5: Project Features (Kalihi to Ala Moana)

IV. PROJECT-WIDE IMPACTS

This section evaluates Project-wide impacts related to Coastal Zone Management objectives (HRS Section 205A-2) and the Special Management Area guidelines (ROH Section 25-3.2 and HRS Chapter 205A). Please see the individual SMA discussions for specific impacts of the Project in each of the four SMA locations.

Attachment 3 to this application is Appendix J from the Final EIS, *Relationship to Land Use Plans, Policies, and Controls*. It discusses the Coastal Zone Management Program in Section 1.3 and the Special Management Area in Section 2.6.

B. CZM Objectives

The Hawai‘i Coastal Zone Management (CZM) program was enacted in 1977 and codified in HRS Chapter 205A and is administered by the State of Hawai‘i Department of Business, Economic Development and Tourism (DBEDT) Office of Planning. The Hawai‘i CZM area encompasses the entire state, including all marine waters. The goals of the Hawai‘i CZM program are to:

- Protect valuable resources
- Preserve management options
- Ensure public access to beaches, recreational areas, and natural reserves

A full CZM consistency assessment will be reviewed by the DBEDT Office of Planning, the agency administering the State's CZM program, when the City applies for Federal grants and Federal permits.

The text in italics below is copied directly from HRS Section 205A-2, *Coastal Zone Management Program; Objectives and Policies*. The Project is consistent with the objectives and policies of the State's CZM program, as described in the following text.

1. *Recreational Resources*

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

The Project will not affect existing coastal recreational resources or their uses by the public. Overall, the Project will improve the availability of access to existing and future parks and recreational facilities along the alignment. Section 4.5 of the Final EIS (Attachment 1) describes the Project effect on parks and recreation areas.

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.*

Final EIS (Attachment 1) Section 4.16 provides the regulatory context that governs archaeological, cultural, and historic resources and identifies the historic properties eligible for the National Register of Historic Places. The City will comply with Federal and State

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archaeological, cultural, and historic preservation laws and regulations. There are 33 adverse effects on historic properties. A draft Programmatic Agreement was prepared (included in the Final EIS) 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 these resources. FTA, SHPO, and ACHP will finalize the draft PA prior to the ROD. FTA will distribute the executed PA to the Section 106 consulting parties and invite their signature as concurring parties to the PA.

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 identifies the protected mauka and makai views in the study corridor and identifies impacts and mitigation to those views. 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. View changes will be less notable from viewpoints where the project elements are smaller components of wider vistas or panoramic views that include the larger landscape. Generally, the project elements will not be dominant features in these views, which include the shoreline.

Final EIS (Attachment 1) Section 4.8.3 describes the mitigation measures for the Project. As part of the design process, DTS has developed specifications and design criteria to address the City's requirements for the Project. Guideway materials and surface textures will be selected in accordance with generally accepted architectural principles to achieve integration between the guideway and its surrounding environment. Landscape and streetscape improvements will mitigate potential visual impacts, primarily for street-level views. Other measures to address visual impacts of the Project are being developed through the station design and planning process. The initial station area plans and design guidelines were first developed with coordination between DTS and DPP. The next level of transit station design focuses on integrating individual neighborhood characteristics of the communities served by stations.

The following mitigation framework will be included with the Project to minimize negative visual effects and enhance the visual and aesthetic opportunities that it creates:

- Develop and apply design guidelines that will establish a consistent design framework for the Project with consideration of local context.
- Coordinate the Project design with City Transit Oriented Development (TOD) planning and DPP.
- Consult with the communities surrounding each station for input on station design elements.
- Consider specific sites for landscaping and trees during the final design phase when plans for new plantings will be prepared by a landscape architect. Landscape and streetscape improvements will serve to mitigate potential visual impacts.

The Coastal View Study (DLU 1987) inventories coastal views around O'ahu and recommends ways for the City to better manage development to preserve and enhance those views. It also considers the creation of new views. Transit users on the elevated guideway will have expansive

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panoramic views of the shoreline, except where blocked by trains traveling in the opposite direction, station structures, and multi-story buildings. These views will be similar to those from the street below but may be considered better due to the elevated perspective (as described in Section 4.8 of the Final EIS). As discussed in Appendix J of the Final EIS (Attachment 3), the City will minimize, where reasonable, portions of the Project that will substantially interfere with or detract from the line of sight toward the sea from the state highway nearest the coast.

Even with mitigation measures, some obstruction and changes to views will result in unavoidable adverse effects. These effects will be most noticeable where the guideway and stations are nearby or in the foreground of views. The degree of visual effect will vary with the alignment orientation and the height of the guideway, stations, and surrounding buildings and trees, along with the viewer's expectations of view quality. Although changes in visual resources or view planes and the viewer response will be significant in some areas, view changes are not likely to be obtrusive in wider vistas or regional panoramic views (i.e. view of the coast and open space) where the project elements serve as smaller components of the larger landscape.

4. *Coastal Ecosystems*

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

Portions of the study corridor are located in the SMA. An SMA permit will be obtained from the Department of Planning and Permitting for four areas, as described in Section 4.21 of the Final EIS.

The only project element in the Shoreline Setback Area will be the stormwater outfall from the preferred site option for the MSF near Leeward Community College that will drain into Pearl Harbor. Stormwater discharge into Pearl Harbor will meet water quality requirements for the estuary. Permanent impacts are discussed in Section 4.14.3 of the Final EIS, and temporary impacts during construction that could affect coastal water quality will be mitigated, as described in Section 4.18 of the Final EIS (Attachment 1). The Project will not impact coastal ecosystems.

5. *Economic Uses*

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

To accomplish the economic development objectives for Oahu's urban corridor, suitable infrastructure must be developed, as described in Section 4.3 of the Final EIS (Attachment 1). The Project provides public infrastructure improvements important to the State's economy.

6. *Coastal Hazards*

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

The Final EIS for the HHCTC Project indicated that the Project was not within a tsunami evacuation zone. Since the publication of the Final EIS, State Civil Defense has revised the maps. Based on the new maps, portions of the Project are now within the tsunami evacuation zone. The only portions of the project both within the SMA and within the tsunami evacuation zone are (a) a portion of the MSF stormwater outfall, and (b) a portion of the guideway centered on the crossing of the Moanalua Stream. Portions of the Project located in a tsunami evacuation

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zone and throughout the Project are being designed to applicable standards and specifications regarding storm weather, seismic events, and associated risks. The Project will not affect coastal erosion (City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. Honolulu High-Capacity Transit Corridor Project, Geology, Soils, Farmlands, and Natural Hazards Technical Report).

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. 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.*

Agencies, non-governmental groups, and the public have been engaged throughout the project planning process, as required by Federal and State laws, which are described in Chapter 8 of the Final EIS.

9. *Beach Protection*

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

The Project will not have a direct impact on Oahu's beaches and will not affect coastal erosion.

10. *Marine Resources*

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

The Project does not affect the sustainability of marine and coastal resources.

C. 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*;

The Project will not adversely affect public access to and along publicly owned or used beaches, recreation areas, and natural reserves. Once constructed, the Project will increase the mobility and improve options to access public recreation areas, such as public beaches and parks.

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Temporary modifications to access public recreation areas will be required for public safety during construction; however, public access will be maintained. Measures to minimize temporary impacts during construction of the Project are discussed in the Final EIS (Attachment 1) Section 3.5 Construction-related Effects on Transportation.

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

The Project will not affect access to public recreation areas. The Project is not within or adjacent to wildlife preserves. DTS will continue to coordinate with appropriate agencies during Final Design and construction to ensure that the Project will not affect public recreation areas. The Project will benefit recreation areas by providing additional mobility options in and near the SMA. Several stations will provide access to recreation areas within the SMA, including access to Ke'ehi Lagoon Beach Park and Pearl Harbor National Historic Landmark.

As discussed in Chapter 5 of the Final EIS (Attachment 1), Lagoon Drive Station will be located outside Ke`ehi Lagoon Park, approximately 350 feet `Ewa and one block mauka of the park entrance on Lagoon Drive and Ualena Street. The Project will provide transportation benefits to park users since the station will be located within walking distance. Hence, the Project will offer another transportation option for recreation users and spectators of events to access the park. The Pacific War Memorial Site is Koko Head of Ke`ehi Lagoon Beach Park and the transportation benefits to parks users are similar.

Impacts to public recreation areas within Ke'ehi Lagoon Park are discussed in c) 2) below.

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

DTS will ensure that proper containment, treatment, and disposal methods for solid and liquid wastes will be 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 Project will not have an adverse effect on water resources within the SMA. During construction (as describe in the Final EIS (Attachment 1) Section 4.18.10 Construction Phase Effects Water Resources), temporary Best Management Practices (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 all stormwater outfall structures associated with the Project and all downspouts that drain the guideway near State of Hawai'i Department of Health 303(d) listed impaired waters (*2006 State of Hawai'i Water Quality Monitoring and Assessment Report: Integrated Report to the U.S. Environmental Protection Agency and the U.S. Congress Pursuant to Section 303(d) and 305(b), Clean Water Act (PL 97-117)*). The Project will avoid or minimize impacts on recreational and scenic amenities where reasonable. The Project will not impact

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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*;

There will be no significant adverse environmental or ecological effect from the Project within the SMA 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 Final EIS Section 4.18.8 Construction Phase Effects Natural Resources documents the impacts and mitigation measures that are anticipated from construction and operation of the Project. 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;*

The Project is consistent with the objectives and policies set forth in Section 25-3.1 and area guidelines contained in HRS Section 205A-26.

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 Project is consistent with approved land use plans, policies, and controls. Section 4.2 of the Final EIS discusses land use consistency, and Appendix J of the Final EIS supports that discussion.

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 Project has been adequately planned and designed to the extent practical to minimize the risk from coastal hazards, including tsunamis. The project design meets the applicable standards and specifications regarding storm weather and construction in floodplains. Temporary and permanent BMPs will minimize the risk to coastal areas from erosion.

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

The Project will not impede public access to shoreline or beach areas and will increase mobility and, thereby, improve access to shoreline and beach areas. Additional information regarding mobility can be found in the Final EIS (Attachment 1) Section 3.4 Transportation Consequences and Mitigation. This section analyzes the effects of the Project on mobility, reliability, access and equity.

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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 dredging, filling, or otherwise altering any bay, estuary, salt marsh, river mouth, slough, or lagoon within the SMA, other than in Moanalua Stream as discussed in the Final EIS (Attachment 1) Section 4.14.3 Waters Environmental Effects and Consequences.

Two guideway support columns will be constructed in Moanalua Stream and will impact approximately 0.004 acre below the stream's ordinary high water mark. To avoid these impacts, different bridge construction techniques would be needed to clear span the 300-foot-wide stream. This stream is wider than the practical length limit for precast concrete girders (150 feet) predominately used to build the elevated guideway. Long spans using a different construction technique, such as balanced cantilever, to cross this stream could add $5 million to total project costs. In addition there are multiple bridge crossings of Moanalua Stream in this area, including Kamehameha Highway, the H-1 Freeway, and Nimitz Highway. The guideway columns will be aligned with the upstream viaduct piers, as feasible, to minimize obstruction of stream flow. This area is tidal and near the stream mouth at Ke'ehi Lagoon. Placement of the piers is not expected to have any consequences on the Moanalua estuarine environment or its fauna.

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

The Project will not impact or reduce the size of any beach. The Project's effects on public recreation areas within the SMA include minor and temporary impacts to Ke'ehi Lagoon Beach Park and the Pacific War Memorial plus temporary impacts to the future Middle Loch Park and the Pearl Harbor Bike Path near the preferred site for the MSF near Leeward Community College. The Project's design includes measures to minimize impacts to Ke'ehi Lagoon Beach Park. The Project is at the mauka edge of the Park and will not impact the features and attributes of the park that are important to its use as a recreational resource. The Final EIS (Attachment 1) Section 5.5.1 Park and Recreation Properties provides additional detail on measures to minimize harm and mitigation for these resources. DTS will continue coordination with the appropriate agencies during Final Design and construction.

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 Project will not reduce or impose restrictions on public access to tidal and submerged lands, beaches, portions of rivers and streams within the SMA, as well as the mean high tide line where there is no beach.

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 City will minimize, where reasonable, portions of the Project that would substantially interfere with or detract from the line of sight toward the sea from the state highway nearest the coast. While the project guideway and columns and associated structures MSF will be prominent features in some areas within the SMA, they will not substantially interfere with or detract from the line of sight toward the sea from the state highway nearest the coast. 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 Project will not adversely affect water quality in the SMA as a result of the implementation of BMPs to control stormwater runoff and erosion during operation and construction of the Project as discussed in the Final EIS (Attachment 1) Section 4.14 and 4.18.10. The Project also will not adversely affect 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 within SMA.

V. MITIGATION MEASURES

The Project mitigation measures are summarized in Attachment 4 to this application, Appendix I from the Final EIS, *Mitigation and Commitments*.

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APPLICATION MATERIALS

Special Management Area A: Waipahu

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I. GENERAL INFORMATION

A. Applicant (Name, Address, Phone)

City and County of Honolulu
Department of Transportation Services (DTS)
650 South King Street, 3rd Floor
Honolulu, HI 96813
(808) 768-8303

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

Within the Special Management Area (SMA) A: Waipahu portion of the Project, the fixed guideway is being constructed entirely within the existing State of Hawai‘i right-of-way (ROW) of Farrington Highway and City and County of Honolulu ROW of Pahu Street.

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

City and County of Honolulu ROW for Pahu Street is controlled by:
City and County of Honolulu
Department of Transportation Services (DTS)
650 S. King Street, 3rd Floor
Honolulu, HI 96813
(808) 768-8303

Traction power substation (TPSS) No. 6 will also be built within this area in one of two locations. The first, and more likely, location for the TPSS is mauka of the SMA boundary, just outside and adjacent to/abutting the SMA on a portion of parcels owned by the City and County of Honolulu. The second location is makai of the SMA boundary on a portion of parcel 9-4-011:037 owned by the Kuiee Napahuela Estate and/or parcel 9-4-011:061 owned by the State of Hawai‘i.

C. Agent

City and County of Honolulu
Department of Transportation Services Rapid Transit Division (DTS-RTD)
1099 Alakea Street, Suite 1700
Honolulu, HI 96813
(808) 768-8344

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D. Tax Map Key

Within the SMA A: Waipahu portion of the Project, the guideway will be built within the existing ROW of Farrington Highway and Pahu Street. Only TPSS No. 6 will occupy a TMK within the SMA A: Waipahu portion of the Project. If the first location is used, the TPSS will be built mauka of the SMA boundary, just outside and adjacent to/abutting the SMA, on TMK 9-4-010:008 and/or 064. If this location cannot be used, the second location will be acquired and the TPSS will be built makai of the SMA boundary on parcel 9-4-011:037 and/or 9-4-011:061.

E. Lot Area

If the second TPSS No. 6 location is used, approximately 1,500 square feet of parcel 9-4-011:037 and/or 9-4-011:061 will be acquired and used by the Project.

F. Agencies Consulted in Making Assessment

Please see the Introduction to this SMA Application for the agencies consulted and Attachment 2 to this Application for copies of correspondence. Some of the listed public outreach activities did occur in the immediate area of the SMA A: Waipahu portion of the Project. This included public meetings at Waipahu Elementary School and Waipahu Neighborhood Board.

Section I References

Attachment A: Preliminary Engineering Plan/Profile Sheets, SMA A: Waipahu.

DPP 2009. City and County of Honolulu, Department of Planning and Permitting (DPP), Interactive GIS Maps and Data. http://gis.hicentral.com/. Accessed between November 1, 2009 and January 19, 2010.

City and County of Honolulu, City Council 2006 - 2009. Bill 06-79, CD2, FD2 and Ordinance 07-001; Resolution 07-039, FD1(C); Resolution 08-97, CD1; Resolution 08-166, CD1, FD1; and Resolution 08-261.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*.

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 in this discussion is drawn from that t document, including the technical reports referenced within it that include detailed information concerning the studies performed to support the Final EIS.

1. Brief Narrative Description of Entire Proposed Project

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

2. Relation of Project to Special Management Area

This section discusses the SMA A: Waipahu portion of the Project. SMA A: Waipahu extends from just Koko Head (i.e., east) of the intersection of Pūpūpuhi Street and Farrington Highway (Project Station 612+45) to the intersection of Waipahu Depot Street/Road and Farrington Highway (Project Station 642+90). This section is a 3,045 linear foot (0.58 mile) portion of the overall Project. Based on Preliminary Engineering designs, the following features are planned to be built within the SMA in this area:

1. 21 columns and approximately 3,045 linear feet of elevated guideway supported by those columns
2. 1,080 linear feet of relocated gas lines
3. 80 linear feet of relocated water lines
4. 775 linear feet of relocated electrical lines
5. 85 linear feet of relocated sewer lines
6. TPSS No. 6 (in one of two location illustrated in Attachments A and B

3. Location Map

Figure 1 illustrates the location of the SMA A: Waipahu portion of the Project. Detailed maps of the Project in SMA A: Waipahu are provided in Attachment A.

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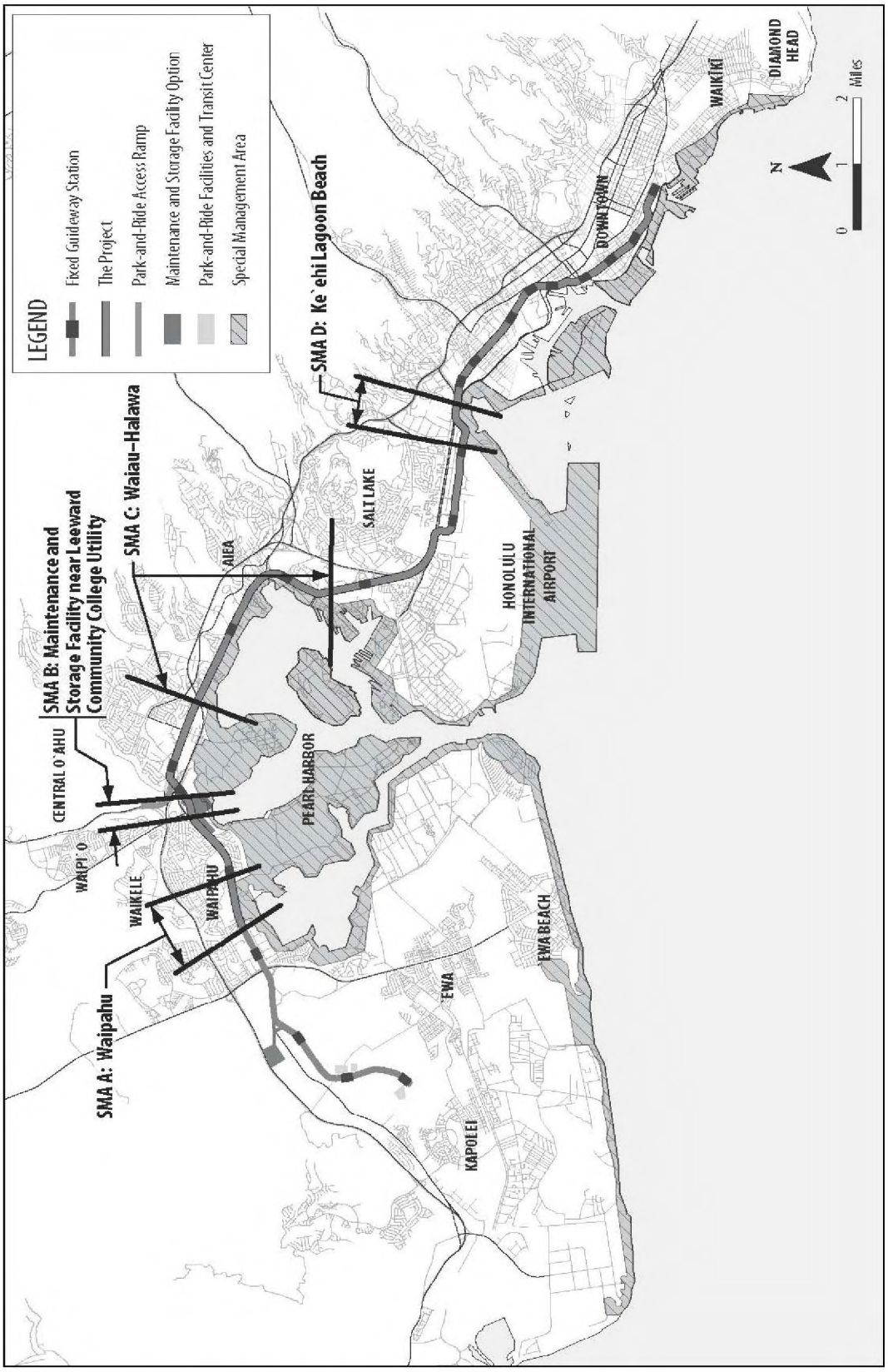

Figure 1: Overview of SMA A: Waipahu Portion of the Project

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4. Land Use Approvals Granted and/or Approvals Required

The following land use approvals and other permits are required for Project construction and/or operation within the SMA A: Waipahu area:

Federal

- Rivers and Harbors Act Section 9 Bridge Permit: U.S. Coast Guard has provided advanced approval (December 23, 2008)
- 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: General Permit Application submitted October 23, 2009. Notice of General Permit Coverage (NGPC) received December 3, 2009 (file number R10D518)
- 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: Application for first construction segment, which includes this SMA A area, submitted July 20, 2009; permit granted August 26, 2009
- Community Noise Variance: Application for first construction segment, which includes this SMA A area, submitted July 20, 2009, variance approved April 13, 2010
- Agreement for storm drain connection to existing MS4 – construction, dewatering, and operation; right-of-way access to construct Project (use and occupancy): City is working with the Hawai‘i Department of Transportation (HDOT) to develop a master agreement that will be completed prior to construction in the highway right-of-way

County

- 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 Flood Hazard District Compliance: To be submitted by the City as required to comply with Flood Hazard District Regulation (Article 9. Special District Regulations, Section 21-9.10) before construction of segment begins
- Building Permit for work outside of ROW: To be submitted by contractor by construction segment as designs become available

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Shoreline Setback

Within SMA A: Waipahu, there will be no construction within the 40-foot shoreline setback area. The Project is therefore in compliance with the Shoreline Setback Ordinance, Chapter 23, Revised Ordinances of Honolulu (ROH).

Environmental Review

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

- An EIS Preparation Notice (EISPN) 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 (NOI) 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's acceptance will conclude the HRS Chapter 343 process
- Following the 30-day publication notice of the Final EIS and acceptance of the Final EIS by the governor per the requirements of HRS Chapter 343, FTA will issue a Record of Decision (ROD) that will identify the selected alternative and conclude the Federal environmental review process

Project Consistency with General and Development Plans

The SMA A: Waipahu portion of the Project is within the *Central O'ahu Sustainable Communities 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 *Central O'ahu Sustainable Communities Plan* (DPP 2002). The following sections describe the Project's consistency with a variety of plans. Attachment 3 is Appendix J of the Final EIS, which 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.

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Central O'ahu Sustainable Communities Plan

The *Central O'ahu Sustainable Communities Plan* is the vision document for the area of Central O'ahu that includes the protection of agricultural and preservation areas, revitalization of Waipahu and Wahiawa, and continued development of master planned communities in Mililani, Royal Kunia, Koa Ridge, and Waiawa. The Project is consistent with land use objectives included in this plan.

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 *Central O'ahu Sustainable Communities Plan*. Protected views and vistas identified in the *Central O'ahu Sustainable Communities Plan* include views of the Wai'anae Mountains from the Waipahu Cultural Garden; views of the O'ahu Sugar Mill from Waipahu Depot Road; and views of Pearl Harbor from Farrington Highway near Waipahu High School. The Project will be makai of the viewline from Waipahu Cultural Garden to the Wai'anae Mountains. The Project crosses Waipahu Depot Road on Farrington Highway at the Diamond End of the SMA A: Waipahu area; however, the Project does not lie within the viewline from Waipahu Depot Road, which ends at Farrington Highway, to the former O'ahu Sugar Mill. The view of Pearl Harbor from Farrington Highway near Waipahu High School is not in the vicinity of the SMA A: Waipahu area. Therefore, the Project within the SMA A: Waipahu area will not interfere with any of the identified views listed in the *Central O'ahu Sustainable Communities Plan*.

Please see Tables 10 and 11 of Attachment 3 for details.

Other Plans

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

- *Hawai'i Statewide Transportation Plan* (HDOT 2002)
- *O'ahu Regional Transportation Plan 2030* (OahuMPO 2007)
- *Waipahu Town Plan* (DPP 1995)
- *Waipahu Transit-Oriented Development Neighborhood Plan* (DPP 2009)

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

Within the SMA A: Waipahu 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.

Section II.A References

Attachment A: Preliminary Engineering Plan/Profile Sheets, SMA A: Waipahu.

Attachment B: Preliminary Engineering Project Drawings, SMA A: Waipahu.

DPP 2002a. City and County of Honolulu Department of Planning and Permitting. 2002. *City and County of Honolulu General Plan*. http://honoluludpp.org/planning/OahuGenPlan.asp.

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DPP 2004. City and County of Honolulu Department of Planning and Permitting. June 2004. *Primary Urban Center Development Plan*. Adopted by Ordinance 04-14. http://honoluludpp.org/planning/DevSustCommPlans.asp.

DPP 2010. City and County of Honolulu, Department of Planning and Permitting, Interactive GIS Maps and Data. http://gis.hicentral.com/. Accessed between November 1, 2009 and January 19, 2010.

HDOT 2002. State of Hawai'i Department of Transportation. September 2002. Hawai'i Statewide Transportation Plan. http://www6.hawaii.gov/dot/stp/hstp.htm.

OahuMPO 2007. O'ahu Metropolitan Planning Organization. May 2007. O'ahu Regional Transportation Plan 2030. http://www.oahumpo.org/programs/ortp.html.

RTD 2005. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. November 2005. *Honolulu High-Capacity Transit Corridor Project Environmental Impact Statement Preparation Notice*.

RTD 2006. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. November 1, 2006. *Honolulu High-Capacity Transit Corridor Project Alternatives Analysis Report*. http://www.honolulutransit.org/library/.

RTD 2008u. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. November 2008. *Honolulu High-Capacity Transit Corridor Project Draft Environmental Impact Statement/Section 4(f) Evaluation*. http://www.honolulutransit.org/library/.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*.

B. Technical Characteristics

1. Use Characteristics

The 0.57-mile portion of the Project in the SMA A: Waipahu area is part of the larger 20-mile fixed guideway transit system between East Kapolei and Ala Moana Center. The transit system will operate from approximately 4 a.m. to midnight on the fixed guideway in the SMA A: Waipahu portion of the Project. Along the SMA A: Waipahu portion of the Project, it is planned that trains will operate every three minutes in each direction during morning and afternoon peak periods (6 a.m. to 9 a.m. and 3 p.m. to 6 p.m., respectively), every six minutes during off-peak hours throughout much of the rest of the day, and every ten minutes during late night periods (8 p.m. to midnight). Section 2.5 of the Final EIS (Attachment 1) provides additional detail on Project operation.

2. Physical Characteristics

Preliminary plan and profile drawings of the SMA A: Waipahu portion of the Project, are provided in Attachment A. These plans generally illustrate that the Project will consist of an elevated fixed guideway with two sets of tracks. There will be approximately 21 columns and

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3,045 linear feet of elevated guideway supported by those columns within the SMA A: Waipahu portion of the Project. The bottom of the guideway will be approximately 18 to 30 feet above the ground surface and 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 Project also requires a TPSS in this area in one of two locations. The first, and more likely, location for the TPSS is on the mauka side of Farrington Highway near Waikele Stream. The second location for the TPSS is on the makai side of Farrington Highway. The first location for the TPSS is not located within the SMA boundary, but the second location is. A TPSS requires an approximately 3,200-square-foot area to access and maintain an approximately 40-foot-long, 16-foot-wide, and 12-foot-high painted steel box that houses transformers, rectifiers, batteries, and ventilation equipment. Figure 2 is a photograph of an example of a TPSS in another city. The TPSS will be connected to the existing power grid.

Figure 2: Example of a Traction Power Substation

3. Construction Characteristics

Construction of the Project in SMA A: Waipahu will occur within the existing highway, primarily in the median. Construction work details will be developed during Preliminary Engineering and Final Design. The following primary construction activities will occur:

- Utility relocation, including trenching within the highway. This will primarily be accomplished using backhoes and excavators.
- 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.

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4. Utility Requirements

The only utility connection within the SMA A: Waipahu portion of the Project will be an electrical connection at TPSS No. 6 near Kinney Place.

5. Liquid Waste Disposal

There are no bathrooms within the SMA A: Waipahu portion of the Project; therefore, no connection to the sewer system for liquid waste disposal will be made within this portion of the Project.

6. Solid Waste Disposal

During operation, the Project will not generate solid waste within the SMA A: Waipahu area. There are no stations in this portion of the Project, and the train windows will not open, so items cannot be thrown from the train as it passes along the SMA A: Waipahu guideway. Because waste will not be generated within this portion of the Project, disposal is not anticipated to take place within the SMA A: Waipahu portion of the Project.

Prior to construction, the contractor will be required to prepare and implement the following plans to mitigate 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 there will be no access to the "site", the guideway, within SMA A: Waipahu. All access will be at stations, the nearest stations are located at West Loch and Waipahu Transit Center.

During construction, access to the site will be along Farrington Highway, where the "site" is located.

Within the SMA A: Waipahu area, the Project will not affect access to any site. During construction, short-term access impacts within SMA A: Waipahu may occur. Waikele and Kapakahi Streams are in this portion of the Project, but access will be maintained to the extent possible during construction. Because there are multiple access points to these streams, overall access is not expected to be adversely affected.

8. Other Pertinent Information

A Final EIS was prepared for the Project and is a joint NEPA and Hawai'i Revised Statutes (HRS) Chapter 343 Final EIS. The information in this SMA Permit Application is drawn from

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information contained in the Final EIS, including supporting technical reports referenced within it that include detailed information concerning project-specific field studies performed to support the Final EIS.

Section II.B References

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*.

Attachment A: Preliminary Engineering Plan/Profile Sheets, SMA A: Waipahu.

Attachment B: Preliminary Engineering Project Drawings, SMA A: Waipahu.

C. Economic and Social Characteristics

1. Estimated Cost and Time Phasing of Construction

Estimated Costs

The cost estimates presented are based on Preliminary Engineering and operations analysis. This financial analysis considers costs, resources, and funding strategies associated with public transit services provided by the City, and excludes financing costs. Unless otherwise stated, costs and revenues are presented in fiscal year (FY) 2009 dollars. For the City and County of Honolulu, the fiscal year begins on July 1 and ends on June 30 (e.g., FY2009 is from July 1, 2008, to June 30, 2009); all year references are to fiscal years.

It is estimated that the cost of construction for the entire 20-mile alignment, including construction within the SMA A: Waipahu portion of the Project, will be $4,281 million in FY2009 dollars. The cost estimate excludes amounts already incurred during FY2007 and FY2008 and financing costs. Assuming costs are generally equal throughout the length of the Project, the 3,045-linear-foot (0.58-mile) portion of the Project within the SMA A: Waipahu would cost approximately $123 million in FY2009 dollars.

Time Phasing of Construction

It is estimated that construction within the SMA A: Waipahu portion of the Project will occur between March 2011 (starting with utility relocation) to December 2013 (for the completion of power systems). However, because the SMA A: Waipahu portion of the Project is just a small part of the overall Project being built during this construction phase, there will be long periods during which no construction activities will occur within SMA A: Waipahu area.

2. Other Pertinent Information

A Final EIS compliant with NEPA and HRS Chapter 343 has been prepared for the Project. The information in this section is drawn from information contained in the Final EIS, including supporting technical reports referenced within it that include detailed information concerning the project-specific field studies performed to support the Final EIS.

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Section II.C References

RTD 2009. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. August 2009. *Honolulu High-Capacity Transit Corridor Project Financial Plan.*

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement.*

D. Environmental Characteristics

1. Soils

In the SMA A: Waipahu portion of the Project, the two soil types found along the Project alignment are Waipahu Silty Clay (WzB) and Tropaquepts (TR). Waipahu Silty Clay is typical of terraces, has slopes of 2 to 6 percent, is well-drained, and transmits water moderately well. Tropaquepts are typical of floodplains, have slopes of 0 to 2 percent, and are poorly drained, although they transmit water fairly well. The majority of the area is currently developed, and the SMA A: Waipahu portion of the Project will be constructed within the median of the existing highway.

2. Topography

In the SMA A: Waipahu portion of the Project, the topography is generally flat with some slight slopes. No major grading activities will occur within the SMA A: Waipahu portion of the Project. The existing grade of the highway will not change.

3. Surface Runoff, Drainage, and Erosion Hazard

Because the SMA A: Waipahu area is currently developed, surface runoff in the area travels to a drainage system and/or directly to Waikele or Kapakahi Streams nearby. The Farrington Highway storm drain system is extensive and under the control of HDOT. The City and County of Honolulu also has an extensive storm drain system that serves the surrounding community. The low slopes of the lands in this location, 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 Flood Insurance Rate Maps (FIRM) indicates that the SMA A: Waipahu portion of the Project will cross flood zones AEF and AE, which are associated with Waikele and Kapakahi Streams. The FIRM are being updated, and the new maps will go into effect in 2011. Figures A-FZ and A-FZ2 in Attachment B illustrate the location of the flood zones, current and 2011, respectively. Please see the flood zone definitions below. The updated FIRM still indicates that the Project will only cross flood zones AEF and AE, although a newly indicated flood zone XS is adjacent to the Project in SMA A: Waipahu. These floodplains largely convey stormwater

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toward the ocean. The Project will not adversely impact or interfere with these floodplains and their functions.

> *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.

In regard to the LUO Flood Hazard District compliance, the City and County of Honolulu will submit documents as required to comply with Flood Hazard District Regulation (Article 9. Special District Regulations, Section 21-9.10) before construction in SMA A: Waipahu begins.

Floods, hurricanes, earthquakes, and tsunamis can all affect Hawai‘i. The International Building Code (IBC) and the American Association of State Highway and Transportation Officials (AASHTO) 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 SMA A: Waipahu portion of the Project is not within a tsunami evacuation area.

5. Other Pertinent Information

A survey of street trees was conducted in the Project 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 DPR 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 while street trees are prevalent in the SMA A: Waipahu portion of the Project, they were not identified as Exceptional or Notable. The trees present are currently juvenile or semi-mature trees that were planted approximately five years ago to help beautify the roadway and were nominated for a landscaping/beautification award. These plantings consist of rainbow shower trees, tall fan palms, and kou trees and are important to the community and the Waipahu streetscape. Most of these relatively newly planted trees will be removed, but many could be transplanted. The location where street trees will be transplanted will be selected based on project-specific criteria that could include the following:

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- Areas where existing landscaping will be lost along the study corridor
- Areas where opportunities exist for enhancing existing streetscapes near the study corridor
- Areas where stations and parking lots will be constructed
- Areas where shared benefits will be accomplished, such as areas adjacent to parks or historic sites

Planting of trees and other mitigation have been included in the design criteria and Special Provisions for the Project. Street tree pruning, removal, and planting will comply with City ordinances. Trees suitable for transplanting that are displaced by construction will be relocated to the project nursery until they can be transplanted to another part of the project area. The City will coordinate with HDOT's highway landscape architect. In addition to transplanting existing trees, plans for new plantings will be prepared by a landscape architect during Final Design to further mitigate effects to street trees. To mitigate any substantial effects in areas that require tree removal, special attention will be given to the development of landscaping plans so that new plantings will provide similar advantages to the community. In the SMA A: Waipahu area, approximately 11 palms and 38 trees will be transplanted; two trees will be removed; and one tree will be protected in place.

Section II.D References

Attachment A: Preliminary Engineering Plan/Profile Sheets, SMA A: Waipahu.

Attachment B: Preliminary Engineering Project Drawings, SMA A: Waipahu (Figures FZ1 and FZ2).

FEMA 2007. Federal Emergency management Agency (FEMA). Digital Flood Insurance Rate Maps; GIS "Flood" shapefile. http://hawaii.gov/dbedt/gis/dfirm.htm.

RTD 2008l. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Street Trees Technical Report*.

RTD 2008m. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Geology, Soils, Farmlands, and Natural Hazards Technical Report.*

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Multiple Sections, including Section 4.15 "Street Trees".

USDA 2007. U.S. Department of Agriculture Natural Resources Conservation Service, Hawai'i. 2007 (original data from 1972). GIS "Soils" shapefile. http://hawaii.gov/dbedt/gis/soils.htm.

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

Waipahu is comprised of moderate-density residential, commercial, and light industrial uses. Waipahu's commercial and light industrial uses are mostly clustered along Farrington Highway. The uses within the SMA A: Waipahu portion of Farrington Highway include residences, light industry, commercial establishments, churches, and schools.

Within SMA A: Waipahu area, the Project will be constructed within the median of Farrington Highway and is expected to have little impact on the uses along Farrington Highway. The SMA boundary lies along the westbound lane of Farrington Highway.

Section III.A References

Attachment A: Preliminary Engineering Plan/Profile Sheets, SMA A: Waipahu.

Attachment B: Preliminary Engineering Project Drawings, SMA A: Waipahu.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*.

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

No publicly owned beaches, parks, or recreation areas are adjacent to the Project within the SMA A: Waipahu area. Accordingly, there will be no impacts to any such resource due to the Project in SMA A: Waipahu.

Section III.B.1 References

RTD 2008d. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Neighborhoods and Communities Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Chapter 5 "Section 4(f) Evaluation".

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

No rare, threatened, or endangered species were observed in the SMA A: Waipahu area and coordination with governmental agencies and the literature review indicate that no there are no designated critical habitats or wildlife preserves within the SMA A: Waipahu portion of the Project.

Section III.B.2 References

RTD 2008j. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Ecosystems and Natural Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.13 "Ecosystems".

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

There are no wetlands, lagoons, tidal lands, or submerged lands in the SMA A: Waipahu area.

Section III.B.3 References

RTD 2008k. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Water Resources Technical Report*.

RTD 2009b. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Wetland and Waters of the U.S. Study*.

RTD 2009h. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Ecosystem Function and Values of Wetland Waters of the U.S.*

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.14 "Water".

4. Fisheries and Fishing Grounds

The Project in SMA A: Waipahu 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, as well as the linear nature of streams that allow for access at multiple locations.

Section III.B.4 References

RTD 2008k. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Water Resources Technical Report*.

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RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.13 "Ecosystems".

5. Other Coastal/Natural Resources

As discussed under Part B.1, no publicly owned beaches, parks, or recreation areas are adjacent to the Project within the SMA A: Waipahu area. As a result, the Project will not adversely affect opportunities for public enjoyment and use of any recreational, coastal, or natural resources within the SMA A: Waipahu area.

Section III.B.5 References

RTD 2008d. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Neighborhoods and Communities Technical Report*.

RTD 2008j. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Ecosystems and Natural Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.13 "Ecosystems".

C. Relation to Historic, Cultural, and Archaeological Resources

1. Archaeological

A draft archeological inventory survey (AIS) was completed for the first construction phase of the Project. The study area includes an approximately 6.8-mile segment that extends from North-South Road in East Kapolei to the Pearl Highlands Station and an approximately 0.6-mile segment that extends from the Pearl Highlands Station to Waimano Home Road in Pearl City, which is part of the second construction phase. This AIS investigation for the first construction phase identified one subsurface cultural deposit (lo‘i sediments) in the project area near the Waipahu Transit Center that is recommended National/Hawai‘i Register-eligible under Criterion D. This subsurface cultural deposit is not within the SMA A: Waipahu area; during the AIS no archaeological features were encountered within the SMA A: Waipahu area. Based on the results of the AIS for the first construction phase area, the City will conduct archaeological data recovery before station construction at the makai entrance building of the Waipahu Transit Center Station for the subsurface cultural deposit (lo‘i sediments). 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 will 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.

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Section III.C.1 References

RTD 2008n. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Archaeological Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.16 "Archaeological, Cultural, and Historic Resources".

2. Cultural

Archival and ethnographic research shows that most of the traditional cultural resources within the SMA A: Waipahu portion of the Project have been heavily damaged or destroyed through previous development. 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.

No cultural resources have been identified as having potential long-term adverse effects as a result of the Project in the SMA A: Waipahu area. Any cultural resources that are uncovered will be assessed through collaborative consultation with appropriate cultural practitioners and/or community groups in accordance with the Programmatic Agreement (PA) developed pursuant to Section 106 of the National Historic Preservation Act (NHPA).

Section III.C.2 References

RTD 2008p. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Cultural Resources Technical Report*.

RTD 2009e. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Addendum 01 to the Cultural Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.16 "Archaeological, Cultural, and Historic Resources".

3. Historical

Through agency coordination, the Project's Area of Potential Effects (APE) was defined generally as one parcel deep from the fixed guideway alignment in the SMA A: Waipahu portion of the Project. The APE also includes parcels immediately adjacent to all facilities associated with the fixed guideway system, including TPSS.

Historical Resources within the SMA A: Waipahu Area

In the SMA A: Waipahu area there is one historical resource. The Waikele Stream Bridge east-bound span and Bridge over the OR&L spur (Tax Map Key: none). Figure A-HR in Attachment B illustrates the location of this historic resource. These two vehicular bridges are a good

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example of a late 1930s continuous deck girder bridge design. The span's relatively long length indicates the importance of this transportation link in the circle-island main road system during that time. The Waikele Stream Bridge is eligible for nomination to the National Register of Historic Places (NRHP) under Criterion A for its association with the development of the Waipahu community and the transportation history of the area and Criterion C for its design. The fixed guideway will be built in the median of Farrington Highway 10 feet mauka of the east-bound, historic span. It will be approximately 40 feet above the roadway, and there will be no physical or direct impact to the bridges. As the primary views of the bridges are from ground level, the elevated guideway will not eliminate primary views of these architecturally significant historic bridges or alter their relationship to the existing transportation corridor. Farrington Highway is a major transportation corridor, and the Project's visual elements will be in character with the surrounding area. It has been determined that the Project will have an adverse effect on this resource under Section 106.

A PA was developed in consultation among the Section 106 consulting parties (identified in the Introduction – Section I.4). The Section 106 process identified historic properties potentially affected by the Project, assessed effects, and sought ways to avoid, minimize, or mitigate any adverse effects on any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP. The PA records the terms and conditions agreed upon to resolve potential adverse effects and is attached to the Final EIS (Attachment 1) in Appendix H. The PA incorporated comments from Section 106 consulting parties listed in the Introduction to this permit application in Section I.4. FTA, SHPO, and the Advisory Council on Historic Preservation, in coordination with the invited signatories, will finalize the PA prior to the Record of Decision (ROD). FTA will distribute an executed PA to the Section 106 consulting parties and invite them to participate as concurring parties to the PA.

Historical Properties in the Vicinity of SMA A: Waipahu

Two historic properties are located near the SMA A: Waipahu area. The Tanaka-Ishihara House (Tax Map Key 9-4-025:008) and the West O'ahu Christian Church/former American Security Bank (round plan) (Tax Map Key 9-4-027:127) are mauka of the SMA boundary and not within the SMA. FTA has determined that there will be no adverse effect to either resource from the Project.

Section III.C.3 References

Attachment B: Preliminary Engineering Project Drawings, SMA A: Waipahu (Figure A-HR).

RTD 2008o. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Historic Resources Technical Report*.

RTD 2009c. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Addendum 01 to the Historic Resources Technical Report*.

RTD 2009d. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Historic Effects Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.16 "Archaeological, Cultural, and Historic Resources".

SHPD 2010. State of Hawai'i Department of Land and Natural Resources State Historic Preservation Division. 2010. *Honolulu High-Capacity Transit Corridor Project Programmatic Agreement*.

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 SMA A: Waipahu area will require installation of the guideway and columns in the median of Farrington Highway, the nearest coastal highway. The 21 roughly 6-foot-wide columns will be spaced about 120 to 150 feet apart and will intermittently obstruct makai views across the highway from the westbound lanes toward the shoreline. However, in this area, makai views are comprised of the surrounding residential, light industrial, and commercial buildings along the highway; ocean and coastal landforms are not currently visible from the highway. The visual effects of the Project will not substantially interfere with or detract from the line of sight toward the sea.

Section III.D References

RTD 2008e. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Visual and Aesthetic Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.8 "Visual and Aesthetic Conditions".

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 cross Waikele and Kapakahi Streams in the SMA A: Waipahu area. Both streams have been modified for flood-control purposes and are on the Hawai'i State Department of Health's (HDOH) 303(d) List of Impaired Waters (HDOH 2008). Because the guideway follows the existing major roadway, the points where the Project crosses these two streams coincide with existing bridges where concrete sidewalls are already in place.

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Waikele Stream is a concrete-lined channel with a length of approximately 10 miles. Twin highway bridges span Waikele Stream. The ordinary high water mark (OHWM) is estimated to be at 4.25 feet above the concrete bed of the culvert. Waikele Stream is known to support diverse freshwater and amphidromous species.

Kapakahi Stream is a realigned channel that drains a portion of Waipahu and is a perennial channel regularly cleared to maintain flood relief. The stream originates just north of Farrington Highway and is adjacent to Waikele Stream. At times of extreme flooding in Waikele Stream, flood waters may flow into and exit through Kapakahi Stream. The elevation of the OHWM is 0.14 feet above the stream bed immediately downstream of the existing Farrington Highway Bridge. Kapakahi Stream supports a limited amount of non-native species.

The fixed guideway will span both streams and there will be no column construction or other construction-related activities within the stream channels below the OHWM. The fixed guideway will parallel the existing highway bridges crossing the streams and will not directly affect either stream. However, some shading of portions of the streams may occur as a result of the Project. Because the guideway is elevated relative to the surrounding highway bridges, the guideway will only impart minimal additional shading onto the water as compared to the bridges already present in each location. Stormwater discharged from the guideway will be managed using permanent stormwater best management practices (BMPs), including the installation of downspout filters on drains near these streams, prior to discharging to the HDOT MS4 system in the area.

Marine Waters

The SMA A: Waipahu portion of the Project is not adjacent to any marine waters.

Flood Zones

The Project will cross two developed flood zones associated with Waikele and Kapakahi Streams in the SMA A: Waipahu area. Figures A-FZ and A-FZ2 in Attachment B illustrate the location of these flood zones. The flood zones traversed by the guideway are AEF and AE; both floodplains have the major function of stormwater conveyance. The guideway in SMA A: Waipahu area will be elevated above the floodplains. However, TPSS No. 6, which is located in the floodplain, will be built at ground level; however, the ground level there is above the projected flood elevation. Only the second location for TPSS No. 6, which is on the makai side of Farrington Highway, is within the SMA A: Waipahu area. The TPSS could have minor effects on the floodplain; however, any changes caused by the Project will be mitigated through design to comply with current flood zone regulations. There will be no notable adverse impacts on natural and beneficial floodplain values. The Project will not cause significant floodplain encroachment as defined by USDOT Order 5650.2.

Groundwater

In the SMA A: Waipahu 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 EPA and USDOT. A Water Quality Impact Assessment was reviewed by EPA, and EPA concurred that contamination of the SOBA will not

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occur (letter dated March 27, 2009, located on page 433 of Attachment 2). The construction methods and BMPs employed and the presence of an upward hydraulic gradient in the area will protect 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, although 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 (UIC) line by the Hawai'i Department of Health (HDOH). In the SMA A: Waipahu area, the Project will be mauka of the UIC 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 (SDWB) publishes groundwater contamination maps, and included in that report are the locations of water wells. Most of these water wells are 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 hundred feet below ground surface, and the shafts for the Project will not penetrate anywhere near those depths.

Subsurface conditions in the SMA A: Waipahu area generally consists of typical caprock, alluvial and marine deposits, and residual soils interlayered with coralline materials and/or basalt bedrock. General water-level elevations in areas where the Project overlies the caprock are expected to vary between elevation +10 and +20 feet above mean sea level (MSL) where the groundwater is confined by the caprock. Based on existing ground elevations that are typically elevation +40 to +100 feet MSL and higher, depth to groundwater for the areas where the Project overlies basalt is expected to vary from 20 feet below ground surface (bgs) to tens of feet bgs. Where existing ground elevations are elevation 20 feet or less, groundwater elevations are expected within 10 feet of the ground surface.

Two general foundation construction methods will be used to support the aerial guideway structure: single drilled shafts that would be integral with columns and driven piles that would 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 SMA A: Waipahu 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 average 75 feet deep, ranging between 60 and 90 feet bgs. Near Waipahu Street/Road, where deep soft ground conditions were observed, foundation depths may reach 110 feet below ground surface. Most piers for the Project will only penetrate the surficial materials or caprock overlying the basalt aquifer. 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 SMA A: Waipahu area foundations will 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

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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 waterbodies 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 has been obtained by the Project, and this 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 would remain that could allow surficial contaminants to travel down the side of the shaft. This is because the flowable concrete used for shaft construction will seal against the surrounding soil.

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 be water and naturally derived cuttings, or it could be 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 SMA A: Waipahu area. By installing permanent BMPs, most 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 before, 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 is expected to be relatively free of pollutants and will not threaten groundwater quality.

Section III.E References

Attachment B: Preliminary Engineering Project Drawings, SMA A: Waipahu.

HDOH 2008. State of Hawai'i Department of Health. 2008. *2006 State of Hawai'i water quality monitoring and assessment report: Integrated report to the U.S. Environmental Protection Agency and the U.S. Congress pursuant to Sections 303(d) and 305(b), Clean Water Act (PL 97-117).*

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RTD 2008k. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Water Resources Technical Report*.

RTD 2009b. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Wetland and Waters of the U.S. Study*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.14 "Water".

F. Include Suitable and Adequate Location and Site Maps

Please see Attachments A and B.

G. Other Pertinent Information

A Final EIS compliant with NEPA and HRS Chapter 343 was prepared for the Project. The information in this section is drawn from information contained in the Final EIS, including supporting technical reports referenced within it 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 SMA A: Waipahu area specifically. The Introduction portion of the SMA application provides a project-wide discussion of impacts related to CZM 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 SMA A: Waipahu area.

While the portion of the Project in the SMA A: Waipahu area does not provide any new coastal recreational opportunities for the public, it will not affect the existing coastal recreational resources or their uses by 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*

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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 SMA A: Waipahu area. There is a moderate chance of encountering burials, as well as pre- and post-contact archaeological resources in the SMA A: Waipahu area. The historic Waikele Stream Bridge east-bound span and Bridge over OR&L spur is also within the SMA A: Waipahu area.

The Project will affect the integrity of the setting, feeling, and association of the historic Waikele Stream Bridge eastbound span and Bridge over OR&L spur. There will be an adverse effect on this resource, although the bridge will not be physically altered by the Project. Because the Project will result in adverse effects and avoidance is not possible, a PA was prepared in consultation with the 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. Please see Section III.D for details regarding coastal views in the SMA A: Waipahu area.

Scenic impacts associated with the Project in the SMA A: Waipahu area include a potential change in the setting of a historic resource (Waikele Stream Bridge), 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 obstruct present makai views toward the shoreline, but most views in this area comprise a wider panoramic scene, and visual effects of the Project will be low. In addition, the Project will be built within the median of the existing Farrington Highway and will be located in an industrial and commercial setting.

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.5 for details regarding coastal/natural resources in the SMA A: Waipahu area.

The Project will not have an adverse impact on coastal ecosystems. There will be no direct drainage into Pearl Harbor in the SMA A: Waipahu portion of the Project because of the distance between the alignment and the coast. The Project is being designed so as 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 specially designed bioinfiltration units near water bodies on the HDOH 303(d) list of water quality limited segments. In locations where space does not allow for their use, downspout filters will be installed on drains near

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impaired waters. 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 improve infrastructure and provide long-term benefits to residents, businesses, and commuters. The portion of the Project within the SMA A: Waipahu 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 SMA A: Waipahu area is not 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 expected to be an issue in this area because of the slight slopes, as well as the soil types and level of development. Sea-level rise may impact the Project because of its fairly low elevation, but that impact is not expected to occur until sometime in the future. According to project engineers' estimates, and based on a general analysis of the topography and contours in the area, sea level would have to rise more than 8 feet to impact the portion of the Project in SMA A: Waipahu 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 expected 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 also will 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

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planning process. Various public outreach activities were held near the SMA A: Waipahu area, as discussed in Section I.F.6.

9. *Beach Protection*

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

The portion of the Project within the SMA A: Waipahu area is not adjacent to or abutting a beach and 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 SMA A: Waipahu 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 SMA A: Waipahu area.

The portion of the Project within the SMA A: Waipahu area will not adversely affect access to and along publicly owned beaches, recreation areas, and natural reserves as none of these facilities exist in the SMA A: Waipahu area. Waikele and Kapakahi Streams, the only areas potentially considered recreation and natural areas with the SMA A: Waipahu area, will not experience any direct or adverse impacts due to the Project and will remain open and accessible during construction and operation of the Project. 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 SMA A: Waipahu area will not adversely affect or in any way diminish the quality of public recreation areas or wildlife preserves. There are no wildlife preserves in the SMA A: Waipahu 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*

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For the portion of the Project within the SMA A: Waipahu area, DTS 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 SMA A: Waipahu area will not adversely affect 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 Waikele and Kapakahi Streams. 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 SMA A: Waipahu 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 as discussed in the Final EIS Section 4.19. 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 SMA A: Waipahu area is consistent with the objectives and policies set forth for Special Management Areas.

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;*

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The portion of the Project within the SMA A: Waipahu area is consistent with all plans and zoning, as discussed 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 SMA A: Waipahu area has been adequately planned and designed to the extent practical to minimize 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 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 8 feet to impact the portion of the Project in the SMA A: Waipahu area.

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

The portion of the Project within the SMA A: Waipahu area will not impede public access to shoreline or beach areas; the closest shoreline is 1,250 feet from the Project in the SMA A: Waipahu area. Conversely, the Project will increase mobility and, thereby, access to such areas outside of the SMA A: Waipahu 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 SMA A: Waipahu area.

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

There are no beaches in the SMA A: Waipahu area. In addition, the Project will not reduce or impact any other 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 SMA A: Waipahu area will not reduce or restrict 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. Waikele and Kapakahi Streams will be spanned by the fixed guideway and will not be directly impacted; access to these streams will be maintained. Public access to the shoreline in this area will not be reduced or restricted by the Project because of 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 SMA A: Waipahu area will require installation of the guideway and columns in the median of Farrington Highway, the state highway nearest the coast in this area. As Farrington Highway is at-grade and the fixed guideway will be on columns, the approximately 21 columns within the SMA A: Waipahu area will intermittently obstruct makai

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views across the highway toward the shoreline. However, most views in this area comprise a wider panoramic scene dominated by residential, commercial, and industrial buildings, and the ocean and coastal landforms are not currently visible from the highway. 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 SMA A: Waipahu 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 in addition, these streams already contain visible structures and modifications. The Project will not adversely impact Pearl Harbor in this area because of the distance between the guideway and the coast. Existing and potential fishing grounds are likely coastal or associated with Waikele and Kapakahi Streams; there will be no interference with any of these areas as a result of the Project. The Project will not adversely affect 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

Please see Attachment 4.

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APPLICATION MATERIALS

Special Management Area B: Maintenance and Storage Facility (MSF) near Leeward Community College (LCC) Utility

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I. GENERAL INFORMATION

A. Applicant (Name, Address, Phone)

City and County of Honolulu
Department of Transportation Services (DTS)
650 S. King Street, 3rd Floor
Honolulu, HI 96813
(808) 768-8303

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

Within the Special Management Area (SMA) B: Maintenance and Storage Facility (MSF) near Leeward Community College (LCC) Utility (SMA B: MSF near LCC Utility) portion of the Project, two underground utility lines, one sanitary sewer, and one stormwater outfall are to be installed within one parcel:

(1) 9-4-008:030: Owned by the City and County of Honolulu
Department of Parks and Recreation
1000 Uluohia Street, Suite 309
Kapolei, HI 96707
(808) 768-3003

The stormwater outfall drain line will extend to near the shoreline and will cross two more Tax Map Keys (TMKs) within the SMA B: MSF near LCC Utility area:

(1) 9-6-003:001: Owned by the United States of America, Department of the Navy
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 9860-3134

(1) 9-6-001:001: Owned by the United States of America, Department of the Navy

In addition, other project features in the SMA B: MSF near LCC Utility portion of the Project are just outside the SMA but are adjacent to the SMA. The MSF will be constructed within two TMKs that are adjacent to the SMA that will be acquired by the City prior to construction:

(1) 9-4-008:010: Owned by the Department of Hawaiian Home Lands (DHHL)
91-5420 Kapolei Parkway
Kapolei, HI 96707
(808) 620-9500

(1) 9-6-003:044: Owned by DHHL

C. Agent

City and County of Honolulu
Department of Transportation Services Rapid Transit Division (DTS-RTD)
1099 Alakea Street, Suite 1700

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Honolulu, HI 96813
(808) 768-8344

D. Tax Map Key

The Project will result in development on three TMKs within the SMA B: MSF near LCC Utility portion of the Project.

(1) 9-4-008:030: The Project will require the installation of two underground utility lines: one sanitary sewer and one stormwater outfall drain within this TMK, which will result in a total project encroachment of 6,400 square feet, or 0.147 acre; the total lot area is 3.103 acres.

(1) 9-6-003:001: The stormwater outfall drain line will be extended toward the shoreline and cross into this TMK, which will result in a total project encroachment of 400 square feet, or 0.009 acre; the total lot area is 3.25 acres.

(1) 9-6-001:001: The stormwater outfall drain line will be extended toward the shoreline and cross into this TMK, which will result in a total project encroachment of 400 square feet, or 0.009 acre; the total lot area is 148.328 acres.

The City will acquire two parcels directly adjacent to the SMA B: MSF near LCC Utility area for construction of the MSF:

(1) 9-4-008:010: The Project will require a full take of this parcel; the total lot area is 23.665 acres.

(1) 9-6-003:044: The Project will require a full take of this parcel; the total lot area is 32.177 acres.

E. Lot Area

Please see Item D above.

F. Agencies Consulted in Making Assessment

Please see the Introduction to this SMA Application for the agencies consulted, and Attachment 2 to this Application for copies of correspondence. Some public outreach activities listed did occur near the SMA B: MSF near LCC Utility portion of the Project. This included public meetings at Waipahu Elementary School.

Section I References

Attachment C: Preliminary Engineering Project Plans, SMA B: MSF – LCC Utilities

DPP 2009. City and County of Honolulu, Department of Planning and Permitting (DPP), Interactive GIS Maps and Data. http://gis.hicentral.com/. Accessed between November 1, 2009 and January 19, 2010.

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City and County of Honolulu, City Council 2006 - 2009. Bill 06-79, CD2, FD2 and Ordinance 07-001; Resolution 07-039, FD1(C); Resolution 08-97, CD1; Resolution 08-166, CD1, FD1; and Resolution 08-261.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*.

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 in this application 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.

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 Parcel to Special Management Area

This package discusses the SMA B: MSF near LCC Utility portion of the Project, which begins at the southwestern corner of TMK 9-6-003:044 and follows the property line northeasterly for approximately 250 feet. This portion of the Project consists of appurtenances for the MSF. Items may change slightly as the design progresses from Preliminary Engineering to Final Design. Based on Preliminary Engineering designs, the following features are planned to be built within the SMA in this area:

1. A 280-foot-long stormwater outfall drain line (stormwater outfall) for the MSF will be installed underground within an easement covering an area of 5,600 square feet. Structural elements of the stormwater outfall will not be placed in Waters of the U.S. or State, and any discharge entering Pearl Harbor will have gone through a permanent oil/water/sand separator prior to reaching the outfall in order to meet water quality requirements for the estuary.
2. An 80-foot-long sanitary sewer drain line (sewer line) for the MSF will be installed underground within an easement covering an area of 800 square feet. This sewer line will connect to an existing sewer line.

In addition to the project features within the SMA, other project features are adjacent to or abutting the SMA. The following adjacent/abutting features are also illustrated on figures in Attachments C and D, and are discussed in this package:

3. The MSF. This site will contain an Operations and Service Building (approximately 85,000 square feet and 62 feet high), a Maintenance of Way Building (approximately

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26,000 square feet and 36 feet high), a Train Wash Facility (approximately 15,000 square feet and 24 feet high), a Wheel Truing Facility (approximately 2,000 square feet and 24 feet high), a system control center, other small buildings, retaining walls, and parking for maintenance employees. In total the floor area of all buildings will be approximately 130,000 square feet. The site will be graded such that all buildings and storage track will be at an elevation of approximately +85 feet above mean sea level (MSL). It will also include areas for operation and maintenance of trains, including storage for approximately 100 vehicles, a vehicle-wash area, and storage track. Drainage within the MSF will be collected internally and flow in a detention basin; the detention basin will allow collected stormwater to percolate into the ground and/or flow through a sand filter and discharge through an extended detention outlet structure into the stormwater outfall drain line discussed above.

4. Approximately 1,400 linear feet of at-grade guideway as it crosses through the MSF.
5. Minor utility relocations.

3. Location Map

Figure 1 illustrates the location of the SMA B: MSF near LCC Utility portion of the overall Project. Detail maps of the Project in SMA B: MSF near LCC Utility are provided in Attachment C.

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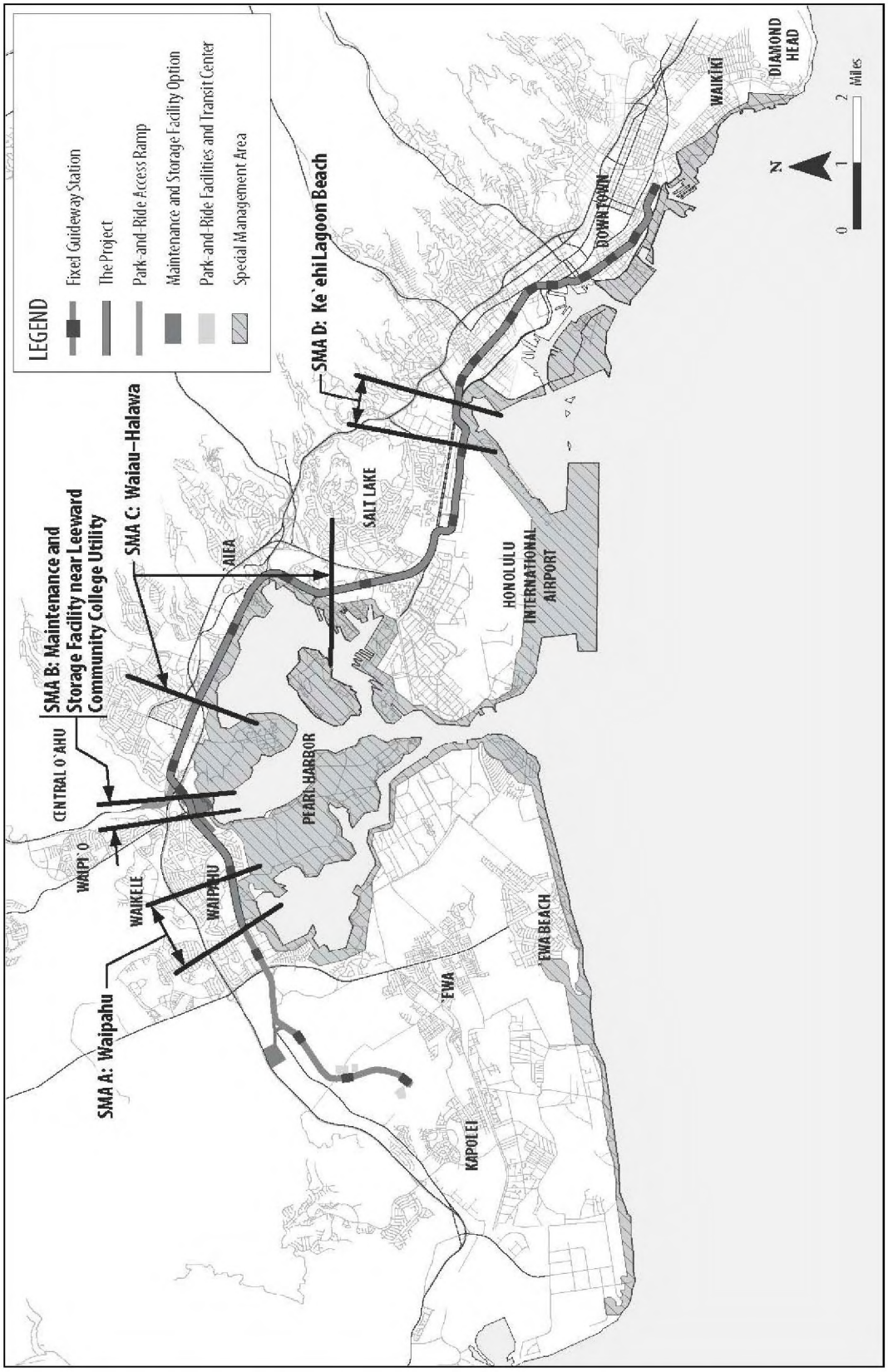

Figure 1: Overview of SMA B: MSF near LCC Utility Portion of the Project

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4. Land Use Approvals Granted and/or Approvals Required

The following land use approvals and other permits are required for Project construction or operation within the SMA B: MSF near LCC Utility area.

State

- Clean Water Act (CWA) Section 402, National Pollutant Discharge Elimination System (NPDES) Permit for stormwater associated with construction activities: General Permit Application submitted October 23, 2009. Notice of General Permit Coverage received December 3, 2009 (file number R10D518)
- 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: Application for first construction segment, which includes this SMA B: MSF near LCC Utility area, submitted July 20, 2009; permit granted August 26, 2009
- Community Noise Variance: Application for first construction segment, which includes this SMA B: MSF near LCC Utility area, submitted July 20, 2009, variance approved April 13, 2010

County

- 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 Easement: City to submit easements for stormwater and sewer drain lines when Final Design is complete and before construction of segment begins
- Building Permit: For work outside of right-of-way (ROW): To be submitted by contractor by construction segment as designs become available

Shoreline Setback

Within the SMA B: MSF near LCC Utility area, construction will occur within the 40-foot shoreline setback area. The Project is therefore required to file a Shoreline Setback Variance (SSV) in compliance with the Shoreline Setback Ordinance, Chapter 23, Revised Ordinances of Honolulu (ROH).

The SSV for construction of the SMA B: MSF near LCC Utility portion of the Project will be submitted separately when details regarding the variance are available. Some general information regarding the SSV is provided in this section.

The Project proposes installing a 280 foot-long, 60-inch-diameter drain line (stormwater outfall) for the MSF near LCC. This drain line will be designed to handle outfall from the extended detention outlet structure and will drain into the Middle Loch of Pearl Harbor. Structural

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elements of the drain will not be placed in State waters or Waters of the U.S., and any discharge entering Pearl Harbor will have gone through a permanent oil/water/sand separator prior to reaching the outfall in order to meet water quality requirements for the estuary.

The portion of the Project within the shoreline area (the MSF stormwater outfall) is not a minor structure. This portion of the Project (the MSF stormwater outfall) will not affect beach processes because the area is not a beach, and it will not extend into the water. This portion of the Project (the MSF stormwater outfall) will not interfere with public access, public views, or open space along the shoreline because all structures will be underground and not visible once construction is complete, except for the outfall, which will be small and will not rise above the surrounding grade. Based on a survey performed November 24, 2009, approximately 17 feet of the drain line will extend makai of the shoreline—the shoreline being the anticipated certified shoreline, which is expected to be the top of the bank in the area. Therefore, the 40-foot portion of the outfall drain line immediately mauka of the shoreline and the 17 feet of the drain line makai of the shoreline will be within the shoreline setback area.

The portion of the Project within the shoreline area (the MSF stormwater outfall) is being undertaken by a public agency and is in the public interest.

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's acceptance will conclude the HRS Chapter 343 process
- Following the 30-day publication notice of the Final EIS and acceptance of the Final EIS by the Governor per the requirements of HRS Chapter 343, the Federal Transit Administration (FTA) will issue a Record of Decision that will identify the selected alternative and conclude the Federal environmental review process.

Project Consistency with General and Development Plans

The SMA B: MSF near LCC Utility portion of the Project is within the *Central O'ahu Sustainable Communities 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 *Central O'ahu Sustainable Communities Plan* (DPP 2002). The

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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.

Central O'ahu Sustainable Communities Plan

The *Central O'ahu Sustainable Communities Plan* is the vision document for the area of Central O'ahu that includes the protection of agricultural and preservation areas, revitalization of Waipahu and Wahiawa, and continued development of master planned communities in Mililani, Royal Kunia, Koa Ridge, and Waiawa. The Project is consistent with land use objectives included in this plan.

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 *Central O'ahu Sustainable Communities Plan*. Protected views and vistas identified in the *Central O'ahu Sustainable Communities Plan* include views of Pearl Harbor from Farrington Highway near Waipahu High School. Currently, the quality of makai views from Farrington Highway in the vicinity of Waipahu High School vary from low to moderate, with the campus and occasional groupings of shrubs and small trees obstructing most of these views. The MSF, between the high school and LCC, will consist of buildings, paved parking areas, a complex of storage tracks and service bays, and site lighting. The major multistory buildings will be sited at various locations, with the tallest building, about 62 feet high, near the base of the property's slope, and a smaller building, about 36 feet high, 'Ewa of the LCC Station. The train wash facility will be makai of the guideway and Farrington Highway; this building will be about 24 feet high. These multistory buildings sited on the slope between the two educational institutions will be highly visible and dominant elements of makai views from the highway. Views of Pearl Harbor are of relatively short duration and intermittent while traveling along this section of Farrington Highway, so changes in views of the shoreline and harbor are not expected to be dramatic. Tables 10 and 11 of Attachment 3 include details.

Other Plans

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

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

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

Within the SMA B: MSF near LCC Utility 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.

Section II.A References

Attachment C: Preliminary Engineering Project Plans, SMA B: MSF – LCC Utilities.

Attachment D: Preliminary Engineering Project Drawings, SMA B: MSF – LCC Utilities.

DPP 2002a. City and County of Honolulu Department of Planning and Permitting. 2002. *City and County of Honolulu General Plan*. http://honoluludpp.org/planning/OahuGenPlan.asp.

DPP 2004. City and County of Honolulu Department of Planning and Permitting. June 2004. *Primary Urban Center Development Plan*. Adopted by Ordinance 04-14. http://honoluludpp.org/planning/DevSustCommPlans.asp.

DPP 2010. City and County of Honolulu, Department of Planning and Permitting, Interactive GIS Maps and Data. http://gis.hicentral.com/. Accessed between November 1, 2009 and January 19, 2010.

HDOT 2002. State of Hawai'i Department of Transportation. September 2002. Hawai'i Statewide Transportation Plan. http://www6.hawaii.gov/dot/stp/hstp.htm.

OahuMPO 2007. O'ahu Metropolitan Planning Organization. May 2007. O'ahu Regional Transportation Plan 2030. http://www.oahumpo.org/programs/ortp.html.

RTD 2005. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. November 2005. *Honolulu High-Capacity Transit Corridor Project Environmental Impact Statement Preparation Notice*.

RTD 2006. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. November 1, 2006. *Honolulu High-Capacity Transit Corridor Project Alternatives Analysis Report*. http://www.honolulutransit.org/library/.

RTD 2008u. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. November 2008. *Honolulu High-Capacity Transit Corridor Project Draft Environmental Impact Statement/Section 4(f) Evaluation*. http://www.honolulutransit.org/library/.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*.

B. Technical Characteristics

1. Use Characteristics

The portion of the Project in the SMA B: MSF near LCC Utility area is part of the support system for the 20-mile fixed guideway transit system between East Kapolei and Ala Moana

Center. The two drain lines in the SMA B: MSF near LCC Utility area will be connected to and support the operation of the MSF, in turn supporting the overall transit system. All drain line structures will be underground except the stormwater outfall structure at the end of the stormwater outfall drain line. There will be no long-term "use" evident within the SMA B: MSF near LCC Utility area. Section 2.5 of the Final EIS (Attachment 1) provides additional detail on overall Project operation.

2. Physical Characteristics

Preliminary plan and profile drawings of the SMA B: MSF near LCC Utility portion of the Project are provided in Attachment C. These plans generally illustrate the placement of the two drain lines and any connections to be made to existing and proposed utilities. The two drain lines are as follows:

1. A 280-foot-long stormwater outfall drain line (stormwater outfall) for the MSF. The line will be underground and will be a 60-inch-diameter round pipe that transitions to a 2-foot by 8.5-foot box culvert. The line will end in an outfall structure just makai of the shoreline on the beach.
2. An 80-foot-long sanitary sewer drain line (sewer line) for the MSF. It will be installed underground, will be 12-inches in diameter, and will connect to an existing sewer line.

The MSF, which abuts the SMA, will occupy the lot just mauka of the two drain lines. As described above and illustrated in drawings in Attachment C, the MSF will contain an Operations and Service Building (approximately 85,000 square feet and 62 feet high), a Maintenance of Way Building (approximately 26,000 square feet and 36 feet high), a Train Wash Facility (approximately 15,000 square feet and 24 feet high), a Wheel Truing Facility (approximately 2,000 square feet and 24 feet high), a system control center, other small buildings, retaining walls, and parking for maintenance employees. In total the floor area of all buildings will be approximately 130,000 square feet. The site will be graded such that all buildings and storage track will be at an elevation of approximately +85 feet above MSL. It will also include areas for operation and maintenance of the trains, including storage for approximately 100 vehicles, a vehicle-wash area, and storage track. Drainage within the MSF will be collected internally and flow in a detention basin. The detention basin will allow collected stormwater to percolate into the ground and/or flow through a sand filter and discharge through an extended detention outlet structure into the stormwater outfall drain line discussed above.

The fixed guideway of the Project will also cross the MSF parcel in the mauka portion of the lot. Unlike other portions of the fixed guideway, within the MSF parcel the fixed guideway will be at-grade. Similar to the rest of the fixed guideway, it will consist of two parallel tracks.

3. Construction Characteristics

Construction of the Project in the SMA B: MSF near LCC Utility area will occur within two parcels in the SMA. Construction work details will be developed during Preliminary Engineering and Final Design. The following primary construction activities will occur:

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- Drain line installation, including trenching for the placement of the underground lines. This will be accomplished using backhoes and excavators.

Construction of the drain lines within the SMA will occur in concert with construction of the MSF on the neighboring parcel that abuts the SMA. Grading of that parcel to achieve a large level area at elevation of approximately +85 feet MSL and a drainage basin will occur first. Once the drainage basin is complete, the drain lines within the SMA will likely be installed. Other improvements within the MSF parcel will also proceed once the site is graded.

4. Utility Requirements

The 80-foot-long sewer line within the SMA will connect MSF facilities to an existing sewer line. The SMA B: MSF near LCC Utility portion of the Project will not require other utility connections within the SMA. The MSF will require connections to water and electricity, but those connections will occur outside the SMA area.

5. Liquid Waste Disposal

The Project will require connection to the municipal sewer system within the SMA B: MSF near LCC Utility area for the sewer drain line that will be installed.

6. Solid Waste Disposal

During operation, the Project will not generate solid waste within the SMA B: MSF near LCC Utility area. There are no stations within the SMA in this portion of the Project. The MSF is adjacent to, but not within the SMA, and the facility will be fenced to minimize the potential for solid waste to blow into adjacent properties. The guideway is approximately 1,300 feet mauka of the SMA boundary, and train windows will not open, so items cannot be thrown from the train as it passes the SMA B: MSF near LCC Utility area. Because waste will not be generated within this portion of the Project, disposal is not anticipated to occur within the SMA B: MSF near LCC Utility portion of the Project.

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 there will be no regular access to the "site", the drain lines within SMA B: MSF near LCC Utilities. Once the drain lines have been installed there will be no need for regular access to them. Access to the MSF adjacent to the SMA during construction and

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operation will primarily be from Ala Ike Street. Access to the operating transit system will be at stations, the nearest station is located on the LCC campus.

During construction, access to the site within the SMA will be from Waiawa Road.

Within the SMA B: MSF near LCC Utility area, two recreation properties will experience temporary impacts during construction: the future Middle Loch Park and the Pearl Harbor Bike Path.

The City and County of Honolulu has set aside land for a new 12.8-acre park mauka of Middle Loch, adjacent to the Pearl Harbor Bike Path, which will contain a portion of TMK 9-4-008:030, the parcel in which the two drain lines will be installed. Only the stormwater outfall drain line extends through the future Middle Loch Park, which is planned as a passive recreational area with benches and restrooms. The guideway will be mauka of the future park in the median of Farrington Highway and will not require any direct use of the park.

The stormwater outfall drain line pipe will be laid in a trench and buried under the future Middle Loch Park, which will be under the jurisdiction of the City and County of Honolulu Department of Parks and Recreation (DPR), and the existing Pearl Harbor Bike Path, which is under the jurisdiction of DTS. The City will maintain public access to and use of the bike path during construction, and once construction is complete, the bike path will be repaved in the affected area and any planting disturbed by construction will be restored. The future Middle Loch Park is currently vacant land. The area disturbed during construction will be restored and vegetated similar to the existing conditions.

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 information used for preparation of that document, including the technical reports that contain detailed information concerning project-specific field studies performed to support the EIS process.

Section II.B References

Attachment C: Preliminary Engineering Project Plans, SMA B: MSF – LCC Utilities.

Attachment D: Preliminary Engineering Project Drawings, SMA B: MSF – LCC Utilities.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*.

C. Economic and Social Characteristics

1. Estimated Cost and Time Phasing of Construction

Estimated Costs

The cost estimates presented are based on Preliminary Engineering and operations analysis. This financial analysis considers costs, resources, and funding strategies associated with public transit

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services provided by the City, and excludes financing costs. Unless otherwise stated, costs and revenues are presented in fiscal year (FY) 2009 dollars. For the City and County of Honolulu, the fiscal year begins on July 1 and ends on June 30 (e.g., FY2009 is from July 1, 2008, to June 30, 2009). All year references are to fiscal years.

It is estimated that the cost of construction for the entire 20-mile alignment, including construction within the SMA B: MSF near LCC Utility portion of the Project will be $4,281 million in FY2009 dollars. The cost estimate excludes amounts already incurred during FY2007 and FY2008 and financing costs. Because work within the SMA B: MSF near LCC Utility portion of the Project includes only relatively minor utility construction, the cost will be a small portion of the total cost for the Project and be less than $1 million in FY2009 dollars.

Time Phasing of Construction

It is estimated that construction within the SMA B: MSF near LCC Utility portion of the Project will occur between April 2011 (starting with utility relocation) and December 2013 (for the completion of power systems). However, because the SMA B: MSF near LCC Utility portion of the Project is just a small part of the overall Project being built during this construction phase, there will be long periods during which no construction will occur within the SMA B: MSF near LCC Utility area. A relatively long period is indicated because it is not known when during the larger MSF construction effort the drain lines will be installed.

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 contain detailed information concerning project-specific field studies performed to support the Final EIS.

Section II.C References

RTD 2009. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. August 2009. *Honolulu High-Capacity Transit Corridor Project Financial Plan.*

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement.*

D. Environmental Characteristics

1. Soils

In the SMA B: MSF near LCC Utility portion of the Project the two soil types found in the area of the drain lines are Waipahu Silty Clay (WzC) and Pearl Harbor Clay (Ph). Waipahu Silty Clay is typical of terraces, has slopes of 6 to 12 percent, is well-drained, and transmits water moderately well. Pearl Harbor Clay is typical of coastal plains, has slopes of 0 to 2 percent, is poorly drained, and has a fairly low capacity to transmit water. The SMA B: MSF near LCC

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Utility portion of the Project work area is relatively undeveloped, although largely surrounded by development.

2. Topography

In the SMA B: MSF near LCC Utility portion of the Project the topography is generally flat with some slight slopes. No major grading activities will occur within the SMA B: MSF near LCC Utility portion of the Project. Existing topography will remain largely unchanged.

The MSF, adjacent to but outside the SMA, will require significant grading to achieve the required topography for the MSF. The grading on the MSF facility site will generally consist of cutting the higher/northern portion of the existing site and filling the lower/southern portion of the existing site. This will create a large relatively flat area for storage of transit system vehicles and maintenance activities. The finished grade is illustrated on the Drainage Plan sheets included in Attachment C.

3. Surface Runoff, Drainage, and Erosion Hazard

Runoff in the area of the two drain lines within the SMA B: MSF near LCC Utility area generally flows overland and into Pearl Harbor. There is no stormwater drain system in the immediate area. The surrounding upland area is developed, and surface runoff in these upland areas travels to a drainage system. The Farrington Highway and the H-1 Freeway stormwater drain system is extensive and under the control of HDOT. The City and County of Honolulu also has an extensive storm drain system that serves the surrounding community. The low slopes of lands in this area, combined with the soil types and high level of vegetative cover, contribute to a minimal erosion threat.

The MSF, adjacent to but outside the SMA, will also have its own internal drainage system. The MSF drainage is illustrated on the Drainage Plan sheets included in Attachment C and includes the direction of on-site stormwater to a retention basin (indicated as a "Proposal Water Quality Basin" in Attachment C).

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

The Flood Insurance Rate Maps (FIRM) are being updated, and the new maps will go into effect in 2011. The previous FIRM indicated that the SMA B: MSF near LCC Utility portion of the Project will not cross or be within any flood zones. However, the updated 2011 FIRM maps indicate that the SMA B: MSF near LCC Utility portion of the Project will be partially within flood zone VE; the outfall structure will extend slightly into this flood zone. Figure B-FZ2 in Attachment D illustrates the location of this flood zone (defined below). The Project will not adversely impact or interfere with this floodplain and its functions.

> *Flood Zone VE:* The flood insurance rate zones that correspond to areas along the coasts subject to inundation by the 100-year floodplains with additional hazards due to storm-induced velocity wave action. In most instances, base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

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In regard to the LUO Flood Hazard District compliance, the City and County of Honolulu will submit documents as required to comply with Flood Hazard District Regulation (Article 9. Special District Regulations, Section 21-9.10) before construction of a segment begins.

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 Final EIS for the HHCTC Project indicated that the SMA B: MSF near LCC Utility portion of the Project is not within a tsunami evacuation zone. Since the publication of the Final EIS, State Civil Defense has revised the maps. A portion of the Project within the SMA B: MSF near LCC Utility area is now within the tsunami evacuation zone; the portion within the evacuation zone is limited the underground stormwater drain pipe and outfall makai of the bike path (a roughly 50 linear foot portion of the pipe and the outfall). Because the only Project facility within the tsunami evacuation zone in the SMA B: MSF near LCC Utility area is the storm drain pipe and outfall structure, tsunamis are not anticipated to affect the Project in this area.

5. Other Pertinent Information

A survey of street trees was conducted in the project 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 DPR 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 there are no street trees in the SMA B: MSF near LCC Utility portion of the Project.

Section II.D References

Attachment C: Preliminary Engineering Project Plans, SMA B: MSF – LCC Utilities.

Department of Emergency Management, 2010. New Tsunami Evacuation Zone Maps. Accessed at http://www.honolulu.gov/dem/draft_tsunami_evacuation_zone_maps_.htm.

FEMA 2007. Federal Emergency Management Agency (FEMA). Digital Flood Insurance Rate Maps; GIS "Flood" shapefile. http://hawaii.gov/dbedt/gis/dfirm.htm.

RTD 2008l. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Street Trees Technical Report*.

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RTD 2008m. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Geology, Soils, Farmlands, and Natural Hazards Technical Report.*

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Multiple Sections, including Section 4.15 "Street Trees."

USDA 2007. U.S. Department of Agriculture Natural Resources Conservation Service, Hawai'i. 2007 (original data from 1972). GIS "Soils" shapefile. http://hawaii.gov/dbedt/gis/soils.htm.

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

In the uplands near the SMA B: MSF near LCC Utility area are the following land uses, from Koko Head to 'Ewa: LCC, a former Navy facility (now vacant), and Waipahu High School. None of these uses are within the SMA area. These uses are described below:

- LCC is a 50-acre public school operated by the University of Hawai'i system and near the Waiawa Interchange, close to Farrington Highway and H-1. This two-year college enrolls approximately 6,000 students each semester. The school's grounds include outdoor eating areas, a children's tot lot, tennis courts, and basketball courts. These resources are outside the SMA to the northeast of the Project in SMA B: MSF near LCC Utility, just north of the MSF parcel.
- The former Navy facility, known as the "Navy Drum Site," was used to store fuel and place it in 55-gallon drums for use in other areas by the Navy. The Navy conducted an extensive cleanup of the facility and turned it over the State of Hawai'i. The site is outside of the SMA. This is the preferred site for the MSF.
- Waipahu High School is a public school operated by the State Department of Education located at 94-1211 Farrington Highway. This high school serves grades 9 through 12 and is attended by approximately 2,500 students. The school, and its resources, is outside of the SMA to the west of the Project in SMA B: MSF near LCC Utility, just south of the MSF parcel.

Within the SMA B: MSF near LCC Utility area much of the land is not actively used, although there are some agricultural and recreational uses. Some ponds in the general area are used for agriculture, and near the shoreline is the Pearl Harbor Bike Path. The Project will involve the installation of two underground drain lines, which is expected to have little impact on the area and surrounding uses. The SMA boundary lies along the makai edge of the former Navy facility proposed for the MSF.

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Section III.A References

Attachment C: Preliminary Engineering Project Plans, SMA B: MSF – LCC Utilities.

Attachment D: Preliminary Engineering Project Drawings, SMA B: MSF – LCC Utilities.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*.

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

There is one existing publicly owned recreation resource in the SMA B: MSF near LCC Utility area, the Pearl Harbor Bike Path, and one planned publicly owned park, the future Middle Loch Park.

The City and County of Honolulu has set aside land for a new 12.8-acre park mauka of Middle Loch, adjacent to the Pearl Harbor Bike Path, which will contain a portion of TMK 9-4-008:030, the parcel in which the two drain lines will be installed. Only the stormwater outfall drain line extends through the future Middle Loch Park, which is planned as a passive recreational area with benches and restrooms. The guideway will be mauka of the future park, in the median of Farrington Highway and will not require any direct use of the park.

The stormwater outfall drain line pipe will be laid in a trench and buried under the future Middle Loch Park, which will be under the jurisdiction of the DPR, and the existing Pearl Harbor Bike Path, which is under the jurisdiction of DTS. The City will maintain public access to and use of the bike path during construction. Once construction is complete, the bike path will be repaved in the affected area and any planting disturbed by construction will be restored. The future Middle Loch Park is currently vacant land. The area disturbed during construction will be restored and vegetated similar to existing conditions.

There will be no permanent adverse physical impacts to either of these resources, which results in a “no use” determination under Section 4(f).

Section III.B.1 References

RTD 2008d. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Neighborhoods and Communities Technical Report*.

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RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Chapter 5 "Section 4(f) Evaluation."

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

No rare, threatened, or endangered species were observed in the SMA B: MSF near LCC Utility area, and coordination with governmental agencies and the literature review indicate that there are no designated critical habitats or wildlife preserves either. The nearest such habitat is the Pearl Harbor National Wildlife Refuge Waiawa Unit, which is designated as core habitat for four endangered water birds. The Waiawa Unit is more than 1,000 feet southeast of the preferred MSF option location.

The species described below were reported as being present or potentially present near the SMA B: MSF near LCC Utility area:

Fauna

Four water birds 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 the Pearl Harbor National Wildlife Refuge; however, none of these water birds were observed in the SMA B: MSF near LCC Utility area during the project survey.

The Black-crowned night heron (*Nycticorax nycticorax hoactii)* is a protected migratory water bird. This species is protected by the Migratory Bird Treaty Act, although it is not threatened or endangered. Local colonies are known to roost and nest in mangrove trees within Pearl Harbor, which are generally remote from the study corridor. Mangrove stands in this area are being removed because the mangrove is regarded as an invasive plant species.

Flora

There are no rare, threatened, or endangered floral species in the SMA B: MSF near LCC Utility area. The only endangered plant known in the study corridor is ko'oloa'ula (*Abutilon menziesii),* which does not occur within this area.

Section III.B.2 References

RTD 2008j. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Ecosystems and Natural Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.13 "Ecosystems."

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

The 60-inch stormwater outfall drain line in SMA B: MSF near LCC Utility area will flow to the shore of Pearl Harbor at Middle Loch. The area in which the drain line discharges is a mangrove wetland. The nearshore waters supported, until recently, a mangrove forest, and the area is now being recolonized by juvenile mangrove plants. The mangroves were recently removed because they are considered an invasive species. The ordinary high water mark—recognized in this instance as the mean reach of the higher high tides—constitutes the upper limit of Waters of the U.S. and State. The outlet structure and riprap of this drain line will be placed above and inland of the ordinary high water mark. There will not be a substantial impact to this mangrove wetland.

Section III.B.3 References

RTD 2008k. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Water Resources Technical Report*.

RTD 2009b. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Wetland and Waters of the U.S. Study*.

RTD 2009h. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Ecosystem Function and Values of Wetland Waters of the U.S.*

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.14 "Water."

4. Fisheries and Fishing Grounds

The Project in the SMA B: MSF near LCC Utility area will not impact the use or availability of coastal or stream-based fishing grounds because of the length of coastline available in comparison to the small area that will experience construction impacts during installation of the stormwater outfall drain line. No streams are located in the SMA B: MSF near LCC Utility area. Once construction is complete, access will return to normal, and there will be no long-term impact to fisheries and fishing grounds.

Section III.B.4 References

RTD 2008k. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Water Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.13 "Ecosystems."

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5. Other Coastal/Natural Resources

The Project will not adversely affect opportunities for public enjoyment and use of any recreational, coastal, or natural resources within the SMA B: MSF near LCC Utility area.

Section III.B.5 References

RTD 2008d. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Neighborhoods and Communities Technical Report.*

RTD 2008j. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Ecosystems and Natural Resources Technical Report.*

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement.* Section 4.13 "Ecosystems."

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 (A.D. 1778) archaeology, and post-contact archaeology. There is a moderate chance of encountering burials, as well as pre- and post-contact archaeological resources in the SMA B: MSF near LCC Utility area. Subsurface features and deposits, including iwi kupuna or Hawaiian burials, that have not been previously identified may be affected by the Project.

A draft archeological inventory survey was completed for the first construction phase of the Project. The study area includes an approximately 6.8-mile segment that extends from North-South Road in East Kapolei to the Pearl Highlands Station and an approximate 0.6-mile segment that extends from the Pearl Highlands Station to Waimano Home Road in Pearl City, which is part of the second construction phase. The archaeological inventory survey investigation for the first construction phase did not identify any archeological resources within SMA B: MSF near LCC Utility area. If, in the unlikely event that subsurface cultural deposits or human skeletal remains are encountered during construction, all work in the immediate area will stop and the State Historic Preservation Officer (SHPO) will be notified in accordance with Federal and State law. If archaeological resources are identified during construction, the City will minimize impacts.

The site proposed for the MSF, which is adjacent to the SMA B: MSF near LCC Utility area, was formerly used by the military and has been previously disturbed; therefore unknown archaeological resources are not expected to be encountered or adversely affected by construction.

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Section III.C.1 References

RTD 2008n. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Archaeological Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.16 "Archaeological, Cultural, and Historic Resources."

2. Cultural

Archival and ethnographic research shows that most traditional cultural resources within the Project in the SMA B: MSF near LCC Utility area have been heavily damaged or destroyed through previous development. 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.

No cultural resources have been previously identified as having potential long-term adverse effects in the area to be disturbed by the two drain lines within the SMA B: MSF near LCC Utility area. The fixed guideway will cross Waiawa Stream, a cultural water resource, which flows through the SMA B: MSF near LCC Utility area, but the fixed guideway crossing is approximately 1,700 feet mauka of the SMA boundary and approximately 3,200 feet from the SMA B: MSF near LCC Utility area. Waiawa Stream could experience potential long-term adverse effects as a result of the Project. Potential effects on traditional cultural practices associated with Waiawa Stream will be mitigated through the mitigation commitments at Waiawa Stream, which include the following:

- Enhancement of the stream to restore and/or improve ecological and aquatic function
- Establishment of water quality basins
- Enhancement of floodway capacity conveyance to achieve a zero rise in flood zone by removal of fill and an increase in stream area
- Extension of the existing culvert to Waiawa Stream to correct existing ponding
- Ecological restoration with native Hawaiian plantings and use of non-invasive species

In addition, any cultural resources that are uncovered will be assessed through collaborative consultation with appropriate cultural practitioners and/or community groups in accordance with the Programmatic Agreement (PA) developed pursuant to Section 106 of the National Historic Preservation Act.

Because the site proposed for the MSF was formerly used by the military, it has been previously disturbed and cultural resources are not anticipated to be adversely affected by construction.

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Section III.C.2 References

RTD 2008p. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Cultural Resources Technical Report*.

RTD 2009e. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Addendum 01 to the Cultural Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.16 "Archaeological, Cultural, and Historic Resources."

3. Historical

Through agency coordination, the Project's Area of Potential Effects was defined generally as one parcel deep from the fixed guideway alignment in the SMA B: MSF near LCC Utility portion of the Project. The Area of Potential Effects also includes parcels adjacent to all facilities associated with the fixed guideway system, including the traction power substations.

Historical Resources within the SMA B: MSF near LCC Utility Area

One historical resource is located in the SMA B: MSF near LCC Utility: Watercress of Hawai'i (Tax Map Key 9-6-003:026); however, the Project will not adversely affect this resource. Figure B-HR in Attachment D illustrates the location of this historic resource. Through agency coordination it was determined that this property could be significant as a rural historic landscape site under Criterion "A" for its association with the history of diversified agriculture in the Waiawa Spring area. However, the grid-pattern watercress plots are not a historic feature, which lowers the farm's integrity by changing the design, setting, and feeling of the site from what it was during the historic period when historic photos show crops were grown in contoured plots.

Historical Resources in the Vicinity of SMA B: MSF near LCC Utility Area

The U.S. Naval Base Pearl Harbor National Historic Landmark (Tax Map Key various) is adjacent to the SMA B: MSF near LCC Utility area. The U.S. Naval Base Pearl Harbor National Historic District was listed in the National Register of Historic Places in 1974 (with boundaries accepted in 1978) and designated as a National Historic Landmark (NHL) in 1964. This property includes the USS Arizona Memorial and the USS Bowfin. Portions of Pearl Harbor were designated as part of the World War II Valor in the Pacific National Monument in 2008. These designations attest to Pearl Harbor's national significance, its critical support of the U.S. Navy fleet, and establishment of the U.S. as a major power in the Pacific. The NHL nomination specifically states that the national significance of Pearl Harbor stems from its continuing function rather than its physical facilities and those physical changes required to support this mission are "necessary, normal, and expected." 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

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this resource. Therefore, the Project will have an adverse effect on this resource under Section 106, but there will be no constructive use of the resource under Section 4(f).

A PA was developed in consultation among the Section 106 consulting parties (identified in the Introduction – Section I.4). The Section 106 process identified historic properties potentially affected by the Project, assessed effects, and sought ways to avoid, minimize, or mitigate any adverse effects on any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP. The PA records the terms and conditions agreed upon to resolve potential adverse effects and is attached to the Final EIS (Attachment 1) in Appendix H. The PA incorporated comments from Section 106 consulting parties listed in the Introduction to this permit application in Section I.4. FTA, SHPO, and the Advisory Council on Historic Preservation, in coordination with the invited signatories, will finalize the PA prior to the Record of Decision (ROD). FTA will distribute an executed PA to the Section 106 consulting parties and invite them to participate as concurring parties to the PA.

Section III.C.3 References

Attachment D: Preliminary Engineering Project Drawings, SMA B: MSF – LCC Utilities (Figure B-HR)

RTD 2008o. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Historic Resources Technical Report*.

RTD 2009c. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Addendum 01 to the Historic Resources Technical Report*.

RTD 2009d. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Historic Effects Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.16 "Archaeological, Cultural, and Historic Resources."

SHPD 2010. State of Hawai'i Department of Land and Natural Resources State Historic Preservation Division. 2010. *Honolulu High-Capacity Transit Corridor Project Programmatic Agreement*.

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

The portion of the Project within SMA B: MSF near LCC Utility are the two underground drain lines. No visual impact is anticipated as a result of these components.

Adjacent to the SMA B: MSF near LCC Utility area, the MSF and guideway will be on vacant and undeveloped property between Waipahu High School and Leeward Community College.

Farrington Highway and the Farrington Highway/H-1 Freeway interchange are mauka of the site, and a single-family residential neighborhood is located farther mauka.

Section 4.8 of the Final EIS discusses the SMA permit criteria related to coastal view effects within the SMA. The Project will pass along coastal roadways identified in the Coastal View Study with intermittent and continuous views along parts of Farrington Highway. The quality of makai views from Farrington Highway in the vicinity of Waipahu High School vary from low to moderate, with the campus and occasional groupings of shrubs and small trees obstructing most of these views.

The MSF, between the high school and LCC, will consist of buildings, paved parking areas, a complex of storage tracks and service bays, and site lighting. The major multistory buildings will be sited at various locations, with the tallest building, about 62 feet high, near the base of the property's slope, and a smaller building, about 36 feet high, 'Ewa of the LCC Station. The train wash facility will be makai of the guideway and Farrington Highway; this building will be about 24 feet high. These multistory buildings sited on the slope between the two educational institutions will be highly visible and dominant elements of makai views from the highway. Views of Pearl Harbor are of relatively short duration and intermittent while traveling along this section of Farrington Highway, so changes in views of the shoreline and harbor are not expected to be dramatic.

Figure B-CS1 in Attachment D provides a site plan illustrating two cross sections that extend from Farrington Highway and the Farrington Highway-Kamehameha Highway interchange to the Pearl Harbor shoreline through the MSF. Figure B-CS2 in Attachment D illustrates the proposed finished grade, planned MSF buildings, and the existing ground level along the two cross sections. These figures illustrate that the MSF buildings will appear in the view toward the shoreline in some areas, but also that the view toward the shoreline from portions of the highways will not be affected by the MSF.

Minimizing or avoiding light spillage onto adjacent properties and eliminating night sky pollution will be achieved by using full cut-off luminaries (fixture and lamp design) and low reflective surfaces.

Section III.D References

Attachment D: Preliminary Engineering Project Drawings, SMA B: MSF – LCC Utilities.

RTD 2008e. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Visual and Aesthetic Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.8 "Visual and Aesthetic Conditions."

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 stream in the SMA B: MSF near LCC Utility area. Outside of the SMA, but nearby, the Project will cross Waiawa Stream, which is listed on the Hawai‘i State Department of Health's (HDOH) 303(d) List of Impaired Waters (HDOH 2008). The Project will not have a direct impact on this stream, and accordingly, there will be no adverse impacts to this stream.

Marine Waters

The Project's MSF stormwater outfall drain line will discharge into Pearl Harbor, a Class 2 Inland Water/Estuary, in the SMA B: MSF near LCC Utility area. Any discharge entering Pearl Harbor will meet water quality requirements for this estuary, as it will have been treated by a permanent oil/water/sand separator prior to reaching the outfall. Impacts will be limited to infrequent flows generated by storms, and these treated flows will contribute fresh water to Middle Loch. Pearl Harbor has existing associated inlets of point-source discharges and streams, and is on HDOH's 303(d) List of Impaired Waters (HDOH 2008). The Project stormwater outfall drain line is not anticipated to adversely affect Pearl Harbor.

Flood Zones

The Project will be partially within one flood zone in the SMA B: MSF near LCC Utility area, as illustrated in Figure B-FZ2 in Attachment D. The outfall structure will slightly extend into flood zone VE, associated with storm-induced velocity wave action. The Project will not cause significant floodplain encroachment as defined by U.S. Department of Transportation Order 5650.2. The outfall structure will be built below ground level. The outfall structure could have minor effects on the floodplain; however any such changes caused by the Project will be mitigated through design to comply with current flood zone regulations. There will be no notable adverse impacts on natural and beneficial floodplain values, and there will be no impact to water levels in flood zones.

Groundwater

In the SMA B: MSF near LCC Utility 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 U.S. Environmental Protection Agency (EPA) and the U.S. Department of Transportation. A Water Quality Impact Assessment was reviewed by EPA, which concurred that contamination of the SOBA will not occur (letter dated March 27, 2009, located on page 433 of 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.

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Caprock overlies the SOBA and impedes the escape of groundwater from this basaltic aquifer. Water in the caprock is brackish and not potable, although 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 HDOH. In the SMA B: MSF near LCC Utility 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, and included in that report are the locations of water wells. Most of these water wells are 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, and the shafts for the Project will not penetrate anywhere near those depths.

Subsurface conditions in the SMA B: MSF near LCC Utility area generally consist of typical caprock, alluvial and marine deposits, and residual soils interlayered with coralline materials and/or basalt bedrock. Based on existing ground elevations that range from 0 to +90 feet MSL, the depth of groundwater for areas where the Project overlies basalt is expected to vary from 20 feet below ground surface to tens of feet below ground surface. Where existing ground elevations are elevation 20 feet or less, groundwater elevations are expected within 10 feet of the ground surface.

In the SMA B: MSF near LCC Utility area, the alignment and site improvements will generally be at grade. No deep foundations will be required for support of the guideway through this area. Any deep foundations for support of the MSF structures and appurtenant facilities are expected to be less than 50 feet deep. Most piers will only penetrate surficial materials or the caprock overlying the basalt aquifer. 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.

Groundwater in the excavations for foundations and drain lines 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 could require the use of oil/water separators, strippers, or other remediation techniques. Water removed from the excavations must either be returned to the groundwater system or added to the stormwater drainage system. Any water discharged into the drainage system and surface waterbodies will require an NPDES Dewatering Permit. This discharge must meet water quality standards, and a monitoring program will ensure compliance with these standards. An NPDES Construction Stormwater Permit has been obtained by the Project and will ensure proper handling of hazardous materials and other pollutants.

Construction-derived wastes will be managed in accordance with prevailing regulations. Uncontrolled releases will not be allowed. No contaminated soils will be disposed of in the Sole Source Aquifer area. No long-term impacts to the SOBA are anticipated.

Potable water is currently limited on O'ahu and is delivered by the City and County of Honolulu Board of Water Supply. Potable water will be required to support the MSF, although the Project

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is not expected to be a major water consumer. To the extent available, the Project will use recycled water at the MSF, at stations, and for irrigation of landscaped areas.

The Project will not increase impermeable surfaces in the SMA B: MSF near LCC Utility area. Once the underground drain lines are installed, vegetation will grow over them, and the only area to be paved will be the section of the Pearl Harbor Bike Path that was disrupted during construction. The Project will slightly increase impermeable surfaces near the SMA B: MSF near LCC Utility area, primarily as a result of the MSF buildings and roads. By installing permanent BMPs, primarily consisting of a settling basin within the MSF site, most 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 is expected to be relatively free of pollutants and will not threaten groundwater quality.

Section III.E References

Attachment D: Preliminary Engineering Project Drawings, SMA B: MSF – LCC Utilities.

HDOH 2008. State of Hawai'i Department of Health. 2008. *2006 State of Hawai'i water quality monitoring and assessment report: Integrated report to the U.S. Environmental Protection Agency and the U.S. Congress pursuant to Sections 303(d) and 305(b), Clean Water Act (PL 97-117).*

RTD 2008k. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Water Resources Technical Report.*

RTD 2009b. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Wetland and Waters of the U.S. Study.*

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement.* Section 4.14 "Water."

F. Include Suitable and Adequate Location and Site Maps

Please see Attachments C and D.

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.

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IV. PROJECT IMPACTS

This section discusses impacts within the SMA B: MSF near LCC Utility 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 SMA B: MSF near LCC Utility area.

While the portion of the Project in the SMA B: MSF near LCC Utility 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. All project facilities in the SMA B area will be underground, except for the small outfall structure, and will not affect coastal recreational opportunities. The MSF, adjacent but outside of the SMA, will not adversely affect any coastal recreational opportunities or their use by 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 SMA B: MSF near LCC Utility area.

There is a moderate chance of encountering burials, as well as pre- and post-contact archaeological resources in the SMA B: MSF near LCC Utility area. Historic Watercress of Hawai'i is within the SMA B: MSF near LCC Utility area, but the Project will have no direct impact to this resource, and there will be no adverse effect on it. The United States Naval Base, Pearl Harbor NHL is near the SMA B: MSF near LCC Utility area. 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. The Project will have an adverse effect on this resource under Section 106 of the National Historic Preservation Act.

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

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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. Please see Section III.D for details regarding coastal views in the SMA B: MSF near LCC Utility area.

Scenic impacts associated with the Project in and near the SMA B: MSF near LCC Utility area include a potential change in the setting of two historic resources (Pearl Harbor National Historic Landmark and Watercress of Hawai'i), 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 Project MSF and guideway will be makai of the Farrington/Kamehameha Highway interchange near Waipahu High School and LCC, but mauka of the SMA line. The multistory MSF buildings will be highly visible and dominant elements of makai views from the highway. However, views of Pearl Harbor are of relatively short duration and intermittent while traveling along this section of Farrington Highway; therefore changes in views of the shoreline and harbor are not expected to be dramatic. The only project components actually within the SMA B: MSF near LCC Utility area are the two underground drain lines that will not have any effect on coastal scenic and open space resources.

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.5 for details regarding coastal/natural resources in the SMA B: MSF near LCC Utility area.

The Project will not have an adverse impact on coastal ecosystems. The Project is being designed so as to ensure minimal environmental impacts along the alignment through the use of construction and permanent BMPs. In the SMA B: MSF near LCC Utility area, the only project element in the SMA will be the two underground drain lines, and only the stormwater outfall drain line will drain into Pearl Harbor; the sewer drain line will connect to an existing sewer line. The outfall is being designed so that any discharge entering Pearl Harbor will have been treated with a permanent oil/water/sand separator in order to meet water quality requirements for the estuary.

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 improve infrastructure and provide long-term benefits to residents, businesses, and commuters. The portion of the Project within the SMA B: MSF near LCC Utility area will not adversely affect coastal-dependent economic activities.

6. *Coastal Hazards*

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

A small portion of the Project within the SMA B: MSF near LCC Utility area is in a tsunami evacuation zone based on new maps issued by State Civil Defense in 2010. The only Project facility within the tsunami evacuation zone in the SMA B: MSF near LCC Utility area is a portion of the underground stormwater discharge pipe and outfall structure; therefore, tsunamis are not anticipated to affect the Project in this area. 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 because of the slight slopes, as well as the soil types and level of vegetative cover. Sea level rise may impact the Project because of 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 4 feet to reach the top of the headwall at the outfall, and more than 38 feet to impact the detention basin adjacent to the portion of the Project in the SMA B: MSF near LCC Utility 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 expected 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 law. Various public outreach activities were held near the SMA B: MSF near LCC Utility area, as discussed in Section I.F.6.

9. *Beach Protection*

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

The portion of the Project within the SMA B: MSF near LCC Utility area is not adjacent to or abutting a beach, and 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.*

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The portion of the Project within the SMA B: MSF near LCC Utility area is abutting a shoreline but will not adversely affect marine resources. The Project stormwater outfall drain line will discharge into the Middle Loch of Pearl Harbor, but the water discharged by the system will have been treated with a permanent oil/water/sand separator prior to reaching the outfall, and any discharge entering Pearl Harbor will meet water quality requirements for the estuary. Impacts will be limited to infrequent flows generated by storms, and these treated flows will contribute fresh water to Middle Loch. The Project stormwater outfall drain line is not expected to adversely affect Pearl Harbor or any of its associated 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 SMA B: MSF near LCC Utility area.

The portion of the Project within the SMA B: MSF near LCC Utility 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. There will be a temporary disruption of the existing Pearl Harbor Bike Path during construction as a trench must be dug across the path to install the stormwater outfall drain line. A temporary crossing over the trench will be provided to maintain bikeway access during construction; once construction is complete, the path will be returned to its existing alignment. As a result, no long-term adverse effects are anticipated on the bicycle path.

Construction in this area will also temporarily impact the Pearl Harbor NHL; however, no long-term adverse impacts are expected.

The Future Middle Loch Park is planned as a passive recreational area with benches and restrooms. The guideway and MSF, as well as the sewer drain line to be installed, will be mauka of the future park and will not require any direct use of the park; only the underground stormwater outfall drain line will be within the park's boundaries. If the park is developed prior to project construction in the SMA B: MSF near LCC Utility area, the Project will maintain access to the extent possible. These resources will remain open and accessible during construction and operation of the Project.

Once constructed, the Project will increase mobility and improve options to access public recreation areas, such as public beaches and parks.

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

The portion of the Project within the SMA B: MSF near LCC Utility area will not adversely affect or diminish the quality of public recreation areas or wildlife preserves.

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 SMA B: MSF near LCC Utility area DTS 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 SMA B: MSF near LCC Utility area is not expected to 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 all stormwater outfall structures associated with the Project, in particular the MSF. The permanent BMPs associated with the MSF include oil/water/sand filters and a retention pond. 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 SMA B: MSF near LCC Utility area, there will be no significant adverse environmental or ecological impacts due to the Project. 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.

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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;*

The portion of the Project within the SMA B: MSF near LCC Utility area is consistent with the objectives and policies set forth for SMAs. The Project will acquire a Shoreline Setback Variance for work within 40 feet of the shoreline.

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 SMA B: MSF near LCC Utility area is consistent with all plans and zoning, as discussed 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*

A portion of the Project within the SMA B: MSF near LCC Utility area is located in the tsunami evacuation zone, based on revised maps published by State Civil Defense in 2010. The only Project facility within the tsunami evacuation zone in the SMA B: MSF near LCC Utility area is a portion of the underground stormwater discharge pipe and the outfall structure; the Project has been adequately planned and designed to the extent practical to minimize the risk from coastal hazards, including tsunamis. 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, the sea level would have to rise more than 4 feet to reach the top of the headwall at the outfall, and more than 38 feet to impact the detention basin adjacent to the portion of the Project in the SMA B: MSF near LCC Utility area.

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

The portion of the Project within the SMA B: MSF near LCC Utility area will not impede public access to the shoreline or beach because it requires only the installation of two underground drain lines. Conversely, the Project will increase mobility and thereby access to such areas outside of the SMA B: MSF near LCC Utility 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 SMA B: MSF near LCC Utility area.

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

There are no beaches in the SMA B: MSF near LCC Utility area. In addition, the Project will not reduce or impact any other areas usable for public recreation because it requires only the installation of two underground drain lines.

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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 SMA B: MSF near LCC Utility area will not reduce or restrict public access to tidal and submerged lands, beaches, portions of rivers and streams within the SMA, or the mean high tide line where there is no beach. The Project does not cross any stream in the SMA B: MSF near LCC Utility area. Public access to the shoreline in this area will not be reduced or restricted by the Project because the Project only requires the installation of two underground drain lines.

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 SMA B: MSF near LCC Utility area requires the installation of two underground drain lines that will not affect coastal scenic and open space resources. In the SMA B: MSF near LCC Utility area, the MSF and guideway will be makai of the Farrington/Kamehameha Highway interchange near Waipahu High School and LCC. Both the Project MSF and guideway will be mauka of the SMA boundary. The multistory MSF buildings will be highly visible and dominant elements of makai views from the highway. However, views of Pearl Harbor are of relatively short duration and intermittent while traveling along this section of Farrington Highway; therefore changes in views of the shoreline and harbor are not expected to be dramatic. 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 SMA B: MSF near LCC Utility 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 stormwater outfall is being designed so that water will have been treated by a permanent oil/water/sand separator prior to reaching the outfall, and any discharge entering Pearl Harbor will meet water quality requirements for the estuary. Existing and potential fishing grounds along the coast will not experience any interference due to the Project. The Project will not have an adverse effect on any wildlife habitats or potential or existing agricultural uses of land due to its small disturbance area in this location.

V. MITIGATION MEASURES

Please see Attachment 4.

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APPLICATION MATERIALS

Special Management Area C: Waiau – Hālawa

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I. GENERAL INFORMATION

A. Applicant (Name, Address, Phone)

City and County of Honolulu
Department of Transportation Services (DTS)
650 South King Street, 3rd Floor
Honolulu, HI 96813
(808) 768-8303

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

The Special Management Area (SMA) C: Waiau – Hālawa portion of the Project is the portion that extends along Kamehameha Highway between the H-1 overpass at the Hawaiian Electric Company (HECO) Waiau power plant to just beyond Kahomua Street (Attachment F). Certain Project facilities will be built on the following right-of-way (ROW) that are within the SMA C: Waiau – Hālawa area.

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

The Project will acquire additional ROW from some or all of the following 12 parcels within the SMA C: Waiau – Hālawa portion of the Project:

(1) 9-8-009:020: Owned by Honolulu Ltd. and Magba, Inc.
3660 Waialae Avenue #400
Honolulu, HI 96816

(1) 9-8-009:011: Owned by Healani Land Company, Inc.
P.O. Box 17658
Honolulu, HI 96817

(1) 9-8-009:014: Owned by Continental Investment Co.
P.O. Box 488
Aiea, HI 96701

(1) 9-8-009:015: Owned by Continental Investment Co.

(1) 9-8-009:016: Owned by Continental Investment Co.

(1) 9-8-009:017: Owned by Continental Investment Co.

(1) 9-8-009:005: Owned by Continental Investment Co.

(1) 9-8-014:005: Owned by Bernice Pauahi Bishop Estate Trust
P.O. Box 3466

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Honolulu, HI 96801

(1) 9-8-014:010: Owned by Bernice Pauahi Bishop Estate Trust

(1) 9-8-014:012: Owned by Bernice Pauahi Bishop Estate Trust

(1) 9-8-014:006: Owned by Nohea Santimer, 2444 Huene Street Honolulu, HI 96817 Brion Zablan, 3330 Keanu Street Honolulu, HI 96816 and others

(1) 9-8-015:045: Owned by Bernice Pauahi Bishop Estate Trust

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; it is anticipated that at that time acquisition of additional ROW may not be necessary from some of the listed parcels.

The SMA C: Waiau – Hālawa 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 just south of Kohomua Street (Attachment F). 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 (Attachment F).

C. Agent

City and County of Honolulu
Department of Transportation Services Rapid Transit Division (DTS-RTD)
1099 Alakea Street, Suite 1700
Honolulu, HI 96813
(808) 768-8344

D. Tax Map Key

Project features may be built on the following current Tax Map Keys (TMKs) within the SMA C: Waiau – Hālawa portion of the Project. The portions of these parcels on which Project features will be built will 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) 9-8-009:020: Project ROW requirements will result in a strip take 10 feet wide for 400 feet along Kamehameha Highway within this TMK, which will result in a total Project acquisition of 4,000 square feet, or 0.092 acre; the total lot area is 2.137 acres.

(1) 9-8-009:011: Project ROW requirements will result in a strip take 10 feet wide for 700 feet along Kamehameha Highway within this TMK, which will result in a total Project acquisition of 7,000 square feet, or 0.161 acre; the total lot area is 3.278 acres.

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(1) 9-8-009:014: Project ROW requirements will result in a strip take 20 feet wide for 85 feet along Kamehameha Highway within this TMK, which will result in a total Project acquisition of 1,700 square feet, or 0.039 acre; the total lot area is 0.2296 acres.

(1) 9-8-009:015: Project ROW requirements will result in a strip take 20 feet wide for 100 feet along Kamehameha Highway within this TMK, which will result in a total Project acquisition of 2,000 square feet, or 0.046 acre; the total lot area is 0.2755 acres.

(1) 9-8-009:016: Project ROW requirements will result in a strip take 20 feet wide for 100 feet along Kamehameha Highway within this TMK, which will result in a total Project acquisition of 2,000 square feet, or 0.046 acre; the total lot area is 0.2755 acres.

(1) 9-8-009:017: the Project will result in the full acquisition of this parcel; the total lot area is 0.5583 acres.

(1) 9-8-009:005: Project ROW requirements will result in a strip take 20 feet wide for 80 feet along Kamehameha Highway within this TMK, which will result in a total Project acquisition of 1,600 square feet, or 0.037 acre; the total lot area is 2.024 acres.

(1) 9-8-014:005: Project ROW requirements will result in a strip take 20 feet wide for 325 feet along Kamehameha Highway within this TMK, which will result in a total Project acquisition of 6,500 square feet, or 0.149 acre; the total lot area is 3.4192 acres.

(1) 9-8-014:010: Project ROW requirements will result in a strip take 10 feet wide for 175 feet along Kamehameha Highway within this TMK, which will result in a total Project acquisition of 1,750 square feet, or 0.040 acre; the total lot area is 0.8219 acres.

(1) 9-8-014:012: Project ROW requirements will result in a strip take 10 feet wide for 170 feet along Kamehameha Highway within this TMK, which will result in a total Project acquisition of 1,700 square feet, or 0.039 acre; the total lot area is 0.4053 acres.

(1) 9-8-014:006: Project ROW requirements for a contingency column location here will result in a take 20 wide feet for 20 feet along Kamehameha Highway within this TMK, which will result in a total Project acquisition of 400 square feet, or 0.009 acre; the total lot area is 2.0468 acres.

(1) 9-8-015:045: Project ROW requirements for contingency column locations here will result in two takes, each 20 feet wide for 20 feet along Kamehameha Highway within this TMK, which will result in a total Project acquisition of 800 square feet, or 0.018 acre; the total lot area is 1.3097 acres.

E. Lot Area

Please see Item D above.

F. Agencies Consulted in Making Assessment

Please see the Introduction to this SMA Application for the agencies consulted, and Attachment 2 to this Application for copies of correspondence. Some of the public outreach activities listed

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took place in the immediate area of the SMA C: Waiau – Hālawa portion of the Project. This included public meetings at Alvah Scott Elementary School.

Section I References

Attachment F: Preliminary Engineering Project Drawings, SMA C: Waiau – Hālawa.

DPP 2009. City and County of Honolulu, Department of Planning and Permitting (DPP), Interactive GIS Maps and Data. http://gis.hicentral.com/. Accessed between November 1, 2009 and January 19, 2010.

City and County of Honolulu, City Council 2006 - 2009. Bill 06-79, CD2, FD2 and Ordinance 07-001; Resolution 07-039, FD1(C); Resolution 08-97, CD1; Resolution 08-166, CD1, FD1; and Resolution 08-261.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*.

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.

1. Brief Narrative Description of Proposed Project

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

2. Relation of Parcel to Special Management Area

This package discusses the SMA C: Waiau – Hālawa portion of the Project. The discussion focuses on Project facilities that will be within the SMA. The SMA C: Waiau – Hālawa portion of the Project extends along Kamehameha Highway from the H-1 overpass near the HECO Waiau Power Plant (Project Station 827+50) to just past Kahomua Street (Project Station 992); this is 16,500 linear feet (3.1 miles) of the overall 20-mile alignment. Based on Preliminary Engineering designs, the following features are planned to be built within the SMA. Items may change slightly as the design progresses from a preliminary design stage to final design. Based on Preliminary Engineering design, it is anticipated that the Project will include the following:

1. 10 columns and approximately 1,070 linear feet of elevated guideway supported by those columns. This is related to an area between the Moanalua Freeway and Aloha Stadium (Attachment F, Drawings C-17 and C-18).

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2. Relocation of 908 linear feet of electrical lines (Attachment F, Drawings C-01, -02, -14, -17, and -18); relocation of electrical lines in Kamehameha Highway fronting Aloha Stadium and future Aloha Stadium Station; and electrical connection from Aloha Stadium Station to relocated electrical service in Kamehameha Highway (Attachment E, Utility Relocation Plans – in particular drawings UP337 to UP340 [pages 207-211]).
3. Relocation of 111 linear feet of cable and telephone lines (Attachment F, Drawing C-17) and a relocation of cable and telephone lines plus a communications connection for the Aloha Stadium Station in Kamehameha Highway, near the intersection of Salt Lake Boulevard-town-bound (Attachment E, Utility Relocation Plans – in particular drawings UP337 to UP340 [pages 207-211]).
4. Relocation of 42 linear feet of water lines (Attachment F, Drawing C-18).
5. Relocation of 266 linear feet of fuel lines (Attachment F, Drawing C-18).
6. Kamehameha Highway improvements (lanes and sidewalks mainly) along 2,325 linear feet of new ROW acquired by the Project. The new ROW varies from 10 to 20 feet wide for a total take of approximately 53,580 square feet, or 1.230 acres (Attachment F, Drawings C-07 through C-10).
7. Potentially three guideway columns on 1,200 square feet of potential new ROW acquired by the Project (Attachment F, Drawing C-12).
8. Relocation of some street lighting utilities (Attachment E, Utility Relocation Plan, Street Lighting) and installation of some fiber optic and traffic signal interconnect infrastructure (Attachment E, Fiber Optic and Traffic Signal Interconnect Plan).
9. A portion (the makai entrance) of the Pearlridge Station on TMK 9-8-009:017 (Attachment F, Drawing C-09).

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 Attachments E and F, are also discussed in this package to a lesser degree. These features include:

10. Roughly 90 columns and 14,000 linear feet of elevated guideway supported by those columns.
11. The mauka portion of the Pearlridge Station.
12. The Aloha Stadium Station.
13. The Aloha Stadium Park-and-Ride, which consists of an at-grade parking area for roughly 600 vehicles. During guideway construction, this area will likely be used as a laydown area.
14. Other utility relocations.

3. Location Map

Figure 1 illustrates the location of the SMA C: Waiau – Hālawa portion of the overall Project. Detail maps of the Project in SMA C: Waiau – Hālawa are provided in Attachment E.

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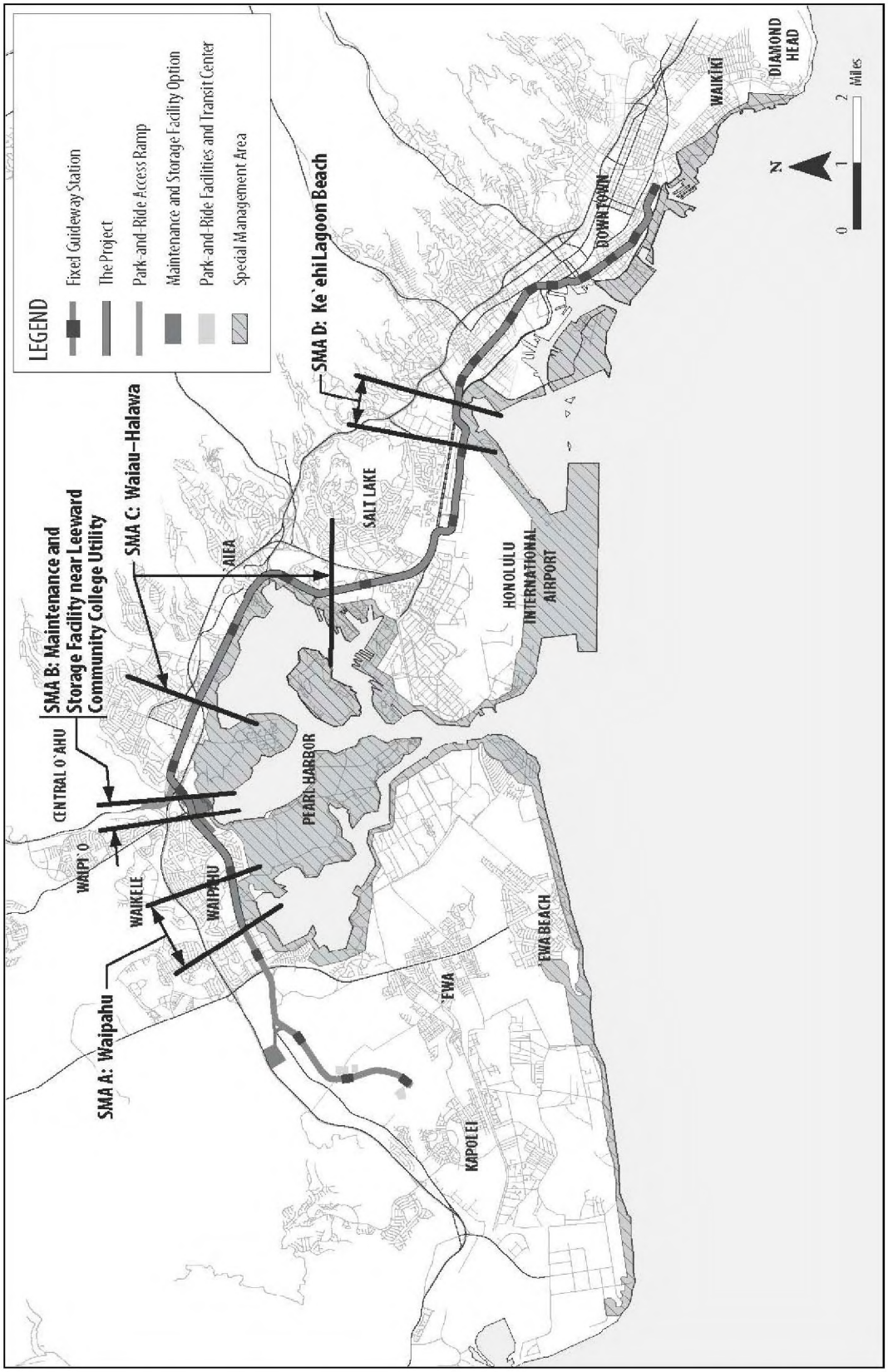

Figure 1: Overview of SMA C: Waiau – Hālawa Portion of the HHCTC Project

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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 SMA C: Waiau – Hālawa 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: General Permit Application submitted October 23, 2009. Notice of General Permit Coverage received December 3, 2009 (file number HI R10D518);
- 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: To be obtained prior to construction;
- Community Noise Variance: To be obtained prior to construction; 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

- 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 by the City as required to comply with Flood Hazard District Regulation (Article 9. Special District Regulations, Section 21-9.10) before construction of segment begins; and

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- Building Permit – for work outside of ROW: To be submitted by contractor by construction segment as designs become available.

Shoreline Setback

Within SMA C: Waiau – Hālawa, there will be no construction within the 40-foot shoreline setback area; the Project is therefore in compliance with the Shoreline Setback Ordinance, Chapter 23, Revised Ordinances of Honolulu (ROH).

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's acceptance will conclude the HRS Chapter 343 process; and
- Following the 30-day publication notice of the Final EIS and acceptance of the Final EIS by the governor per the requirements of HRS Chapter 343, Federal Transit Administration (FTA) will issue a Record of Decision that will identify the selected alternative and conclude the Federal environmental review process.

Project Consistency with General and Development Plans

The SMA C: Waiau – Hālawa 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.

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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; Āina Moana Park (Magic Island)-mauka/makai; and Panoramic views-Ala Wai Canal Promenade toward the Ko'olau Mountain Range.

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)

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

Within the SMA C: Waiau – Hālawa 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.

Section II.A References

Attachment E: Preliminary Engineering Plan/Profile Sheets, SMA C: Waiau – Hālawa

Attachment F: Preliminary Engineering Project Drawings, SMA C: Waiau – Hālawa.

DPP 2002a. City and County of Honolulu Department of Planning and Permitting. 2002. *City and County of Honolulu General Plan*. http://honoluludpp.org/planning/OahuGenPlan.asp.

DPP 2004. City and County of Honolulu Department of Planning and Permitting. June 2004. *Primary Urban Center Development Plan*. Adopted by Ordinance 04-14. http://honoluludpp.org/planning/DevSustCommPlans.asp.

DPP 2009. City and County of Honolulu, Department of Planning and Permitting, Interactive GIS Maps and Data. http://gis.hicentral.com/. Accessed between November 1, 2009 and January 19, 2010.

HDOT 2002. State of Hawai'i Department of Transportation. September 2002. Hawai'i Statewide Transportation Plan. http://www6.hawaii.gov/dot/stp/hstp.htm.

Oahu MPO 2007. O'ahu Metropolitan Planning Organization. May 2007. O'ahu Regional Transportation Plan 2030. http://www.oahumpo.org/programs/ortp.html.

RTD 2005. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. November 2005. *Honolulu High-Capacity Transit Corridor Project Environmental Impact Statement Preparation Notice*.

RTD 2006. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. November 1, 2006. *Honolulu High-Capacity Transit Corridor Project Alternatives Analysis Report*. http://www.honolulutransit.org/library/.

RTD 2008u. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. November 2008. *Honolulu High-Capacity Transit Corridor Project Draft Environmental Impact Statement/Section 4(f) Evaluation*. http://www.honolulutransit.org/library/.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*.

B. Technical Characteristics

1. Use Characteristics

The 3.1-mile portion of the Project in the SMA C: Waiau – Hālawa 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 SMA C: Waiau – Hālawa portion of the Project. Along the SMA C: Waiau – Hālawa portion of the Project, it is planned that trains will operate every three minutes in each direction during morning and afternoon peak periods (6 a.m. to 9 a.m. and 3 p.m. to 6 p.m., respectively), every six minutes during off-peak hours throughout much of the rest of the day, and every ten minutes during late night periods (8 p.m. to midnight). Section 2.5 of the Final EIS (Attachment 1) provides additional detail on Project operation.

2. Physical Characteristics

Preliminary plan and profile drawings of the SMA C: Waiau – Hālawa portion of the Project are provided in Attachment E. 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 40 to 50 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 9-8-009:018, 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 E.

3. Construction Characteristics

Construction of the Project in SMA C: Waiau – Hālawa 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.

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4. Utility Requirements

A portion of the Pearlridge Station will be located within SMA C: Waiau – Hālawa, and will require connections to the following utilities:

- Water, supplied by the Honolulu Board of Water Supply;
- Electricity, supplied by HECO;
- Telecommunications, supplied by Hawaiian Telcom; and
- Cable, supplied by Oceanic Time Warner Cable.

The Aloha Stadium Station and a traction power substation site will be located outside of the SMA but adjacent or abutting the general SMA C area. 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 SMA C: Waiau – Hālawa area.

5. Liquid Waste Disposal

The Pearlridge Station is located partially within SMA C: Waiau – Hālawa, 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 SMA C: Waiau – Hālawa 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

The "site" is considered to be the guideway. All access will be at stations, the nearest stations are located at Pearl Highlands, Pearlridge, and Aloha Stadium. The Pearlridge station is partially within the SMA C: Waiau – Hālawa area. Access to that station will be available on both sides

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of Kamehameha Highway; Chapter 2, and specifically Figure 2-24, of the Final EIS (Attachment 1) provide details regarding access to the station.

During construction, access to the site will be along Kamehameha Highway, where the "site" is located.

Within the SMA C: Waiau – Hālawa area, the Project will not affect access to any site. During construction, short-term access impacts within SMA C: Waiau – Hālawa 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 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.

Section II.B References

Attachment E: Preliminary Engineering Plan/Profile Sheets, SMA C: Waiau – Hālawa

Attachment F: Preliminary Engineering Project Drawings, SMA C: Waiau – Hālawa.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*.

C. Economic and Social Characteristics

1. Estimated Cost and Time Phasing of Construction

Estimated Costs

The cost estimates presented are based on Preliminary Engineering and operations analysis. This financial analysis considers costs, resources, and funding strategies associated with public transit services provided by the City, and excludes financing costs. Unless otherwise stated, costs and revenues are presented in fiscal year (FY) 2009 dollars. For the City and County of Honolulu, the fiscal year begins on July 1 and ends on June 30 (e.g., FY2009 is from July 1, 2008, to June 30, 2009); all year references are to fiscal years.

It is estimated that the cost of construction for the entire 20-mile alignment, including construction within the SMA C: Waiau – Hālawa portion of the Project, will be $4,281 million in FY2009 dollars. The cost estimate excludes amounts already incurred during FY2007 and FY2008 and financing costs. Assuming the costs are generally equal throughout the length of the Project, the 1,070-linear foot (0.20-mile) portion of the Project within SMA C: Waiau – Hālawa would cost roughly $43 million in FY2009 dollars.

Time Phasing of Construction

It is estimated that construction within the SMA C: Waiau – Hālawa portion of the Project will occur between September 2011 (starting with utility relocation) to September 2016 (for the completion of power systems). However, because the SMA C: Waiau – Hālawa portion of the Project is just a small part of the overall Project being built during this construction phase, there will be long periods during which no construction activities will be taking place within the SMA C: Waiau – Hālawa area.

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.

Section II.C References

RTD 2009. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. August 2009. *Honolulu High-Capacity Transit Corridor Project Financial Plan.*

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement.*

D. Environmental Characteristics

1. Soils

In the SMA C: Waiau – Hālawa 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.

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- 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 SMA C: Waiau – Hālawa will be constructed within the median of the existing highway.

2. Topography

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

3. Surface Runoff, Drainage, and Erosion Hazard

As the SMA C: Waiau – Hālawa 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 Flood Hazard District, Other Geological Hazards

The Flood Insurance Rate Maps (FIRMs) indicate that the SMA C: Waiau – Hālawa portion of the Project will not cross or be within any flood zones within the SMA. The FIRMs are being updated, and the new maps will go into effect in 2011. The updated FIRMs indicate that the Project will still not cross or be within any flood zones in SMA C: Waiau – Hālawa.

Concerning the Land Use Ordinance Flood Hazard District compliance, as the Project does not cross any flood zone in the SMA C: Waiau – Hālawa area, the Project is in compliance.

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 SMA C: Waiau – Hālawa portion of the Project is not within a tsunami evacuation area.

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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 street trees in the SMA C: Waiau – Hālawa area will be impacted by the Project. In the vicinity of the SMA C: Waiau – Hālawa area, 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.

Section II.D References

Attachment E: Preliminary Engineering Plan/Profile Sheets, SMA C: Waiau – Hālawa

FEMA 2007. Federal Emergency Management Agency. Digital Flood Insurance Rate Maps; GIS "Flood" shapefile. http://hawaii.gov/dbedt/gis/dfirm.htm.

RTD 2008l. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Street Trees Technical Report*.

RTD 2008m. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Geology, Soils, Farmlands, and Natural Hazards Technical Report.*

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Multiple Sections, including Section 4.15 "Street Trees".

USDA 2007. U.S. Department of Agriculture Natural Resources Conservation Service, Hawai'i. 2007 (original data from 1972). GIS "Soils" shapefile. http://hawaii.gov/dbedt/gis/soils.htm.

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 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 SMA C: Waiau – Hālawa area the Project will 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.

Section III.A References

Attachment E: Preliminary Engineering Plan/Profile Sheets, SMA C: Waiau – Hālawa

Attachment F: Preliminary Engineering Project Drawings, SMA C: Waiau – Hālawa.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*.

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

The following recreational facilities are adjacent to the Project and within the SMA C: Waiau – Hālawa area: Neal S. Blaisdell Park and ‘Aiea Bay State Recreation Area. The Project will not impact either of these parks, and therefore, no adverse impact is anticipated due to the Project in SMA C: Waiau – Hālawa. Also found in the SMA C: Waiau – Hālawa 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 SMA C: Waiau – Hālawa area.

Just mauka of the SMA, in the vicinity of the SMA C: Waiau – Hālawa 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.

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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. Approximately six guideway support columns will be located on Aloha Stadium property south of the overflow parking lot next to Kamehameha Highway. The guideway in this area will be wider than 30 feet to accommodate a third track for additional trains 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.

Section III.B.1 References

RTD 2008d. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Neighborhoods and Communities Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Chapter 5 "Section 4(f) Evaluation".

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 SMA C: Waiau – Hālawa 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

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SMA C: Waiau – Hālawa 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 SMA C: Waiau – Hālawa 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 SMA C: Waiau – Hālawa area. The only endangered plant known in the study corridor is ko'oloa'ula (*Abutilon menziesii),* which does not occur within the SMA C area.

Section III.B.2 References

RTD 2008j. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Ecosystems and Natural Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.13 "Ecosystems".

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

In the SMA C: Waiau – Hālawa area, there are three wetland areas in the vicinity of the Project.

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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.
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. ʻAiea Bay State Recreational Area Wetland. The Project guideway is approximately 200 feet mauka of the tidal wetland (formally a dense mangrove forest) fringing ʻAiea Bay. ʻAiea 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 SMA C: Waiau – Hālawa area.

Section III.B.3 References

RTD 2008k. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Water Resources Technical Report*.

RTD 2009b. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Wetland and Waters of the U.S. Study*.

RTD 2009h. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Ecosystem Function and Values of Wetland Waters of the U.S.*

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RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.14 "Water".

4. Fisheries and Fishing Grounds

The Project in SMA C: Waiau – Hālawa 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.

Section III.B.4 References

RTD 2008k. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Water Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.13 "Ecosystems".

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 SMA C: Waiau – Hālawa area.

Section III.B.5 References

RTD 2008d. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Neighborhoods and Communities Technical Report*.

RTD 2008j. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Ecosystems and Natural Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.13 "Ecosystems".

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 SMA C: Waiau – Hālawa area. Subsurface features and deposits, including iwi kupuna or Hawaiian burials, that have not been previously identified may be affected by the Project.

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The City will develop an archaeological inventory survey (AIS) plan for the area of potential effects (APE) for each construction phase in accordance with 36 CFR 800.4, which allows for phased identification of archaeological resources to limit disturbance of potential resources during the investigation. The City will use Preliminary Engineering plans to focus the investigation in locations where there is the potential to affect archaeological resources by project construction. The AIS plans will follow the requirements of Hawaii Administrative Rules Chapter 13-276. The City will conduct the archaeological fieldwork as presented in the AIS plan for each construction phase. The archaeological fieldwork will be completed in advance of the completion of final design so that measures to avoid and/or minimize adverse effects to the historic properties can be incorporated into the design. The City has consulted and continues to consult with the State Historic Preservation Division (SHPD) and O'ahu Island Burial Council (OIBC) on burial issues. As required under HRS Chapter 6E, the City will ensure that City and State agencies that grant land use entitlements for the Project consult with SHPD prior to the issuance of permits in areas where the Project may affect a burial site. To ensure that OIBC maintains jurisdiction to determine whether preservation in place or relocation of previously unidentified native Hawaiian burial sites is warranted, the City will complete an AIS prior to construction in each construction phase. The City has committed to conducting archaeological investigations in locations where foundations will be placed. This would limit the area disturbed for archaeological investigations and construction to potentially less than 10 percent of what would be disturbed if archaeological investigations were conducted for 100 percent of the alignment. Mitigation will be conducted in advance of, and in some cases during, the construction phases in the Project's different geographic areas.

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.

Section III.C.1 References

RTD 2008n. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Archaeological Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.16 "Archaeological, Cultural, and Historic Resources".

2. Cultural

Archival and ethnographic research shows that most of the traditional cultural resources within the SMA C: Waiau – Hālawa 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.

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There are no cultural resources that have been previously identified as having potential long-term adverse effects in the SMA C: Waiau – Hālawa area. Any cultural resources that are uncovered will be assessed through collaborative consultation with appropriate cultural practitioners and/or community groups in accordance with the Programmatic Agreement (PA) developed pursuant to Section 106 of the National Historic Preservation Act.

Section III.C.2 References

RTD 2008p. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Cultural Resources Technical Report*.

RTD 2009e. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Addendum 01 to the Cultural Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.16 "Archaeological, Cultural, and Historic Resources".

3. Historical

Through agency coordination, the Project's APE was defined generally as one parcel deep from the fixed guideway alignment in the SMA C: Waiau – Hālawa 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 SMA C: Waiau – Hālawa Area

In the SMA C: Waiau – Hālawa area, there are six historic resources. These resources are all makai of Kamehameha Highway and therefore within the SMA. Figure C-HR in Attachment F 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

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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

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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.

A PA was developed in consultation among the Section 106 consulting parties (identified in the Introduction – Section I.4). The Section 106 process identified historic properties potentially affected by the Project, assessed effects, and sought ways to avoid, minimize, or mitigate any adverse effects on any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP. The PA records the terms and conditions agreed upon to resolve potential adverse effects and is attached to the Final EIS (Attachment 1) in Appendix H. The PA incorporated comments from Section 106 consulting parties listed in the Introduction to this permit application in Section I.4. FTA, SHPO, and the Advisory Council on Historic Preservation, in coordination with the invited signatories, will finalize the PA prior to the Record of Decision (ROD). FTA will distribute an executed PA to the Section 106 consulting parties and invite them to participate as concurring parties to the PA.

Historical Resources in the Vicinity of SMA C: Waiau – Hālawa

The following resources are located in the SMA C: Waiau – Hālawa 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 SMA C: Waiau – Hālawa. The Waimalu Stream Bridge (originally built in 1936 and modified in 1945) is eligible for nomination to the

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NRHP under Criterion A for its association with the roadway infrastructure development of Kamehameha Highway in the Pearl City and ʻAiea 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.

- 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 Hawaiʻi 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 (loʻi) 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 SMA C: Waiau – Hālawa. The Kalauao

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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 ʻAiea 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.

- Kalauao Stream Bridge (TMK none). This bridge is within and a part of Kamehameha Highway, and just mauka of SMA C: Waiau – Hālawa. 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 ʻAiea 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.
- 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

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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 Hālawa Stream (mauka span) (TMK none). This bridge is within and a part of Kamehameha Highway, and just mauka of SMA C: Waiau – Hālawa. The Kamehameha Highway Bridge over Hālawa 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 Hālawa 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.

Section III.C.3 References

Attachment F: Preliminary Engineering Project Drawings, SMA C: Waiau – Hālawa (Figure C-HR)

RTD 2008o. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Historic Resources Technical Report*.

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RTD 2009c. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Addendum 01 to the Historic Resources Technical Report*.

RTD 2009d. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Historic Effects Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.16 "Archaeological, Cultural, and Historic Resources".

SHPD 2010. State of Hawai'i Department of Land and Natural Resources State Historic Preservation Division. 2010. *Honolulu High-Capacity Transit Corridor Project Programmatic Agreement*.

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 SMA C: Waiau – Hālawa area will result in the installation of the guideway and columns in the median of Kamehameha Highway, the nearest coastal 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 SMA C: Waiau – Hālawa, 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.

Section III.D References

RTD 2008e. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Visual and Aesthetic Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.8 "Visual and Aesthetic Conditions".

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E. Quality of Receiving Waters and Groundwater (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 SMA C: Waiau – Hālawa area. Nearby, abutting but outside of the SMA area, the Project will cross Waimalu Stream, Kalauao Springs, Kalauao Stream, and ʻAiea Stream along Kamehameha Highway; all are on the Hawaiʻi 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.

Marine Waters

The SMA C: Waiau – Hālawa portion of the Project is not adjacent to any marine waters. .

Flood Zones

The Project will not cross any flood zones in the SMA C: Waiau – Hālawa area. In the vicinity of the SMA C: Waiau – Hālawa 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 SMA C: Waiau – Hālawa area, the Project overlies the Pearl Harbor Aquifer Sector of the Southern Oʻahu 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 on page 433 of 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 Oʻahu, 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 SMA C: Waiau – Hālawa area, the Project will be mauka of the underground injection control line. The Project

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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 SMA C: Waiau – Hālawa 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 SMA C: Waiau – Hālawa 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 Hālawa 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 SMA C: Waiau – Hālawa 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

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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 SMA C: Waiau – Hālawa 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.

Section III.E References

Attachment F: Preliminary Engineering Project Drawings, SMA C: Waiau – Hālawa.

HDOH 2008. State of Hawai'i Department of Health. 2008. *2006 State of Hawai'i water quality monitoring and assessment report: Integrated report to the U.S. Environmental Protection Agency and the U.S. Congress pursuant to Sections 303(d) and 305(b), Clean Water Act (PL 97-117).*

RTD 2008k. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Water Resources Technical Report.*

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RTD 2009b. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Wetland and Waters of the U.S. Study*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.14 "Water".

F. Include Suitable and Adequate Location and Site Maps

Please see Attachments E and F.

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 SMA C: Waiau – Hālawa 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*

   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 SMA C: Waiau – Hālawa area.

While the portion of the Project in the SMA C: Waiau – Hālawa 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.*

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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 SMA C: Waiau – Hālawa area.

There is a moderate chance of encountering burials, as well as pre- and post-contact archaeological resources in the SMA C: Waiau – Hālawa area. The historic HECO Waiau Plant is within the SMA C: Waiau – Hālawa 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 SMA C: Waiau – Hālawa 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 SMA C: Waiau – Hālawa 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.5 for details regarding coastal/natural resources in the SMA C: Waiau – Hālawa area.

The Project will not have an adverse impact on coastal ecosystems. There will be no direct drainage into Pearl Harbor in the SMA C: Waiau – Hālawa 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

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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 SMA C: Waiau – Hālawa 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 SMA C: Waiau – Hālawa 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 SMA C: Waiau – Hālawa 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*

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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 SMA C Waiau – Hālawa 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 SMA C: Waiau – Hālawa 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 SMA C: Waiau – Hālawa 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 SMA C: Waiau – Hālawa area.

The portion of the Project within the SMA C: Waiau – Hālawa 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;

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

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

For the portion of the Project within the SMA C: Waiau – Hālawa area DTS 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 SMA C: Waiau – Hālawa 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 SMA C: Waiau – Hālawa 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;*

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As discussed above, the portion of the Project within the SMA C: Waiau – Hālawa 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 SMA C: Waiau – Hālawa 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 SMA C: Waiau – Hālawa 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 SMA C: Waiau – Hālawa area.

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

The portion of the Project within the SMA C: Waiau – Hālawa 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 SMA C: Waiau – Hālawa 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 SMA C: Waiau – Hālawa area.

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

In the SMA C: Waiau – Hālawa 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 that 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 SMA C: Waiau – Hālawa 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 SMA C: Waiau – Hālawa area, the Project will span Waimalu Stream, Kalauao Springs, Kalauao Stream, 'Aiea Stream, and Hālawa Stream. These streams will not be directly impacted,

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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 that 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 SMA C: Waiau – Hālawa 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 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. Most views in this area comprise a wider panoramic scene consisting of an urban environment. 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 that 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 SMA C: Waiau – Hālawa 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

Please see Attachment 4.

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APPLICATION MATERIALS

Special Management Area D: Ke‘ehi Lagoon Beach Park

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I. GENERAL INFORMATION

A. Applicant (Name, Address, Phone)

City and County of Honolulu
Department of Transportation Services (DTS)
650 South King Street, 3rd Floor
Honolulu, HI 96813
(808) 768-8303

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

Within the Special Management Area (SMA) D: Ke'ehi Lagoon Beach Park portion of the Project, the fixed guideway is being constructed within three parcels.

(1) 1-1-003:006: Owned by the State of Hawaii
Department of Transportation Airports Division
400 Rodgers Boulevard, 7th Floor
Honolulu, HI 96819-1880
808-838-8600

(1) 1-1-003:004: Owned by the State of Hawaii
Department of Transportation Airports Division

(1) 1-1-003:138: Owned by the State of Hawaii
Department of Transportation Airports Division

(1) 1-1-003:003: Owned by the State of Hawaii
Department of Transportation Airports Division

The SMA D: Ke'ehi Lagoon Beach Park portion of the Project is restricted to the portion of the Project that will be built within the SMA, in Ke'ehi Lagoon Beach Park. In addition, other Project features will be built mauka of the SMA boundary, just outside and adjacent to/abutting the SMA (Attachment H). The City will acquire three parcels directly adjacent to the SMA D: Ke'ehi Lagoon Beach Park area for the construction of the guideway and a station.

(1) 1-1-016:005: Owned by 2676 Waiwai Loop, LLC
P.O. Box 29177
Honolulu, HI 96820

(1) 1-1-016:006: Owned by Alert Holdings Group, Inc.
2668 Waiwai Loop
Honolulu, HI 96819

(1) 1-1-016:014: Owned by Chevron USA, Inc.
P.O. Box 285
Houston, TX 77001

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The Project will also acquire portions of three parcels that abut the SMA – (1) 1-1-016: 007, 012, and 013; however, the portions of these parcels to be acquired by the Project do not abut the SMA.

C. Agent

City and County of Honolulu
Department of Transportation Services Rapid Transit Division (DTS-RTD)
1099 Alakea Street, Suite 1700
Honolulu, HI 96813
(808) 768-8344

D. Tax Map Key

Project features will be built on the following current Tax Map Keys (TMKs) within the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project. The portions of these parcels on which Project features will be built will be acquired by the City and designated as right-of-way (ROW).

(1) 1-1-003:006: Project ROW requirements will result in a strip take 50 feet wide for 1,150 linear feet within this TMK, which will result in a total Project acquisition of approximately 57,500 square feet, or 1.32 acres; the total lot area is 69.171 acres.

(1) 1-1-003:004: Project ROW requirements will result in a strip take 30 feet wide for 400 linear feet within this TMK, which will result in a total Project acquisition of approximately 12,000 square feet, or 0.28 acre; the total lot area is 11.087 acres.

(1) 1-1-003:138: Project ROW requirements will result in a strip take 20 feet wide for 300 linear feet within this TMK, which will result in a total Project acquisition of approximately 6,000 square feet, or 0.14 acre; the total lot area is 4.967 acres.

(1) 1-1-003:003: Project ROW requirements will result in a strip take up to 20 feet wide for roughly 300 linear feet within this TMK, which will result in a total Project acquisition of approximately 5,000 square feet, or 0.11 acre; the total lot area is 5.166 acres.

The City will also acquire three parcels directly adjacent to the SMA D: Ke‘ehi Lagoon Beach Park area for the construction of the guideway and a station.

(1) 1-1-016:005: the Project will require a full take of this parcel for the guideway; the total lot area is 0.57 acre.

(1) 1-1-016:006: the Project will require a full take of this parcel for the guideway; the total lot area is 0.53 acre.

(1) 1-1-016:014: the Project will require a full take of this parcel for the Lagoon Drive station; the total lot area is 0.65 acre.

E. Lot Area

Please see Item D above.

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F. Agencies Consulted in Making Assessment

Please see the Introduction to this SMA 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 SMA D: Ke'ehi Lagoon Beach Park portion of the Project. This included public meetings at Aliamanu Elementary School.

Section I References

Attachment H: Preliminary Engineering Project Drawings, SMA D: Ke'ehi Lagoon Beach Park.

DPP 2009. City and County of Honolulu, Department of Planning and Permitting (DPP), Interactive GIS Maps and Data. http://gis.hicentral.com/. Accessed between November 1, 2009 and January 19, 2010.

City and County of Honolulu, City Council 2006 - 2009. Bill 06-79, CD2, FD2 and Ordinance 07-001; Resolution 07-039, FD1(C); Resolution 08-97, CD1; Resolution 08-166, CD1, FD1; and Resolution 08-261.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*.

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 the preparation of the Final EIS, including supporting technical reports referenced within it that include detailed information concerning the studies performed to support the Final EIS.

1. Brief Narrative Description of Proposed Project

The Introduction to this SMA Application provides a description of the entire proposed Project. The Final EIS (Attachment 1), Sections 2.4 and 2.5, provide more detailed information.

2. Relation of Parcel to Special Management Area

This package discusses the SMA D: Ke'ehi Lagoon Beach Park portion of the Project. The discussion focuses on Project facilities that will be within the SMA. The SMA D: Ke'ehi Lagoon Beach Park portion of the Project extends from where the Project enters Ke'ehi Lagoon Beach Park (Project Station 1217+60) to Makai Frontage Road (Project Station 1241); this is 2,340 linear feet (0.44 mile) of the overall 20-mile alignment. Based on Preliminary Engineering designs, the following features are planned to be built within the SMA. Items may change slightly as the design progresses from a preliminary design stage to final design.

1. 17 columns and approximately 2,340 linear feet of elevated guideway supported by those columns.
2. 1,850 linear feet of ROW acquisition, varying from 20 to 50 feet wide for a total take of approximately 75,500 square feet, or 1.74 acres.
3. Traction power substation (TPSS) #29.
4. Lighting for the four mauka tennis courts in the Ke‘ehi Lagoon Beach Park.

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

5. 2 columns and roughly 350 linear feet of elevated guideway supported by those columns; this is the guideway within TMKs 1-1-016:005 and 006.
6. A portion of the makai side of the Lagoon Drive station will be located on parcel TMK 1-1-016:014.

3. Location Map

Figure 1 illustrates the location of the SMA D: Ke‘ehi Lagoon Beach Park portion of the overall Project. Detail maps of the Project in SMA D: Ke‘ehi Lagoon Beach Park are provided in Attachment G.

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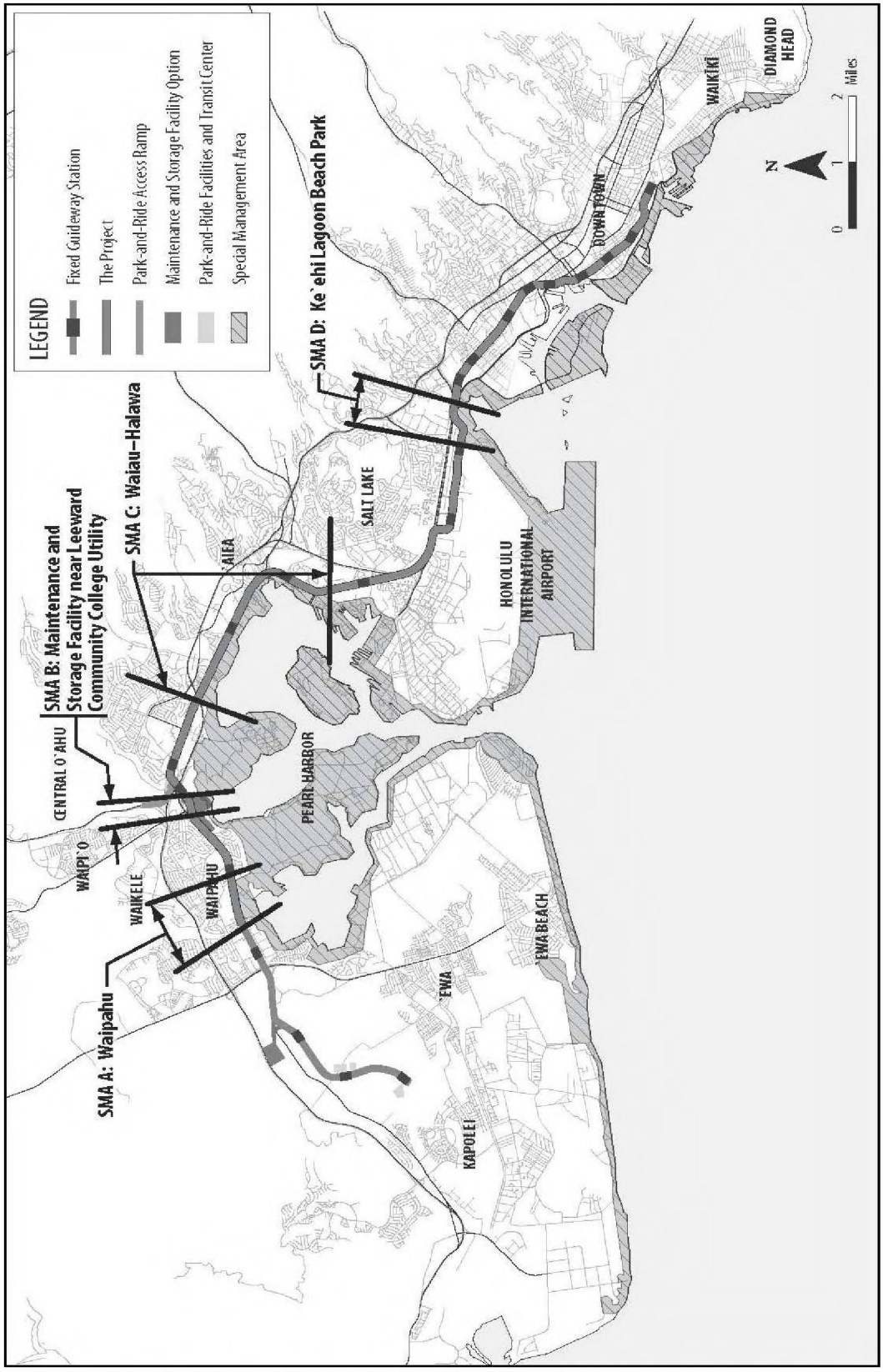

Figure 1: Overview of SMA D: Ke‘ehi Lagoon Beach Park Portion of the HHCTC Project

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4. Land Use Approvals Granted and/or Approvals Required

The following land use approvals and other permits are required for Project construction and/or operation within the SMA D: Ke‘ehi Lagoon Beach Park area.

Federal

- Section 9 of the Rivers and Harbors Act: U.S. Coast Guard has provided advanced approval (December 23, 2008);
- Clean Water Act (CWA) Section 404 – Department of the Army permit; various nationwide permits and/or Section 10 of the Rivers and Harbors Act: City will submit application prior to construction of the Project in waters of the U.S.;
- Form 7460.1 Notice of Proposed Construction or Alteration of Impacts to the Airport and Federal Aviation Administration (FAA) Facilities: To be prepared and submitted by the City to FAA within 18 months prior to construction at the Honolulu International Airport; and
- Interstate airspace use approval for crossing H-1 Freeway access ramps at Ke‘ehi Interchange: To be prepared and submitted to the Federal Highway Administration by the City prior to construction.

State

- CWA Section 401, Water Quality Certification: To be prepared;
- CWA Section 402, National Pollutant Discharge Elimination System (NPDES) Permit for stormwater associated with construction activities: General Permit Application submitted October 23, 2009. Notice of General Permit Coverage (NGPC) received December 3, 2009 (file number HI R10D518);
- 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: Application for first construction segment granted August 26, 2009, permit for this segment to be obtained prior to construction;
- Community Noise Variance: Application for first construction segment granted April 13, 2010, permit for this segment to be submitted prior to construction;
- 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 the highway ROW and airport property; and
- Waiver to construct in the Runway Protection Zone (RPZ): To be prepared and submitted to HDOT – Airports by the contractor within two years of intended construction of the airport portion of the Project; HDOT – Airports will submit to FAA.

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County

- 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 Flood Hazard District Compliance: To be submitted by the City 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 SMA D: Ke'ehi Lagoon Beach Park, there will be no construction within the 40-foot shoreline setback area; the Project is therefore in compliance with the Shoreline Setback Ordinance, Chapter 23, Revised Ordinances of Honolulu (ROH).

Environmental Review

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

- An EIS Preparation Notice (EISPN) 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 (NOI) 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's acceptance will conclude the HRS Chapter 343 process; and
- Following the 30-day publication notice of the Final EIS and acceptance of the Final EIS by the governor per the requirements of HRS Chapter 343, FTA will issue a Record of Decision (ROD) that will identify the selected alternative and conclude the Federal environmental review process.

Project Consistency with General and Development Plans

The SMA D: Ke'ehi Lagoon Beach Park portion of the Project is within the *Primary Urban Center (PUC) 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 (PUC) Development Plan* (DPP 2004). The following sections describe the Project's consistency with a variety of plans. Attachment 3

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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; Āina Moana Park (Magic Island)-mauka/makai; and Panoramic views-Ala Wai Canal Promenade toward the Ko'olau Mountain Range.

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

Other Plans

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

- *Hawai'i Statewide Transportation Plan* (HDOT 2002)
- *O'ahu Regional Transportation Plan 2030* (Oahu MPO 2007)
- *Kalihi-Palama Action Plan* (DPP 2004c)

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

Within the SMA D: Ke'ehi Lagoon Beach Park 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.

Section II.A References

Attachment G: Preliminary Engineering Plan/Profile Sheets, SMA D: Ke'ehi Lagoon Beach Park.

Attachment H: Preliminary Engineering Project Drawings, SMA D: Ke'ehi Lagoon Beach Park.

DPP 2002a. City and County of Honolulu Department of Planning and Permitting. 2002. *City and County of Honolulu General Plan*. http://honoluludpp.org/planning/OahuGenPlan.asp.

DPP 2004. City and County of Honolulu Department of Planning and Permitting. June 2004. *Primary Urban Center Development Plan*. Adopted by Ordinance 04-14. http://honoluludpp.org/planning/DevSustCommPlans.asp.

DPP 2010. City and County of Honolulu, Department of Planning and Permitting, Interactive GIS Maps and Data. http://gis.hicentral.com/. Accessed between November 1, 2009 and January 19, 2010.

HDOT 2002. State of Hawai'i Department of Transportation. September 2002. Hawai'i Statewide Transportation Plan. http://www6.hawaii.gov/dot/stp/hstp.htm.

Oahu MPO 2007. O'ahu Metropolitan Planning Organization. May 2007. O'ahu Regional Transportation Plan 2030. http://www.oahumpo.org/programs/ortp.html.

RTD 2005. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. November 2005. *Honolulu High-Capacity Transit Corridor Project Environmental Impact Statement Preparation Notice*.

RTD 2006. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. November 1, 2006. *Honolulu High-Capacity Transit Corridor Project Alternatives Analysis Report*. http://www.honolulutransit.org/library/.

RTD 2008u. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. November 2008. *Honolulu High-Capacity Transit Corridor Project*

Draft Environmental Impact Statement/Section 4(f) Evaluation. http://www.honolulutransit.org/library/.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*.

B. Technical Characteristics

1. Use Characteristics

The 0.44 mile portion of the Project in the SMA D: Ke'ehi Lagoon Beach Park 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 SMA D: Ke'ehi Lagoon Beach Park portion of the Project. Along the SMA D: Ke'ehi Lagoon Beach Park portion of the Project, it is planned that trains will operate every three minutes in each direction during morning and afternoon peak periods (6 a.m. to 9 a.m. and 3 p.m. to 6 p.m., respectively), every six minutes during off-peak hours throughout much of the rest of the day, and every ten minutes during late night periods (8 p.m. to midnight). Section 2.5 of the Final EIS (Attachment 1) provides additional detail on Project operation.

2. Physical Characteristics

Preliminary plan and profile drawings of the SMA D: Ke'ehi Lagoon Beach Park portion of the Project are provided in Attachment G. 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 60 feet above the ground surface, supported by columns that are six to eight 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 three feet above the top of the rail; the parapet wall will reduce noise exposure from transit vehicles to the surrounding area.

The Project also requires a TPSS in this area. A TPSS requires an approximately 3,200-square-foot area to access and maintain an approximately 40-foot-long, 16-foot-wide, and 12-foot-high painted steel box that houses transformers, rectifiers, batteries, and ventilation equipment. Figure 2 is a photograph of an example of a TPSS in another city. The TPSS will be connected to the existing power grid.

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Figure 2: Example of a Traction Power Substation (TPSS)

The guideway that abuts, but is outside the SMA area will be the same as the guideway within the SMA area. The Lagoon Drive station will be a typical station with entrances on both the makai and mauka side of Waiwai Loop; a portion of the makai entrance will be located on TMK 1-1-016:014, which is being acquired in full and is adjacent to the SMA. Figure 3 illustrates the makai portion of a typical station in cross section. The Lagoon Drive station will have this general layout. The platform will be roughly 240 feet long and have a layout as illustrated on Drawing D-00 in Attachment H.

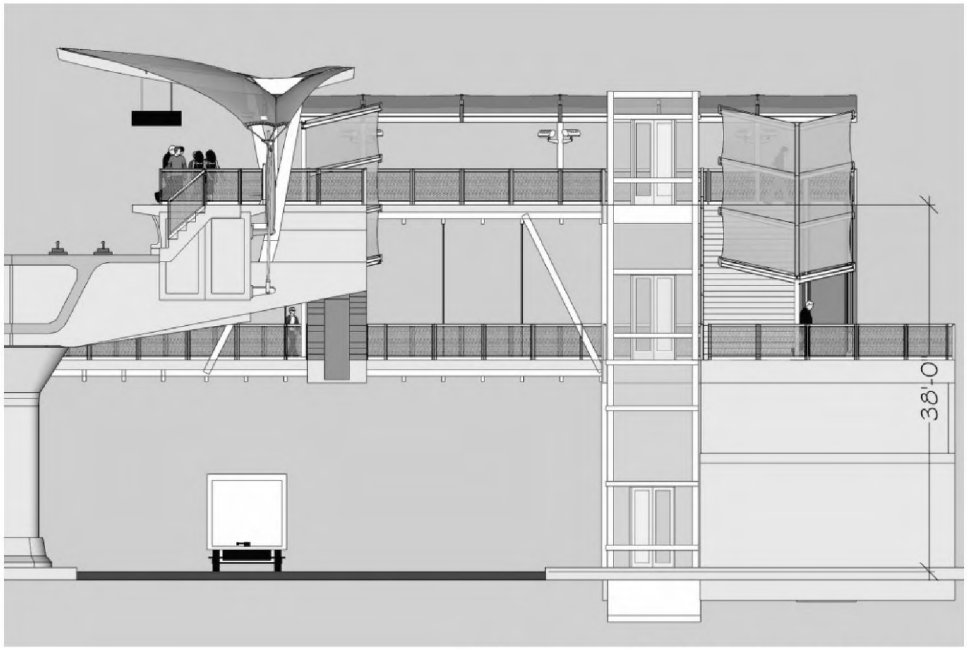

Figure 3: Station Cross Section

3. Construction Characteristics

Construction of the Project in SMA D: Ke‘ehi Lagoon Beach Park will occur primarily within the mauka portion of the park near Nimitz Highway. The Project will traverse the park near its mauka property line, generally following the alignment of the park’s access road until it leaves the park, where it will continue on an elevated guideway within the ROW of Nimitz Highway.

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Construction work details will be developed during preliminary and final design. The following primary construction activities will take place:

- 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.

4. Utility Requirements

The only utility connection within the SMA D: Ke'ehi Lagoon Beach Park portion of the Project will be an electrical connection at TPSS #29.

Additional utility connections will be required at the Lagoon Drive station abutting the SMA D: Ke'ehi Lagoon Beach Park area. These connections will include water, electrical, telecommunications, and cable.

5. Liquid Waste Disposal

There are no bathrooms located within the SMA D: Ke'ehi Lagoon Beach Park portion of the Project; therefore, no connection to the sewer system for liquid waste disposal will be made within this portion of the Project.

There Lagoon Drive Station abutting the SMA D: Ke'ehi Lagoon Beach Park area will require connection to the municipal sewer system.

6. Solid Waste Disposal

During the operational phase, the Project will not generate solid waste within the SMA D: Ke'ehi Lagoon Beach Park area. There are no stations in this portion of the Project, and train windows will not open, so items cannot be thrown from the train as it passes along the SMA D: Ke'ehi Lagoon Beach Park guideway. Because waste will not be generated within this portion of the Project, disposal is not anticipated to take place within the SMA D: Ke'ehi Lagoon Beach Park portion of the Project.

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

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

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- Solid Waste Management Plan

7. Access to Site

During operation there will be no access to the "site", the guideway, within SMA D: Ke'ehi Lagoon Beach Park area. All access will be at stations, the nearest stations are located at Lagoon Drive and Middle Street Transit Center.

During construction, access to the site will be from Nimitz Highway, Lagoon Drive, and Waiwai Loop.

Within the SMA D: Ke'ehi Lagoon Beach Park area the Project will not affect access to any site. During construction, short-term access impacts within SMA D: Ke'ehi Lagoon Beach Park may occur. Access to the park will be maintained during construction in accordance with Project maintenance of traffic and safety plans.

Moanalua Stream is in this portion of the Project, but access will be maintained to the extent possible during construction and there are multiple access points to the stream and shoreline, so overall access is not anticipated to be adversely affected.

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 information contained in the Final EIS, including supporting technical reports referenced within it that include detailed information concerning the Project-specific field studies performed to support the Final EIS.

Section II.B References

Attachment G: Preliminary Engineering Plan/Profile Sheets, SMA D: Ke'ehi Lagoon Beach Park.

Attachment H: Preliminary Engineering Project Drawings, SMA D: Ke'ehi Lagoon Beach Park.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*.

C. Economic and Social Characteristics

1. Estimated Cost and Time Phasing of Construction

Estimated Costs

The cost estimates presented are based on Preliminary Engineering and operations analysis. This financial analysis considers costs, resources, and funding strategies associated with public transit services provided by the City, and excludes financing costs. Unless otherwise stated, costs and revenues are presented in fiscal year (FY) 2009 dollars. For the City and County of Honolulu, the fiscal year begins on July 1 and ends on June 30 (e.g., FY2009 is from July 1, 2008, to June 30, 2009); all year references are to fiscal years.

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It is estimated that the cost of construction for the entire 20 mile alignment, including construction within the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project will be $4,281 million in FY2009 dollars. The cost estimate excludes amounts already incurred during FY2007 and FY2008 and financing costs. Assuming the costs are generally equal throughout the length of the Project, the 2,340 linear foot (0.44 mile) portion of the Project within SMA D: Ke‘ehi Lagoon Beach Park would cost roughly $95 million in FY2009 dollars.

Time Phasing of Construction

It is estimated that construction within the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project will occur between December 2012 (starting with utility relocation) to April 2018 (for the completion of power systems). However, because the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project is just a small part of the overall Project being built during this construction phase, there will be long periods during which no construction activities will be taking place within the SMA D: Ke‘ehi Lagoon Beach Park area.

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 contained in the Final EIS, including supporting technical reports referenced within it that include detailed information concerning the Project-specific field studies performed to support the Final EIS.

Section II.C References

RTD 2009. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. August 2009. *Honolulu High-Capacity Transit Corridor Project Financial Plan.*

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement.*

D. Environmental Characteristics

1. Soils

In the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project the two soil types found along the Project alignment are ‘Ewa Silty Clay Loam (EmA) and Fill Land (FL). ‘Ewa Silty Clay Loam is typical of footslopes, has slopes of 0 to 2 percent, is well-drained, and transmits water at a moderately low to high rate. Fill Land 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 SMA D: Ke‘ehi Lagoon Beach Park portion of the Project will largely be constructed within the existing driveway and parking lot of Ke‘ehi Lagoon Beach Park.

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2. Topography

In the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project the topography is generally flat with some sloped areas. No major grading activities will take place within the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project; the existing grade of the roads and park area will remain unchanged.

3. Surface Runoff, Drainage, and Erosion Hazard

Runoff in the area of the Project within the SMA D: Ke‘ehi Lagoon Beach Park area generally flows overland and into Moanalua Stream or Ke‘ehi Lagoon. The surrounding area is developed, and surface runoff travels to a drainage system. The City and County of Honolulu has an extensive storm drain system serving the surrounding community. The low slopes of the lands here, combined with the soil types and high level of vegetative cover in the area, contribute to a minimal erosion threat.

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

The Flood Insurance Rate Maps (FIRM) indicate that the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project will cross flood zones AE and AEF, and be in the vicinity of flood zone AO, all of which are associated with Moanalua Stream. The FIRM are being updated, and the new maps will go into effect in 2011. Figures D-FZ and D-FZ2 in Attachment H illustrate the location of the flood zones, current and 2011, respectively. Please see the flood zone definitions below. The updated FIRM indicate that the Project will still only cross flood zones AE and AEF, but will now be in the vicinity of a newly indicated flood zone VE, rather than AO in SMA D: Ke‘ehi Lagoon Beach Park. This floodplain serves largely to convey stormwater toward the ocean. The Project will not adversely impact or interfere with this floodplain or its functions.

> *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 reserved to pass the base flood, with the “F” standing for floodway.
>
> *Flood Zone VE:* The flood insurance rate zones that correspond to areas along the coasts subject to inundation by the 100-year floodplains with additional hazards due to storm-induced velocity wave action. In most instances, base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

In regard to the LUO Flood Hazard District compliance, the City and County of Honolulu will submit documents as required to comply with Flood Hazard District Regulation (Article 9. Special District Regulations, Section 21-9.10) before construction of a segment begins.

Floods, hurricanes, earthquakes, and tsunamis can all affect Hawai‘i. The International Building Code (IBC) and the American Association of State Highway and Transportation Officials

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(AASHTO) 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 Final EIS for the HHCTC Project indicated that the SMA D: Ke'ehi Lagoon Beach Park portion of the Project is not within a tsunami evacuation zone. Since the publication of the Final EIS, State Civil Defense has revised the maps. A portion of the Project within the SMA D: Ke'ehi Lagoon Beach Park is now within the tsunami evacuation zone; the portion within the evacuation zone stretches from near the boundary of Ke'ehi Lagoon Beach Park and the Pacific War Memorial to where the Project leaves the SMA. Because the only Project facility within the tsunami evacuation zone in the SMA D: Ke'ehi Lagoon Beach Park area is the guideway and the guideway is elevated roughly 30 feet above ground level, tsunamis are not anticipated to affect the Project in this area.

5. Other Pertinent Information

A survey of street trees was conducted in the Project 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 DPR 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 there is an Excellent Monkeypod tree located on Lagoon Drive in the vicinity of the SMA D: Ke'ehi Lagoon Beach Park area. The tree has a 70-foot canopy 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.

Section II.D References

Attachment G: Preliminary Engineering Plan/Profile Sheets, SMA D: Ke'ehi Lagoon Beach Park.

Attachment H: Preliminary Engineering Project Drawings, SMA D: Ke'ehi Lagoon Beach Park (Figures D-FZ1 and D-FZ2).

Department of Emergency Management, 2010. New Tsunami Evacuation Zone Maps. Accessed at http://www.honolulu.gov/dem/draft_tsunami_evacuation_zone_maps_.htm.

FEMA 2007. Federal Emergency management Agency (FEMA). Digital Flood Insurance Rate Maps; GIS "Flood" shapefile. http://hawaii.gov/dbedt/gis/dfirm.htm.

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RTD 2008l. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Street Trees Technical Report*.

RTD 2008m. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Geology, Soils, Farmlands, and Natural Hazards Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Multiple Sections, including Section 4.15 "Street Trees".

USDA 2007. U.S. Department of Agriculture Natural Resources Conservation Service, Hawai'i. 2007 (original data from 1972). GIS "Soils" shapefile. http://hawaii.gov/dbedt/gis/soils.htm.

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

Airport runways, a maintenance facility, and a bus parking lot are located near the Lagoon Drive Station. There is also a dense warehouse and distribution district which includes Ualena Street and Waiwai Loop.

Within SMA D: Ke'ehi Lagoon Beach Park the Project will traverse the park near its mauka property line, generally following the alignment of the park's access road until the alignment diverges from the road near the tennis courts. From there the alignment remains near the mauka boundary of the park until it leaves the park, where the alignment continues within the SMA near and parallel Nimitz Highway. The Project is expected to have little impact on uses found in the surrounding area. The SMA boundary follows the mauka boundary line of the park's parcel here.

Section III.A References

Attachment G: Preliminary Engineering Plan/Profile Sheets, SMA D: Ke'ehi Lagoon Beach Park.

Attachment H: Preliminary Engineering Project Drawings, SMA D: Ke'ehi Lagoon Beach Park.

RTD 2008d. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Neighborhoods and Communities Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*.

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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

Ke'ehi Lagoon Beach Park

Ke'ehi Lagoon Beach Park is located within the SMA D: Ke'ehi Lagoon Beach Park portion of the Project. The City Department of Parks and Recreation (DPR) operates and maintains the 70-acre park located at Lagoon Drive near Honolulu International Airport. It contains 12 tennis courts, a baseball diamond, walking trails, picnic areas, restrooms, and access to the water. The Project guideway will cross over approximately 1 acre of the park at its mauka edge and will have no direct effect on the tennis courts nearby. Approximately 10 guideway support columns will be placed in the park at 120-foot intervals in the vicinity of the access road. The guideway will cross above the park, just makai of the four lighted tennis courts near Nimitz Highway. Given their proximity to the guideway, these tennis courts will be closed during construction and reopened once this portion of the Project is completed. To mitigate temporary impacts to these lighted mauka tennis courts, the Project will coordinate with DPR during Final Design to provide lighting and associated resurfacing for four of the tennis courts near the park entrance prior to construction so that nighttime tennis court use will be maintained during construction and after Project completion. The lighting will be designed and constructed in accordance with regulatory requirements. During Final Design, the Project will coordinate with DPR to restore the area around the four mauka tennis courts to a condition that provides recreational benefit to park users including, but not limited to, restoring the four mauka tennis courts to their original condition for daytime use, planting grass, and installing landscaping and picnic tables.

During construction, there will be a temporary loss of approximately 10 percent of the parking spaces within the park. During construction, the Project will temporarily provide additional bus service from existing City transit centers or parking lots for major events. After construction, the parking area will be restored and there will be no net loss of parking.

In the park, the Project guideway will be approximately 30 feet wide, between 30 to 35 feet high, and will be elevated above approximately 1 acre of land within the park, primarily in the parking lot and the park access road. Within the park, the guideway will be constructed on approximately 10 columns that will be about 6 feet in diameter, which will result in the use of approximately 280 square feet of park land for the placement of columns. Because the Project will permanently incorporate the land for the columns into the transportation facility, this will be a direct use. Officials with the DPR, which operates and maintains Ke'ehi Lagoon Beach Park, have been involved in the planning and design process within the boundaries of the park; coordination will continue during final design and construction.

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Although there will be a direct use of the site, the City and County of Honolulu Department of Parks and Recreation (DPR), who operates and maintains the park, indicated in a letter dated September 25, 2008 (page 441-444 of Attachment 2), that the Project will have a *de minimis* impact on Ke'ehi Lagoon Beach Park. 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 Ke'ehi Lagoon Beach Park.

Pacific War Memorial Site (Disabled American Veterans Ke'ehi Lagoon Memorial)

Although loosely referred to as a park in various planning documents prepared by the Ke'ehi Memorial Organization and Hawai'i Disabled American Veterans (KMO-DAV), which manage the property for the Department of Land and Natural Resources, Parks Division (DLNR-Parks), the Pacific War Memorial Site property has not been designated for park or recreation uses by the governor of the State of Hawai'i, nor is it listed on the State's inventory of parks. In addition, the Project does not use portions of the property currently used or planned for memorial or recreational uses. Although the property could be viewed as a non-Section 4(f) property, the property is evaluated below as if it were a Section 4(f) property using a *de minimis* analysis.

The property comprises approximately 11 acres and is located between Ke'ehi Lagoon Beach Park ('Ewa boundary), Moanalua Stream (Koko Head boundary), Nimitz Highway (mauka boundary), and Ke'ehi Lagoon (makai boundary).

Pursuant to Governor's Executive Order (GEO) 3967, February 19, 2003, the property was "set aside for the following public purposes: FOR PACIFIC WAR MEMORIAL PROPERTY PURPOSES[.]" GEO 3967 cancelled GEOs 1534 and 1550 and transferred jurisdiction from the abolished Pacific War Memorial Commission of Hawai'i to DLNR-Parks. DLNR-Parks oversees the KMO-DAV, which has been maintaining the property.

KMO-DAV manages the property for multiple uses, including memorial and recreational uses. Facilities on the property include a rental office, memorial obelisk, several community centers and meeting rooms, Disabled American Veterans Headquarters, a storage building, a rehabilitation facility, and two chapels. The property also has a basketball/volleyball court, a grass field with a baseball backstop, small pavilions, and a picnic area. It is fenced-in along its perimeter and has a lockable gate at its entrance for security at night. The property is closed between the hours of 10:00 p.m. and 6:00 a.m., except by permit.

In 2005, KMO-DAV prepared the *Ke'ehi Lagoon Memorial Master Plan Update*. The Plan included four goals: (1) Maintain the park for use by veterans and their families, youth groups, and the community and complement Ke'ehi Lagoon Beach Park; (2) maintain the integrity of the obelisk; (3) provide a rehabilitation center for disabled veterans; and (4) maintain the park property "as self-sustaining so that the public may not be asked constantly for support."

All of the memorial and recreational features, attributes, and activities of the property are located makai of the Project. The Project will traverse the property near the mauka property line next to Nimitz Highway and grade-separated ramps for the H-1 Freeway. On the property, the Project guideway will be approximately 30 feet wide, between 30 and 35 feet high, and will be elevated above approximately 0.5 acre of land. The guideway will be constructed on approximately three columns that will be about 6 feet in diameter each, which will result in the use of approximately

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150 square feet of the property. The area where the three guideway columns will be constructed is generally where the elevated guideway will pass over the property. This area is not used for memorial or recreational activities and is in an area where there are existing utility easements. The Project will not adversely affect the activities, features, or attributes of the memorial or recreational areas on this property.

Measures to minimize harm were considered in the Project's design in coordination with DLNR-Parks and KMO-DAV. To minimize Project use of the property, the Project's guideway was located as close to the mauka boundary as possible, consistent with operational and engineering constraints, and to be away from the memorial and recreational activities and facilities, such as the memorial obelisk, rehabilitation center, chapels, basketball/volleyball court, small pavilions, and picnic area. The guideway support columns have been designed to use as little of the property as practicable, be located in areas away from memorial and recreational activities, and accommodate access to the property by users. Based on the existing use of the property, the area where the three guideway columns will be constructed and where the elevated guideway will pass over the property is not used for memorials or recreational activities and is in an area where there are utility easements.

During final design, DTS will coordinate with KMO-DAV to replant and relocate any affected trees and to landscape the area near the columns. In addition, the fence will be replaced with "security fencing" on the mauka property line and the utility bridges, as feasible. The area where the columns will be constructed is not in an area that would change KMO-DAV's future plans for the property.

Access to the property will be maintained during construction in accordance with the Project's maintenance of traffic and safety plans. During construction, the work area generally will be limited to the area under the guideway. After construction, the property will be restored in consultation with KMO-DAV. DTS will coordinate with KMO-DAV to develop a landscaping and planting plan to replace vegetation and trees disturbed during construction. KMO-DAV agrees with the mitigation measures. Coordination with KMO-DAV will continue during final design and construction.

KMO-DAV officials who operate and maintain the property have been involved in the planning and design process for the portion of the Project within the boundaries of the property. Meetings have been held to ensure that the Project will result in a net benefit regarding access to this multi-use memorial and recreational property. With the measures to minimize harm and mitigation described above, DLNR/KMO-DAV has stated its concurrence that the Project's use of the property would have a *de minimis* impact on the property since it would not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f).

Section III.B.1 References

RTD 2008d. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Neighborhoods and Communities Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Chapter 5 "Section 4(f) Evaluation".

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

No rare, threatened, or endangered species were observed in the SMA D: Ke‘ehi Lagoon Beach Park area and coordination with governmental agencies and the literature review indicate that there are no designated critical habitats or wildlife preserves within the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project.

Fauna

One protected “migratory” waterbird species was observed at Moanalua Stream and the drainage channel along Aolele Street during the project survey. The Migratory Bird Treaty Act (MBTA) protects this species, the Black-crowned night heron (*Nycticorax nycticorax hoactii*), although it is not listed as threatened or endangered. Local colonies are known to roost and nest in mangrove trees within Pearl Harbor and Ke‘ehi Lagoon; however, nests have not been observed in the mangroves along the east bank of Moanalua Stream.

Construction activities over Moanalua Stream may temporarily affect the availability of foraging sites for Black-crowned night herons. But over time, the waterbird will adjust to new structures built for the Project; they continue to occupy other wetland areas despite the construction of nearby buildings and overhead utilities and the construction or widening of adjacent roads and highways. The Project will not adversely impact this waterbird species in the SMA D: Ke‘ehi Lagoon Beach Park area.

Flora

There are no rare, threatened, or endangered floral species in the SMA D: Ke‘ehi Lagoon Beach Park area. The only endangered plant known in the study corridor is ko‘oloa‘ula (*Abutilon menziesii)*, which does not occur within the SMA D: Ke‘ehi Lagoon Beach Park area.

Section III.B.2 References

RTD 2008j. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Ecosystems and Natural Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.13 “Ecosystems”.

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

In the SMA D: Ke‘ehi Lagoon Beach Park area, there are three “wetland” areas present within Aolele Ditch. Aolele Ditch is a man-made drainage feature constructed to drain stormwater to Ke‘ehi Lagoon from the northeastern portion of Honolulu International Airport and the adjacent light industrial area. The lower end of the ditch is tidal; however, the part of the ditch crossed by the guideway is an intermittently flowing (non-relatively permanent water), unlined, open ditch fed by several small drains from the light industrial area mauka. These drains provide sufficient freshwater to establish three small semi-permanent wet areas along the bottom of the ditch, one of which occurs under the planned guideway. These “wetland” features support a variety of

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wetland plants and aquatic insects, such as dragonflies. The most downstream of the three wetlands connects to the tidal reach of Aolele Ditch and harbors top minnows and American crayfish, suggesting a permanent fresh or slightly brackish wetland that has developed on a thin layer of sediment over the concrete channel bed in this segment.

Although some shading impacts to these wetland areas are anticipated, these are minimal and there will be no adverse impacts on wetlands due to the Project in the SMA D: Ke‘ehi Lagoon Beach Park area.

Section III.B.3 References

RTD 2008k. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Water Resources Technical Report*.

RTD 2009b. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Wetland and Waters of the U.S. Study*.

RTD 2009h. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Ecosystem Function and Values of Wetland Waters of the U.S.*

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.14 “Water”.

4. Fisheries and Fishing Grounds

The Project in SMA D: Ke‘ehi Lagoon Beach Park 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.

Section III.B.4 References

RTD 2008k. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Water Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.13 “Ecosystems”.

5. Other Coastal/Natural Resources

The Project will not adversely affect the opportunities for public enjoyment and use of any other coastal or natural resources within the SMA D: Ke‘ehi Lagoon Beach Park area.

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Section III.B.5 References

RTD 2008d. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Neighborhoods and Communities Technical Report*.

RTD 2008j. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Ecosystems and Natural Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.13 "Ecosystems".

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 low chance of encountering burials and post-contact archaeological resources, but a moderate chance of encountering pre-contact archaeological resources in the SMA D: Ke'ehi Lagoon Beach Park area. Subsurface features and deposits, including iwi kupuna or Hawaiian burials, that have not been previously identified may be affected by the Project.

The City will develop an archaeological inventory survey (AIS) plan for the area of potential effects (APE) for each construction phase in accordance with 36 CFR 800.4, which allows for phased identification of archaeological resources to limit disturbance of potential resources during the investigation. The City will use Preliminary Engineering plans to focus the investigation in locations where there is the potential to affect archaeological resources by project construction. The AIS plans will follow the requirements of HAR Chapter 13-276. The City will conduct the archaeological fieldwork as presented in the AIS plan for each construction phase. The archaeological fieldwork will be completed in advance of the completion of final design so that measures to avoid and/or minimize adverse effects to the historic properties can be incorporated into the design. The City has consulted and continues to consult with the State Historic Preservation Division (SHPD) and O'ahu Island Burial Council (OIBC) on burial issues. As required under HRS Chapter 6E, the City will ensure that City and State agencies that grant land use entitlements for the Project consult with SHPD prior to the issuance of permits in areas where the Project may affect a burial site. To ensure that OIBC maintains jurisdiction to determine whether preservation in place or relocation of previously identified native Hawaiian burial sites is warranted, the City will complete an AIS prior to construction in each construction phase. The City has committed to conducting archaeological investigations in locations where foundations will be placed. This will limit the area disturbed for archaeological investigations and construction to potentially less than 10 percent of what would be disturbed if archaeological investigations were conducted for 100 percent of the alignment. Mitigation will be conducted in advance of, and in some cases during, the construction phases in the Project's different geographic areas.

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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 SHPO will be notified in accordance with Federal and State law. If archaeological resources are identified during construction, the City will minimize impacts.

Section III.C.1 References

RTD 2008n. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Archaeological Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.16 "Archaeological, Cultural, and Historic Resources".

2. Cultural

Archival and ethnographic research shows that most of the traditional cultural resources within the SMA D: Ke'ehi Lagoon Beach Park portion of the Project have been heavily damaged or destroyed through previous development. 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.

There are no cultural resources that have been previously identified as having potential long-term adverse effects in the SMA D: Ke'ehi Lagoon Beach Park area. Any cultural resources that are uncovered will be assessed through collaborative consultation with appropriate cultural practitioners and/or community groups in accordance with the Programmatic Agreement (PA) developed pursuant to Section 106 of the National Historic Preservation Act (NHPA).

Section III.C.2 References

RTD 2008p. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Cultural Resources Technical Report*.

RTD 2009e. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Addendum 01 to the Cultural Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.16 "Archaeological, Cultural, and Historic Resources".

3. Historical

Through agency coordination, the Project's Area of Potential Effects (APE) was defined generally as one parcel deep from the fixed guideway alignment in the SMA D: Ke'ehi Lagoon

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Beach Park portion of the Project. The APE also includes parcels immediately adjacent to all facilities associated with the fixed guideway system, including TPSS.

Historical Resources Within SMA D: Ke'ehi Lagoon Beach Park

There are no historical resources within the Project APE in the SMA D: Ke'ehi Lagoon Beach Park area.

Historical Resources in the Vicinity of SMA D: Ke'ehi Lagoon Beach Park

The Hawai'i Employers Council (TMK 1-1-016:004) is located mauka of and directly adjacent to Ke'ehi Lagoon Beach Park. Figure D-HR in Attachment H illustrates the location of this historic resource. The Hawai'i Employers Council was built in 1961. The council was founded in 1943 in response to the National Labor Relations Act of 1935, which guaranteed the rights of workers to organize. By February 1962, when the council moved to its new offices, it had more than 300 members. This resource is eligible for nomination to the NRHP under Criterion A for its association with the history of labor relations in Hawai'i and under Criterion C for its association with the architectural firm of Wimberly and Cook. In addition, its successor firm, Wimberly, Allison, Tong & Goo, had a major influence on Hawaiian architecture in this period. The Project entails construction of an elevated guideway along the mauka edge of Ke'ehi Lagoon Beach Park and within the neighboring TMK 1-1-016:005 that will skirt the corner of the parcel the building is on, and be approximately 40 feet from the corner of the building and about 40 feet high. The primary views of the building are from the front of the building (on Waiwai Loop) at ground level. The guideway will be behind and beside the building, and therefore, will not eliminate primary views of the historic building. There will be no direct use of the historic building or its parcel and the Project will not substantially impair the visual and aesthetic qualities of the building that contribute to the resource's NHRP 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 PA was developed in consultation among the Section 106 consulting parties (identified in the Introduction – Section I.4). The Section 106 process identified historic properties potentially affected by the Project, assessed effects, and sought ways to avoid, minimize, or mitigate any adverse effects on any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP. The PA records the terms and conditions agreed upon to resolve potential adverse effects and is attached to the Final EIS (Attachment 1) in Appendix H. The PA incorporated comments from Section 106 consulting parties listed in the Introduction to this permit application in Section I.4. FTA, SHPO, and the Advisory Council on Historic Preservation, in coordination with the invited signatories, will finalize the PA prior to the Record of Decision (ROD). FTA will distribute an executed PA to the Section 106 consulting parties and invite them to participate as concurring parties to the PA.

Section III.C.3 References

Attachment H: Preliminary Engineering Project Drawings, SMA D: Ke'ehi Lagoon Beach Park (Figure D-HR)

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RTD 2008o. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Historic Resources Technical Report*.

RTD 2009c. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Addendum 01 to the Historic Resources Technical Report*.

RTD 2009d. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Historic Effects Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.16 "Archaeological, Cultural, and Historic Resources".

SHPD 2010. State of Hawai'i Department of Land and Natural Resources State Historic Preservation Division. 2010. *Honolulu High-Capacity Transit Corridor Project Programmatic Agreement*.

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 SMA D: Ke'ehi Lagoon Beach Park area will require the installation of the guideway and columns along the mauka perimeter of the park, as well as lighting at currently unlit tennis courts. Project elements will fit with the bulk and scale of other structures near the airport, which is surrounded by other transportation elements and industrial buildings. The open special quality of the park will be altered by the guideway and columns; this change will be noticeable but not substantial to park users because the alignment will be along the periphery of the park and closely follow Nimitz Highway and the H-1 Freeway. Views of Honolulu Harbor and the park are already obstructed by the interchange and will not be substantially affected by the Project. The guideway and stations will not be dominant elements in views of regional scenic features.

The nearest coastal highway is Nimitz Highway. The view from this highway toward the coast is currently obscured by buildings along the highway and surrounding industrial area, highway elements, and trees; therefore the Project will not substantially interfere with or detract from the line of sight toward the sea.

Section III.D References

RTD 2008e. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Visual and Aesthetic Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.8 "Visual and Aesthetic Conditions".

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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 directly impact Moanalua Stream in the SMA D: Ke‘ehi Lagoon Beach Park area; Moanalua Stream is on the Hawai‘i State Department of Health's (HDOH) 303(d) List of Impaired Waters (HDOH 2008). Moanalua Stream, a channelized stream with associated tidal mangrove wetlands, is connected to Ke‘ehi Lagoon, an embayment of the Pacific Ocean. The stream is subject to tidal flow and the estuary is within the OHWM. Various fish species were noted to inhabit the stream.

Because of the 300-foot width of the channel where the Project crosses Moanalua Stream, two guideway columns (approximately 36 square feet each on 10-foot drilled shaft foundations) will need to be constructed in the estuary; this location is makai of the H-1 Freeway ramp to Nimitz Highway but mauka of a utility/pedestrian bridge crossing the channel. In this area, there exist multiple bridge crossings, including Kamehameha Highway, the H-1 Freeway, Nimitz Highway ramps, and two utility/pedestrian bridges makai of the guideway crossing. The guideway columns will be aligned with the upstream viaduct piers, as feasible, to minimize obstruction of stream flow. Placement of the piers is not expected to have any consequences on the Moanalua Stream estuarine environment or its fauna beyond a loss of 175 square feet, or 0.004 acre, of sandy mud bottom.

Stormwater discharged from the guideway will be managed using permanent stormwater best management practices (BMPs). Permanent BMPs will include discharging stormwater from the guideway to the landscaped ground for infiltration and potentially the use of downspout filters.

Marine Waters

In the SMA D: Ke‘ehi Lagoon Beach Park area there is Ke‘ehi Lagoon, a Class A Marine Embayment. Ke‘ehi Lagoon has associated inlets of point-source discharges and streams, and is on HDOH's 303(d) List of Impaired Waters (HDOH 2008). The Project will not discharge stormwater directly into the lagoon and is not anticipated to adversely affect Ke‘ehi Lagoon.

Flood Zones

The Project will cross one developed floodplain associated with Moanalua Stream in the SMA D: Ke‘ehi Lagoon Beach Park area. Figures D-FZ and D-FZ2 in Attachment H illustrate the location of these flood zones. The flood zones traversed by the guideway are AEF and AE; this floodplain serves largely to convey stormwater toward the ocean. The Project will not cause significant floodplain encroachment as defined by USDOT Order 5650.2. The Project will not have a substantial effect on the groundwater recharge cycle, nor will it have any detrimental effects on the quality of surrounding waters. The guideway in SMA D: Ke‘ehi Lagoon Beach

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Park will be elevated above the floodplain by piers and there will be no impact to water levels in this floodplain. Any impacts to floodplains caused by the Project will be mitigated through design to comply with current flood zone regulations. There will be no notable adverse impacts on natural and beneficial floodplain values. There will be no impact to water levels in flood zones.

Groundwater

In the SMA D: Ke‘ehi Lagoon Beach Park area, the Project overlies the Honolulu 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 EPA and the USDOT. 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 on page 433 of Attachment 2). The construction methods and 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 (UIC) line by the State Department of Health (HDOH); in the SMA D: Ke‘ehi Lagoon Beach Park area, the Project will generally follow the edge of the UIC 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 (SDWB) publishes groundwater contamination maps, and included in that report are 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, and the shafts will not penetrate anywhere near those depths.

Subsurface conditions in the SMA D: Ke‘ehi Lagoon Beach Park area generally consists of artificial fills approximately 10 feet thick, placed over thick stratum of recent alluvium over lagoonal and estuarine deposits extending to depths of 80 to over 150 feet below ground surface (bgs). Sands, coral detritus, and silty clays underlie the soft soils and extend to the approximately 200-foot maximum depth explored. The existing ground surface elevation ranges from +5 to +15 feet above mean sea level (MSL). Local areas may have been built up by the addition of fill to maintain grades above tidal influences from nearby waters. Brackish groundwater due to the nearby ocean in this area is expected within 10 feet of the ground surface.

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 SMA D: Ke‘ehi Lagoon Beach Park

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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 55 to 250 feet. In the SMA D: Ke‘ehi Lagoon Beach Park area foundations will not penetrate 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 has been obtained by the Project, and 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 SMA D: Ke‘ehi Lagoon Beach Park 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.

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Section III.E References

Attachment H: Preliminary Engineering Project Drawings, SMA D: Ke‘ehi Lagoon Beach Park.

HDOH 2008. State of Hawai‘i Department of Health. 2008. *2006 State of Hawai‘i water quality monitoring and assessment report: Integrated report to the U.S. Environmental Protection Agency and the U.S. Congress pursuant to Sections 303(d) and 305(b), Clean Water Act (PL 97-117).*

RTD 2008k. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Water Resources Technical Report.*

RTD 2009b. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Wetland and Waters of the U.S. Study.*

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement.* Section 4.14 “Water”.

F. Include Suitable and Adequate Location and Site Maps

Please see Attachments G and H.

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 the Final EIS, including supporting technical reports referenced within it that include detailed information concerning the detailed Project-specific field studies performed to support the Final EIS.

IV. PROJECT IMPACTS

This section discusses impacts within the SMA D: Ke‘ehi Lagoon Beach Park area specifically. The Introduction portion of the SMA application provides a Project-wide discussion of impacts related to CZM 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 SMA D: Ke‘ehi Lagoon Park area.

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While the portion of the Project in SMA D: Ke‘ehi Lagoon Beach Park 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. Ke‘ehi Lagoon Beach Park and the Pacific War Memorial Site will remain accessible to the public and offer the same uses they currently do. 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 SMA D: Ke‘ehi Lagoon Beach Park area.

There is a low chance of encountering burials and post-contact archaeological resources, but a moderate chance of encountering pre-contact archaeological resources in the SMA D: Ke‘ehi Lagoon Beach Park area. There are no historic resources within the SMA D: Ke‘ehi Lagoon Beach Park area.

Outside of the SMA D: Ke‘ehi Lagoon Beach Park area, but in the general vicinity, the Project will have an adverse impact on the Hawai‘i Employers Council building.

Because the Project will result in adverse effects on some resources and avoidance is not possible, a PA was prepared in consultation with the State Historic Preservation Officer (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 the SMA D: Ke‘ehi Lagoon Beach Park area include a potential change in the setting of a historic resource (The Hawai‘i Employers Council) and alteration of ‘Ewa-Koko Head and mauka-makai views. The guideway will largely be constructed along the park's mauka perimeter. Views of Honolulu Harbor and the park are already obstructed by the Nimitz Highway and H-1 Freeway interchange.

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.5 for details regarding coastal/natural resources in the SMA D: Ke‘ehi Lagoon Beach Park area.

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The Project will not have an adverse impact on coastal ecosystems. There will be no direct drainage into Ke'ehi Lagoon in the SMA D: Ke'ehi Lagoon Beach Park portion of the Project, due to the distance between the alignment and the coast. The Project is being designed so as to ensure minimal environmental impacts throughout the alignment through the use of construction and permanent BMPs. Stormwater runoff will be filtered through landscaped areas and sedimentation collars where possible. Stormwater will be filtered through downspout filters or specially designed bioinfiltration units near water bodies on the HDOH 303(d) list of water quality limited segments, such as Moanalua Stream. 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 SMA D: Ke'ehi Lagoon Beach Park 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.*

A portion of the Project within the SMA D: Ke'ehi Lagoon Beach Park area is located in a tsunami evacuation zone based on new maps issued by State Civil Defense in 2010. The only Project facility within the tsunami evacuation zone in the SMA D: Ke'ehi Lagoon Beach Park area is the guideway and the guideway is elevated roughly 30 feet above ground level; therefore, tsunamis are not anticipated to affect the Project in this area. 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 vegetative cover. 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 3 feet to have an impact on the portion of the Project in the SMA D: Ke'ehi Lagoon Beach Park 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

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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 law. Various public outreach activities were held near the SMA D: Ke'ehi Lagoon Beach Park area, as discussed above in Section I.F.6..

9. *Beach Protection*

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

Ke'ehi Lagoon Beach Park is located within SMA D. The Project will have a direct impact on the park; however, the impact is to the four tennis courts in the mauka portion of the park and there will be no impact to the makai beach area of the park. During Final Design, the Project will coordinate with DPR to restore the area around the four mauka tennis courts to one that provides recreational benefit to park users including, but not limited to, restoring the area around the four mauka tennis courts to their original condition for daytime use, planting grass, and installing landscaping and picnic tables. The Project will not cause long-term adverse effects to the park's use by the public because the Project will provide park improvements to off-set its impacts. 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 SMA D: Ke'ehi Lagoon Beach Park 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 SMA D: Ke'ehi Lagoon Beach Park area.

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The portion of the Project within the SMA D: Ke'ehi Lagoon Beach Park 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. Ke'ehi Lagoon Beach Park, the Pacific War Memorial Site, and Moanalua Stream will experience direct impacts due to the Project, but these effects will not be adverse and all three resources 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 SMA D: Ke'ehi Lagoon Beach Park area will not adversely affect or in any way diminish the quality of public recreation areas or wildlife preserves; there are no wildlife preserves in the SMA D: Ke'ehi Lagoon Beach Park area. Ke'ehi Lagoon Beach Park and the Pacific War Memorial Site will retain their functions, and although they will be directly impacted, neither park will not be adversely affected. Roughly 1.5 acres of land, in total, will be acquired for the Project, but this impact will be mitigated through coordination with DPR and DLNR/KMO-DAV as described in Section III.B.1.

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 SMA D: Ke'ehi Lagoon Beach Park area DTS 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 SMA D: Ke'ehi Lagoon Beach Park 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 Best Management Practices (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 as discussed in Section III.E; stormwater from the guideway will be discharged to landscaped areas for infiltration and discharged to specifically designed bioinfiltration units near Moanalua Stream, a HODH 303(d) listed water body. 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:*

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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 SMA D: Ke'ehi Lagoon Beach Park 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 SMA D: Ke'ehi Lagoon Beach Park area is consistent with the objectives and policies set forth for Special Management Areas.

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 SMA D: Ke'ehi Lagoon Beach Park 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*

A portion of the Project within the SMA D: Ke'ehi Lagoon Beach Park area is located in the tsunami evacuation zone, based on revised maps published by State Civil Defense in 2010. The only Project facility within the tsunami evacuation zone in the SMA D: Ke'ehi Lagoon Beach Park area is the guideway and the guideway is elevated roughly 30 feet above ground level; the Project has been adequately planned and designed to the extent practical to minimize the risk from coastal hazards, including tsunamis. 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 3 feet to have an impact on the portion of the Project in the SMA D: Ke'ehi Lagoon Beach Park area.

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

The portion of the Project within the SMA D: Ke'ehi Lagoon Beach Park area will not impede public access to the shoreline or beach area. Short-term changes to Ke'ehi Lagoon Beach Park 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 SMA D: Ke'ehi Lagoon Beach Park area.

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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;

Two guideway support columns will be constructed in Moanalua Stream and will impact approximately 0.004 acre below the stream's ordinary high water mark. To avoid these impacts, different bridge types would be needed to clear span the 300-foot-wide stream. This stream is wider than the practical length limit for precast concrete girders (150 feet). Long spans to cross this stream could add $5 million to total project costs. In addition there are multiple bridge crossings of Moanalua Stream in this area with support columns in the water, including Kamehameha Highway, the H-1 Freeway, and Nimitz Highway. The guideway columns will be aligned with the upstream viaduct piers, as feasible, to minimize obstruction of stream flow. This area is tidal and near the stream mouth at Ke'ehi Lagoon. Placement of the piers is not expected to have any consequences on the Moanalua estuarine environment or its fauna.

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

In the SMA D: Ke'ehi Lagoon Beach Park area, the Project will not reduce or impact any beaches and will not significantly reduce areas usable for public recreation. The Project will coordinate with DPR during Final Design to provide lighting and associated resurfacing for four of the tennis courts near the park entrance prior to construction so that nighttime tennis court use will be maintained during construction and after project completion. The Project will coordinate with KMO-DAV to ensure that it results in a net benefit for access to the memorial and recreational area. Therefore, there will be no permanent loss to public recreation facilities within the SMA area.

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 SMA D: Ke'ehi Lagoon Beach Park 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. Moanalua Stream will be directly impacted by the Project, but those impacts are not expected to be adverse; access to the stream will be maintained. Public access to the shoreline in this 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 SMA D: Ke'ehi Lagoon Beach Park area will require the installation of the guideway and columns along the park's existing driveway and parking lot. Views of Honolulu Harbor and the park are already obstructed by the Nimitz Highway and H-1 Freeway interchange. 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). This section states "The portion of the guideway that will run along

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the makai side of Nimitz Highway and the mauka side of the SMA boundary is between Lagoon Drive near Honolulu International Airport and Kalihi. In this area, the alignment will be along the mauka edge of Ke'ehi Lagoon Beach Park and closely follow Nimitz Highway and the H-1 Freeway. Figure 4-27 illustrates where the guideway will be in relationship to the roadway. There will be moderate impacts on makai views of the shoreline from these state highways."

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 SMA D: Ke'ehi Lagoon Beach Park 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. Though Moanalua Stream will be directly impacted due to the placement of two columns in the stream, there will be no adverse effects due to the use of temporary and permanent BMPs. In addition, this stream already contains visible structures and modifications. The Project will not have an adverse impact on Ke'ehi Lagoon in this area due to the distance between the guideway and the coast. Existing and potential fishing grounds are likely coastal or associated with the stream or coastline; there shall be no interference with 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 an area used for open space and surrounded by a commercially-developed area unlikely to be used for agriculture.

V. MITIGATION MEASURES

Please see Attachment 4.

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Attachment A:

Preliminary Engineering Plan/Profile Sheets, SMA A: Waipahu

These plan and profile sheets are excerpts from the following:

City and County of Honolulu
Department of Transportation Services
Rapid Transit Division (RTD)

West O'ahu/Farrington Design Build
Contract DB-1200
RFP Drawings

Conformed August 5, 2009

Prepared for: Honolulu High-Capacity Transit Corridor Project

Prepared by: Parsons Brinckerhoff, General Engineering Consultant (GEC)

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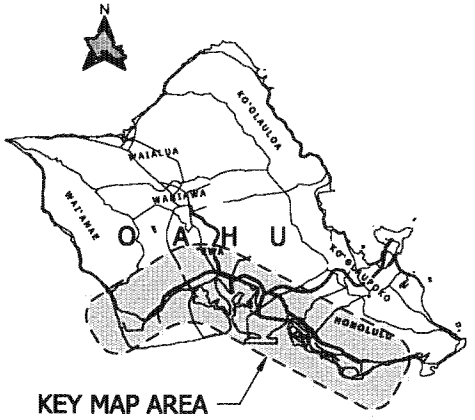
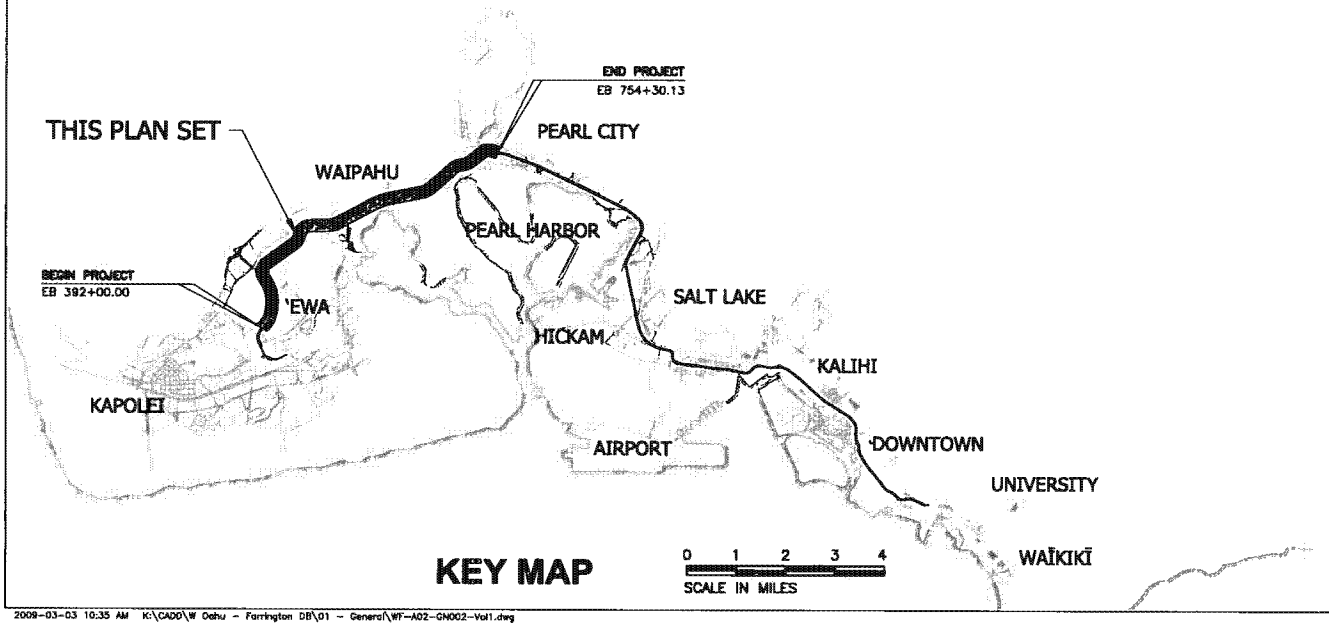
HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
WEST O'AHU/FARRINGTON DESIGN-BUILD
VOLUME 1 - CIVIL AND TRAFFIC



City and County of Honolulu
Department of Transportation Services
Rapid Transit Division



KEY MAP

03 APRIL 2009
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NOT FOR CONSTRUCTION

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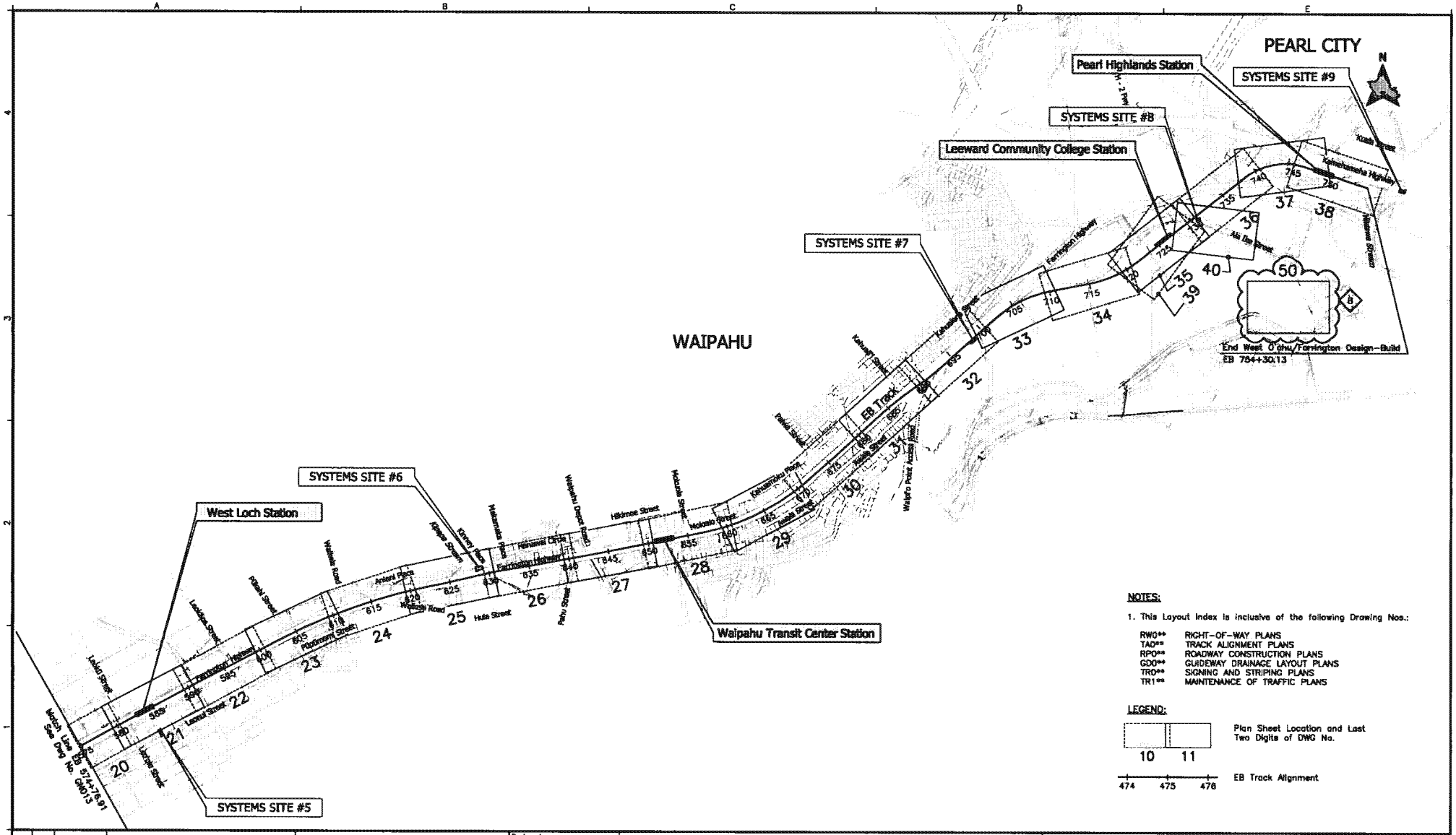

NOTES:

1. This Layout Index is inclusive of the following Drawing Nos.:

RW0**	RIGHT-OF-WAY PLANS
TA0**	TRACK ALIGNMENT PLANS
RP0**	ROADWAY CONSTRUCTION PLANS
GD0**	GUIDEWAY DRAINAGE LAYOUT PLANS
TR0**	SIGNING AND STRIPING PLANS
TR1**	MAINTENANCE OF TRAFFIC PLANS

LEGEND:

10 11 — Plan Sheet Location and Last Two Digits of DWG No.

474 475 476 — EB Track Alignment

Rev	By	Date	Description
B	AB	05-22-09	Cut Sheet Revision
A	AB	04-03-09	Issued For Bid

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Designed: N/A
Drawn: T Cochran
Checked: J Davis
Approved: A Borst
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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WEST O'AHU/FARRINGTON DESIGN-BUILD

VOLUME 1
LAYOUT INDEX - 1"=40' PLANS

SHEET 2 OF 2

Contract No.: DB-1200
CADD File: WF-A05-GN014-Vol1
Drawing No: GN014 Rev. B
Scale: NTS
Page No. 13 of 312

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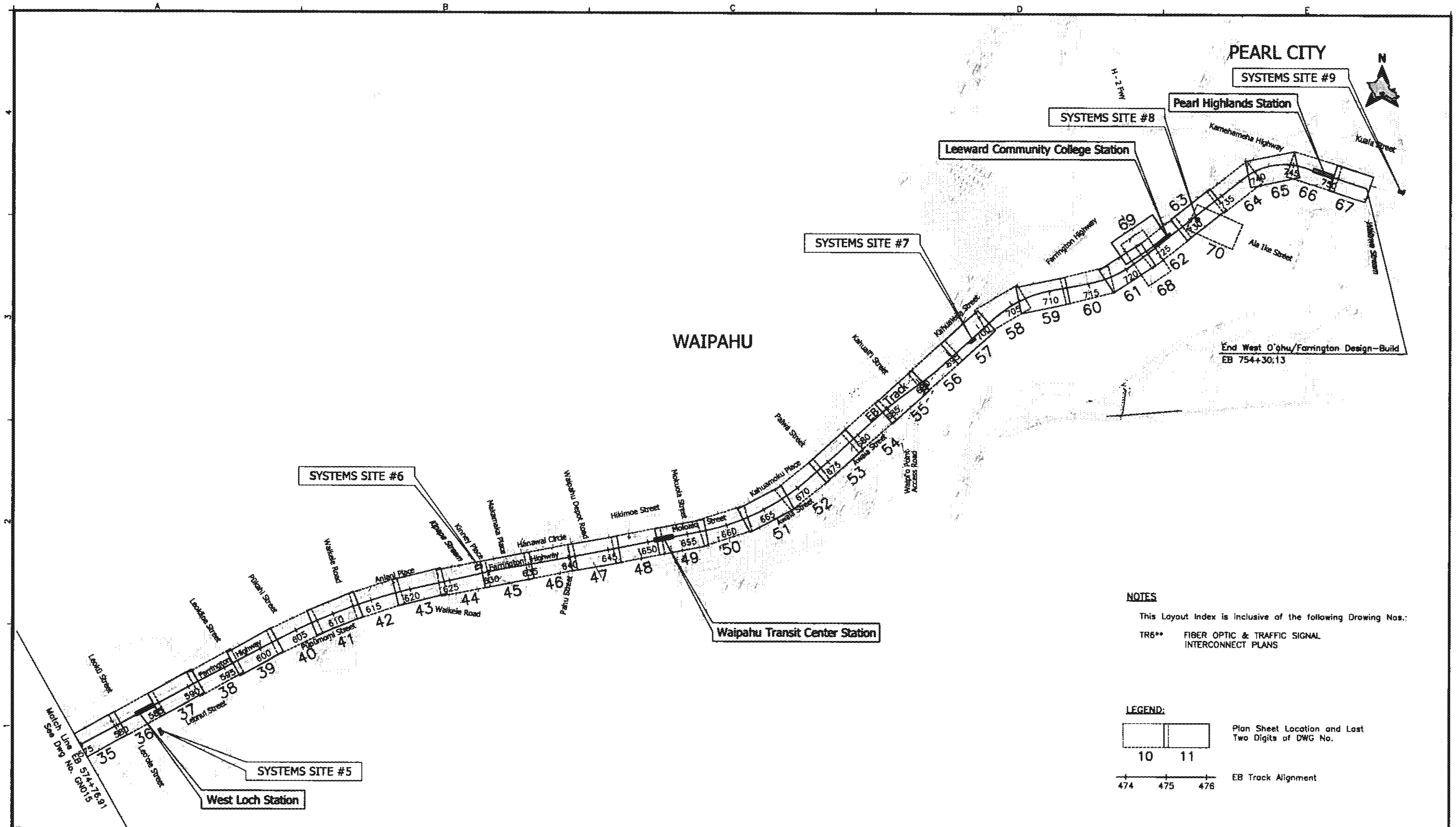

NOTES

This Layout Index is inclusive of the following Drawing Nos.:

TR6** FIBER OPTIC & TRAFFIC SIGNAL INTERCONNECT PLANS

LEGEND:

10 / 11	Plan Sheet Location and Last Two Digits of DWG No.
474 475 476	EB Track Alignment

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WEST O'AHU/FARRINGTON DESIGN-BUILD

VOLUME 1
LAYOUT INDEX - 1"=20' PLANS

SHEET 2 OF 2

Contract No.: DB-1200
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Drawing No: GN016
Rev. A
Scale: NTS
Page No. 15 of 312

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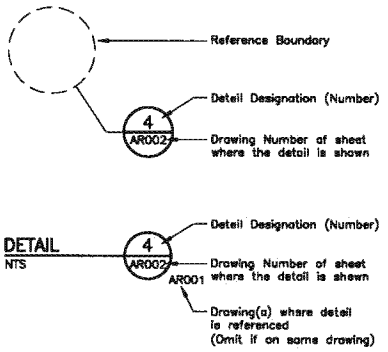
GENERAL NOTES

1. "EB Track" denotes the centerline of the Eastbound Track. "WB Track" denotes centerline of the Westbound Track.
2. Origin of Coordinates: Hawaii State Plane Coordinate Grid System, Zone III with the North American Datum of 83 High Accuracy Reference Network (NAD83 HARN).
3. Elevations shown on these plans are reference to Mean Sea Level (MSL).
4. The proposed WB Track alignment stationing equals to the proposed EB Track alignment stationing in all parallel tangent sections. Station equations are given at the endpoint of each westbound curve.
5. The top of rail profile shown represents the elevation of the top of low running rail.
6. Degree of Curve (Dc) values are expressed in arc definition.
7. All track points, except PI's are at centerline of proposed track, unless noted otherwise.
8. Underground facilities, poles, structures, and utilities have been plotted from available surveys and records. Their locations must be considered approximate only. There may be others, the existence of which is at present unknown. Verification of all the locations, shown or not shown, will be the responsibility of the contractor.
9. HDOT North-South Road Phase 1B, East Kapolei Offsite Trunk Sewer, and East Kapolei Water Transmission Main Project are under construction by others and their designs are shown for informational purposes only (estimated completion to be January 2010). Any field modifications are not reflected on these drawings.
10. The existing conditions shown hereon are based on LiDAR data collected in September and October of 2007, supplemental ground surveys were performed between September of 2007 and December of 2008, and record information from various design projects either constructed, under construction or proposed. The selected design-build contractor is responsible for verifying existing conditions prior to supplying advanced design documents to the RTD.
11. Contact the Hawaii Department of Transportation (HDOT) and/or the City and County of Honolulu for additional plan sheet details not included in the Standard Details Summary and Standard Plans Summary plan sheets.

SYMBOLS

DETAILS



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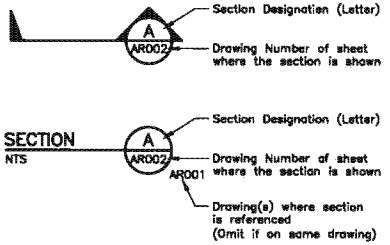
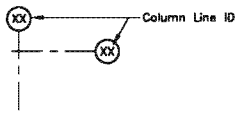


COLUMN LINE GRID INDICATOR



GENERAL SYMBOLS

&	And
@	At
#	Number
ø	Diameter
%	Percent
=	Equal to
>	Greater Than
<	Less Than
≥	Greater Than or Equal To
≤	Less Than or Equal To

CIVIL SYMBOLS

CB10	Track Curve Name
△	Point of Intersection
⊙	PVC
	Point of Switch
SB10-B	Track Spiral Name
	Station Equation
XX-X	Roadway Curve Number
CUT	Limit of Cut Slope (Top of Slope)
FILL	Limit of Fill Slope (Toe of Slope)

HATCH

Station Platform

SPECIAL TERMS

Makai	Ocean
Mauka	Mountain

231° 41' 16" South Azimuth

ABBREVIATIONS

Aggr	Aggregate
AHD	Ahead
Align	Alignment
Approx	Approximate
℄	Baseline
BK	Back
BT	Back Tangent
Bldg	Building
BVC	Begin Vertical Curve
BVCE	Begin Vertical Curve Elevation
BVCS	Begin Vertical Curve Station
℄	Centerline
CB	Catch Basin
CCTV	Closed Circuit Television Camera
Comm	Communications
Conc	Concrete
Const	Construction
CS	Curve to Spiral
DF	Direct Fixation
DI	Drainage Inlet
Dia	Diameter
Δ	Delta
DMH	Drainage Manhole
DS	Downspout
Dwg	Drawing
E	East
Ea	Actual Superelevation
Eu	Unbalanced Elevation
EB	Eastbound
EG	Existing Ground
El	Elevation
Elev	Elevation
EVC	End Vertical Curve
EVCE	End Vertical Curve Elevation
EVCS	End Vertical Curve Station
Exist	Existing
FA	Fire Alarm
FG	Finish Grade
Fin	Finish, Finished
FOC	Face of Curb
ft	Foot, Feet
GB	Grade Break
GBS	Gap Breaker Station
Gnd	Ground
H, Horiz	Horizontal
HWY	Highway
Jt(s)	Joint(s)
L	Length
Lc	Length of Curve
LH, L.H.	Left Hand
LIDAR	Light Detection and Ranging
Ls	Length of Spiral
LT	Left
LVC	Length of Vertical Curve
Max	Maximum
Min	Minimum
MHN	Manhole, Negative
MHP	Manhole, Positive
MPH	Miles Per Hour
N	North
N/A	Not Applicable
NB	Northbound
NIC	Not in Contract
N.I.C.	Not in Contract
No.	Number
OD	Outside Diameter
PC	Point of Curve
PI	Point of Intersection
PITO	Point of Intersection of Turnout
POB	Point of Beginning
POC	Point on Curve
POE	Point of Ending
POT	Point on Tangent
POVC	Point on Vertical Curve
POVT	Point on Vertical Tangent
PS	Point of Switch
PSI	Pounds Per Square Inch
PT	Point of Tangent
PVC	Point of Vertical Curvature
PVI	Point of Vertical Intersection
PVT	Point of Vertical Tangency
R	Radius
Reinf	Reinforce, Reinforcing
RH, R.H.	Right Hand
Rm	Room
ROW	Right-of-Way
RPM	Revolutions Per Minute
RT	Right
S	South
SB	Southbound
SC	Spiral to Curve
SDMH	Storm Drain Manhole
Shldr	Shoulder
Sht	Sheet
Sig	Signal
Sq	Square
St	Street
ST	Spiral to Tangent
Sta	Station
T	Tangent Distance
T&B	Top & Bottom
T.O.	Turnout
TOR	Top of Rail
TPSS	Traction Power Substation
TS	Tangent to Spiral
Typ	Typical
UG	Underground
V, Vert	Speed, Vertical
W	West
WB	Westbound
w/	With

Rev	By	Date	Description
B	EL	05-22-09	Modified Notes & Abbreviations
A	AB	04-03-09	Issued For Bid

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GENERAL CIVIL NOTES, SYMBOLS, AND ABBREVIATIONS

Contract No.: DB-1200
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Drawing No: CG001 Rev. B
Scale: N/A
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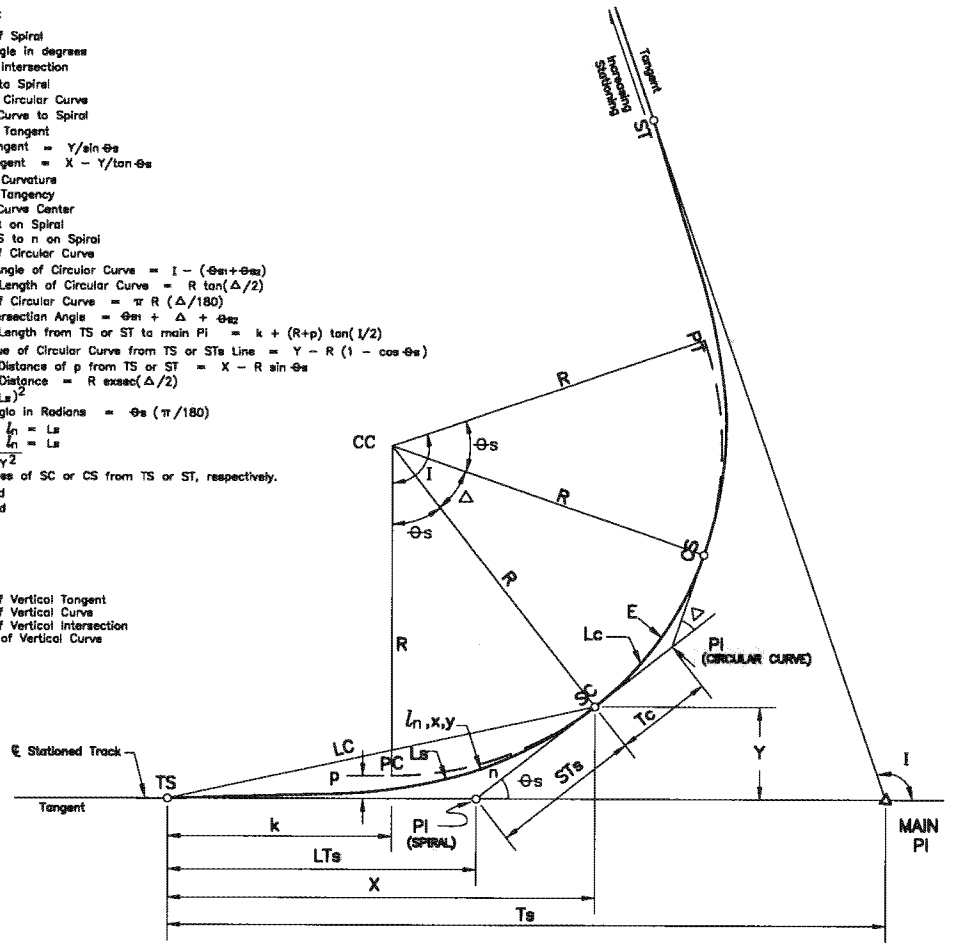
TRACK ALIGNMENT ABBREVIATIONS:

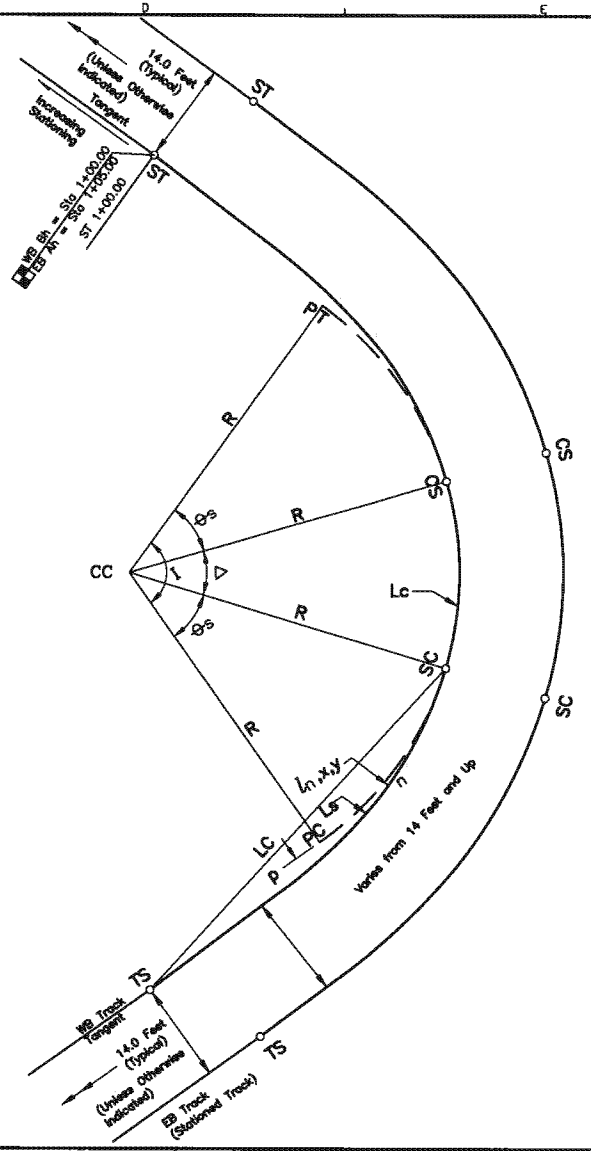
HORIZONTAL:

- Ls = Length of Spiral
- θs = Spiral Angle in degrees
- PI = Point of Intersection
- TS = Tangent to Spiral
- SC = Spiral to Circular Curve
- CS = Circular Curve to Spiral
- ST = Spiral to Tangent
- STs = Short Tangent = $Y/\sin\theta s$
- LTs = Long Tangent = $X - Y/\tan\theta s$
- PC = Point of Curvature
- PT = Point of Tangency
- CC = Circular Curve Center
- n = any Point on Spiral
- l_n = Length TS to n on Spiral
- R = Radius of Circular Curve
- Δ = Central Angle of Circular Curve = $I - (\theta s_1 + \theta s_2)$
- Tc = Tangent Length of Circular Curve = $R \tan(\Delta/2)$
- Lc = Length of Circular Curve = $\pi R (\Delta/180)$
- I = Total Intersection Angle = $\theta s_1 + \Delta + \theta s_2$
- Ts = Tangent Length from TS or ST to main PI = $k + (R+p)\tan(I/2)$
- p = Shift Value of Circular Curve from TS or STs Line = $Y - R(1 - \cos\theta s)$
- k = Tangent Distance of p from TS or ST = $X - R\sin\theta s$
- E = External Distance = $R\,\mathrm{exsec}(\Delta/2)$
- δ_n = $\delta s\,(l_n/Ls)^2$
- δs = Spiral Angle in Radians = $\theta s\,(\pi/180)$
- X = x, where l_n = Ls
- Y = y, where l_n = Ls
- LC = $\sqrt{X^2 + Y^2}$
- X & Y = Coordinates of SC or CS from TS or ST, respectively.
- EB = Eastbound
- WB = Westbound

VERTICAL:

- PVT = Point of Vertical Tangent
- PVC = Point of Vertical Curve
- PVI = Point of Vertical Intersection
- LVC = Length of Vertical Curve





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

WEST O'AHU/FARRINGTON DESIGN-BUILD

TRACK ALIGNMENT ABBREVIATIONS

Contract No.: SBC
CADD File: WF-B01-CG002
Drawing No: CG002 Rev. A
Scale: N/A
Page No. 21 of 312

2009-03-25 10:13 AM K:\CADD\03 Civil\General Drawings\WF-B01-CG002.dwg

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ROADWAY CONSTRUCTION NOTES:

1. Construct Concrete Curb, Type 2A, Per HDOT Std. Plan No. D-05.
2. Construct Concrete Curb, Type 2D, Per HDOT Std. Plan No. D-05.
3. Construct Concrete Curb and Gutter, Type 2DG, Per HDOT Std. Plan No. D-05.
4. Construct Concrete Sidewalk, Per HDOT Std. Plan No. D-15.
5. Construct Reinforced Concrete Drop Driveway, Per HDOT Std. Plan No. D-08.
6. Construct Concrete Curb Ramp.
7. Install Chain Link Fence with Toprail, 6', Per HDOT Std. Plan No. D-02.
8. Install Chain Link Fence without Toprail, 6', Per HDOT Std. Plan No. D-03.
9. Install Double Swing Chain Link Drive Gate, 20', Per HDOT Std. Plan No. D-02 and D-03.
10. Construct Concrete Barrier Rail, Type 4A, Per HDOT Std. Plan No. TE-41.
11. Construct Concrete Half Barrier Rail.
12. Install Guardrail.
13. Construct Concrete Retaining Wall.
14. Construct P.C.C. Bus Pad, Per HDOT Std. Plan No. D-16.
15. Construct Plantmix Bituminous Surface Overlay.
16. Construct Plantmix Bituminous Pavement.
17. Construct Concrete Median Island Paving.
18. Construct Double Swing Drive Gate.
19. Construct Reinforced Concrete Driveway.
20. Place Aggregate Base Surface.
21. Construct Concrete Barrier Rail, Type 4B, Per HDOT Std. Plan No. TE-41. B

ROADWAY CONSTRUCTION LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Proposed gravel pavement.
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.

GENERAL ROADWAY CONSTRUCTION NOTES:

1. See survey control plan sheets for references to horizontal and vertical control datums.
2. See structural plan and profile sheets for proposed guideway column details.
3. See landscaping plan sheets for proposed landscaping details.
4. See R.O.W. plan sheets for proposed R.O.W. details.
5. See utility plan sheets for proposed modifications and/or improvements to existing above and below ground utility systems.
6. See drainage plans sheets for proposed modifications and/or improvements to existing storm drainage facilities and piping.
7. See traffic signal plan sheets for proposed modifications and/or improvements to existing traffic signal systems.
8. See systems site plan sheets for proposed TPSS and GBS details.
9. See track alignment plan and profile for proposed track alignment details.
10. See station plan sheets for proposed station details. B

Rev	By	Date	Description
B	MH	05-22-09	Plan Sheet Note Revisions
A	MH	04-03-09	Issued For Bid

BID DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: E Liberman
Approved: M Hall
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

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WEST O'AHU/FARRINGTON DESIGN-BUILD

ROADWAY CONSTRUCTION NOTES AND LEGEND

Contract No.: DB-1200
CADD File: WF-B01-CG003
Drawing No: CG003 Rev. B
Scale: NTS
Page No. 22 of 312

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GENERAL STRUCTURAL AND GEOTECHNICAL NOTES (CONTINUED)

9.7 The contract documents represent the finished structure. They do not indicate the method of construction. The Design-Builder shall provide means, method, techniques, sequence, and procedure of construction as required. Structural elements shall not be assumed stable or capable of lateral restraint until all permanent elements are in place and all temporary erection and construction equipment and temporary supports are removed. Site visits performed by RTD's representative do not include inspections of means and methods of construction performed by the Contractor.

9.8 The Design-Builder shall provide all necessary shores, braces, and guys required to support all loads to which the guideway structures and components, soils, other structures, and utilities may be subjected during construction. Shoring systems shall be designed and stamped by a structural engineer licensed in the State of Hawaii and submitted to RTD for approval prior to conducting the work.

9.9 The lateral and vertical stability of structural elements indicated in the contract drawings are not to be assumed to be self-supporting until the entire guideway structural system is in place.

9.10 Manufactured materials shall be approved by the RTD designated agency prior to their use on the Project.

9.11 Inserts, openings, and etc. shall not be placed in guideway structural members unless specifically detailed on the structural drawings. Notify RTD when drawings by others show inserts, openings, pockets, or temporary construction elements affecting the structural configuration shown in the contract documents;

9.12 The Design-Builder shall carefully review the drawings, to identify the extent of the scope of work. Visit the site to relate the scope of work to the existing conditions and determine the extent to which those conditions and physical surroundings will impact the work;

9.13 The Design-Builder shall resolve any conflicts on the project drawings with RTD before proceeding with the work;

9.14 Any deviation from the final RTD approved set of the Design-Builder's structural drawings shall be submitted to the RTD for review/approval before proceeding with the work. Substitutions of products or material specified on the Design-Builder's final construction documents are not allowed.

9.15 Complete structural and geotechnical calculations and drawings must be provided for all newly constructed elements and for existing elements within the zone of construction influence;

9.16 See Trackwork, Electrical, Corrosion Control and Systems Drawings for the following:
- Track alignment information
- Pipe runs, sleeves, hangers, drainage inlets, and openings in the structural members;
- Electrical conduit runs, boxes, and outlets in structural members;
- Anchor bolts and inserts for equipment mounts;
- Size, weight, and location of equipment to be installed by others.

10.0 General Geotechnical Conditions Shown on Structural Drawings:

10.1 Geotechnical conditions implied by the Structural drawings shall be verified by the Design-Builder;

10.2 Locations shown are based on available data cited in the corresponding report;

10.3 References:
- Oct. 2008: Geotechnical Data Report, Honolulu High-Capacity Transit Corridor Project, East Kapolei to Pearl Highlands; W.O. 6000-10; Geolabs, Inc. for PB Americas, Inc.
- March 1991; Geotechnical Engineering Exploration, Honolulu Rapid Transit Development Project; Addendum 4; Department of Transportation Services, City and County of Honolulu [March 15, 1991; Geotechnical Engineering Exploration, Honolulu Rapid Transit System, Waiawa to Waikiki and Moana, Ewa and Honolulu; W.O. 2636+00; Geolabs-Hawaii].

11.0 Minimum Material Strengths:

11.1 Unless otherwise approved by RTD, the following minimum material strengths shall be used for the construction of the guideway structural elements:

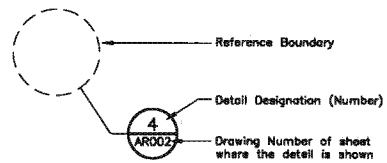
- For the precast concrete of span by span and balanced cantilever girder elements: f'c = 6500 psi;
- For guideway pier beams and columns, and prestressed concrete: f'c = 5000 psi;
- For all cast in drilled shaft foundations: f'c=4500 psi min in place;
- For all above ground reinforced concrete cast-in place structures not specified above, including columns, cap beams, and superstructure for aerial structures and bridges, columns, beams, slabs, foundations, and walls for the buildings: f'c=4000 psi min;
- For all building foundations, floor slabs, pits and other miscellaneous foundations at yards and shops, miscellaneous foundations other than those specified, and station platform foundations: f'c=3000 psi min;
- In certain cases, strengths of concrete other than those specified above might be required. These cases shall be as recommended by the designer of record and accepted by RTD.

11.2 Reinforcing and Prestressing Steel:
- Reinforcing Steel: Primary reinforcement: ASTM A615/A615M or ASTM A706/A706M Grade 60, Secondary reinforcement: ASTM A615/A615M Grade 40.
- Prestressing Steel: Stress Relieved Steel wire ASTM A421, Stress Relieved Steel Strand ASTM A416 (low relaxation), High Strength Steel bar ASTM A722

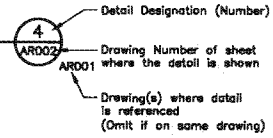
12.0 Seismic:
The seismic design for the guideway structures shall be 7 percent probability of exceedance in 75 years (Approximately a 1000 year return period). The Peak Ground Acceleration Coefficient is 0.18.

STRUCTURAL SYMBOLS

DETAILS



DETAIL
NTS



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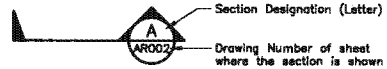

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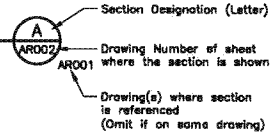
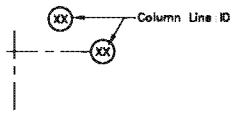


COLUMN LINE GRID INDICATOR



HATCH

- Station Platform Location (NIC)
- Concrete
- Composite Panel
- Earth
- Gravel/Rip-Rap
- Sand, Grout, Mortar

GENERAL SYMBOLS

&	And
@	At
#	Number
ø	Diameter
%	Percent
=	Equal to
>	Greater Than
<	Less Than
≥	Greater Than or Equal To
≤	Less Than or Equal To
±	Plus or Minus

CIVIL SYMBOLS

- Point of Vertical Intersection
- Point of Switch

STRUCTURAL SYMBOLS

- Semi-Square Pier Column with Drill Shaft
- Work Point

GEOTECHNICAL SYMBOLS

- B-101 — Completed Geotechnical Boring; Ref A
- Planned Geotechnical Boring; ____
- B-220 (SCPT) — Completed Seismic Cone Penetration Test; Ref A
- Planned Seismic Cone Penetration Test; ____
- B-221 [2] (P) — Boring Completed with Indicated Number of Vibrating Wire Piezometers; Ref A
- B-107 (SWVP) — Boring Completion included down-hole Seismic Shear Wave Velocity Profile; Ref A
- B-1 — Completed Geotechnical Boring; Ref B

STRUCTURAL ABBREVIATIONS

Ah	Ahead
Approx.	Approximate, Approximately
Arch.	Architect, Architectural
ASCE	American Society of Civil Engineers
Ave	Avenue
℄	Baseline
Bk	Back
Bldg	Building
℄	Centerline
CIDH	Cast in Drilled Hole
C.J.	Construction Joint
Clr	Clear, Clearance
Conc.	Concrete
Dia	Diameter
Dwg	Drawing
E	East
EB	Eastbound, End of Bridge
EG	Existing Ground
El, Elev	Elevation
Exp	Expansion
FG	Finished Grade
ft	Feet, Foot
Galv	Galvanized
HHCTCP	Honolulu High-Capacity Transit Corridor Project
Hwy	Highway
Jt	Joint
Loc	Location
Max	Maximum
Min	Minimum
N	North
NB	Northbound
NE	Northeast
NIC	Not in Contract
No.	Number
Nos.	Numbers
O.C.	On Center
PS	Point on Switch
PVI	Point of Vertical Intersection
R	Radius
Rd	Road
Rem	Remove, Removal
Ret	Retain, Retaining
Rev	Revise, Revised
RTD	Rapid Transit Division
Tot	Total
Typ	Typical
Var	Varies
WB	Westbound
WP	Work Point
w/	With

SPECIAL TERMS

Makai	Ocean
Mauka	Mountain

Rev	By	Date	Description
B	AB	05-22-09	Revised Notes; Added Abbreviations
A	AB	04-03-09	Issued For Bid

BID DOCUMENT NOT FOR CONSTRUCTION

Designed: D Yavorsky
Drawn: T Cochran
Checked: T Kimura
Approved: A Borst
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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Subconsultant:

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WEST O'AHU/FARRINGTON DESIGN-BUILD

GENERAL STRUCTURAL NOTES, SYMBOLS AND ABBREVIATIONS

SHEET 2 OF 2

Contract No.: DB-1200
CADD File: WF-G01-SG001
Drawing No: SG002 Rev. B
Scale: N/A
Page No. 21 of 209

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PULLBOX, HANDHOLE, MANHOLE SCHEDULE

4	2' x 4'	HECO Pullbox
6	3' x 5'	HECO Handhole
7	4' x 6'	HECO Handhole
8	5' x 7'	HECO Handhole
9	6' x 11'	HECO Handhole
11	5' x 8'	HECO Manhole
14	6' x 11'	HECO Manhole
16	6' x 14'	HECO Manhole
21	13" x 24"	Electrical Pullbox (Power to traffic signal controller)
44	2' x 4'	HT Pullbox (435TB)
46	3' x 5'	HT Handhole
47	4' x 6'	HT Handhole
50	4' x 6'	HT Manhole
52	5' x 8'	HT Manhole
53	5' x 10'	HT Manhole
55	6' x 12'	HT Manhole
74	4' x 4'	AT&T Manhole
75	6' x 12'	Telecommunications Manhole
84	2' x 4'	CATV Pullbox
85	2' x 6'	CATV Pullbox
86	3' x 5'	CATV Handhole
86A	3' x 5'	CATV Handhole
87	4' x 6'	CATV Handhole
87A	4' x 6'	CATV Manhole
88	5' x 8'	CATV Handhole
92		C & C Street Light Pullbox Type SLD-4
100		State Highways Street Light (UON) Pullbox Type A
101		State Highways Street Light (UON) Pullbox Type B
102		State Highways Traffic Signal Pullbox Type C

ELECTRICAL SYMBOLS

- New Wood Pole
- New Steel Utility Pole
- 100 Watt HPS Street Light Standard
- 150 Watt HPS Street Light Standard
- 250 Watt HPS Street Light Standard
- 100 Watt HPS Street Light Luminaire & bracket arm on poll
- 150 Watt HPS Street Light Luminaire & bracket arm on poll
- 250 Watt HPS Street Light Luminaire & bracket arm on poll
- 250 Watt HPS Highway Light Standard with Breakaway Transformer Base
- 150 Watt HPS Street Light Standard with Transformer Base
- 250 Watt HPS Highway Light Standard with Transformer Base
- Guy Anchor
- Manhole
- Handhole or Pullbox
- UON — Unless Otherwise Noted
- Underground Ductline
- Conduit and Wiring Concealed within Concrete Structure
- —SL— Street Light Ductline and Wiring, see Street Light Details
- Exposed Conduit and Wiring
- Ductline, Stub-Out 5'-0" from edge of sidewalk or as indicated on plan. Provide concrete stub-out marker.
- —OH/P/S/T/V/G— Overhead Utility Lines
  - G — Guy
  - V — CATV
  - T — Telephone
  - S — Secondary Electric
  - P — Primary Electric
  - OH — Overhead (New); eOH — Overhead (Existing)

1 → Key Note Indicator

2 E 4 (A) Duct Section Indicator

Duct Designation

2 E 4 (A)

- A — Duct Section "A" See Duct Section Details
- 4 — Conduit Size
- E — System
  - "P" Primary Electric (12KV)
  - "ST" Sub-Transmission (46KV)
  - "S" Secondary Electric
  - "SL" Highway Lighting
  - "TS" Traffic Signal
  - "V" Cable Television
  - "T" Telephone/Telecommunications
  - "L" C & C Street Lighting
  - "AT" AT&T
  - "SIC" Sandwich Isles Communications
  - "SP" Spare
- 2 — Number of Ducts

Removal Notes:

1. "---\---\---" noted on plans for underground removal work indicates that the respective utility owner will remove its cables from the existing conduits and the Contractor will remove the street light cables from the existing conduits, and the existing conduits will be abandoned in place.
2. "---R---R---" noted on plans for overhead removal work indicates that the respective utility owner will remove its overhead conductors (and poles, guys, and anchors if so designated) and the Contractor will remove the overhead street light conductors (and street light poles and fixtures if so designated) from the existing overhead pole line.
3. The Contractor shall coordinate with the State of Hawaii street light Engineer for the disposal of the existing street light poles and fixtures where designated for removal.

UTILITIES NOTES

1. Refer to general utilities notes, symbols, and abbreviations and utility relocation notes on other "UG" (UG001~UG006 and UG008~UG011).
2. All ductline installation (except for AT&T) shall be encased in concrete, PVC Schedule 40 unless otherwise specified. AT&T ductlines will be 4-2" HDPE SDR-11. See detail __/_____.
3. All materials shall be new and manufactured in the United States of America.
4. Scope of Work: The Contractor shall furnish all labor, equipment and services to properly perform and fully complete all work shown on the Contract Drawings and in accordance with Contract Specifications as summarized below:
   a. The Contractor is responsible to provide all underground electrical and communications utility support structures, stubbed-up risers and at-grade equipment concrete pads.
   b. Utility owners (except for Signal Corps) are responsible to provide poles, cables, and equipment for electrical and communications utilities and remove all poles, cables, and equipment for electrical and communications utilities where indicated on the Contract Drawings. Where new Signal Corps (SC) ducts and maintenance holes are indicated on the Contract Drawings, the Contractor shall also provide the communication cables and splices in coordination with the Signal Corps Engineer.
   c. The Contractor is responsible to provide all street light and traffic signal work as noted on the Contract Drawings.
5. The Contractor shall provide the required number of as-built drawings showing the offsets, stationing and vertical elevation of the ductline(s) constructed.

Rev	By	Date	Description
A	FKH	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: F Hirakami
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: MKengineers
265 Keliʻiʻi Street, Honolulu, Hawaii 96819, Phone: (808) 848-2822, Fax: (808) 848-2874, E-Mail: info@mkengineers.com

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WEST OʻAHU/FARRINGTON DESIGN-BUILD

UTILITIES NOTES AND SYMBOLS
ELECTRICAL & COMMUNICATIONS

SHEET 1 OF 5

Contract No.: DB-1200
CADD File: WF-D01-UG007
Drawing No: UG007 Rev. A
Scale: As noted
Page No. 26 of 314

AR00077583

UTILITIES SYMBOLS

- AT&T — Exist AT&T Line
- CTV — Exist Cable Television
- OCTv — Exist Cable Television, Overhead
- FOC — Exist Communication Fiber Optic
- D24 — Exist Drain Line (Size in inches)
- OE — Exist Electrical Line, Overhead
- E — Exist Electrical Line
- FA — Exist Fire Alarm
- F8 — Exist Fuel or Oil Line (Size in inches)
- FM12 — Exist Force Main (Size in inches)
- G6 — Exist Gas Line (Size in inches)
- NPW12 — Exist Non-Potable Water Line (Size in inches)
- SIC — Exist Sandwich Isle Communications Line
- S12 — Exist Sewer Line (Size in inches)
- SC — Exist Signal Corps Line
- SLC — Exist Street Light Conduit
- OT — Exist Telephone Line, Overhead
- T — Exist Telephone Line
- TSC — Exist Traffic Signal Conduit
- W12 — Exist Water Line (Size in inches)
- Exist Air Relief Valve
- Exist AT&T Box
- Exist AT&T Manhole
- Exist Backflow Preventor
- Exist Utility Box
- Exist Catch Basin
- Exist Catch Basin
- Exist Cable TV Box
- Exist Clean Out
- Exist Drain Inlet
- Exist Drain Manhole
- Exist Dry Standpipe
- Exist Electrical Box
- Exist Electrical Manhole
- Exist Electrical Transformer
- Exist Fire Alarm Box
- Exist Fire Hydrant
- Exist Gas Manhole
- Exist Gas Valve
- Exist Guy Wire
- Exist Irrigation Control Valve Box
- Exist Irrigation Control Valve
- Exist Light Pole
- Exist Manhole
- Exist Street Monument
- Exist Pole (EP, U.P.)
- Exist Pedestrian Street Light
- Exist Traffic Sensor
- Exist Street Light
- Exist Street Light Box
- Exist Sewer Manhole
- Exist Telephone Box
- Exist Telephone Manhole
- Exist Traffic/Pedestrian Street Light
- Exist Traffic Signal Box
- Exist Traffic Street Light
- Exist Water Meter
- Exist Water Manhole
- Exist Water Valve
- D24 — Prop Drain Line (Size in inches)
- F8 — Prop Fuel or Oil Line (Size in inches)
- G6 — Prop Gas Line (Size in inches)
- NPW12 — Prop Non-Potable Water Line (Size in inches)
- S8 — Prop Sewer Line (Size in inches)
- W12 — Prop Water Line (Size in inches)
- Prop Air Relief Valve
- Prop Backflow Preventor
- Prop Catch Basin
- Prop Catch Basin
- Prop Clean Out
- Prop Drain Inlet
- Prop Drain Manhole
- Prop Swale
- Prop Fire Hydrant
- Prop Gas Manhole
- Prop Gas Valve
- Prop Sewer Manhole
- Prop Water Meter
- Prop Water Manhole
- Prop Water Valve
- Cut and Plug
- Abandon in Place
- R — R Demolish/Remove

For Electrical and Communications Utilities Notes and Symbols, See Dwg. No UG007.

For General Traffic Signal Notes, Symbols, and Abbreviations, See Dwg. No TG004.

UTILITIES ABBREVIATIONS

&	And
Abnd	Abandoned
AC	Asphalt Concrete
AF	Air Force
Approx	Approximate
ARV	Air Relief Valve
Ave	Avenue
'	Baseline
BFP	Backflow Preventor
BGGV	Bevel-geared gate valve
Blvd	Boulevard
BWS	Board of Water Supply
~	Centerline
C&C	City and County
CB	Catch Basin
CBMH	Catch Basin Manhole
CO	Cleanout
Comm	Communication
Conc	Concrete
CTV	Cable TV
D	Drain
DI	Drainage Inlet
DMH	Drainage Manhole
DS	Down Spout
Dwg	Drawing
E	Electric, Electrical
EB	Electrical Box
EH	Electrical Handhole
Elec	Electric, Electrical
EP	Electric Pole
EMH	Electrical Manhole
EV	Electrical Vault
Exist	Existing
F	Fuel
FA	Fire Alarm
FAB	Fire Alarm Box
FH	Fire Hydrant, Farrington Highway
FM	Force Main
FMH	Fuel Manhole
FOC	Fiber Optic Cable
FSA	Fire Safety Alarm
Fwy	Freeway
G	Gas
GM	Gas Meter
GMH	Gas Manhole
GV	Gas Valve, Gate Valve
GW	Guy Wire
HECO	Hawaiian Electric Company
HH	Handhole
HITS	Hawaii Information Transfer System
HP	High Pressure
HT	Hawaiian Telcom
HVP	High Voltage Power
HW	Headwall
Hwy	Highway
ICB	Irrigation Control Box
ICV	Irrigation Control Valve
Irr	Irrigation
kV	Kilovolt
Lat	Lateral
Ln	Lane
LP	Light Pole
Lt	Light
MH	Manhole
MHP	Manhole (Positive)
MHN	Manhole (Negative)
Misc	Miscellaneous
MTCO	Mutual Telephone Company
MW	Monitoring Well
NPW	Non-Potable Water
N/A	Not Applicable
NS	North-South Road
OCTv	Overhead Cable Television
OH	Overhead
OHE	Overhead Electrical
OT	Overhead Telephone
PB	Pullbox
Pkwy	Parkway
PPB	Pedestrian Push Button
Pl	Place
PM	Petroleum Marker
PP	Power Pole
Prop	Proposed
PVC	Polyvinyl Chloride
Pwr	Power
RCP	Reinforced Concrete Pipe
Rd	Road
ROW	Right-of-Way
S	Sewer
SC	Signal Corps Line
SDMH	Storm Drain Manhole
SIC	Sandwich Isle Communications
Sig	Signal
SL	Street Light
SL	Sewer Line
SLB	Street Light Box
SLC	Street Light Conduit
SMH	Sewer Manhole
St	Street
St Mon	Street Monument
T	Top
TBD	To Be Determined
TCB	Traffic Control Box
Tel	Telephone
Temp	Temporary
TGC	The Gas Company
TL	Traffic Light
TMH	Telephone Manhole
TP	Telephone Pole
TPOL	Traffic Signal Pole
TRB	Traffic Box
TS	Top Stem
TSB	Traffic Signal Box
TSC	Traffic Signal Conduit
TSL	Traffic Signal
TV	Television
Typ.	Typical
UB	Utility Box
UD	Underdrain
UMH	Utility Manhole
UP	Utility Pole
USN	United States Navy
USAF	United States Air Force
Util	Utility
W	Water
WL	Water Line
WM	Water Meter
WMH	Water Manhole
Wtr	Water
WV	Water Valve
WVB	Water Valve Box
WVMH	Water Valve Manhole

Rev	By	Date	Description
A	JY	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: N/A
Drawn: D Tabo
Checked: H Andrews
Approved: J Yamamoto
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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WEST O'AHU/FARRINGTON DESIGN-BUILD

GENERAL UTILITIES SYMBOLS AND ABBREVIATIONS

Contract No.: DB-1200
CADD File: WF-D01-UG001
Drawing No: UG001 Rev. A
Scale: None
Page No. 20 of 314

AR00077584

GENERAL NOTES

1. "EB Track" denotes the centerline of the Eastbound Track. "WB Track" denotes the centerline of the Westbound Track.
2. Origin of Coordinates: Hawaii State Plane Coordinate Grid System, Zone III with the North American Datum of 83 High Accuracy Reference Network (NAD83 HARN).
3. The proposed WB Track alignment stationing equals to the proposed EB Track alignment stationing in all parallel tangent sections. Station equations are given at the endpoint of each westbound curve.
4. Underground facilities, poles, structures, and utilities have been plotted from available surveys and records. Their locations must be considered approximate only. There may be others, the existence of which is at present unknown. Verification of all the locations, shown or not shown, will be the responsibility of the contractor.
5. The existing conditions shown hereon are based on LiDAR data collected in September and October of 2007, supplemental ground surveys were performed between September of 2007 and December of 2008, and record information from various design projects either constructed, under construction, or proposed. The selected design-build contractor is responsible for verifying existing conditions prior to supplying advanced design documents to the RTD.
6. Contact the Hawaii Department of Transportation (HDOT) and/or the City and County of Honolulu for additional plan sheet details not included in the Standard Details Summary and Standard Plans Summary plan sheets.

SYMBOLS

DETAILS

Reference Boundary

3 / LA101 — Detail Designation (Number); Drawing Number of sheet where the detail is shown

DETAIL 3 / LA101 / LA100
NOT TO SCALE

Detail Designation (Number)
Drawing Number of sheet where the detail is shown
Drawing(s) where detail is referenced (Omit if on same drawing)

SECTIONS

A / LA101
NOT TO SCALE

Section Designation (Letter)
Drawing Number of sheet where the section is shown

SECTION A / LA101 / LA100
NOT TO SCALE

Section Designation (Letter)
Drawing Number of sheet where the section is shown
Drawing(s) where section is referenced (Omit if on same drawing)

GENERAL SYMBOLS

&	And
@	At
#	Number
ø	Diameter
%	Percent
=	Equal
>	Greater Than
<	Less Than
≥	Greater Than or Equal To
≤	Less Than or Equal To
▩	Guideway Column

LANDSCAPE SYMBOLS

	Existing Palm
	Existing Tree
	Screen-Undisturbed Vegetation

HATCH

Station Platform

SPECIAL TERMS

Makai	Ocean
Mauka	Mountain

ABBREVIATIONS

℄	Baseline
℄	Centerline
Conc	Concrete
Dia	Diameter
Dwg	Drawing
EB	Eastbound
GB#	Gap Breaker
Max	Maximum
Min	Minimum
MH	Manhole
N/A	Not Applicable
NB	Northbound
NIC	Not in Contract
N.I.C.	Not in Contract
NTS	Not to scale
ROW	Right of Way
SB	Southbound
SR	State Route
Typ	Typical
WB	Westbound

Rev	By	Date	Description
A	AK	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: D Easterday
Drawn: M Weiss
Checked: D Easterday
Approved: A Kutsunai
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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

WEST O'AHU/FARRINGTON DESIGN-BUILD

GENERAL LANDSCAPE NOTES, SYMBOLS, AND ABBREVIATIONS

Contract No.: DB-1200
CADD File: WF-J01-LG001
Drawing No: LG001 Rev. A
Scale: NTS
Page No. 154 of 209

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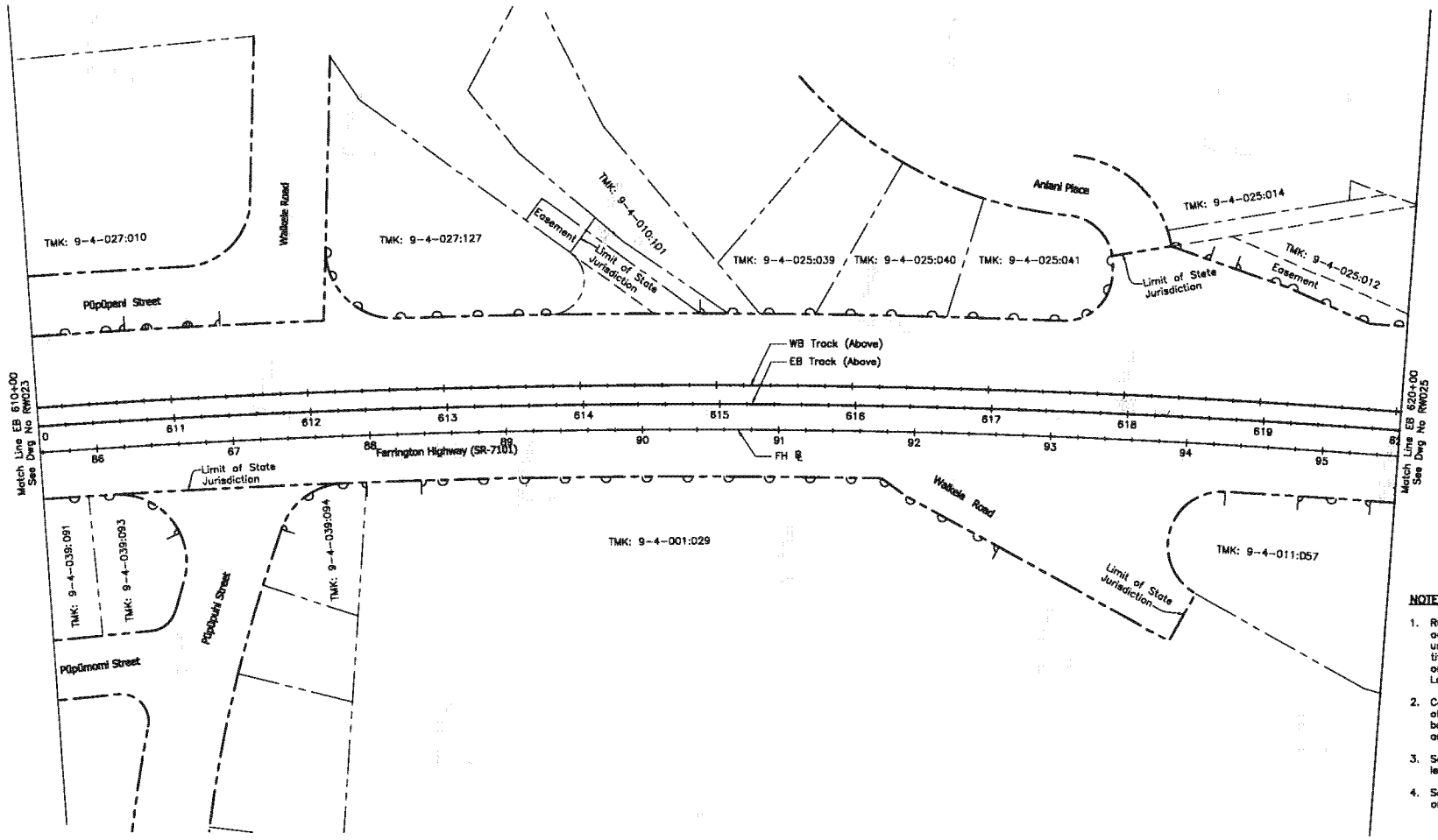
AR00077585



NOTES:

1. ROW acquisition may be in the form of an aerial easement; an easement allowing joint use; subdivision of property with transfer of title; transfer of title for the entire parcel; or some other form to be documented by Land Court registration.
2. Construction easements are the responsibility of the Design-Build Contractor and should be defined during the final design phase and are not reflected on plans.
3. See Dwg No. CG001 for general civil notes, legend and abbreviations.
4. See Dwg No. RW001 for Right-of-Way notes and legend.

40' 0 40'

Rev	By	Date	Description
A	AB	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: L Koramatsu
Drawn: A Viterbo
Checked: K Wong
Approved: A Borst
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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WEST O'AHU / FARRINGTON DESIGN-BUILD

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 610+00 TO EB 620+00

Contract No.: DB-1200
CADD File: WF--B04--RW024
Drawing No: RW024 Rev. A
Scale: 1"=40'
Page No. 48 of 312

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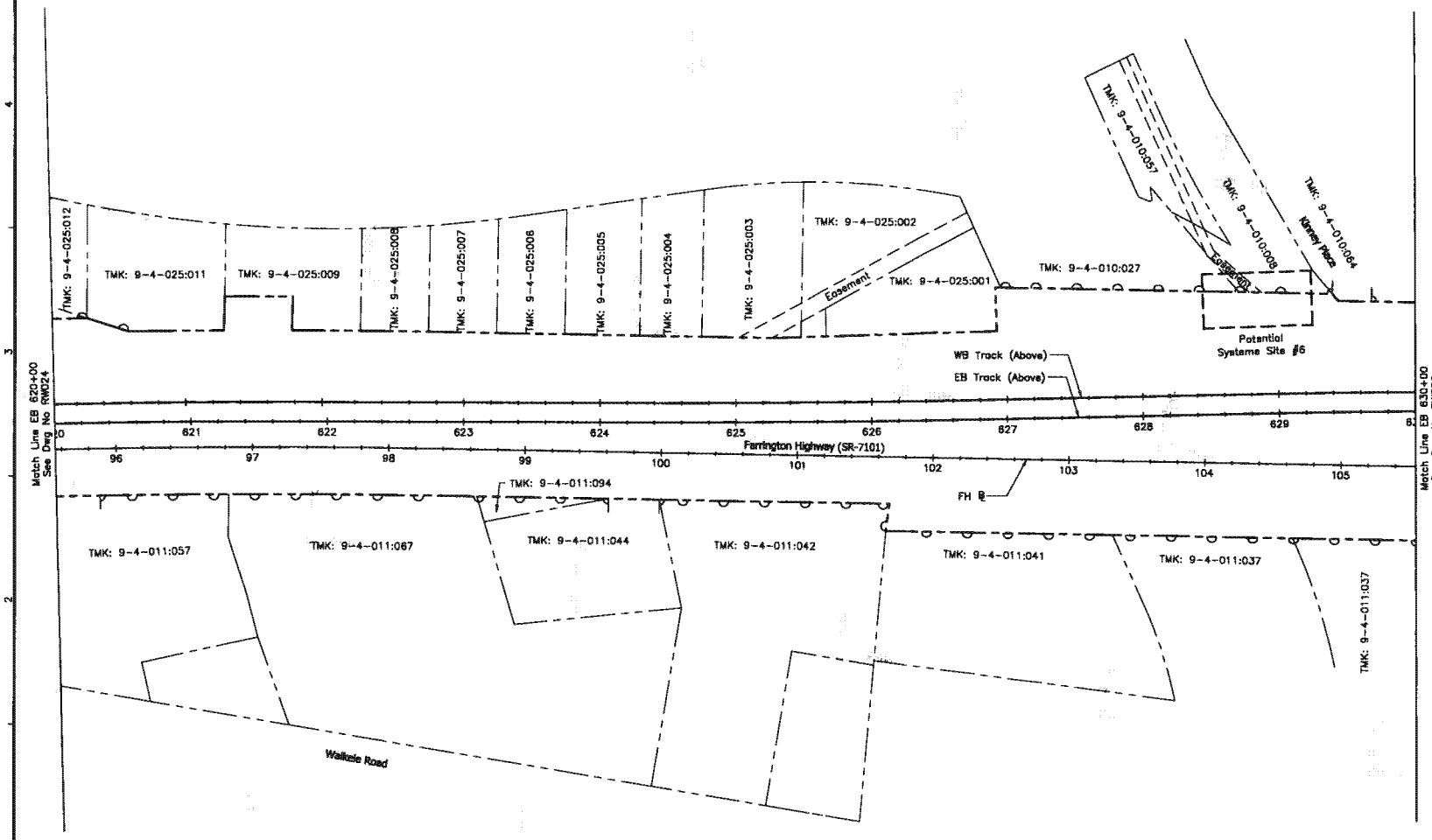

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40' 0 40'

Rev	By	Date	Description
A	AB	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: L Karamatsu
Drawn: A Viterbo
Checked: K Wong
Approved: A Borst
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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

WEST O`AHU / FARRINGTON DESIGN-BUILD

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 620+00 TO EB 630+00

Contract No.: DB-1200
CADD File: WF-B04-RW025
Drawing No: RW025 Rev. A
Scale: 1"=40'
Page No. 49 of 312

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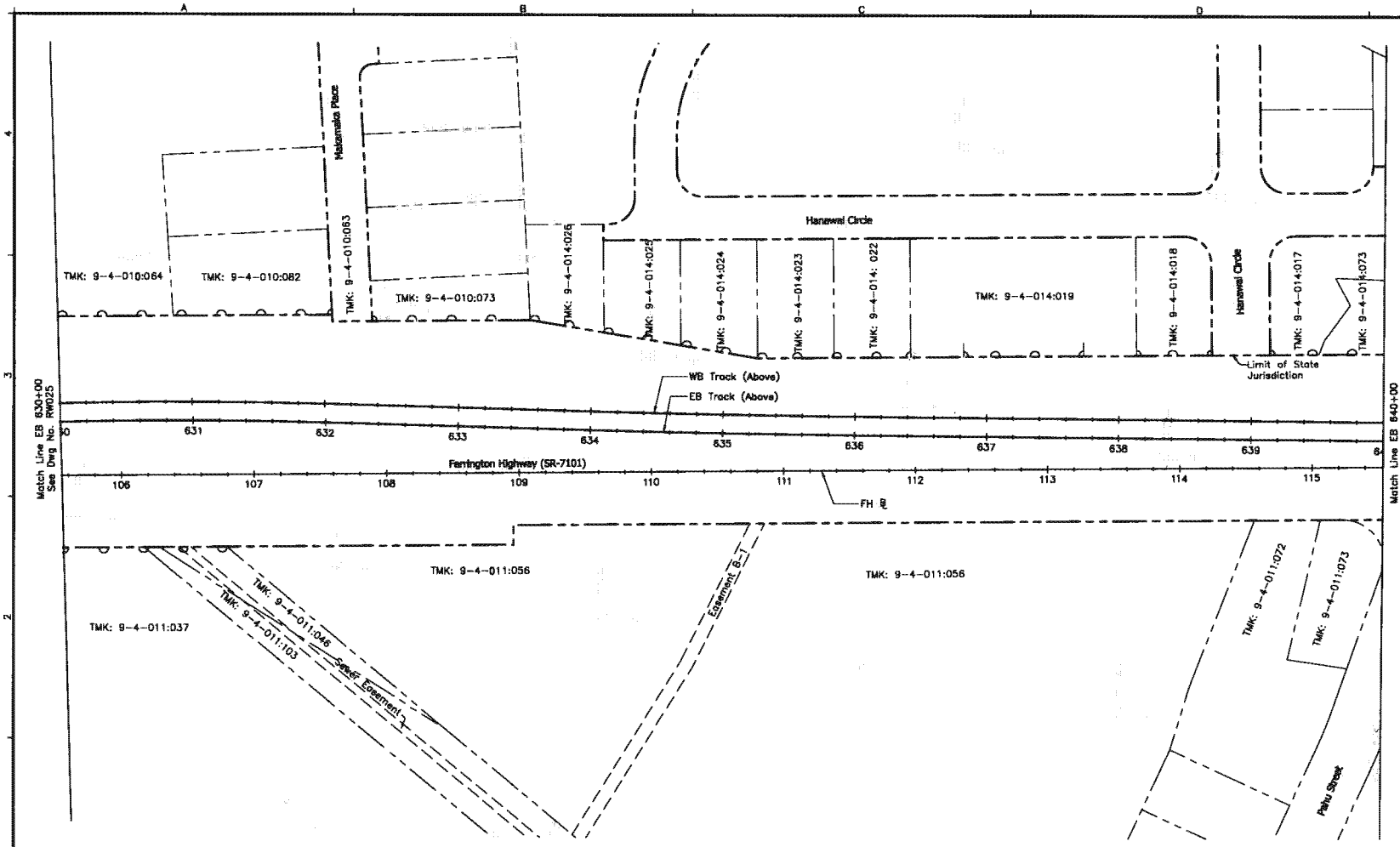

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40' 0 40'

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Checked: K Wong
Approved: A Barst
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HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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WEST O'AHU / FARRINGTON DESIGN-BUILD

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 630+00 TO EB 640+00

Contract No.: DB-1200
CADD File: WF-B04-RW026
Drawing No: RW026 Rev. A
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Page No. 50 of 312

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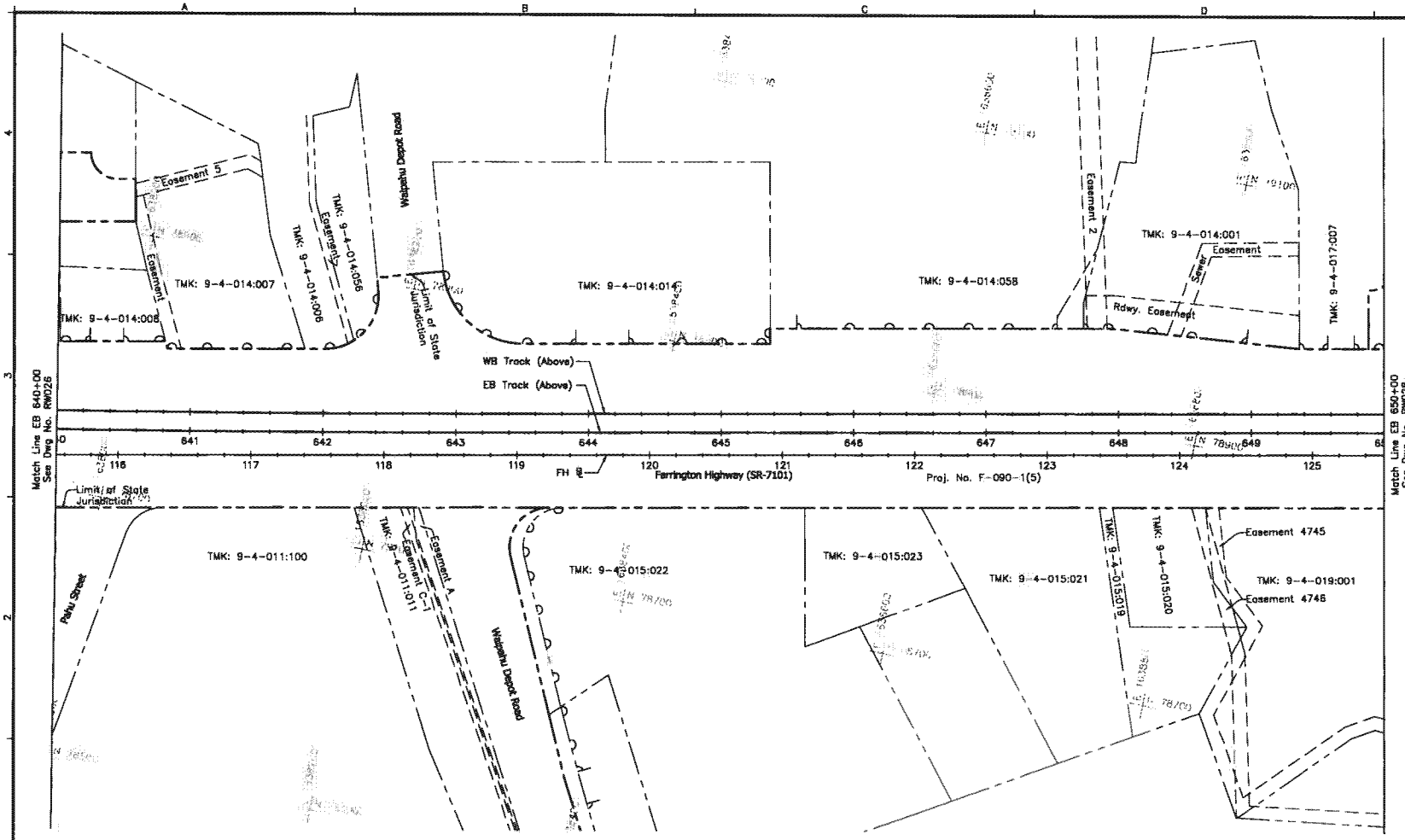

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Designed: L Karamatsu
Drawn: A Viterbo
Checked: K Weng
Approved: A Borst
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
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WEST O`AHU / FARRINGTON DESIGN-BUILD

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 640+00 TO EB 650+00

Contract No.: DB-1200
CADD File: WF-B04-RW027
Drawing No: RW027 Rev. A
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Page No. 51 of 312

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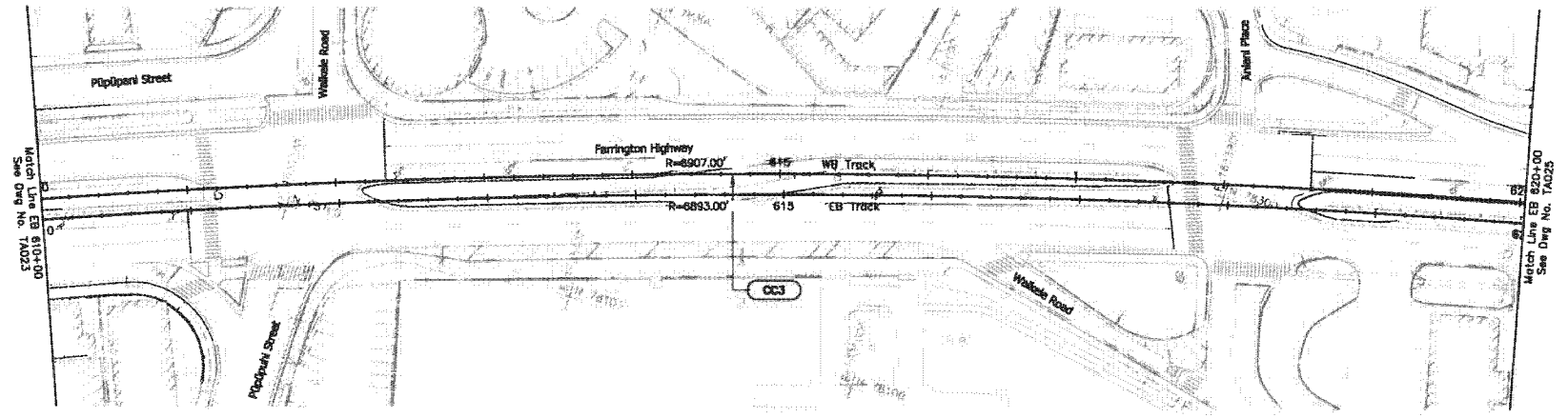
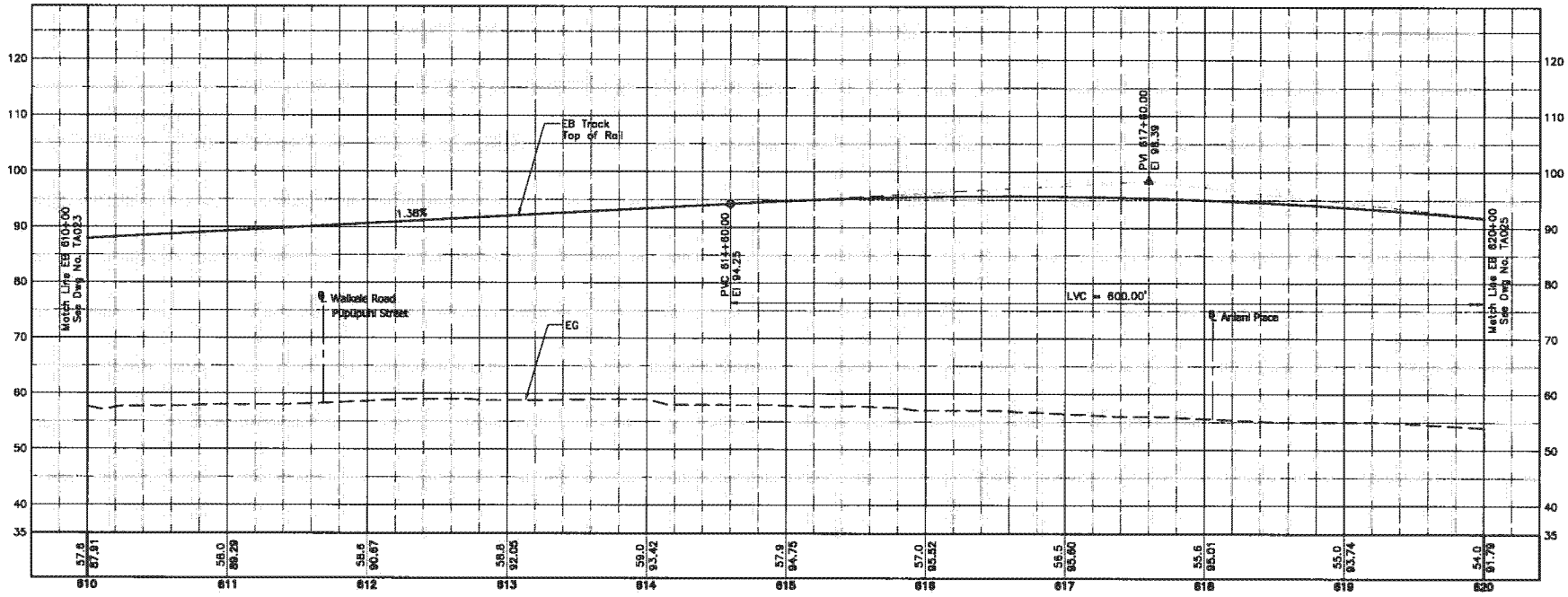


NOTES:

1. For general notes, symbols, and abbreviations, see Dwg No. CG001.
2. For track alignment abbreviations, see Dwg No. CG002.



Rev	By	Date	Description
A	AB	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: M Hall
Drawn: R Nacion
Checked: E Liberman
Approved: A Borst
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

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WEST O'AHU/FARRINGTON DESIGN-BUILD

TRACK ALIGNMENT PLAN & PROFILE

EB 610+00 TO EB 620+00

Contract No.: DB-1200
CADD File: WF-B05-TA024
Drawing No: TA024 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 87 of 312

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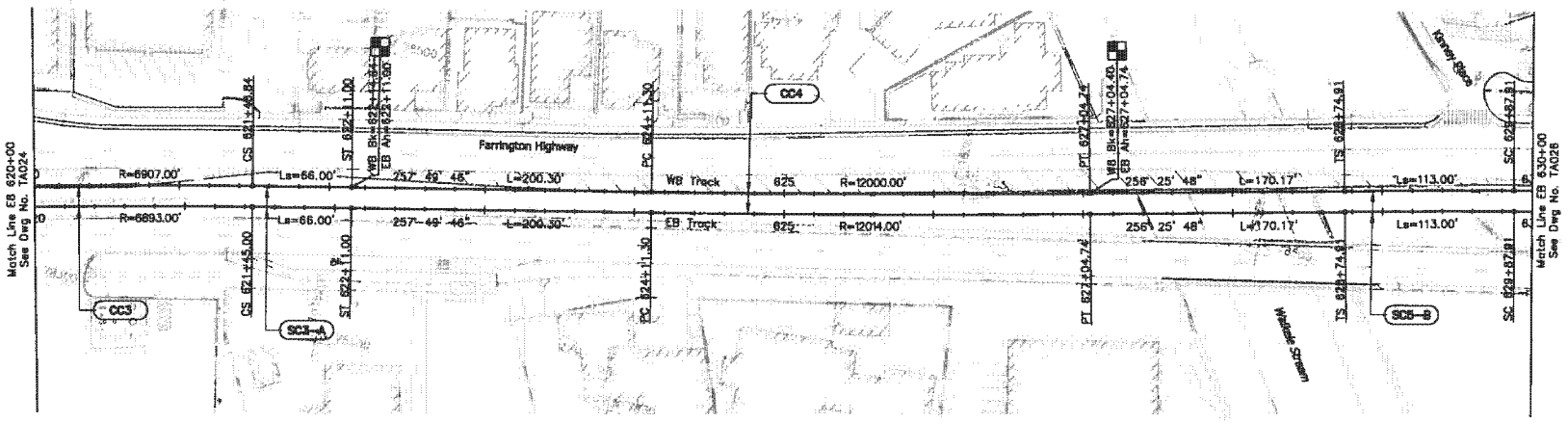

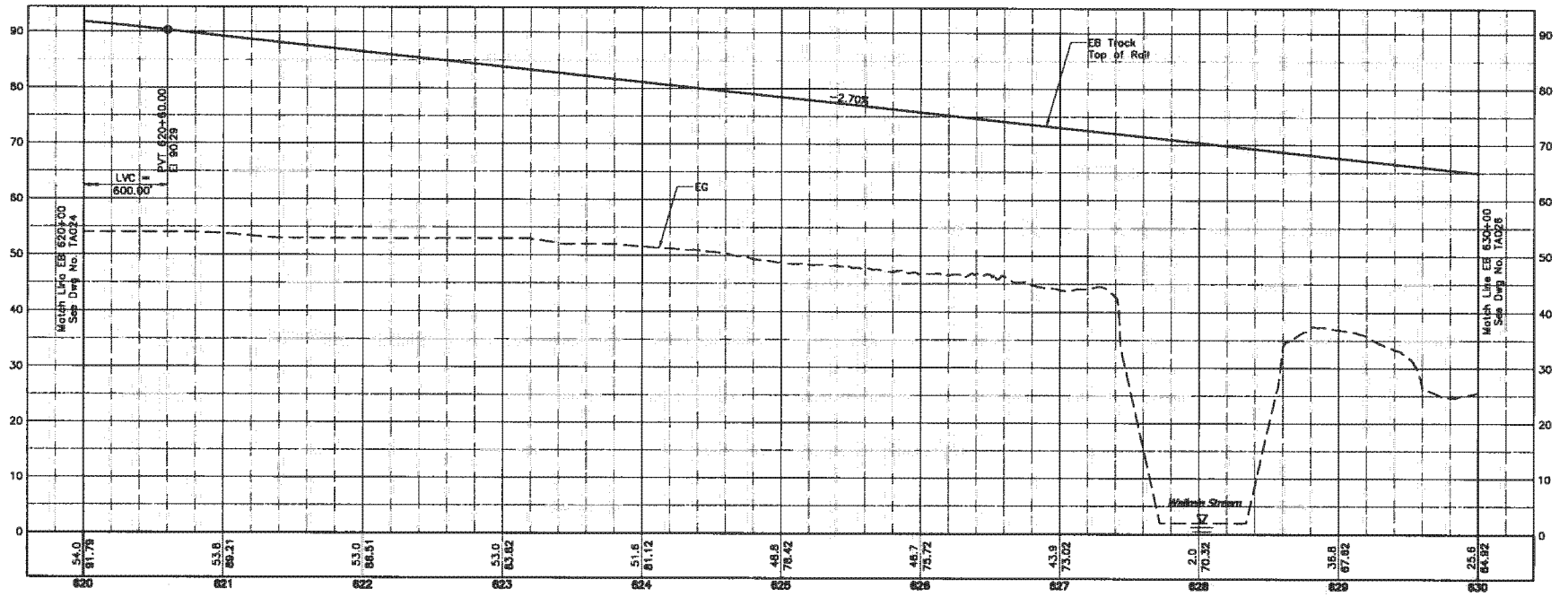

NOTES:

1. For general notes, symbols, and abbreviations, see Dwg No. CG001.
2. For track alignment abbreviations, see Dwg No. CG002.

Rev	By	Date	Description
A	AB	04-03-09	Issued For Bid

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Designed: M Hall
Drawn: R Nacion
Checked: E Liberman
Approved: A Borst
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

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WEST O'AHU/FARRINGTON DESIGN-BUILD

TRACK ALIGNMENT
PLAN & PROFILE

EB 620+00 TO EB 630+00

Contract No.: DB-1200
CADD File: WF-B05-TA025
Drawing No: TA025 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 88 of 312

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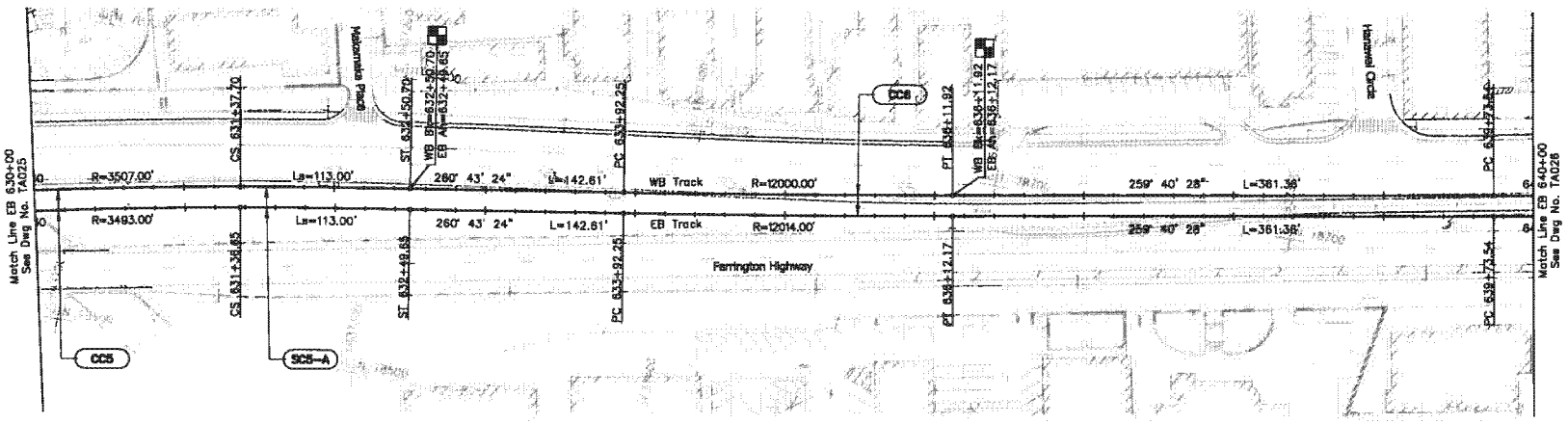
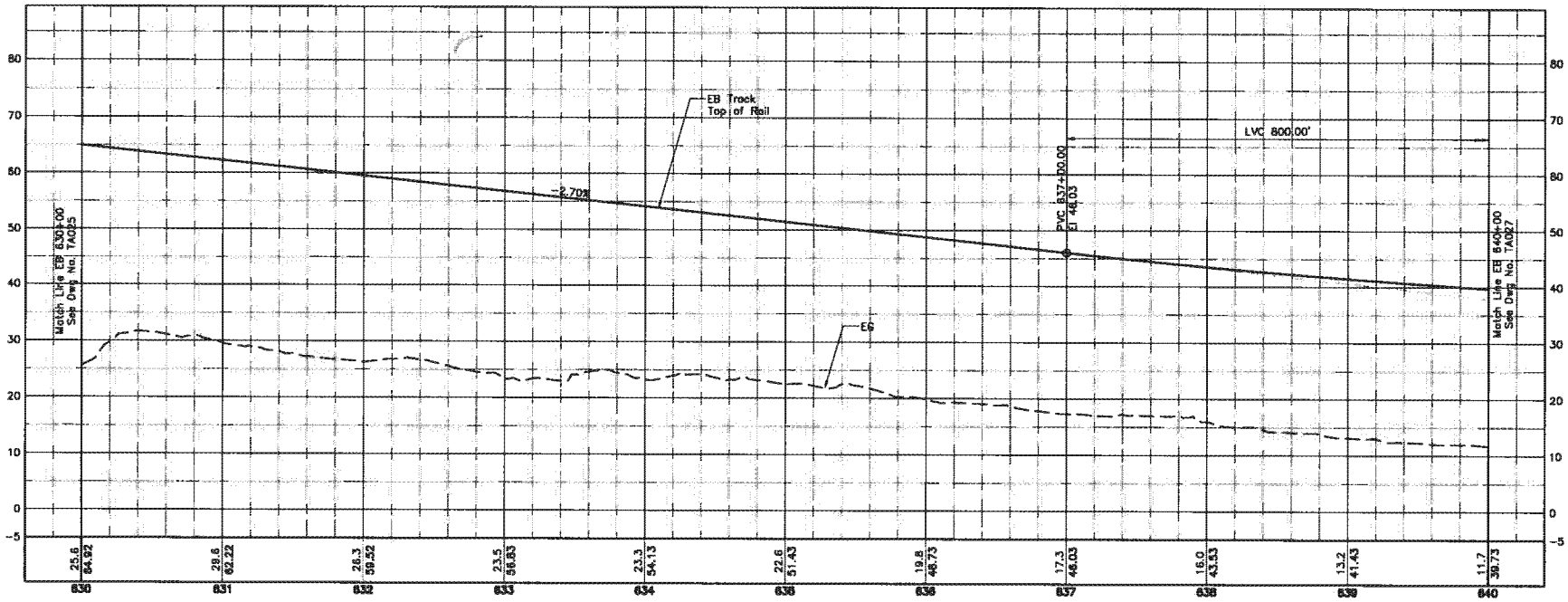


NOTES:

1. For general notes, symbols, and abbreviations, see Dwg No. CG001.
2. For track alignment abbreviations, see Dwg No. CG002.



Rev	By	Date	Description
A	AB	04-03-09	Issued For Bid

2009-03-26 8:44 AM K:\CADD\03 Civil\Segment C\Sheet Files\SC-B05_sheets.dwg

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: M Hall
Drawn: R Nacion
Checked: E Liberman
Approved: A Borst
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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WEST O'AHU/FARRINGTON DESIGN-BUILD

TRACK ALIGNMENT PLAN & PROFILE

EB 630+00 TO EB 640+00

Contract No.: DB-1200
CADD File: WF-B05-TA026
Drawing No: TA026 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 59 of 312

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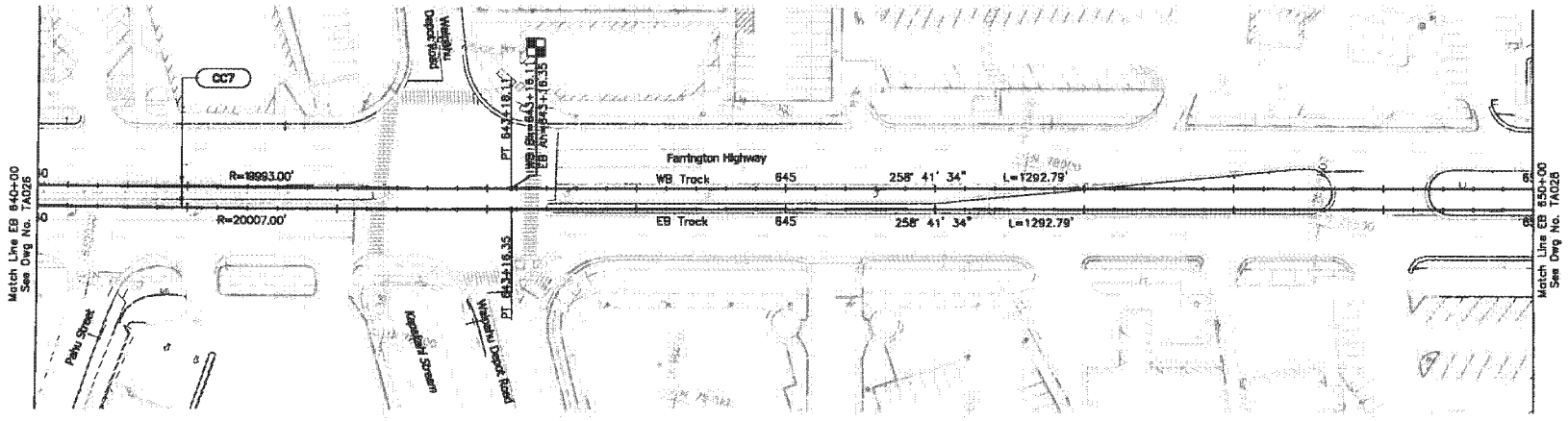
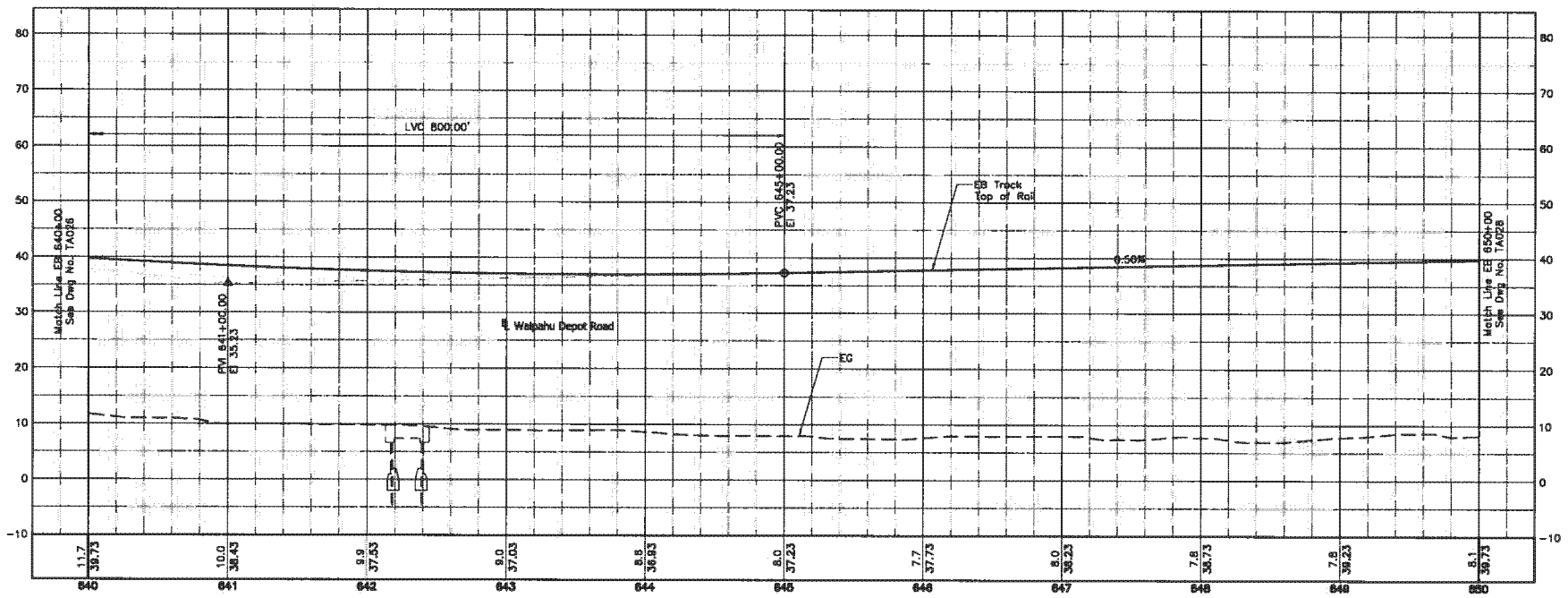


NOTES:

1. For general notes, symbols, and abbreviations, see Dwg No. CG001.
2. For track alignment abbreviations, see Dwg No. CG002.



Rev	By	Date	Description
A	AB	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: M Hall
Drawn: R Nacion
Checked: E Liberman
Approved: A Borat
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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

WEST O'AHU/FARRINGTON DESIGN-BUILD

TRACK ALIGNMENT PLAN & PROFILE

EB 640+00 TO EB 650+00

Contract No.: DB-1200
CADD File: WF-B05-TA027
Drawing No: TA027 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 90 of 312

2009-03-26 8:44 AM K:\CADD\03 Civil\Segment C\Sheet Files\SC-B05_sheets.dwg

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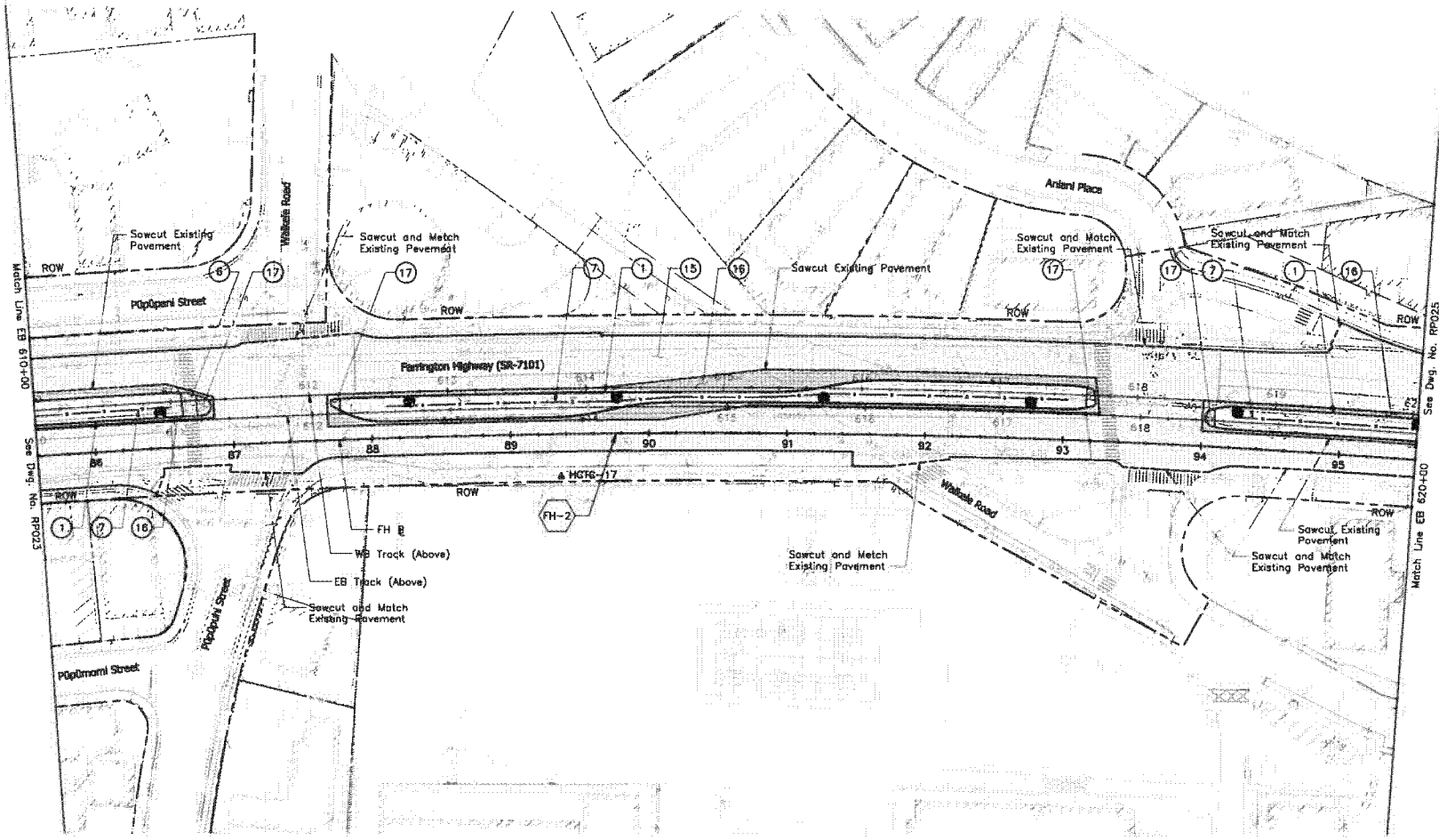

N

NOTES:

1. For general notes, symbols, and abbreviations, see Dwg. No. CG001.
2. For roadway construction plan notes and legend, see Dwg. No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Proposed gravel pavement.
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.

CONSTRUCTION NOTES:

1. Construct Concrete Curb, Type 2A, Per HDOT Std. Plan No. D-05.
6. Construct Concrete Curb Ramp.
7. Install Chain Link Fence with Topreil, 6', Per HDOT Std. Plan No. D-02.
15. Construct Plantmix Bituminous Surface Overlay.
16. Construct Plantmix Bituminous Pavement.
17. Construct Concrete Median Island Paving.

ROADWAY CURVE DATA	
	FH-2
Δ	17° 30' 00.0"
R	6875.50'
T	1058.24'
C	2091.85'
L_C	2100.00'

40' 0 40'

Rev	By	Date	Description
A	MH	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: E Liberman
Approved: M Hall
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

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

WEST O'AHU/FARRINGTON DESIGN-BUILD
ROADWAY CONSTRUCTION PLAN
EB 610+00 TO EB 620+00

Contract No.: DB-1200
CADD File: WF-B09-RP024
Drawing No: RP024 Rev. A
Scale: 1"=40'
Page No. 130 of 312

2009-03-26 2:54 PM k:\CADD\03 Civil\Segment C\Sheet Files\WF-B09-RP_2.dwg

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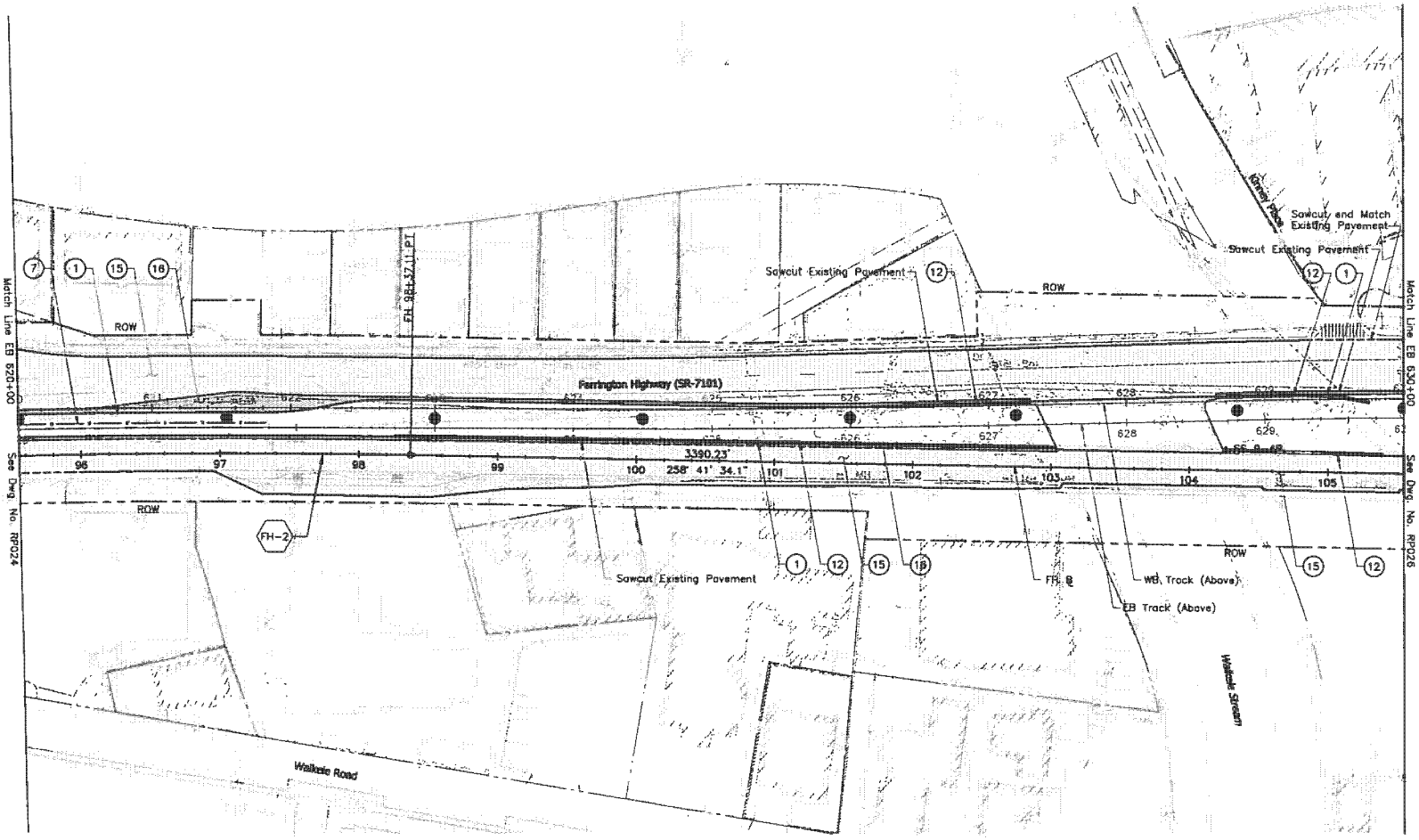


N

NOTES:

1. For general notes, symbols, and abbreviations, see Dwg. No. CG001.
2. For roadway construction plan notes and legend, see Dwg. No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Proposed gravel pavement.
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.

CONSTRUCTION NOTES:

1. Construct Concrete Curb, Type 2A, Per HDOT Std. Plan No. D-05.
7. Install Chain Link Fence with Toprail, 6', Per HDOT Std. Plan No. D-02.
12. Install Guardrail.
15. Construct Plantmix Bituminous Surface Overlay.
16. Construct Plantmix Bituminous Pavement.

ROADWAY CURVE DATA	
	FH-2
Δ	17° 30' 00.0"
R	6875.50'
T	1058.24'
C	2091.85'
L_c	2100.00'

40' 0 40'

Rev	By	Date	Description
A	MH	04-03-09	Issued For Bid

2009-03-26 2:54 PM h:\CADD\03 Civil\Segment C\Sheet Files\WF-B09-RP_2.dwg

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Deresier
Checked: E Liberman
Approved: M Hall
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1001 Bishop Street, Suite 2250 - Honolulu, HI 96813
Subconsultant:

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

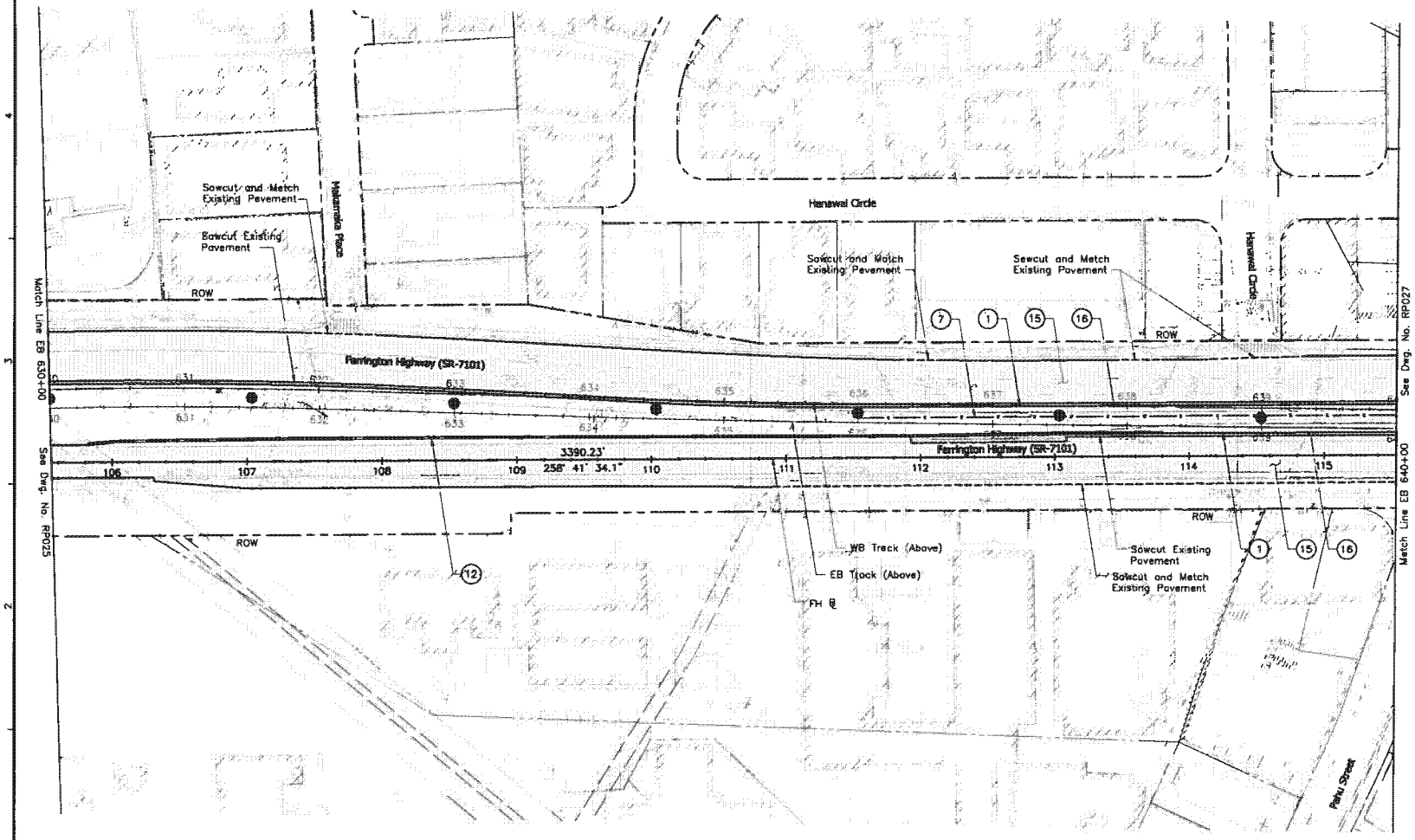
WEST O'AHU/FARRINGTON DESIGN-BUILD

ROADWAY CONSTRUCTION PLAN

EB 620+00 TO EB 630+00

Contract No.: DB-1200
CADD File: WF-B09-RP025
Drawing No: RP025 Rev. A
Scale: 1"=40'
Page No. 131 of 312

AR00077595



NOTES:

1. For general notes, symbols, and abbreviations, see Dwg. No. CG001.
2. For roadway construction plan notes and legend, see Dwg. No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Proposed gravel pavement.
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.

CONSTRUCTION NOTES:

1. Construct Concrete Curb, Type 2A, Per HDOT Std. Plan No. D-05.
7. Install Chain Link Fence with Toprail, 6', Per HDOT Std. Plan No. D-02.
12. Install Guardrail.
15. Construct Plantmix Bituminous Surface Overlay.
16. Construct Plantmix Bituminous Pavement.

40' 0 40'

Rev	By	Date	Description
A	MH	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: E Libermen
Approved: M Hall
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU · DEPARTMENT OF TRANSPORTATION SERVICES · RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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WEST O'AHU/FARRINGTON DESIGN-BUILD

ROADWAY CONSTRUCTION PLAN

EB 630+00 TO EB 640+00

Contract No.: DB-1200
CADD File: WF-B09-RP026
Drawing No: RP026 Rev. A
Scale: 1"=40'
Page No. 132 of 312

2009-03-26 2:54 PM K:\CADD\03 Civil\Segment C\Sheet Files\WF-B09-RP_2.dwg

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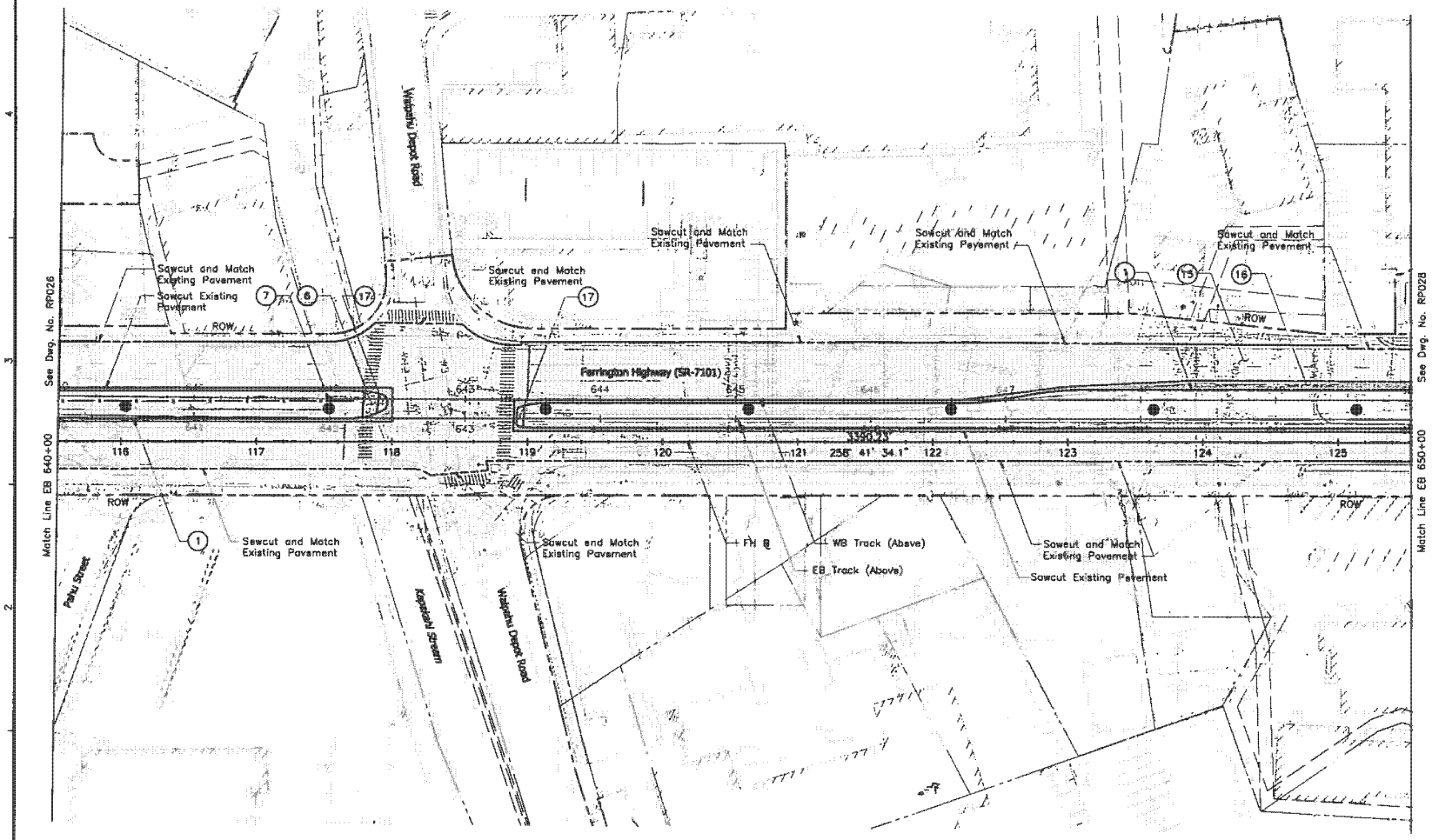

N

NOTES:

1. For general notes, symbols, and abbreviations, see Dwg. No. CG001.
2. For roadway construction plan notes and legend, see Dwg. No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Proposed gravel pavement.
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.

CONSTRUCTION NOTES:

1. Construct Concrete Curb, Type 2A, Per HDOT Std. Plan No. D-05.
6. Construct Concrete Curb Ramp.
7. Install Chain Link Fence with Toprail, 6', Per HDOT Std. Plan No. D-02.
15. Construct Plantmix Bituminous Surface Overlay.
16. Construct Plantmix Bituminous Pavement.
17. Construct Concrete Median Island Paving.

40' 0 40'

Rev	By	Date	Description
A	MH	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: E Liberman
Approved: M Hell
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
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WEST O'AHU/FARRINGTON DESIGN-BUILD
ROADWAY CONSTRUCTION PLAN
EB 640+00 TO EB 650+00

Contract No.: DB-1200
CADD File: WF-B09-RP027
Drawing No: RP027 Rev. A
Scale: 1"=40'
Page No. 133 of 312

2009-03-26 2:54 PM K:\CADD\03 Civil\Segment C\Sheet Files\WF-B09-RP_2.dwg

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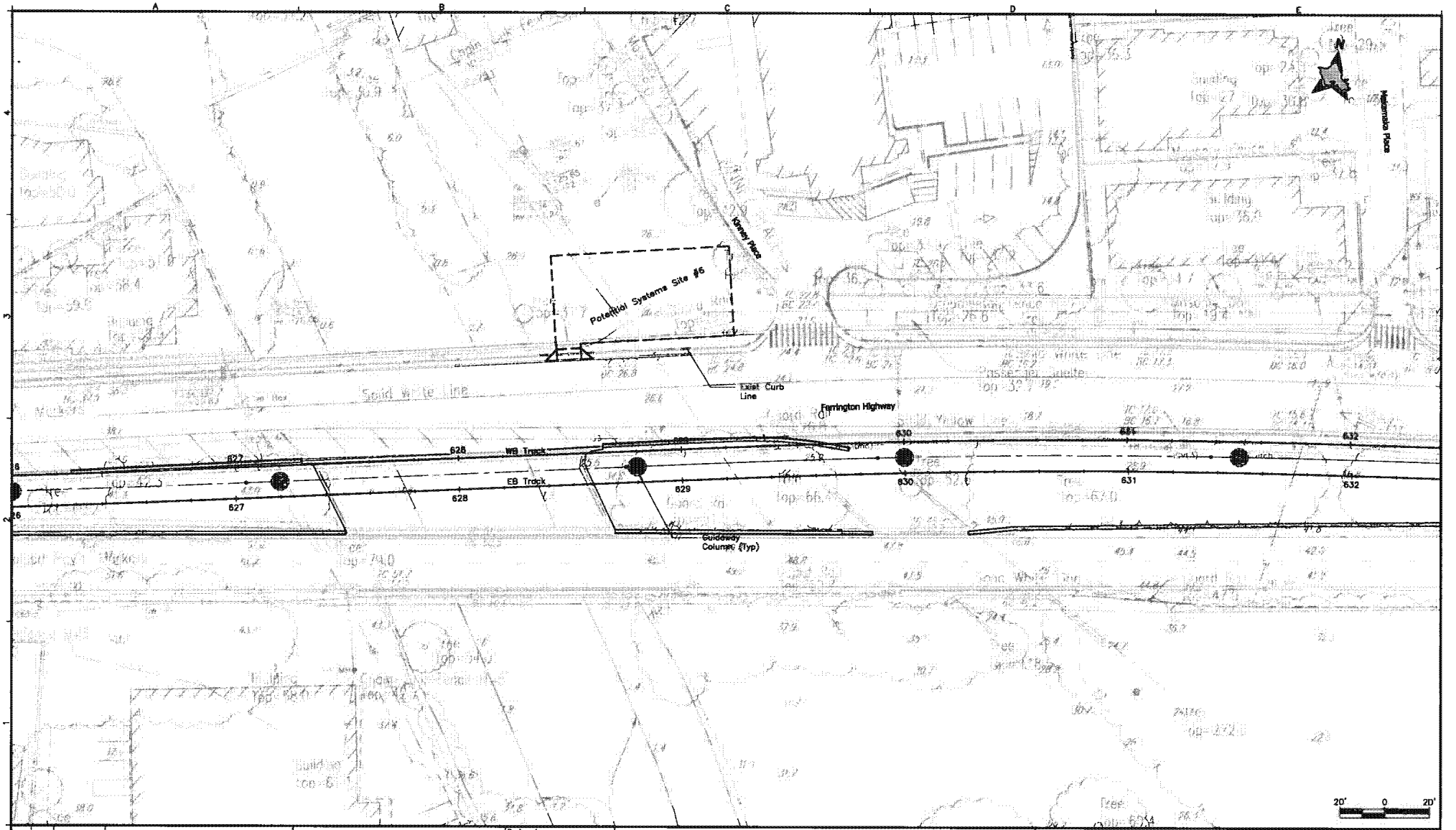

Rev	By	Date	Description
A	DG	04-03-09	Issued For Bid

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BID DOCUMENT
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Designed: D Gobelle
Drawn: C Jamison
Checked: LMoyola
Approved: M Hall
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2290 - Honolulu, HI 96813
Subconsultant:
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WEST O'AHU/FARRINGTON DESIGN-BUILD

SYSTEMS SITE PLAN
SITE # 6

Contract No.: DB-1200
CADD File: WF-B10-RP109
Drawing No: RP109 Rev. A
Scale: 1"=20'
Page No. 156 of 312

AR00077598

NOTE: Station ranges not listed have 0' width dimension

Ⓐ 46+66 to 51+50 2'–0.8'
52+25 to 56+20 2'

Ⓑ 46+66 to 47+20 21'
47+20 to 49+30 21'–0'

Ⓒ 46+66 to 47+20 27'–0'

Ⓓ 52+30 to 56+80 11'

Ⓔ 46+66 to 48+70 34'
48+70 to 49+90 34'–14'
49+90 to 56+20 14'

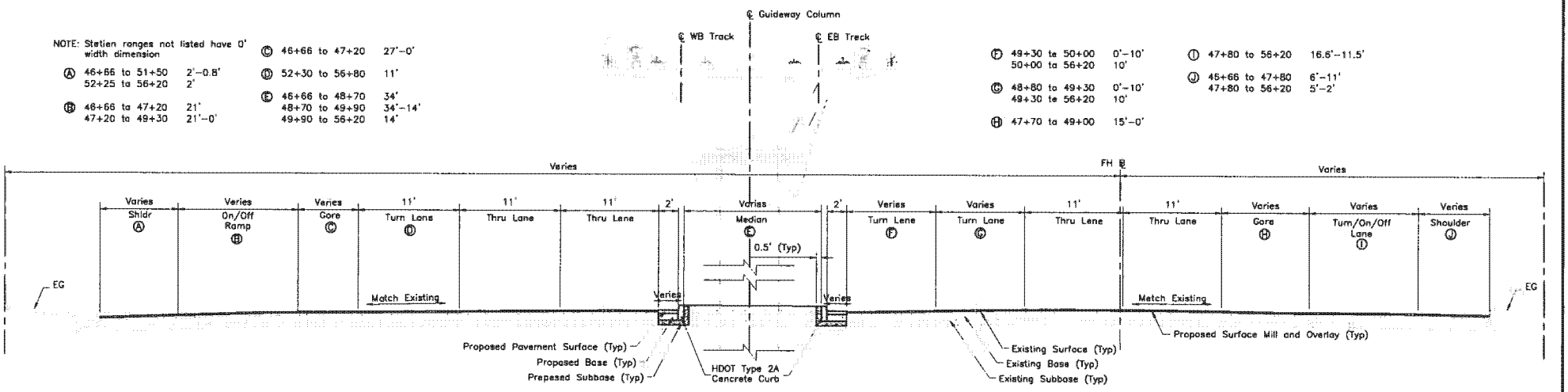
Ⓕ 49+30 to 50+00 0'–10'
50+00 to 56+20 10'

Ⓖ 48+80 to 49+30 0'–10'
49+30 to 56+20 10'

Ⓗ 47+70 to 49+00 15'–0'

Ⓘ 47+80 to 56+20 16.6'–11.5'

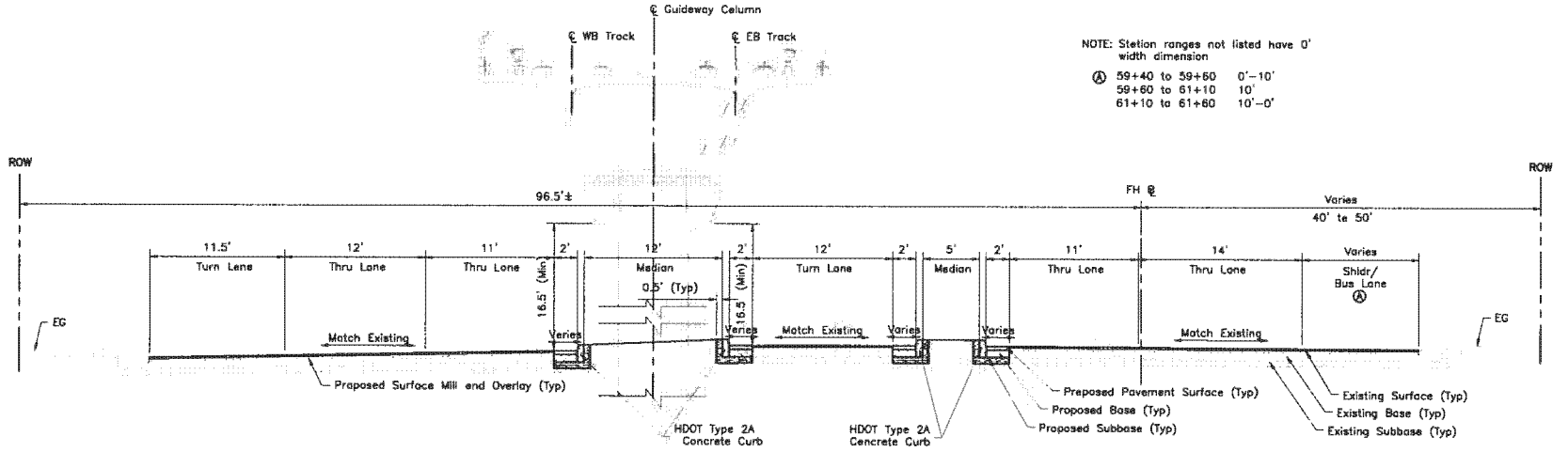
Ⓙ 46+66 to 47+80 6'–11'
47+80 to 56+20 5'–2'



"FH" 46+66.18 AH to "FH" 56+80

NOTE: Station ranges not listed have 0' width dimension

Ⓐ 59+40 to 59+60 0'–10'
59+60 to 61+10 10'
61+10 to 61+60 10'–0'



"FH" 56+80 to "FH" 62+00

5' 0 5'

Rev	By	Date	Description
A	MH	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: B. Wardell
Drawn: T Cochran
Checked: E Libermen
Approved: M Hall
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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WEST O'AHU/FARRINGTON DESIGN-BUILD

TYPICAL SECTIONS
FARRINGTON HIGHWAY

SHEET 3 OF 8

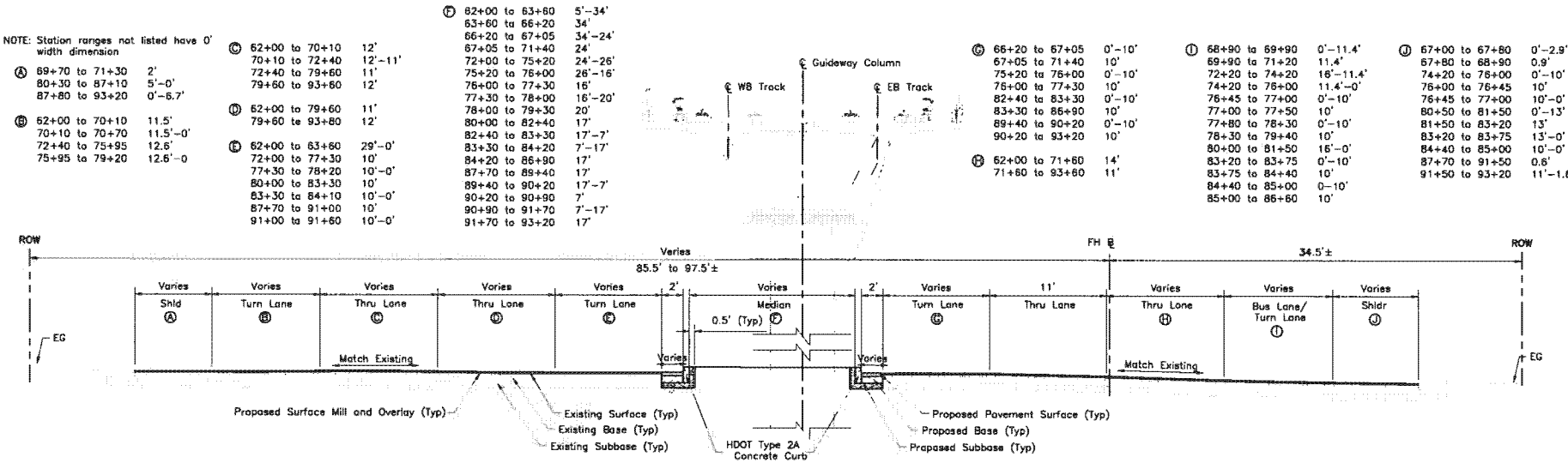
Contract No.: DB–1200
CADD File: WF–813–RX003
Drawing No: RX003 Rev. A
Scale: 1"=5'
Page No. 164 of 312

2009-03-27 1:17 PM K:\CADD\03 Civil\Segment C\Sheet Files\WF-813-RX_2.dwg

AR00077599

NOTE: Station ranges not listed have 0' width dimension

Ⓐ	69+70 to 71+30	2'
	80+30 to 87+10	5'–0'
	87+80 to 93+20	0'–6.7'
Ⓑ	62+00 to 70+10	11.5'
	70+10 to 70+70	11.5'–0'
	72+40 to 75+95	12.6'
	75+95 to 79+20	12.6'–0
Ⓒ	62+00 to 70+10	12'
	70+10 to 72+40	12'–11'
	72+40 to 79+60	11'
	79+60 to 93+60	12'
Ⓓ	62+00 to 79+60	11'
	79+60 te 93+80	12'
Ⓔ	62+00 to 63+60	29'–0'
	72+00 to 77+30	10'
	77+30 to 78+20	10'–0'
	80+00 to 83+30	10'
	83+30 to 84+10	10'–0'
	87+70 to 91+00	10'
	91+00 to 91+60	10'–0'
Ⓕ	62+00 to 63+60	5'–34'
	63+60 ta 66+20	34'
	66+20 to 67+05	34'–24'
	67+05 to 71+40	24'
	72+00 to 75+20	24'–26'
	75+20 to 76+00	26'–16'
	76+00 to 77+30	16'
	77+30 to 78+00	16'–20'
	78+00 to 79+30	20'
	80+00 to 82+40	17'
	82+40 to 83+30	17'–7'
	83+30 to 84+20	7'–17'
	84+20 to 86+90	17'
	87+70 to 89+40	17'
	89+40 to 90+20	17'–7'
	90+20 to 90+90	7'
	90+90 to 91+70	7'–17'
	91+70 to 93+20	17'
Ⓖ	66+20 to 67+05	0'–10'
	67+05 to 71+40	10'
	75+20 ta 76+00	0'–10'
	76+00 to 77+30	10'
	82+40 to 83+30	0'–10'
	83+30 to 86+90	10'
	89+40 to 90+20	0'–10'
	90+20 to 93+20	10'
Ⓗ	62+00 to 71+60	14'
	71+60 to 93+60	11'
Ⓘ	68+90 to 69+90	0'–11.4'
	69+90 to 71+20	11.4'
	72+20 to 74+20	16'–11.4'
	74+20 to 76+00	11.4'–0'
	76+45 to 77+00	0'–10'
	77+00 to 77+50	10'
	77+80 to 78+30	0'–10'
	78+30 to 79+40	10'
	80+00 to 81+50	16'–0'
	83+20 to 83+75	0'–10'
	83+75 to 84+40	10'
	84+40 to 85+00	0–10'
	85+00 to 86+60	10'
Ⓙ	67+00 to 67+80	0'–2.9'
	67+80 to 68+90	0.9'
	74+20 to 76+00	0'–10'
	76+00 to 76+45	10'
	76+45 to 77+00	10'–0'
	80+50 to 81+50	0'–13'
	81+50 to 83+20	13'
	83+20 to 83+75	13'–0'
	84+40 to 85+00	10'–0'
	87+70 to 91+50	0.6'
	91+50 to 93+20	11'–1.6'



"FH" 62+00 to "FH" 93+60

5' 0 5'

Rev	By	Date	Description
A	MH	04–03–09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: B. Wardell
Drawn: T Cochran
Checked: E Liberman
Approved: M Hall
Date: 04–03–09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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WEST O'AHU/FARRINGTON DESIGN-BUILD

TYPICAL SECTIONS
FARRINGTON HIGHWAY

SHEET 4 OF 8

Contract No.: 08–1200
CADD File: WF–813–RX004
Drawing No: RX004 Rev. A
Scale: 1"=5'
Page No. 165 of 312

2009–03–27 1:17 PM K:\CADD\03 Civil\Segment C\Sheet Files\WF–813–RX_2.dwg

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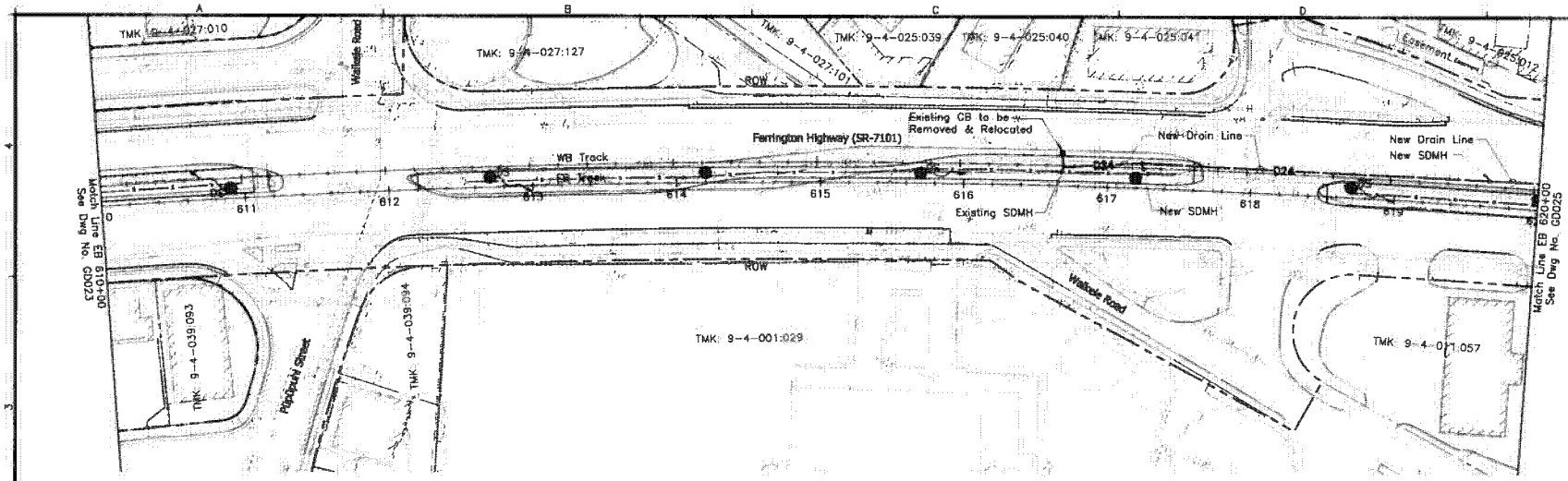
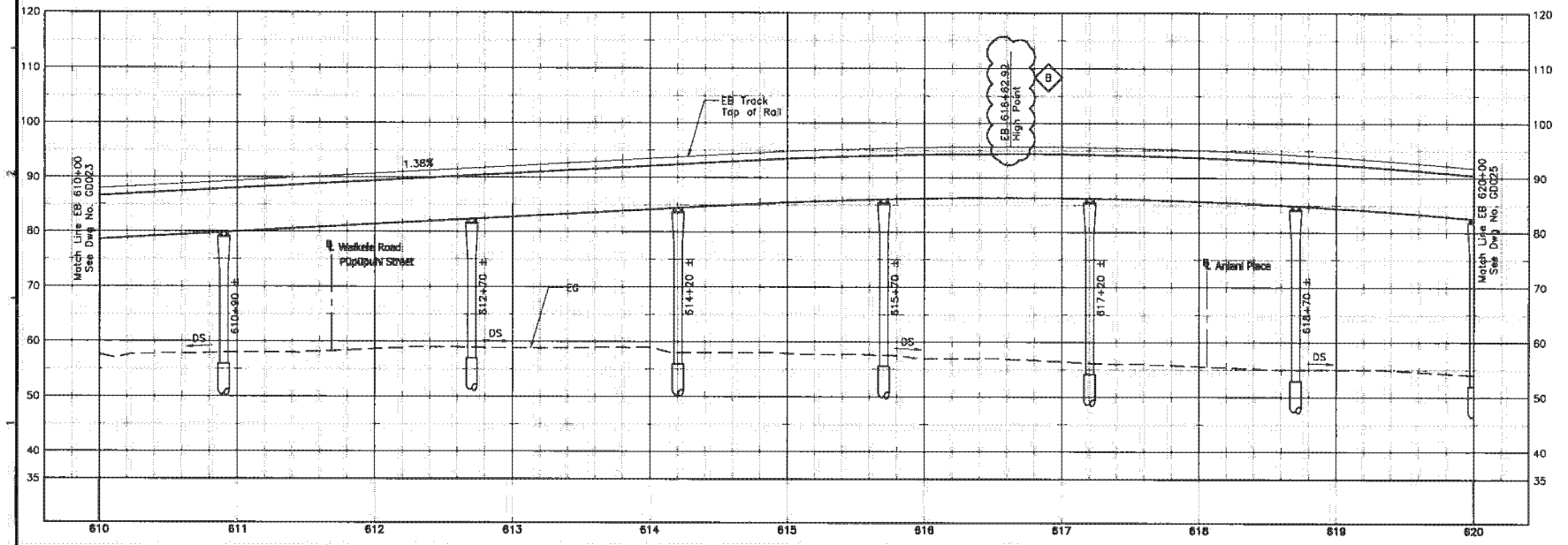


NOTES:

1. Refer to utility relocation drawings UP142A & UP143A for new drainage structures shown in this sheet.
2. Refer to GD001 for legend and symbols.
3. For DS locations and discharge conditions, see schedule on Drawing No. GD039 & GD040.



40' 0 40'

10' 0 10'

Rev	By	Date	Description
B	MY	05-22-09	Added High Point in Profile
A	MY	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: E Leung
Drawn: D Chua
Checked: N Orense
Approved: M Yonamine
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: LYON ASSOCIATES

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WEST O'AHU/FARRINGTON DESIGN-BUILD

GUIDEWAY DRAINAGE LAYOUT PLAN

EB 610+00 TO EB 620+00

Contract No.: DB-1200
CADD File: WF-B16-GD024
Drawing No: GD024 Rev. B
Scale: 1"=40' H, 1"=10' V
Page No. 193 of 312

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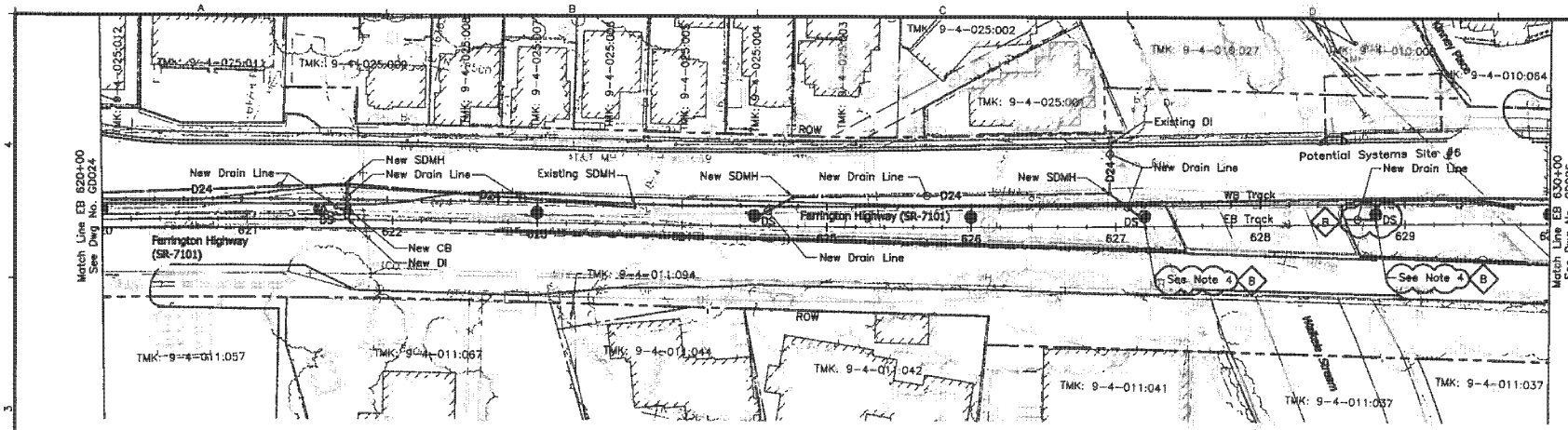

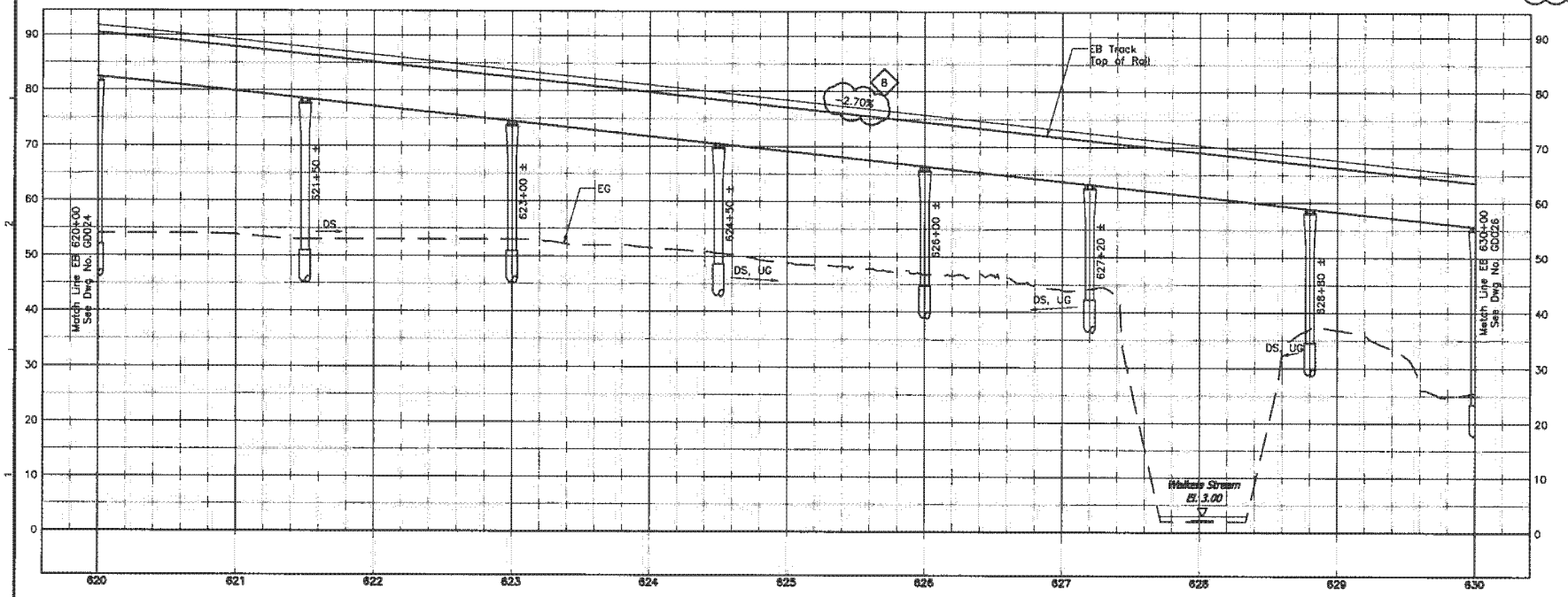

NOTES:

1. Refer to utility relocation drawings UP143A & UP144A for new drainage structures shown in this sheet.
2. Refer to GD001 for legend and symbols.
3. For DS locations and discharge conditions, see schedule on Drawing No. GD039 & GD040.
4. Downspout at location noted shall be provided with a downspout filter per Drawing No. GD105.

Rev	By	Date	Description
B	MY	05-22-09	Miscellaneous Updates
A	MY	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: E Leung
Drawn: D Chua
Checked: N Orense
Approved: M Yonamine
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: LYON ASSOCIATES

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WEST O'AHU/FARRINGTON DESIGN-BUILD

GUIDEWAY DRAINAGE LAYOUT PLAN

EB 620+00 TO EB 630+00

Contract No.: DB-1200
CADD File: WF-B16-GD025
Drawing No: GD025 Rev B
Scale: 1"=40' H, 1"=10' V
Page No. 194 of 312

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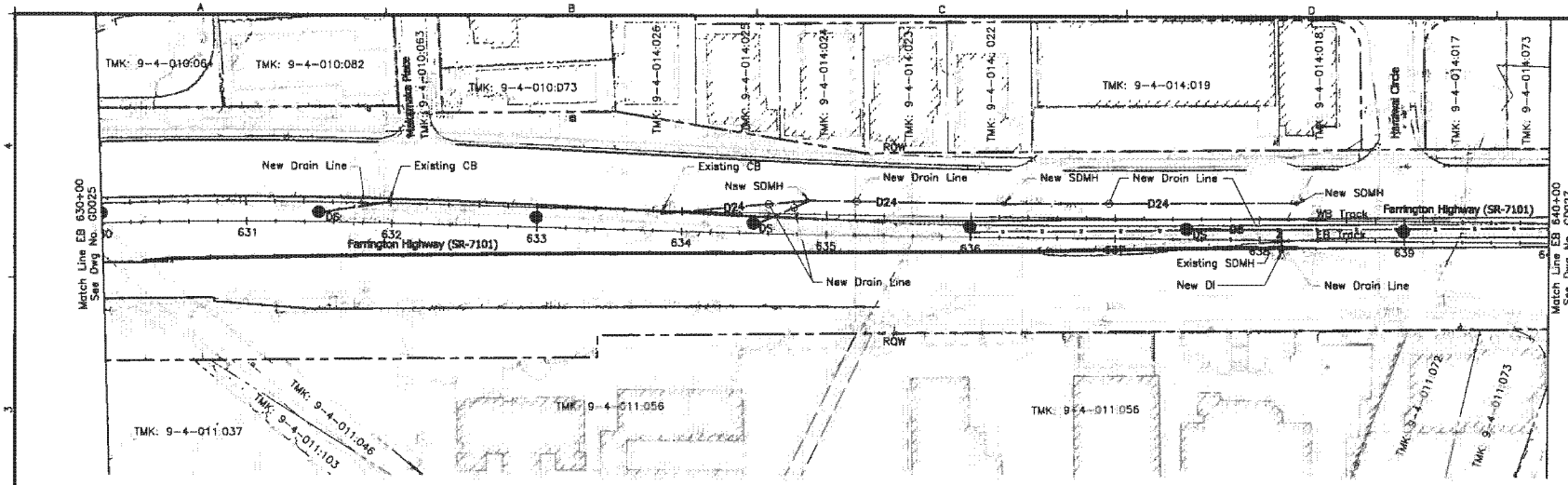

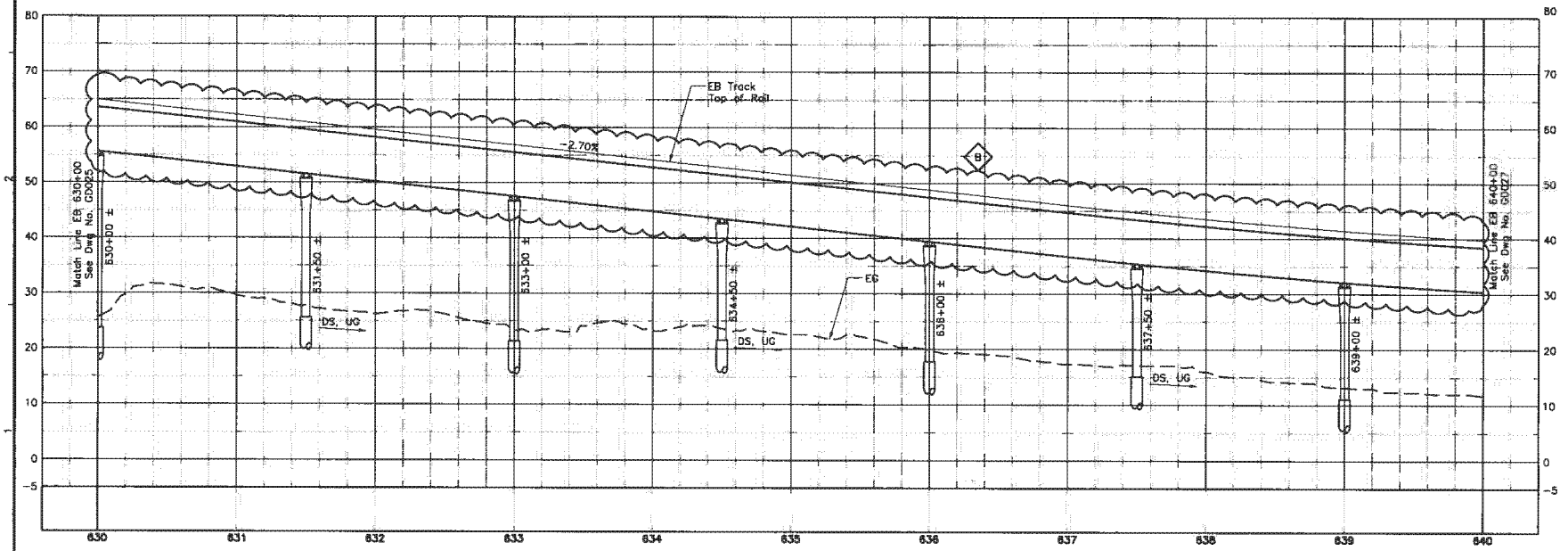

NOTES:

1. Refer to utility relocation drawings UP145A & UP146A for new drainage structures shown in this sheet.
2. Refer to GD001 for legend and symbols.
3. For DS locations and discharge conditions, see schedule on Drawing No. GD039 & GD040.

Rev	By	Date	Description
B	MY	05-22-09	Profile Update
A	MY	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: E Leung
Drawn: D Chuo
Checked: N Orense
Approved: M Yonomine
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 · Honolulu, HI 96813

Subconsultant: LYON ASSOCIATES

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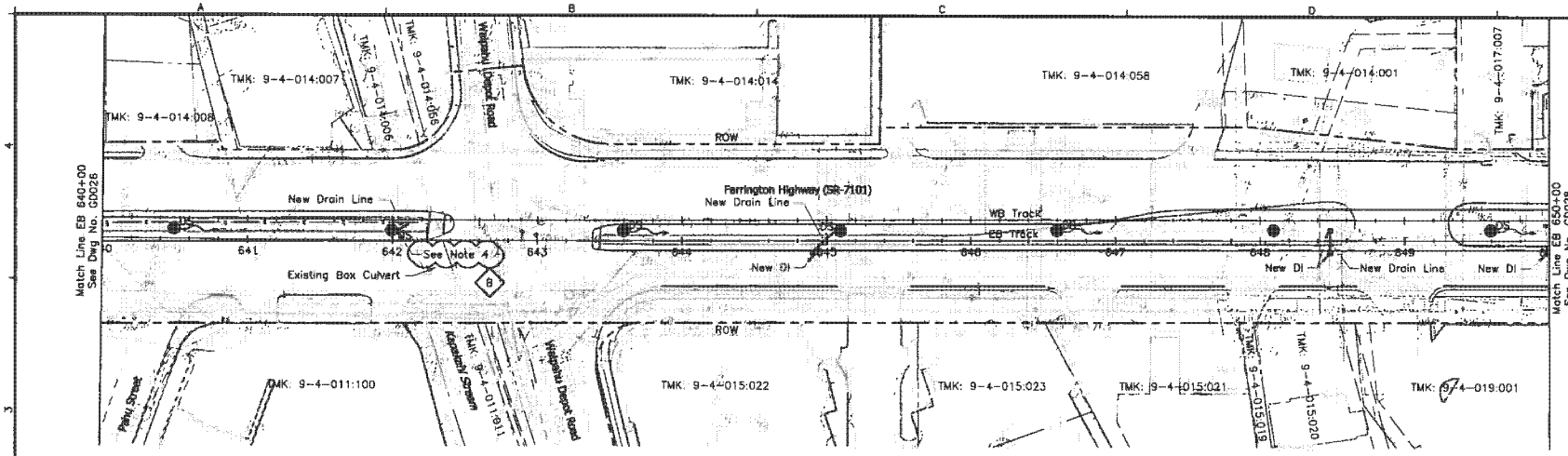
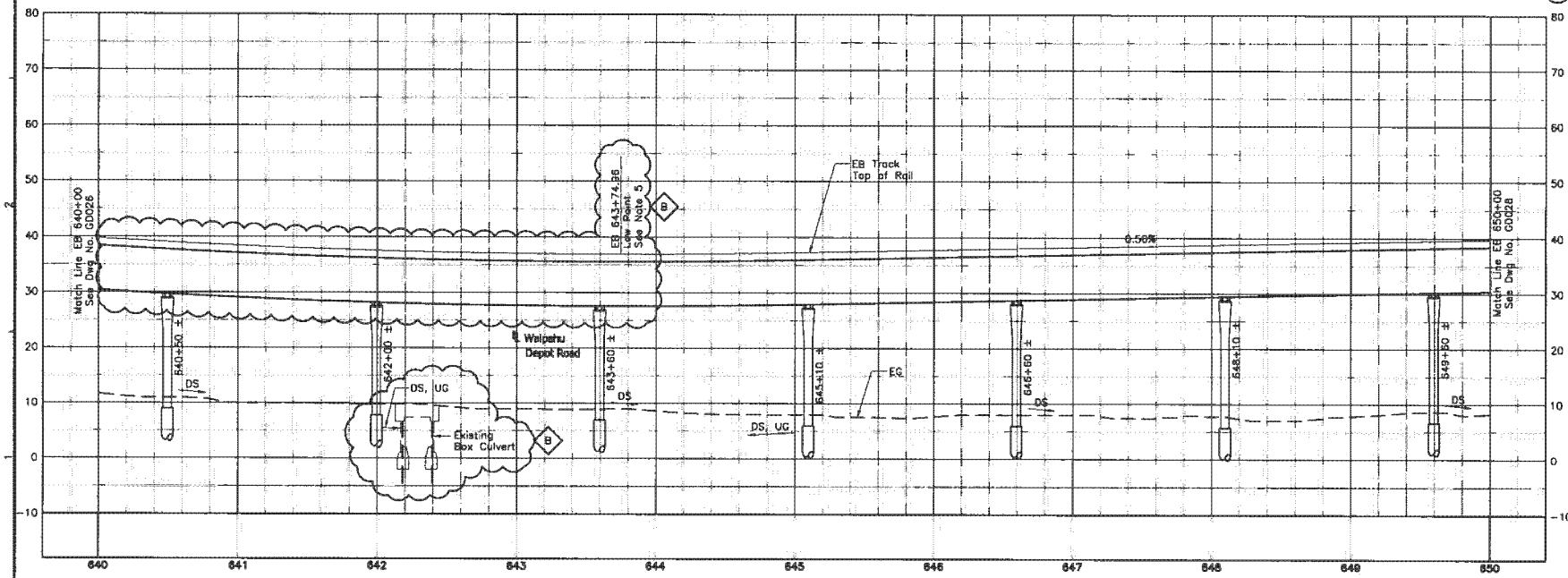
WEST O'AHU/FARRINGTON DESIGN-BUILD

GUIDEWAY DRAINAGE LAYOUT PLAN

EB 630+00 TO EB 640+00

Contract No.: DB-1200
CADD File: WF-B16-GD026
Drawing No: GD026 Rev. B
Scale: 1"=40' H, 1"=10' V
Page No. 195 of 312





NOTES:

1. Refer to utility relocation drawings UP147A & UP14BA for new drainage structures shown in this sheet.
2. Refer to GD001 for legend and symbols.
3. For DS locations and discharge conditions, see schedule on Drawing No. GD039 & GD040.
4. Downspout at location noted shall be provided with a downspout filter per Drawing No. GD105.
5. Drain inlets at low point(sump) shall be connected to the nearest column DS at Sta 643+60 per Detail B on Drawing No. GD101.

B

Rev	By	Date	Description
B	MY	05-22-09	Miscellaneous Updates
A	MY	04-03-09	Issued For Bid

BID DOCUMENT
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Drawn: D Chua
Checked: N Orense
Approved: M Yonamine
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: LYON ASSOCIATES

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WEST O'AHU/FARRINGTON DESIGN-BUILD

GUIDEWAY DRAINAGE LAYOUT PLAN

EB 640+00 TO EB 650+00

Contract No.: DB-1200
CADD File: WF-B16-GD027
Drawing No: GD027 Rev. B
Scale: 1"=40' H, 1"=10' V
Page No. 196 of 312

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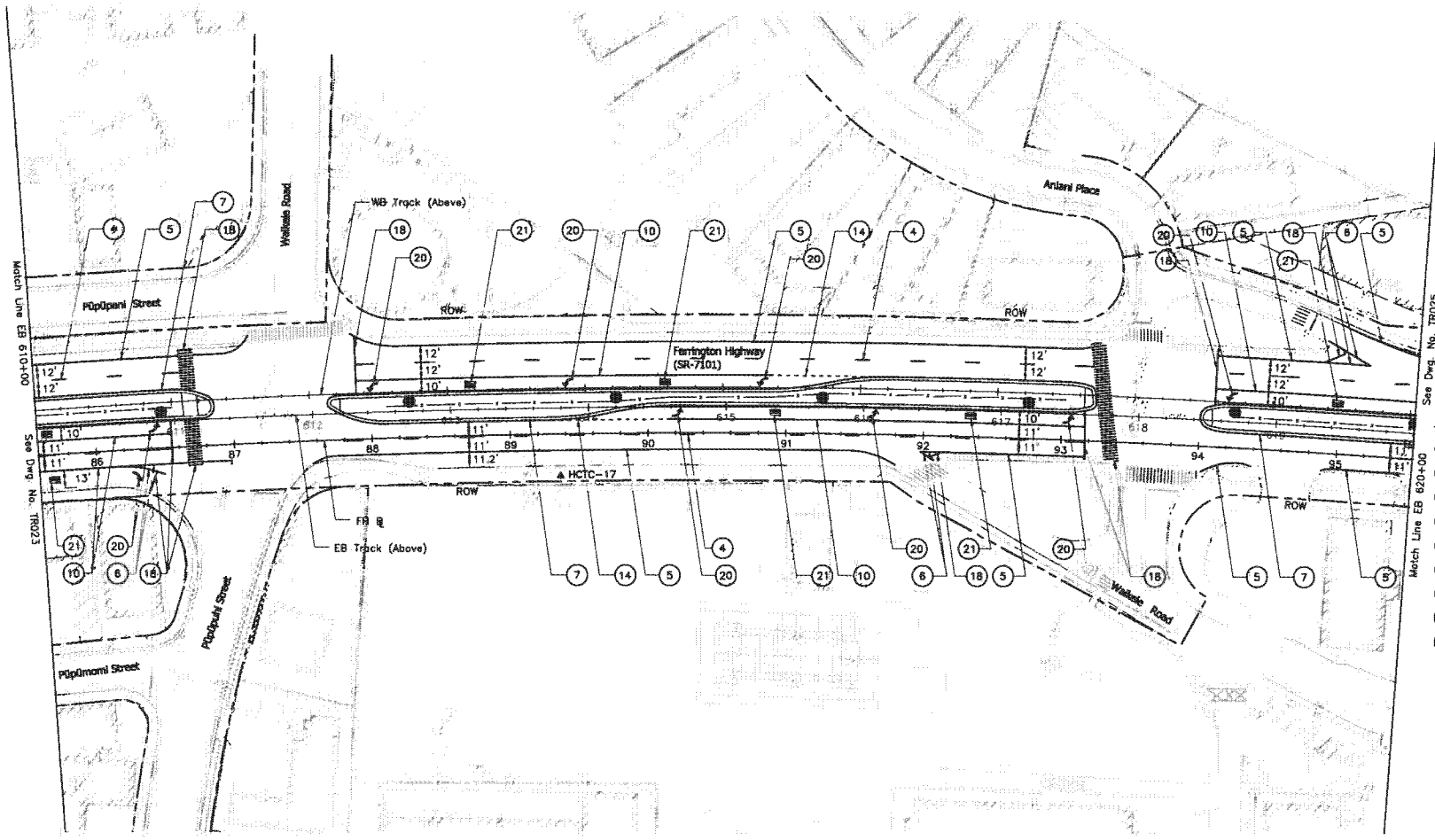

NOTES:

1. For general notes, symbols, and abbreviations, see Dwg. No. CG001.
2. For signing and typical pavement marking notes and legend, see Dwg. No. TG002 to TG006.

LEGEND:

- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.

PAVEMENT MARKING NOTES:

- (4) Laneline – RPM
- (5) Edgeline – Single Solid 4" White Stripe with RPM
- (6) Edgeline – Single Solid 8" White Stripe with RPM
- (7) Edgeline – Single Solid 4" Yellow Stripe with RPM
- (10) Laneline – Single Solid 8" White Stripe with RPM
- (14) Laneline – Single Dashed 4" White Stripe
- (18) Transverse Markings – Single Solid 12" White Stripe
- (20) Pavement Markings – Turn Arrows
- (21) Pavement Markings – Text

40' 0 40'

Rev	By	Date	Description
A	MH	04-03-09	Issued For Bid

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2290 – Honolulu, HI 96813

Subconsultant:

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WEST O'AHU/FARRINGTON DESIGN-BUILD

SIGNING AND STRIPING PLAN

EB 610+00 TO EB 620+00

Contract No.: DB-1200
CADD File: WF-C02-TR024
Drawing No: TR024 Rev: A
Scale: 1"=40'
Page No. 238 of 312

2009-03-26 4:12 PM h:\CADD\03 Civil\Segment C\Sheet Files\WF-C02-S5_2.dwg

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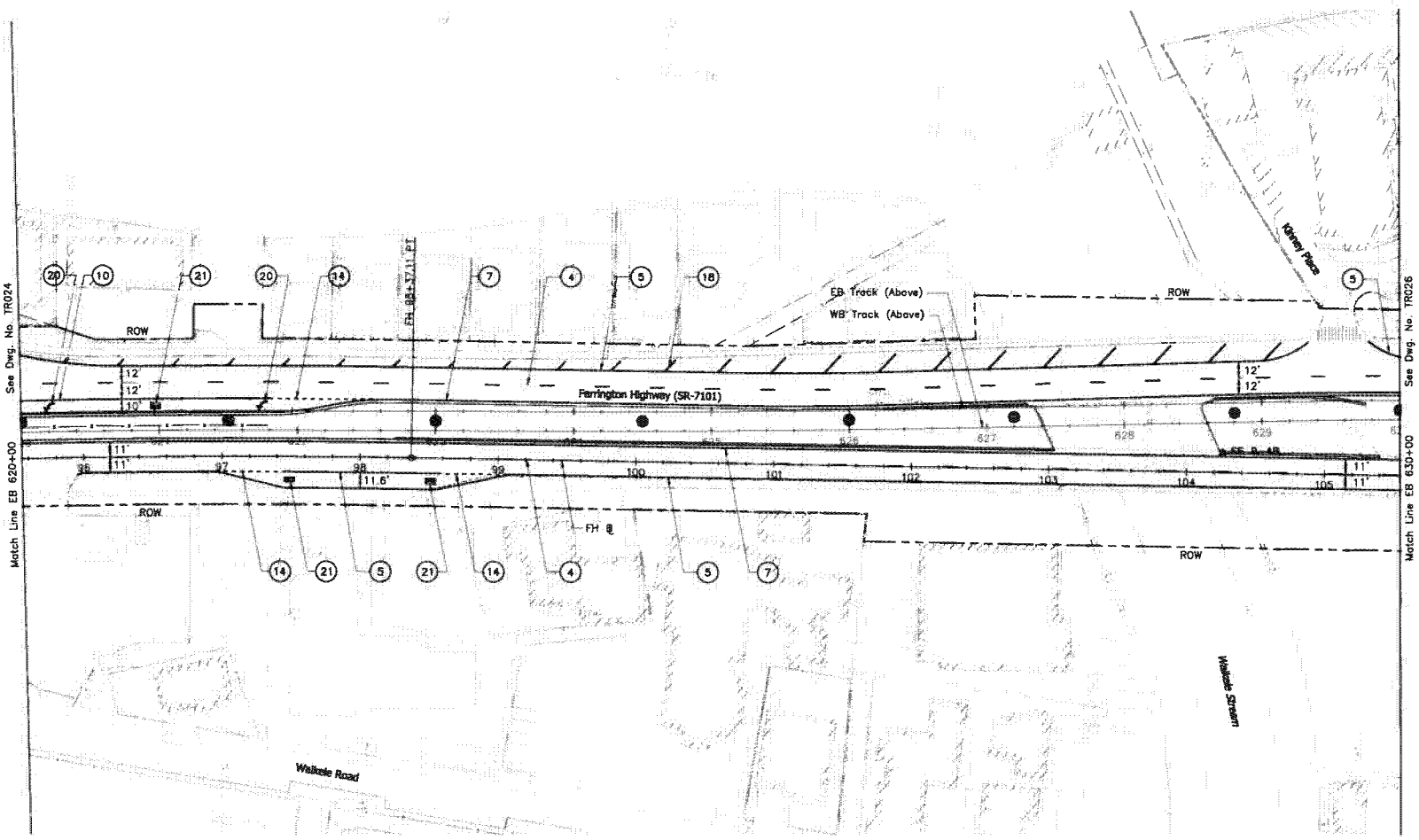


N

NOTES:

1. For general notes, symbols, and abbreviations, see Dwg. No. CG001.
2. For signing and typical pavement marking notes and legend, see Dwg. No. TG002 to TG006.

LEGEND:

- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.

PAVEMENT MARKING NOTES:

- (4) Laneline – RPM
- (5) Edgeline – Single Solid 4" White Stripe with RPM
- (7) Edgeline – Single Solid 4" Yellow Stripe with RPM
- (10) Laneline – Single Solid 8" White Stripe with RPM
- (14) Laneline – Single Dashed 4" White Stripe
- (18) Transverse Markings – Single Solid 12" White Stripe
- (20) Pavement Markings – Turn Arrows
- (21) Pavement Markings – Text

40' 0 40'

Rev	By	Date	Description
A	MH	04-03-09	Issued For Bid

2009-03-26 4:12 PM h:\CADD\03 Civil\Segment C\Sheet Files\WF-C02-TR025.dwg

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: E Liberman
Approved: M Holl
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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

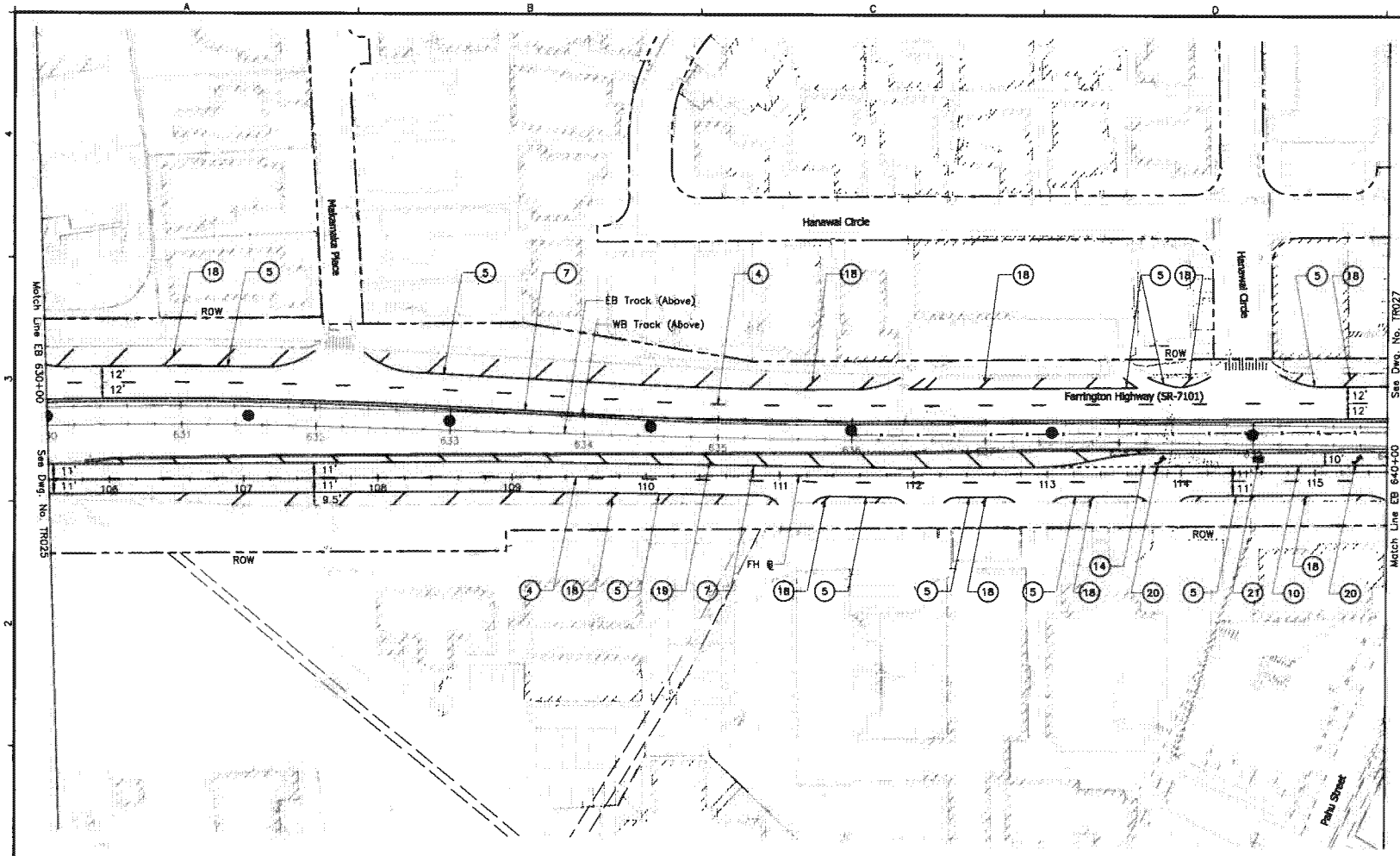
WEST O'AHU/FARRINGTON DESIGN-BUILD

SIGNING AND STRIPING PLAN

EB 620+00 TO EB 630+00

Contract No.: DB-1200
CADD File: WF-C02-TR025
Drawing No: TR025 Rev. A
Scale: 1"=40'
Page No. 239 of 312

AR00077606



NOTES:

1. For general notes, symbols, and abbreviations, see Dwg. No. CG001.
2. For signing and typical pavement marking notes and legend, see Dwg. No. TG002 to TG006.

LEGEND:

- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.

PAVEMENT MARKING NOTES:

- (4) Laneline – RPM
- (5) Edgeline – Single Solid 4" White Stripe with RPM
- (7) Edgeline – Single Solid 4" Yellow Stripe with RPM
- (10) Laneline – Single Solid 8" White Stripe with RPM
- (14) Laneline – Single Dashed 4" White Stripe
- (18) Transverse Markings – Single Solid 12" White Stripe
- (19) Transverse Markings – Single Solid 12" Yellow Stripe
- (20) Pavement Markings – Turn Arrows
- (21) Pavement Markings – Text

40' 0 40'

Rev	By	Date	Description
A	MH	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: E Libermen
Approved: M Hall
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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

WEST O'AHU/FARRINGTON DESIGN-BUILD

SIGNING AND STRIPING PLAN

EB 630+00 TO EB 640+00

Contract No.: DB-1200
CADD File: WF-C02-TR026
Drawing No: TR026 Rev. A
Scale: 1"=40'
Page No. 240 of 312

2009-03-26 4:12 PM ▶:\CADD\03 CWA\Segment C\Sheet Files\WF-C02-SS_2.dwg

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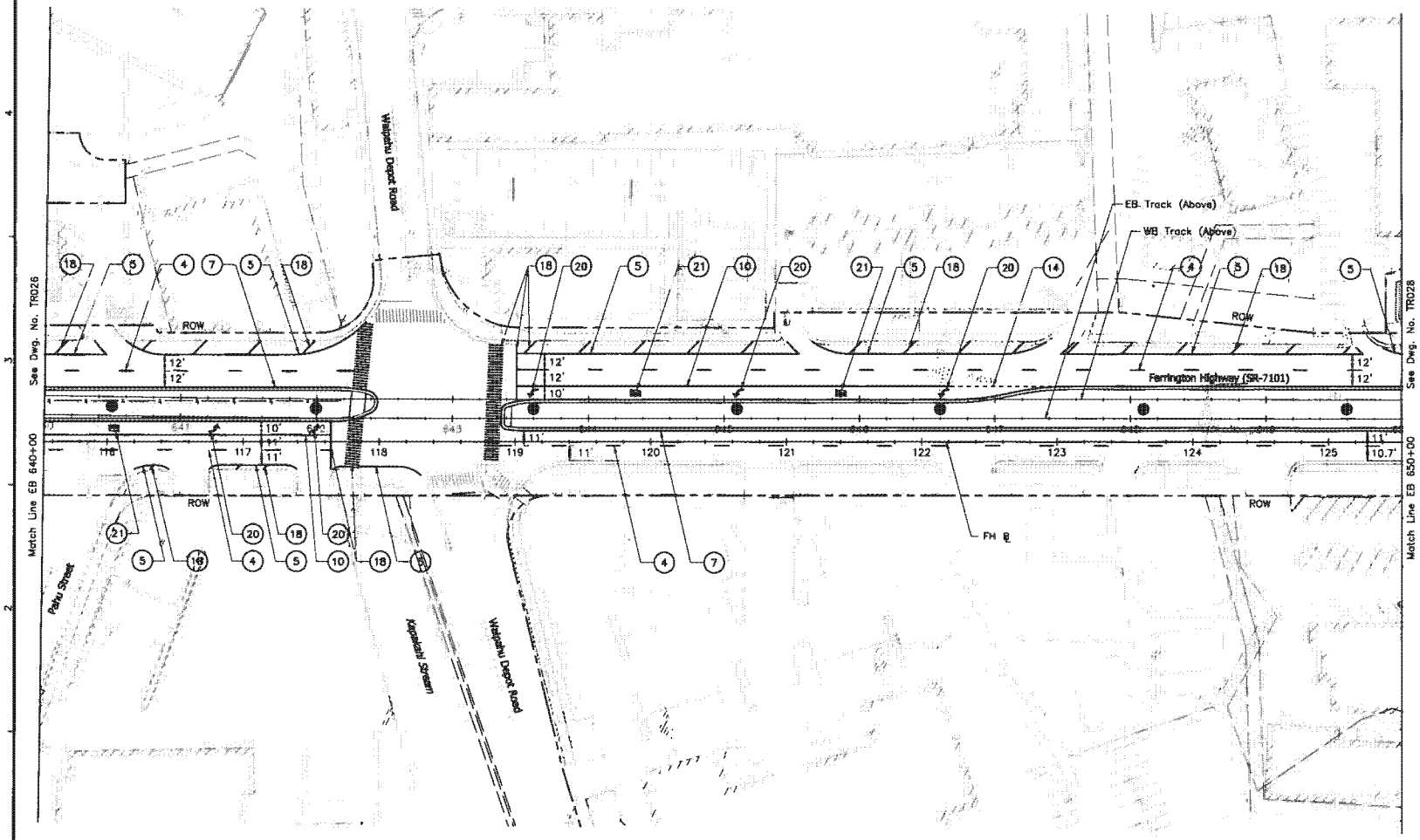

N

NOTES:

1. For general notes, symbols, and abbreviations, see Dwg. No. CG001.
2. For signing and typical pavement marking notes and legend, see Dwg. No. TG002 to TG006.

LEGEND:

- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.

PAVEMENT MARKING NOTES:

- (4) Laneline – RPM
- (5) Edgeline – Single Solid 4" White Stripe with RPM
- (7) Edgeline – Single Solid 4" Yellow Stripe with RPM
- (10) Laneline – Single Solid 8" White Stripe with RPM
- (14) Laneline – Single Dashed 4" White Stripe
- (18) Transverse Markings – Single Solid 12" White Stripe
- (20) Pavement Markings – Turn Arrows
- (21) Pavement Markings – Text

40' 0 40'

Rev	By	Date	Description
A	MH	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: E Liberman
Approved: M Hall
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

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

WEST O'AHU/FARRINGTON DESIGN-BUILD

SIGNING AND STRIPING PLAN

EB 640+00 TO EB 650+00

Contract No.: DB-1200
CADD File: WF-C02-TR027
Drawing No: TR027 Rev. A
Scale: 1"=40'
Page No. 241 of 312

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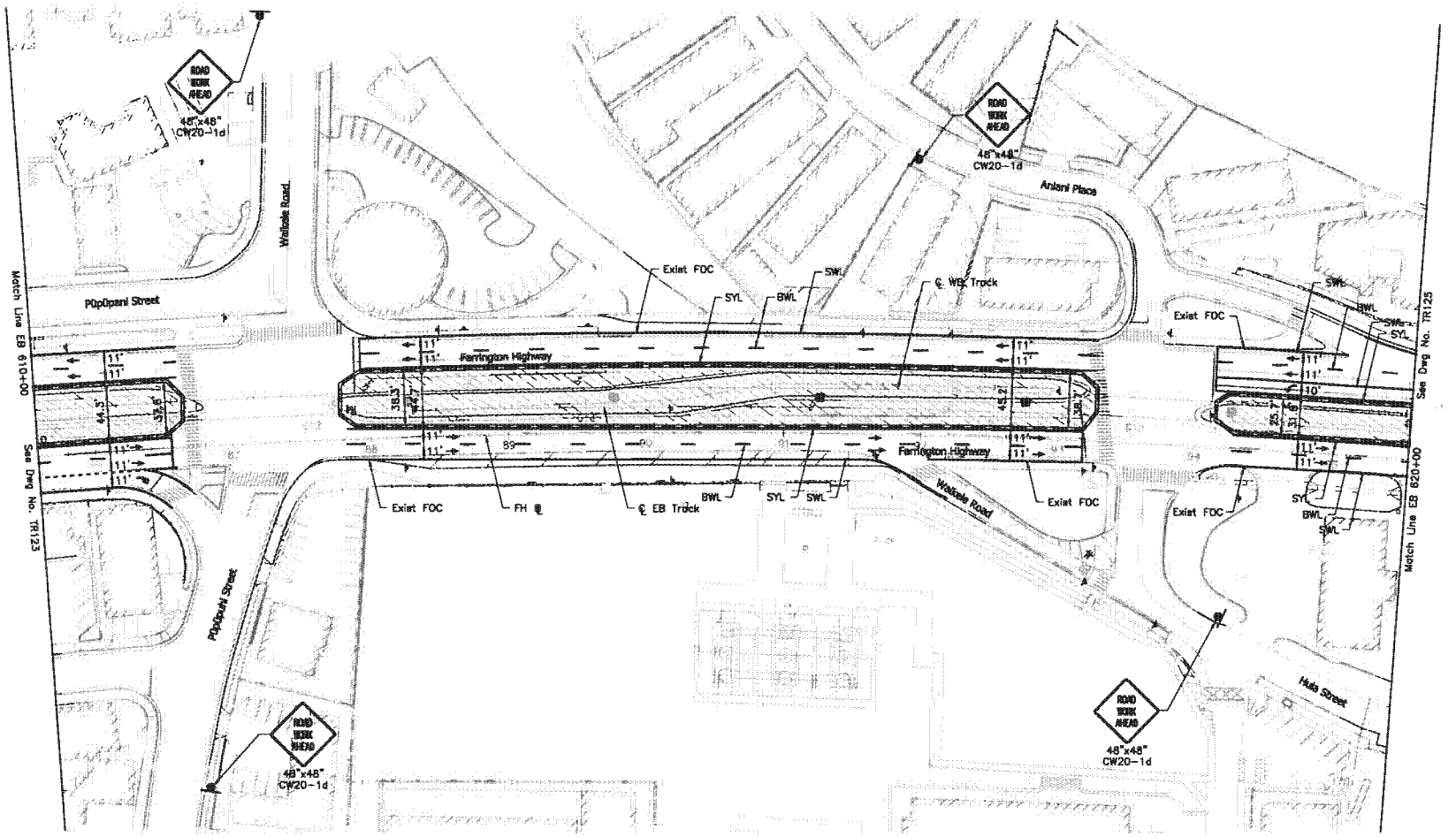

N

NOTES

1. For general notes, see Dwg No. TG001.

LEGEND

- Work Zone
- Bus Pullout Area
- Concrete Barrier
- Proposed Traffic Control
- SYL Temporary Solid Yellow Line
- SWL Temporary Solid White Line
- BWL Temporary Broken White Line
- DWL Temporary Dashed White Line
- Flow of Traffic
- Guideway Column Location
- Attenuator
- Existing Sign
- FOC Face of Curb
- EP Edge of Pavement

40' 0 40'

Rev	By	Date	Description
A	MH	004-03-09	Issued For Bid

2009-03-25 11:03 AM K:\CADD\03 Civil\Segment C\Sheet Files\WF-C03-MOT_2.dwg

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: B Wardell
Drawn: J Derosier
Checked: E Liberman
Approved: M Hall
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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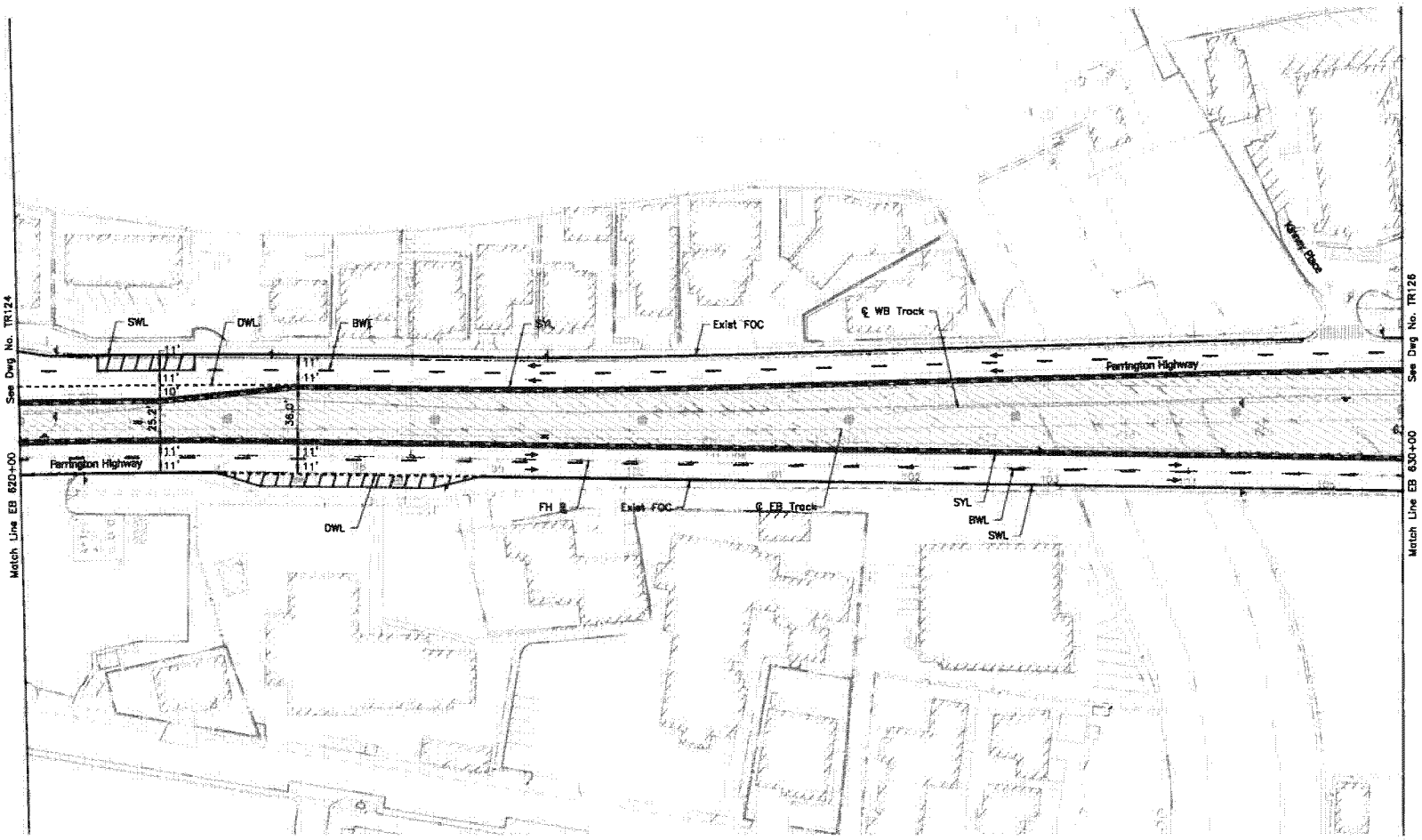
WEST O'AHU/FARRINGTON DESIGN-BUILD

MAINTENANCE OF TRAFFIC PLAN

EB 610+00 TO EB 620+00

Contract No.: DB-1200
CADD File: WF-C03-TR124
Drawing No: TR124 Rev. A
Scale: 1"=40'
Page No. 260 of 312

AR00077609



NOTES

1. For general notes, see Dwg No. TG001.

LEGEND

- Work Zone
- Bus Pullout Area
- Concrete Barrier
- Proposed Traffic Control
- SYL Temporary Solid Yellow Line
- SWL Temporary Solid White Line
- BWL Temporary Broken White Line
- DWL Temporary Dashed White Line
- Flow of Traffic
- Guideway Column Location
- Attenuator
- Existing Sign
- FOC Face of Curb
- EP Edge of Pavement

40' 0 40'

Rev	By	Date	Description
A	MH	004-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: B Wordell
Drawn: J Deroeier
Checked: E Libermon
Approved: M Hall
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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WEST O'AHU/FARRINGTON DESIGN-BUILD

MAINTENANCE OF TRAFFIC PLAN

EB 620+00 TO EB 630+00

Contract No.: DB-1200
CADD File: WF-C03-TR125
Drawing No: TR125 Rev. A
Scale: 1"=40'
Page No. 261 of 312

2009-03-25 11:03 AM K:\CADD\03 Civil\Segment C\Sheet Files\WF-C03-MOT_2.dwg

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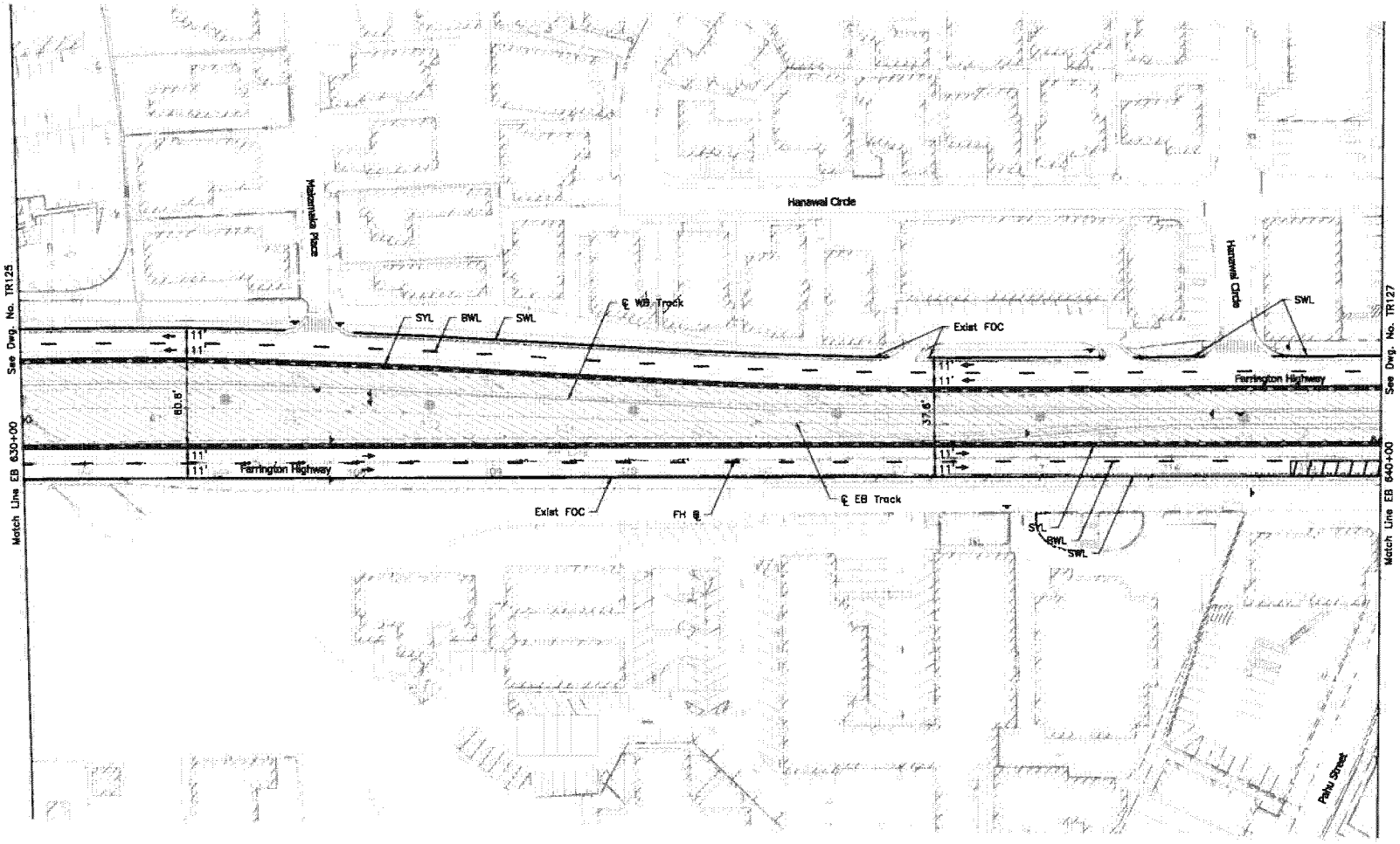

NOTES

1. For general notes, see Dwg No. TG001.

LEGEND

- Work Zone
- Bus Pullout Area
- Concrete Barrier
- Proposed Traffic Control
- SYL Temporary Solid Yellow Line
- SWL Temporary Solid White Line
- BWL Temporary Broken White Line
- DWL Temporary Dashed White Line
- Flow of Traffic
- Guideway Column Location
- Attenuator
- Existing Sign
- FOC Face of Curb
- EP Edge of Pavement

40' 0 40'

Rev	By	Date	Description
A	MH	004-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: B Wardell
Drawn: J Derosier
Checked: E Liberman
Approved: M Hall
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

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WEST O'AHU/FARRINGTON DESIGN-BUILD

MAINTENANCE OF TRAFFIC PLAN

EB 630+00 TO EB 640+00

Contract No.: DB-1200
CADD File: WF-C03-TR126
Drawing No: TR126 Rev. A
Scale: 1"=40'
Page No. 262 of 312

2009-03-25 11:03 AM K:\CADD\03 Civil\Segment C\Sheet Files\WF-C03-MOT_2.dwg

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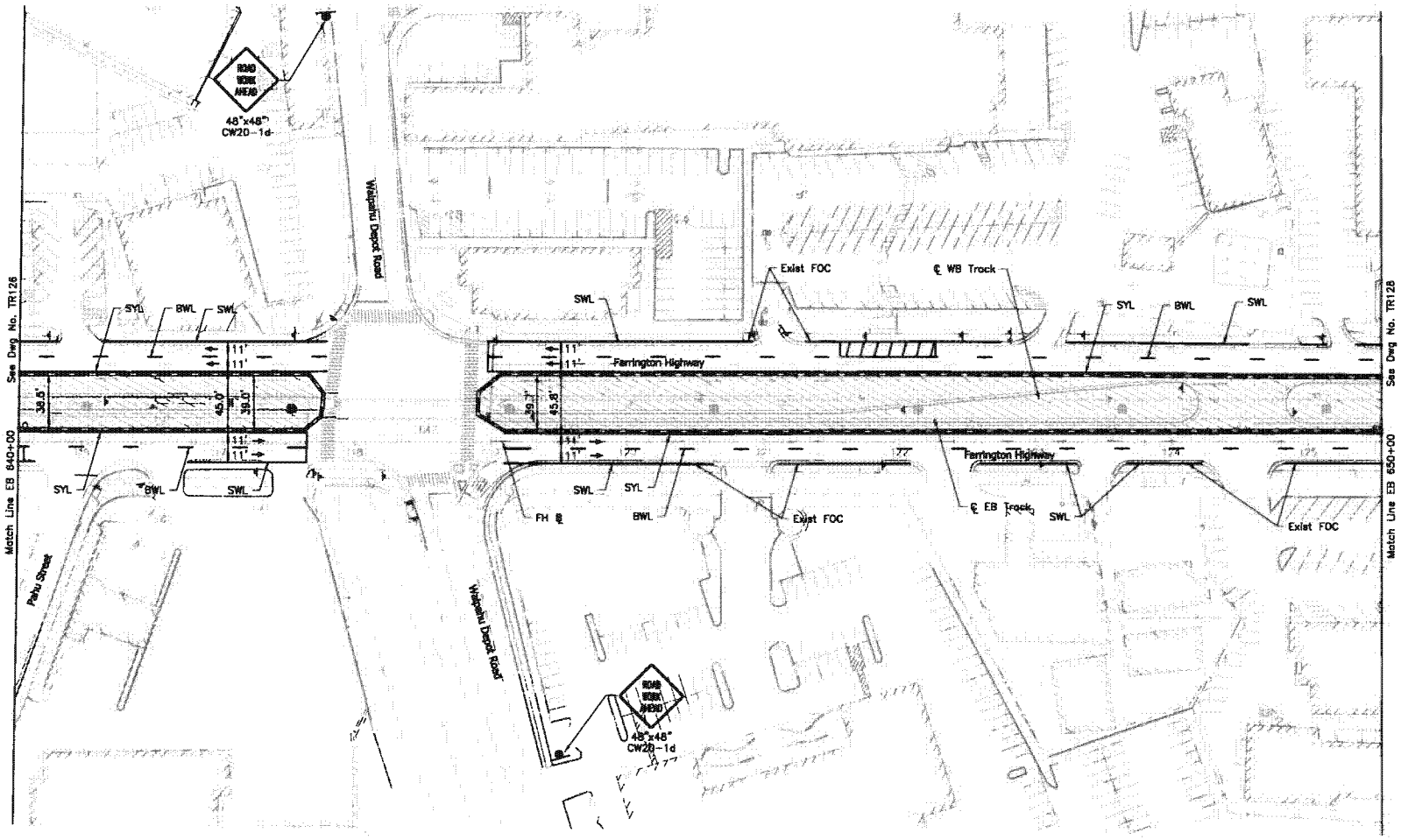

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NOTES

1. For general notes, see Dwg No. TG001.

LEGEND

- Work Zone
- Bus Pullout Area
- Concrete Barrier
- Proposed Traffic Control
- SYL Temporary Solid Yellow Line
- SWL Temporary Solid White Line
- BWL Temporary Broken White Line
- DWL Temporary Dashed White Line
- Flow of Traffic
- Guideway Column Location
- Attenuator
- Existing Sign
- FOC Face of Curb
- EP Edge of Pavement

40' 0 40'

Rev	By	Date	Description
A	MH	004-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: B Wardell
Drawn: J Deroeier
Checked: E Liberman
Approved: M Hall
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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WEST O'AHU/FARRINGTON DESIGN-BUILD
MAINTENANCE OF TRAFFIC PLAN

EB 640+00 TO EB 650+00

Contract No.: DB-1200
CADD File: WF-C03-TR127
Drawing No: TR127 Rev. A
Scale: 1"=40'
Page No. 263 of 312

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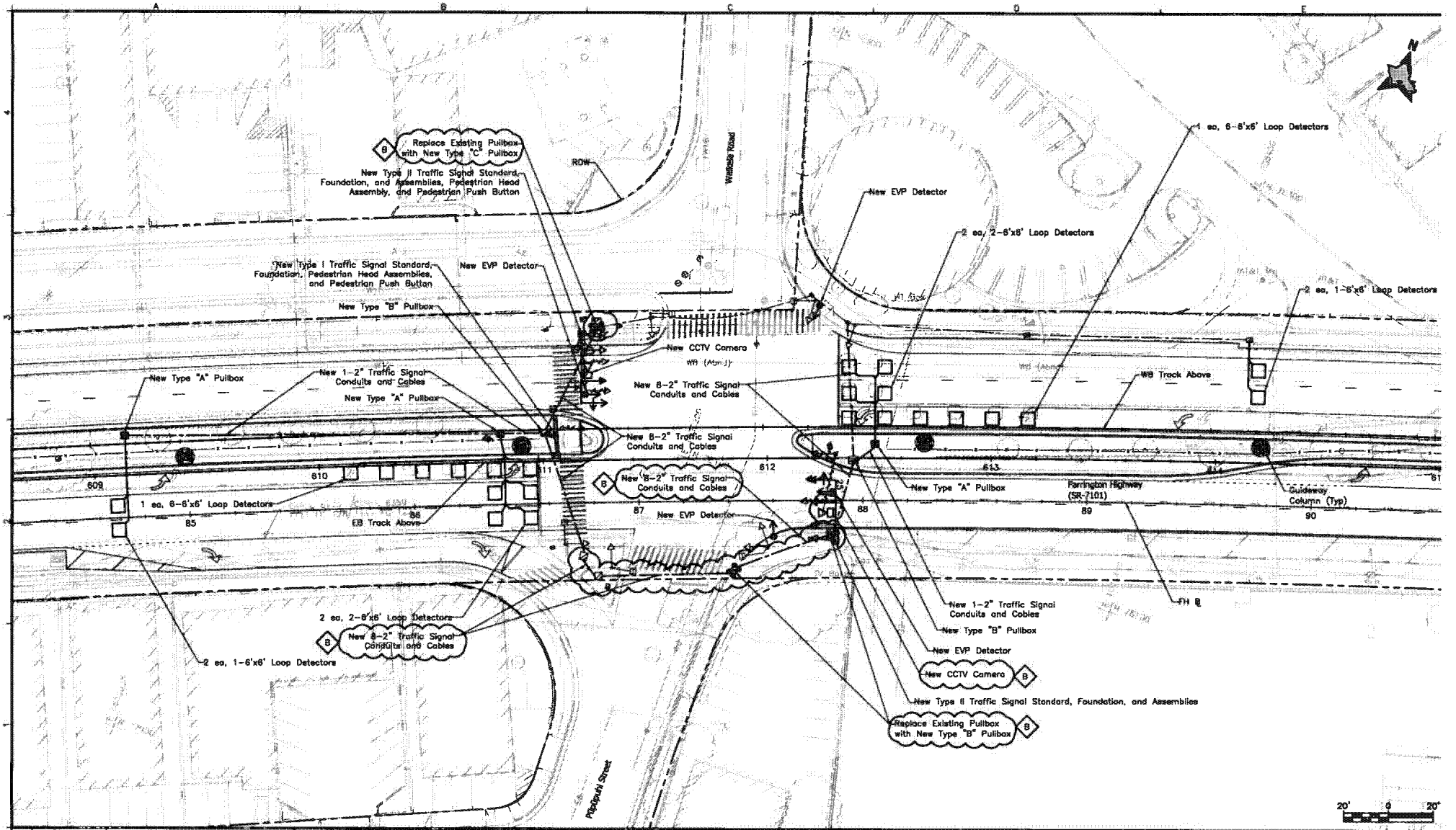


Rev	By	Date	Description
B	KKN	05-22-09	Added CCTV Camera
A	KKN	04-03-09	Issued for Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: Z Tong
Drawn: R Quemada
Checked: K Niiya
Approved: K Niiya
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: ATA AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS - HONOLULU, HAWAII

For reduced prints, original page size in inches:

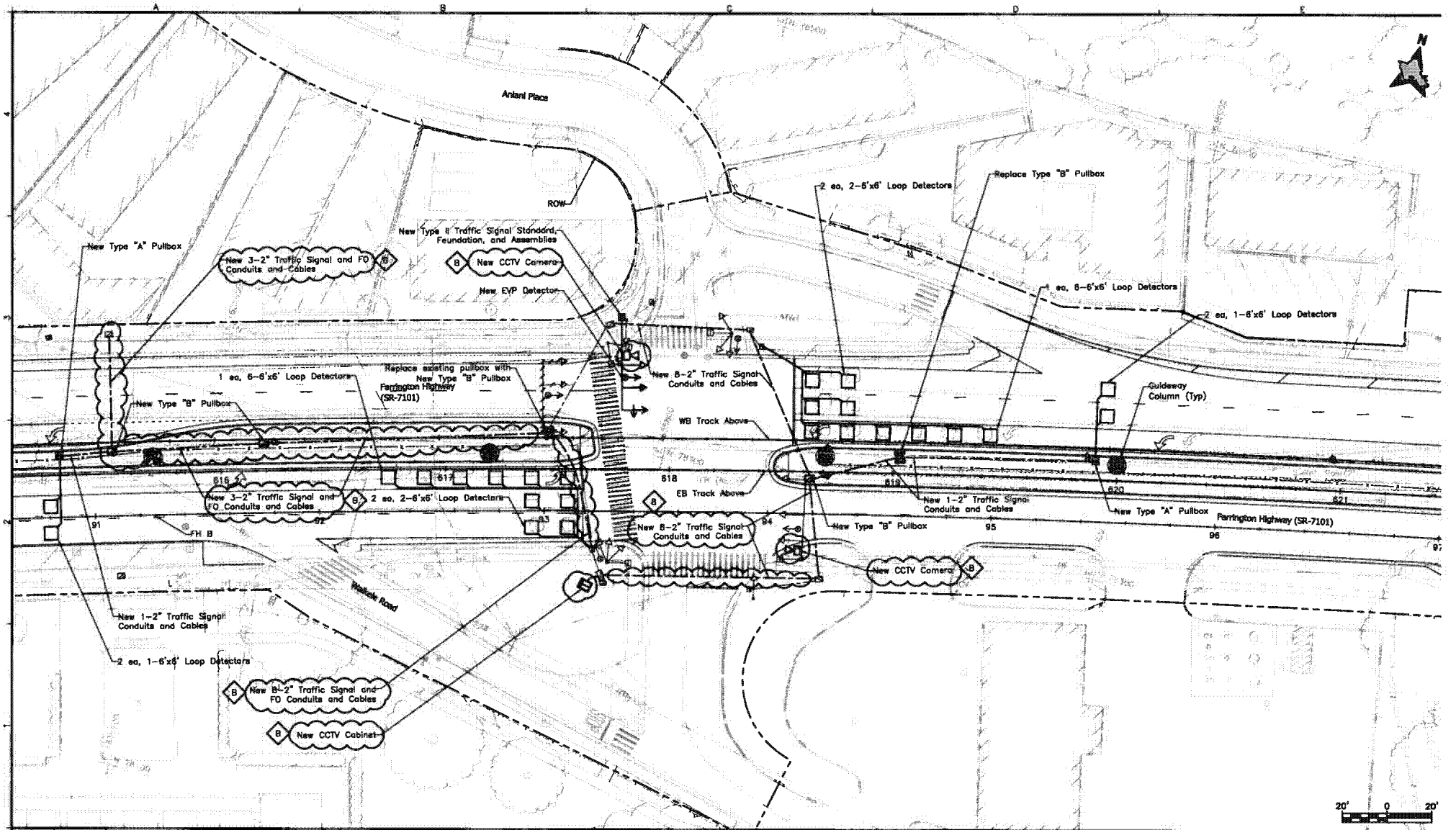
WEST O'AHU/FARRINGTON DESIGN-BUILD

TRAFFIC SIGNAL PLAN

FARRINGTON HWY AT WAIKELE RD/PŪPŪPUHI ST

Contract No.: DB-1200
CADD File: WF-C04-TR507
Drawing No.: TR507 Rev. B
Scale: 1"=20'
Page No. 292 of 312

AR00077613



Rev	By	Date	Description
B	KKN	05-22-09	Added CCTV Camera
A	KKN	04-03-09	Issued for Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: Z Tong
Drawn: R Quemada
Checked: K Niiya
Approved: K Niiya
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
For reduced prints, original page size in inches:

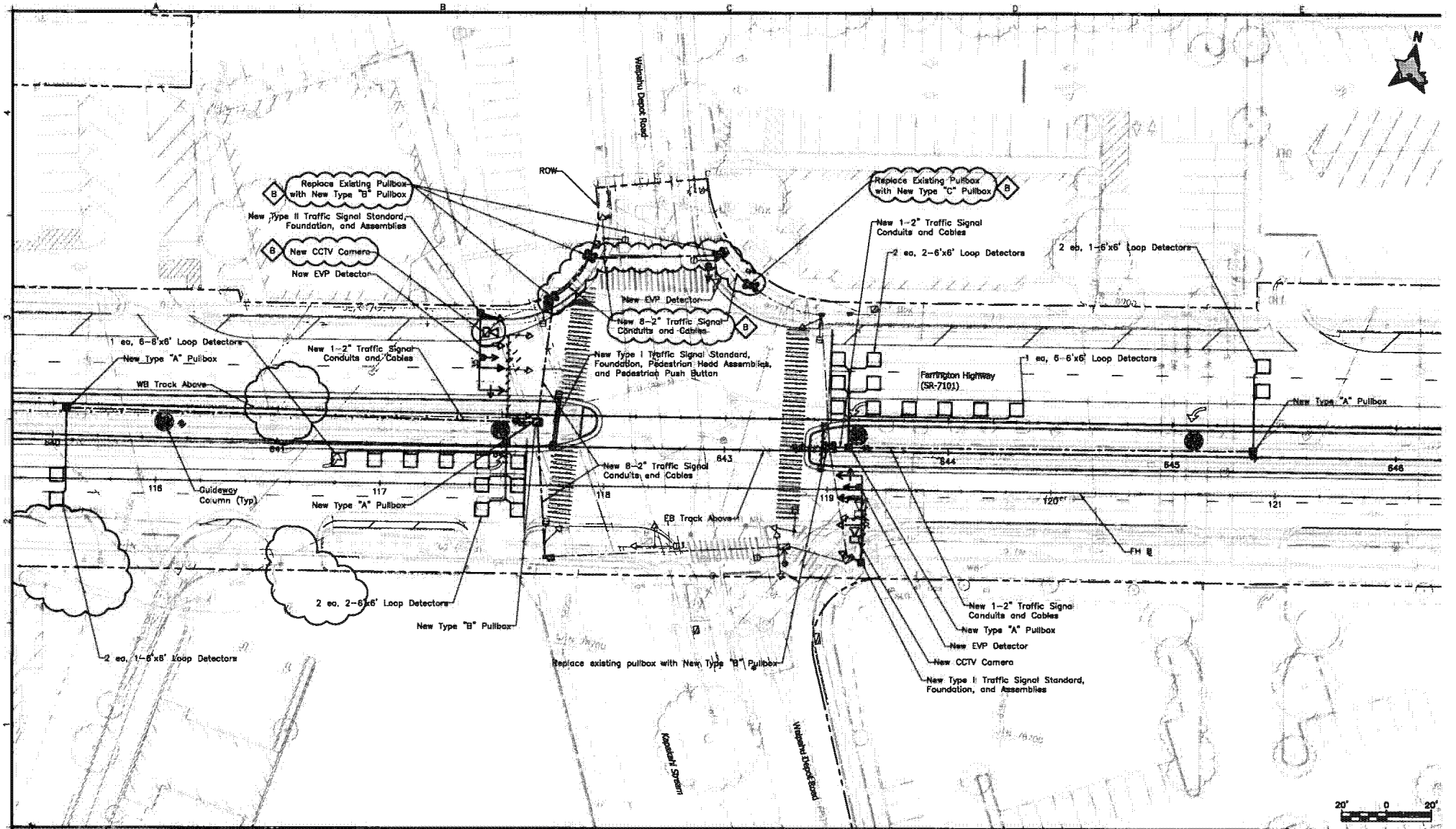
Subconsultant: AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

WEST O'AHU/FARRINGTON DESIGN-BUILD

TRAFFIC SIGNAL PLAN

FARRINGTON HWY AT ANIANI PL/WAIKELE RD

Contract No.: DB-1200
CADD File: WF-C04-TR508
Drawing No: TR508 Rev. B
Scale: 1"=20'
Page No. 293 of 312



Rev	By	Date	Description
B	KKN	05-22-09	Added CCTV Camera
A	KKN	04-03-09	Issued for Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: Z Tong
Drawn: R Quemada
Checked: K Niiya
Approved: K Niiya
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
For reduced prints, original page size in inches:

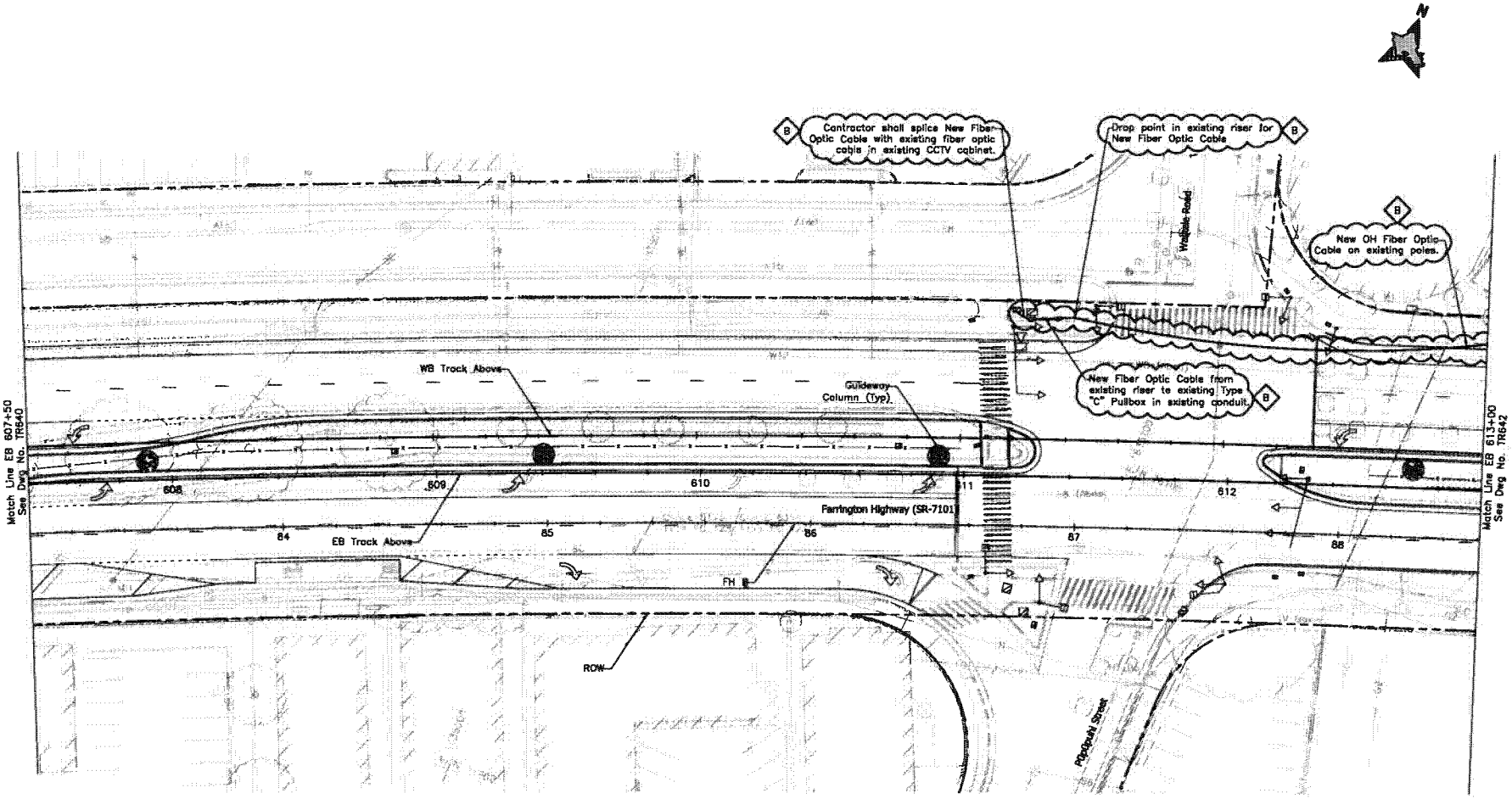
Subconsultant: AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

WEST O'AHU/FARRINGTON DESIGN-BUILD

TRAFFIC SIGNAL PLAN

FARRINGTON HWY AT WAIPAHU DEPOT RD

Contract No.: DB-1200
CADD File: WF-C04-TR509
Drawing No: TR509 Rev. B
Scale: 1"=20'
Page No. 294 of 312



NOTES

1. For traffic signal relocation see Drawing No. TR507.
2. Fiber Optic Cable shown on this DWG and TR642 does NOT replace existing fiber optic cable.

20' 0 20'

Rev	By	Date	Description
B	KKN	05-22-09	Revised Interconnect
A	KKN	04-03-09	Issued for Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: Z Tong
Drawn: R Quemada
Checked: K Niiya
Approved: K Niiya
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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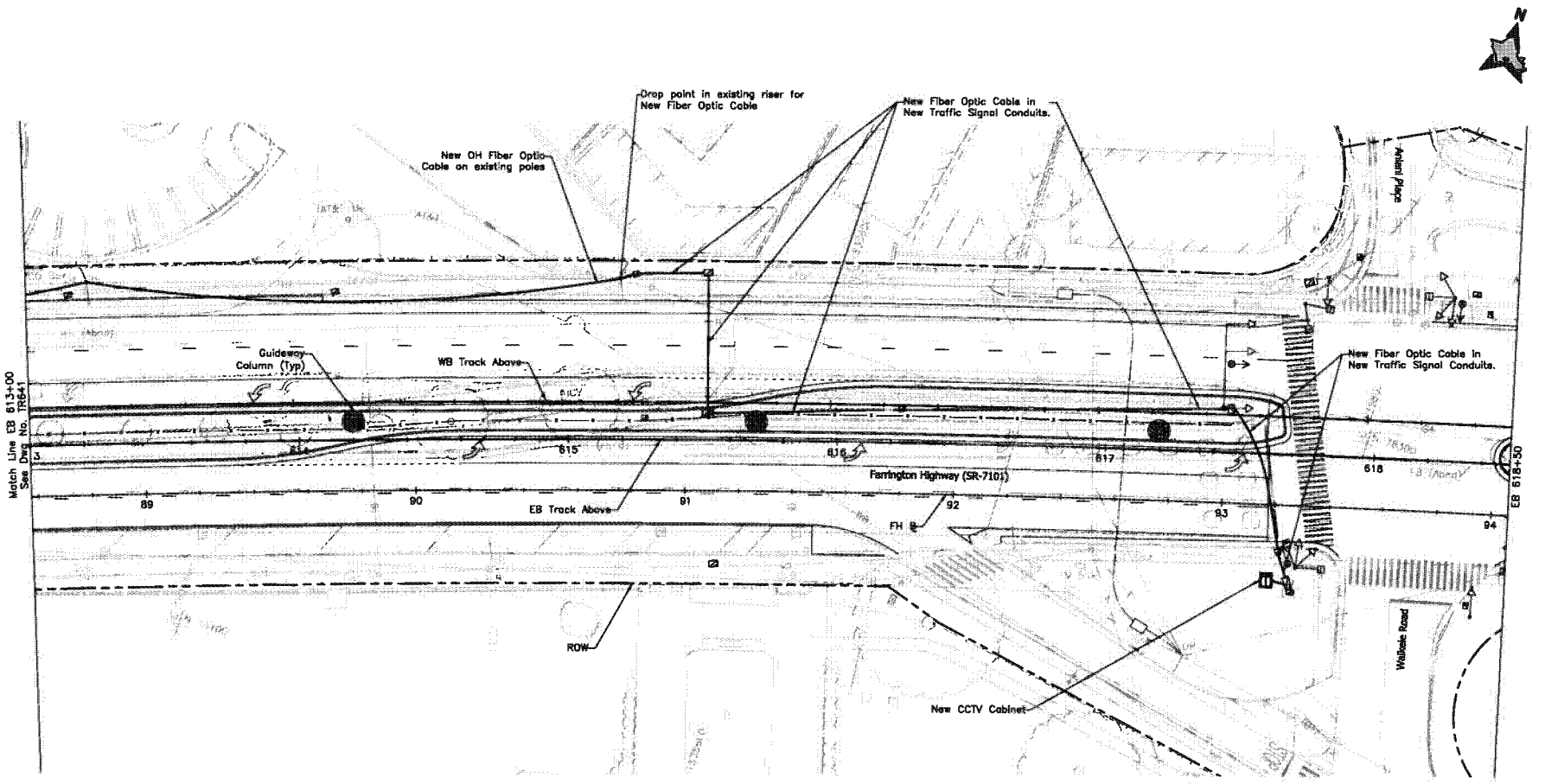
WEST O'AHU/FARRINGTON DESIGN-BUILD

FIBER OPTIC & TRAFFIC SIGNAL INTERCONNECT PLAN

EB 607+50 TO EB 613+00

Contract No.: DB-1200
CADD File: WF-C04-TR641
Drawing No: TR641 Rev. B
Scale: 1"=20'
Page No. 305 of 312

AR00077616



NOTES

1. For traffic signal relocation see Drawing No. TR508.
2. Fiber Optic Cable shown on this DWG and TR641 does NOT replace existing fiber optic cable.

20' 0 20'

Rev	By	Date	Description
A	KKN	05-22-09	Issued for Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: Z Tang
Drawn: R Quemado
Checked: K Niiya
Approved: K Niiya
Date: 05-22-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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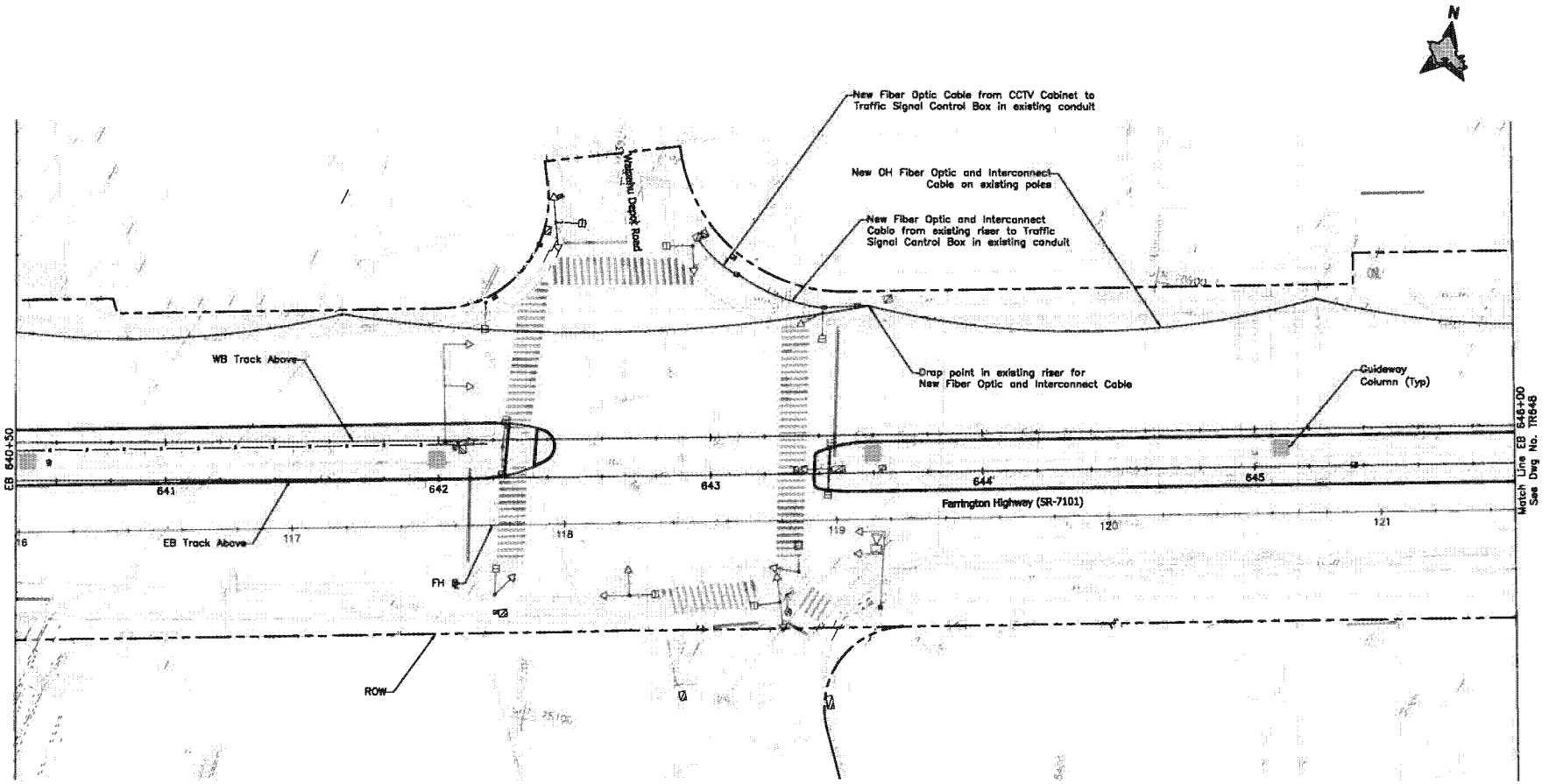
WEST O'AHU/FARRINGTON DESIGN-BUILD

FIBER OPTIC & TRAFFIC SIGNAL INTERCONNECT PLAN

EB 613+00 TO EB 618+50

Contract No.: DB-1200
CADD File: WF-C04-TR642
Drawing No: TR642 Rev. A
Scale: 1"=20'
Page No. 305A of 312

AR00077617



NOTES:

For traffic signal relocation see Drawing No. TR509.

20' 0 20'

Rev	By	Date	Description
A	KKN	04-03-09	Issued for Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: Z Tong
Drawn: R Quamado
Checked: K Niiyo
Approved: K Niiyo
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: AATA AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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

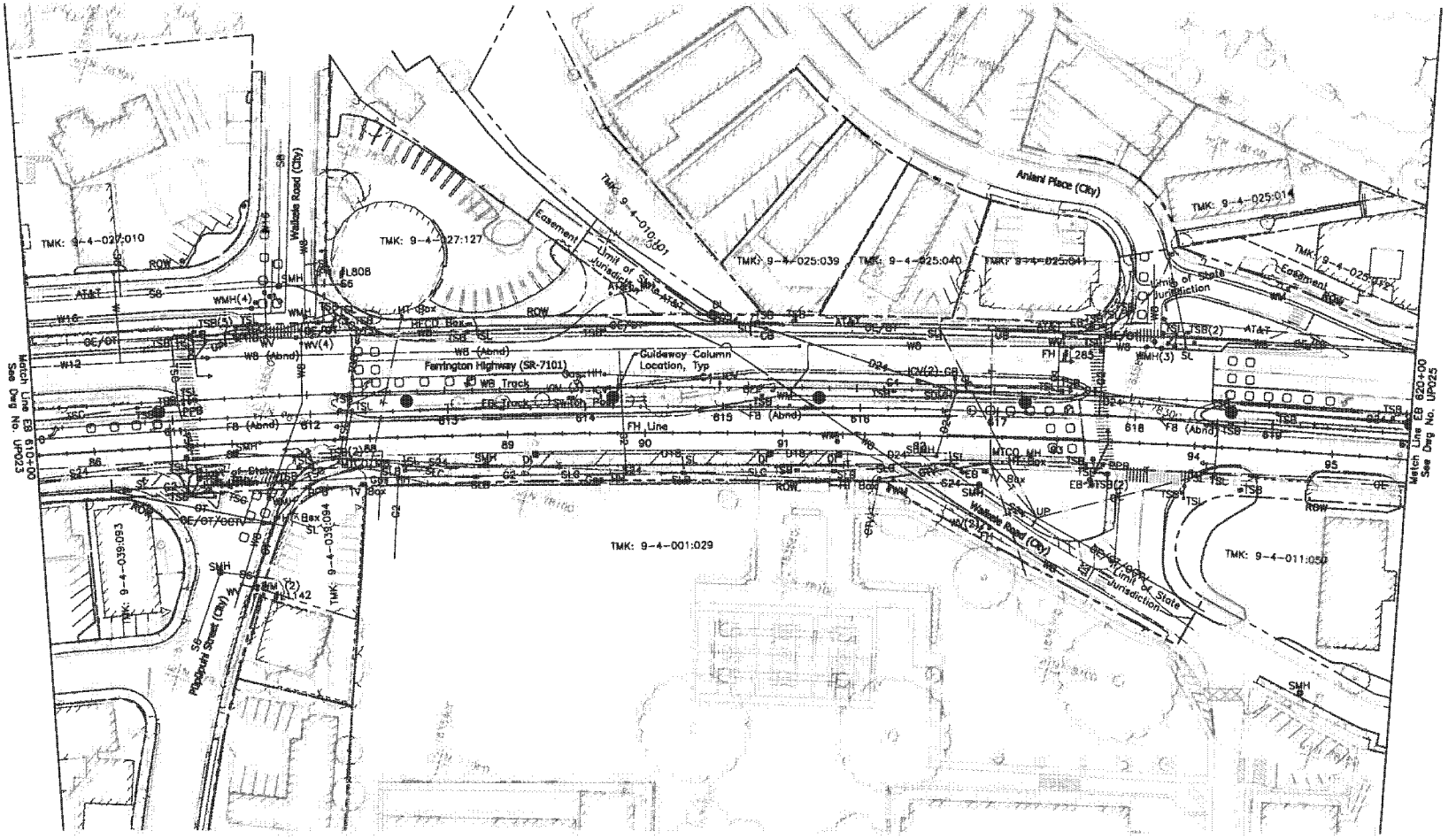
WEST O'AHU/FARRINGTON DESIGN-BUILD

FIBER OPTIC & TRAFFIC SIGNAL INTERCONNECT PLAN

EB 640+50 TO EB 646+00

Contract No.: DB-1200
CADD File: WF-C04-TR647
Drawing No: TR647 Rev. A
Scale: 1"=20'
Page No. 306 of 312

AR00077618



40' 0 40'

Rev	By	Date	Description
A	JY	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: N/A
Drawn: D Tsiba
Checked: H Andrews
Approved: J Yamamoto
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: R. M. TOWILL CORPORATION

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

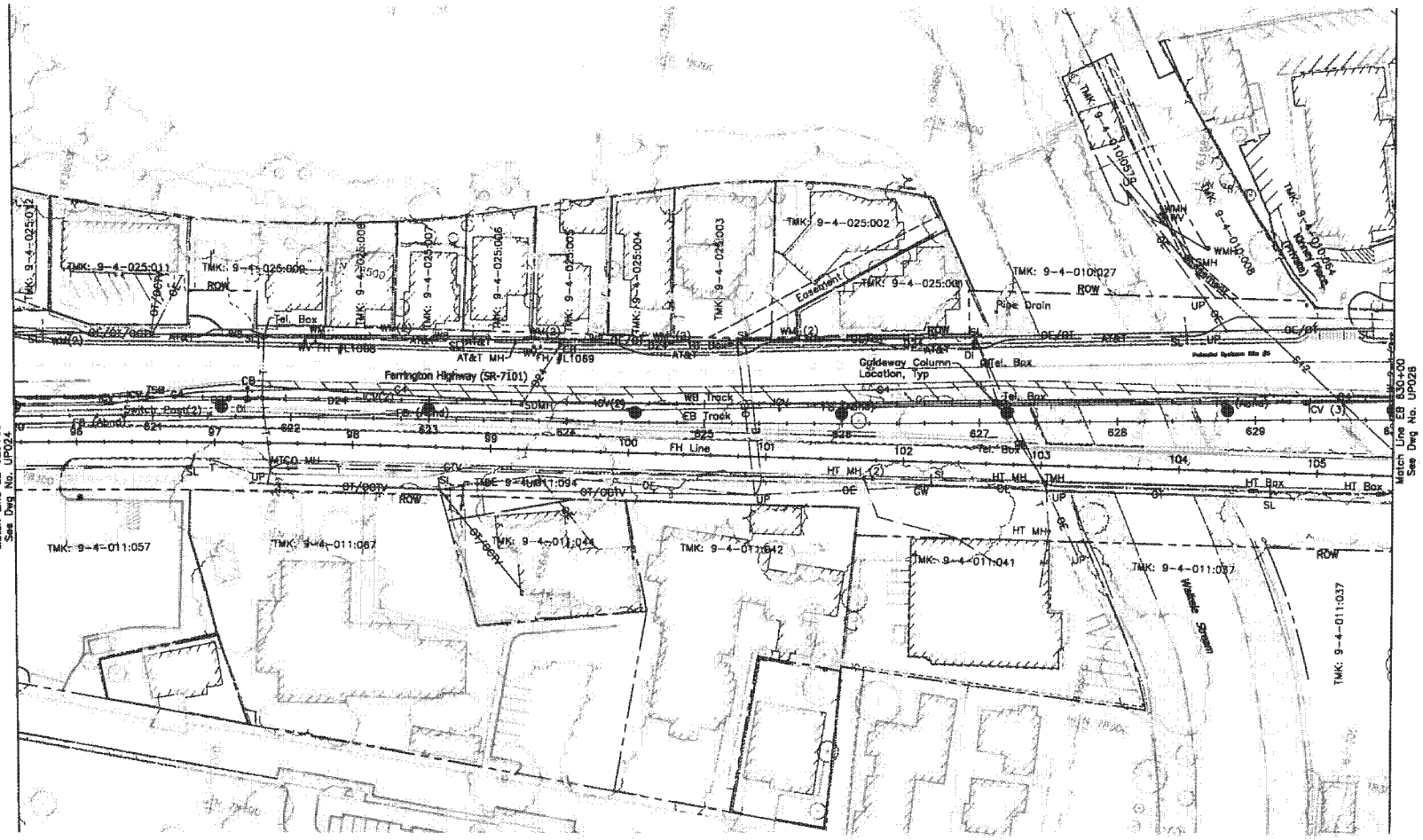
WEST O'AHU/FARRINGTON DESIGN-BUILD

COMPOSITE PLAN
EXISTING UTILITIES

EB 610+00 TO EB 620+00

Contract No.: DB-1200
CADD File: WF-002-UP024
Drawing No: UP024
Rev. A
Scale: 1"=40'
Page No. 54 of 314

AR00077619



40' 0 40'

Rev	By	Date	Description
A	JY	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: N/A
Drawn: D Taba
Checked: H Andrews
Approved: J Yamamoto
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PARSONS BRINCKERHOFF
1001 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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

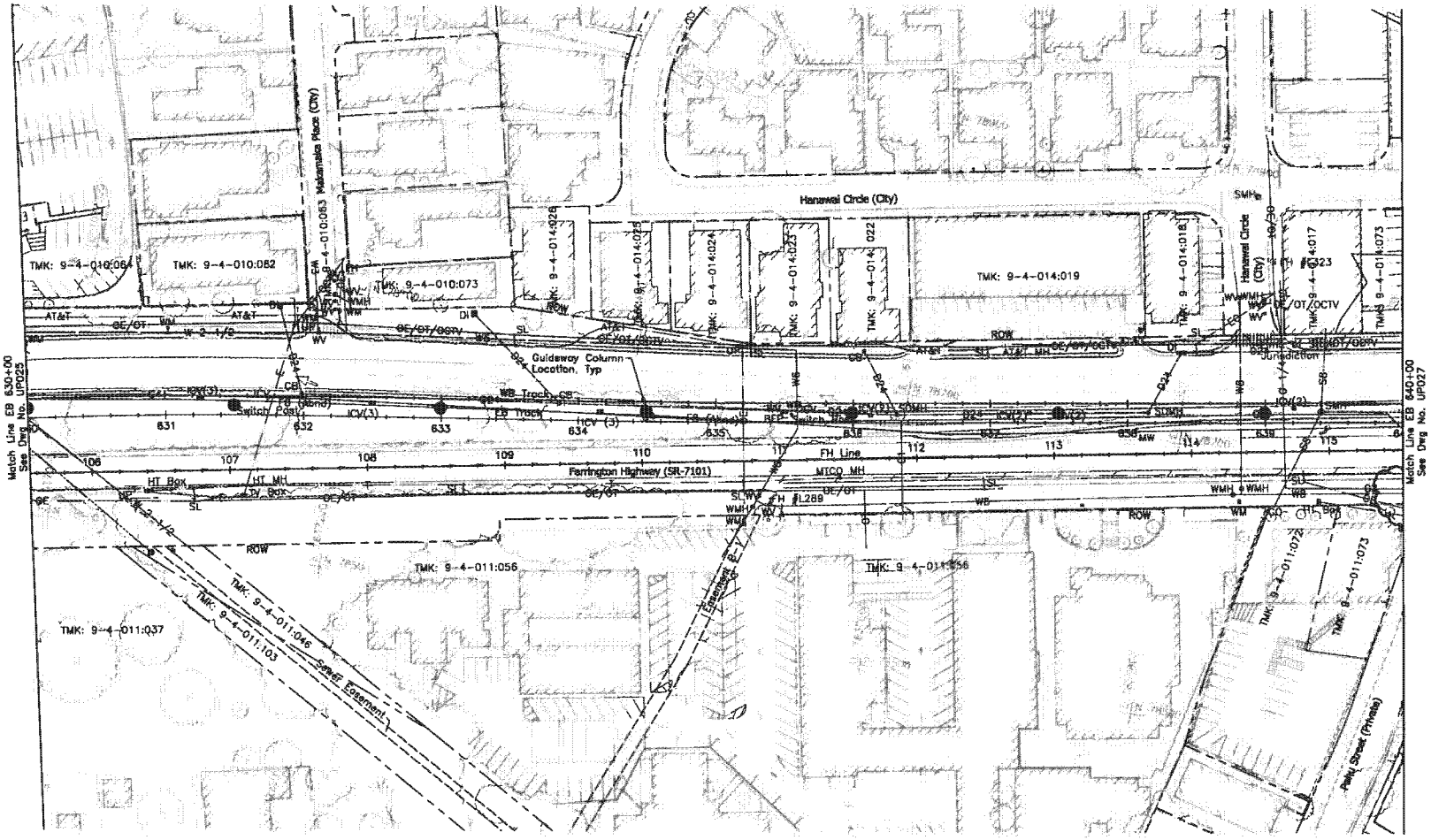
WEST O'AHU/FARRINGTON DESIGN-BUILD

COMPOSITE PLAN
EXISTING UTILITIES

EB 620+00 TO EB 630+00

Contract No.: DB-1200
CADD File: WF-D02-UP025
Drawing No.: UP025 Rev. A
Scale: 1"=40'
Page No. 55 of 314

AR00077620



40' 0 40'

Rev	By	Date	Description
A	JY	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: N/A
Drawn: D Tobo
Checked: H Andrews
Approved: J Yamamoto
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: R. M. TOWILL CORPORATION

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

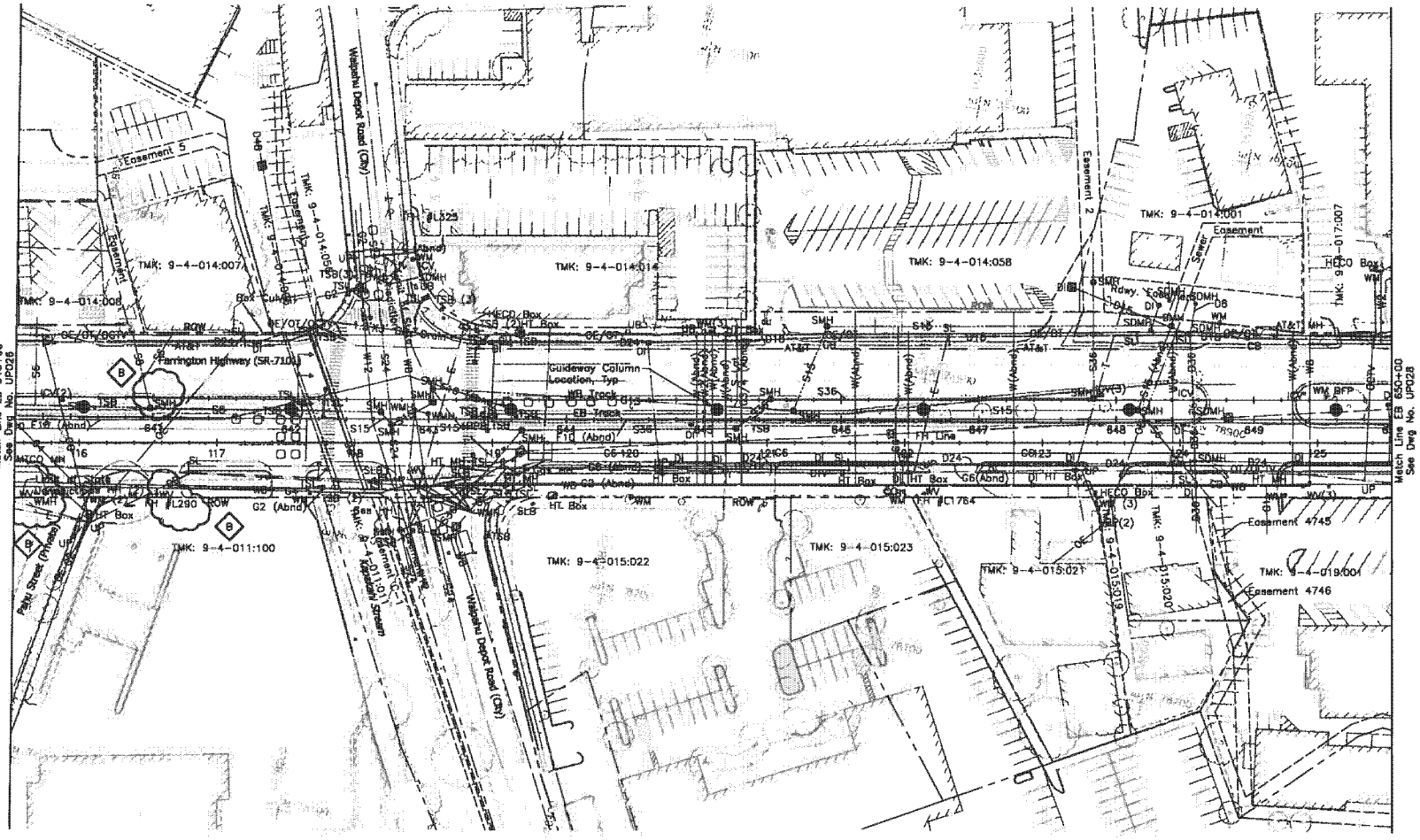
WEST O'AHU/FARRINGTON DESIGN-BUILD

COMPOSITE PLAN
EXISTING UTILITIES

EB 630+00 TO EB 640+00

Contract No.: DB-1200
CADD File: WF-D02-UP026
Drawing No: UP026 Rev. A
Scale: 1"=40'
Page No. 56 of 314

AR00077621



Rev	By	Date	Description
B	JY	05-22-09	Misc. Revisions
A	JY	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: N/A
Drawn: D Tobo
Checked: H Andrews
Approved: J Yamamoto
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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

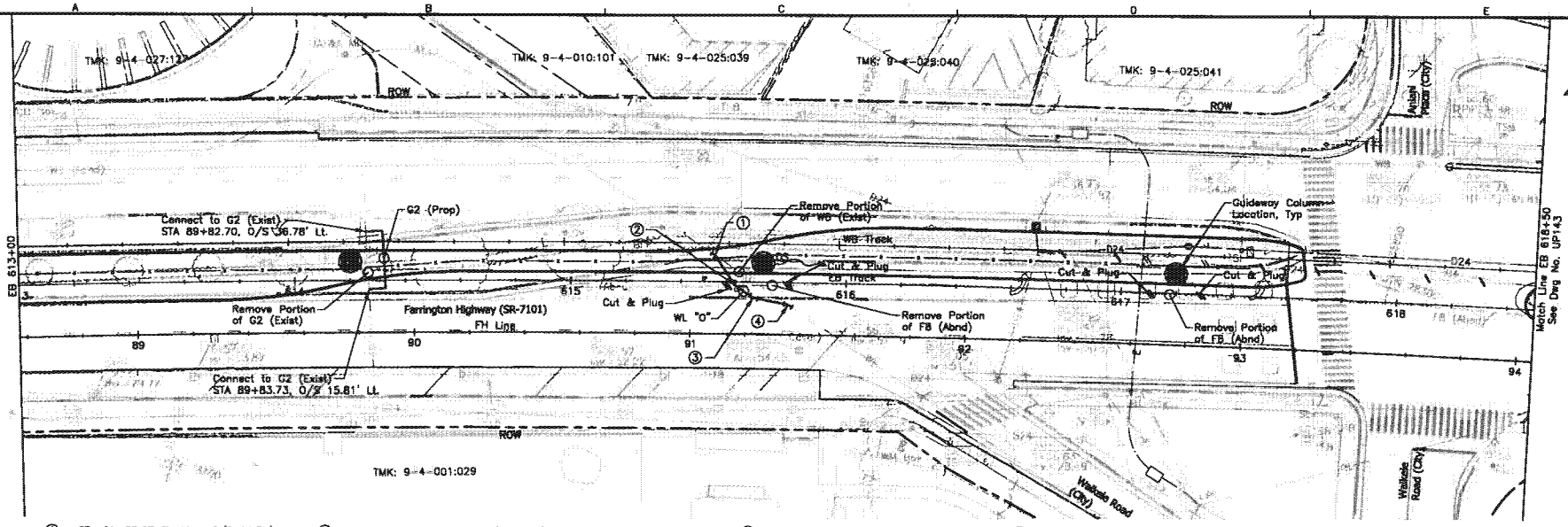
WEST O'AHU/FARRINGTON DESIGN-BUILD

COMPOSITE PLAN
EXISTING UTILITIES

EB 640+00 TO EB 650+00

Contract No.: DB-1200
CADD File: WF-002-UP027
Drawing No: UP027 Rev. B
Scale: 1"=40'
Page No. 57 of 314

AR00077622



① STA 91+08.97 FH Line, O/S 28.54' Lt.
=0+00 WL "O"
Connect to WB (Exist)
1-8" Xs Bend (H)
1-Conc Blk. w/ Structural Struts
1-8" Sleeve, 15" Long
8± LF D.I. Pipe, CL. 52

② STA 91+16.21 FH Line, O/S 17.78' Lt.
=0+13 WL "O"
1-8" Xs Bend (H)
1-Conc Blk.

③ STA 91+22.87 FH Line, O/S 13.35' Lt.
=0+21 WL "O"
1-8" Xs Bend (H)
1-Conc Blk.

④ STA 91+35.62 FH Line, O/S 10.90' Lt.
=0+34 WL "O"
Connect to WB (Exist)
1-8" Xs Bend (H)
1-Conc Blk. w/ Structural Struts
1-8" Sleeve, 15" Long
8± LF D.I. Pipe, CL. 52

NOTE:
For drainage relocations, see Drawing No. UP142A.

20' 0 20'
4' 0 4'

Rev	By	Date	Description
B	JY	05-22-09	Misc. Revisions
A	JY	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: D Toba
Drawn: D Toba
Checked: H Andrews
Approved: J Yamamoto
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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

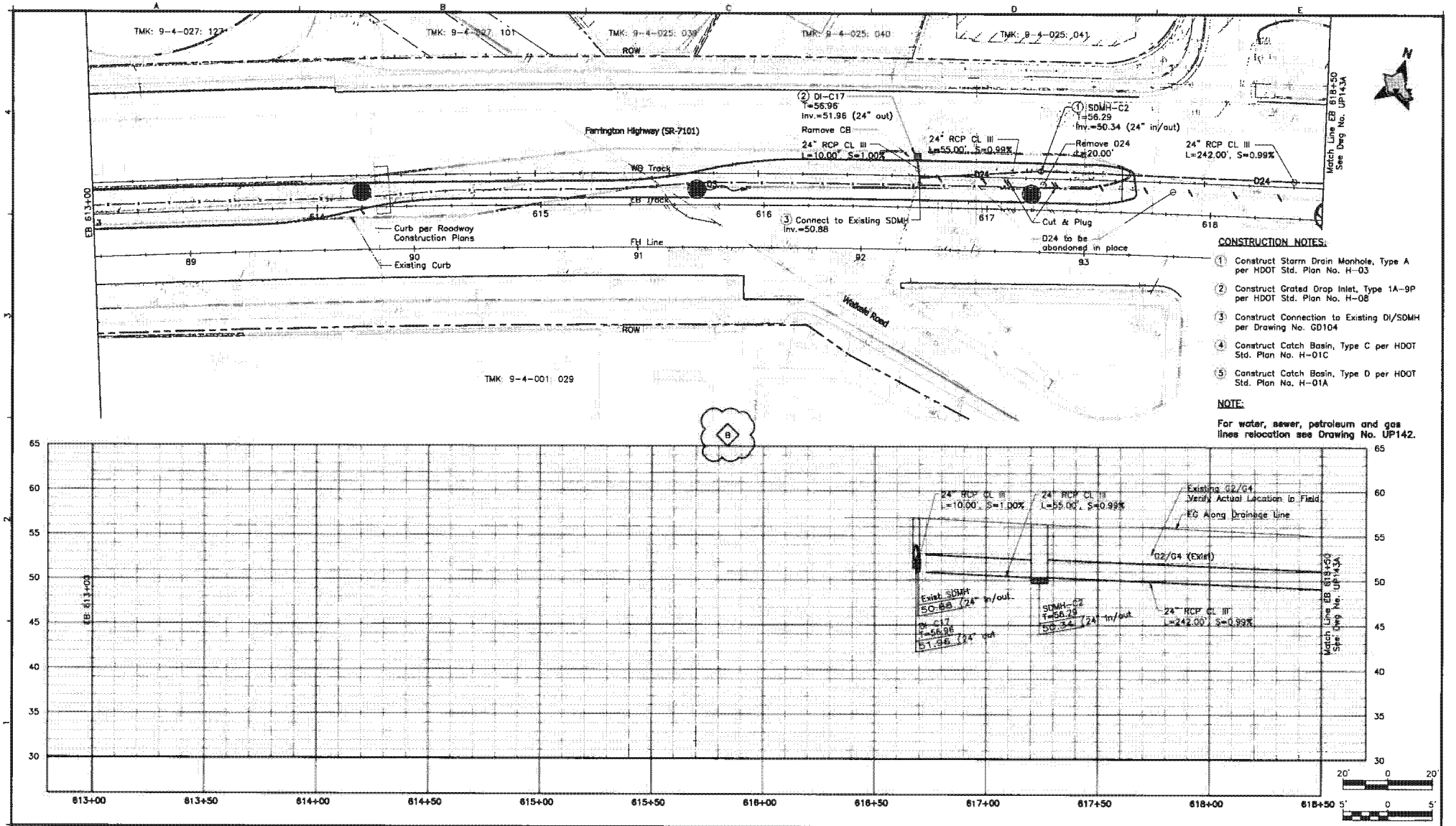
WEST O'AHU/FARRINGTON DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 613+00 TO EB 618+50 SHEET 1 OF 2

Contract No.: DB-1200
CADD File: WF-D03-UP142
Drawing No: UP142 Rev. B
Scale: 1"=20'
Page No. 101 of 314

AR00077623



CONSTRUCTION NOTES:

1. Construct Storm Drain Manhole, Type A per HDOT Std. Plan No. H-03
2. Construct Grated Drop Inlet, Type 1A-9P per HDOT Std. Plan No. H-08
3. Construct Connection to Existing DI/SDMH per Drawing No. GD104
4. Construct Catch Basin, Type C per HDOT Std. Plan No. H-01C
5. Construct Catch Basin, Type D per HDOT Std. Plan No. H-01A

NOTE:

For water, sewer, petroleum and gas lines relocation see Drawing No. UP142.

Rev	By	Date	Description
B	MY	05-22-09	Added Profile & Misc. Update
A	MY	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: E Leung
Drawn: D Chua
Checked: N Oronse
Approved: M Yonamine
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 · Honolulu, HI 96813

Subconsultant: LYON ASSOCIATES

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

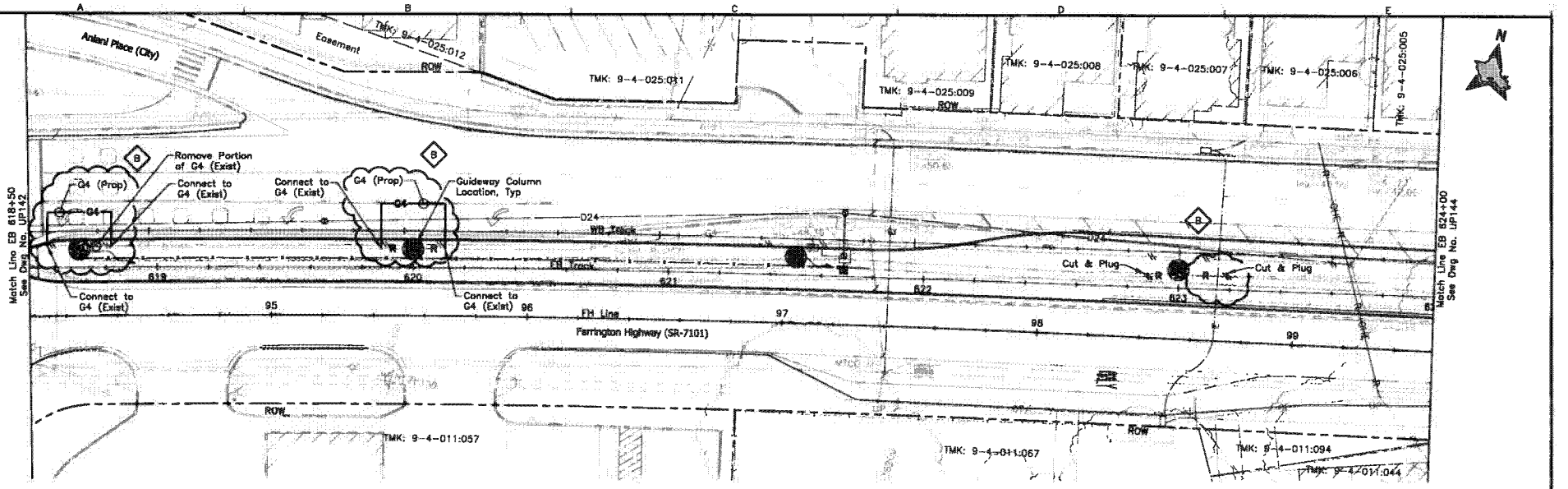
WEST O'AHU/FARRINGTON DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 613+00 TO EB 618+50 SHEET 2 OF 2

Contract No.: DB-1200
CADD File: WF-003-UP142A
Drawing No: UP142A
Rev. B
Scale: 1"=20' H, 1"=5' V
Page No. 102 of 314

AR00077624



NOTE:

For drainage relocations, see Drawing No. UP143A.

20' 0 20'

4' 0 4'

Rev	By	Date	Description
B	JY	05-22-09	Misc. Revisions
A	JY	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: D Taba
Drawn: D Taba
Checked: H Andrews
Approved: J Yamamoto
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

For reduced prints, original page size in inches:

WEST O'AHU/FARRINGTON DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 618+50 TO EB 624+00 SHEET 1 OF 2

Contract No.: DB-1200
CADD File: WF-D03-UP143
Drawing No: UP143 Rev. B
Scale: 1"=20'
Page No. 103 of 314

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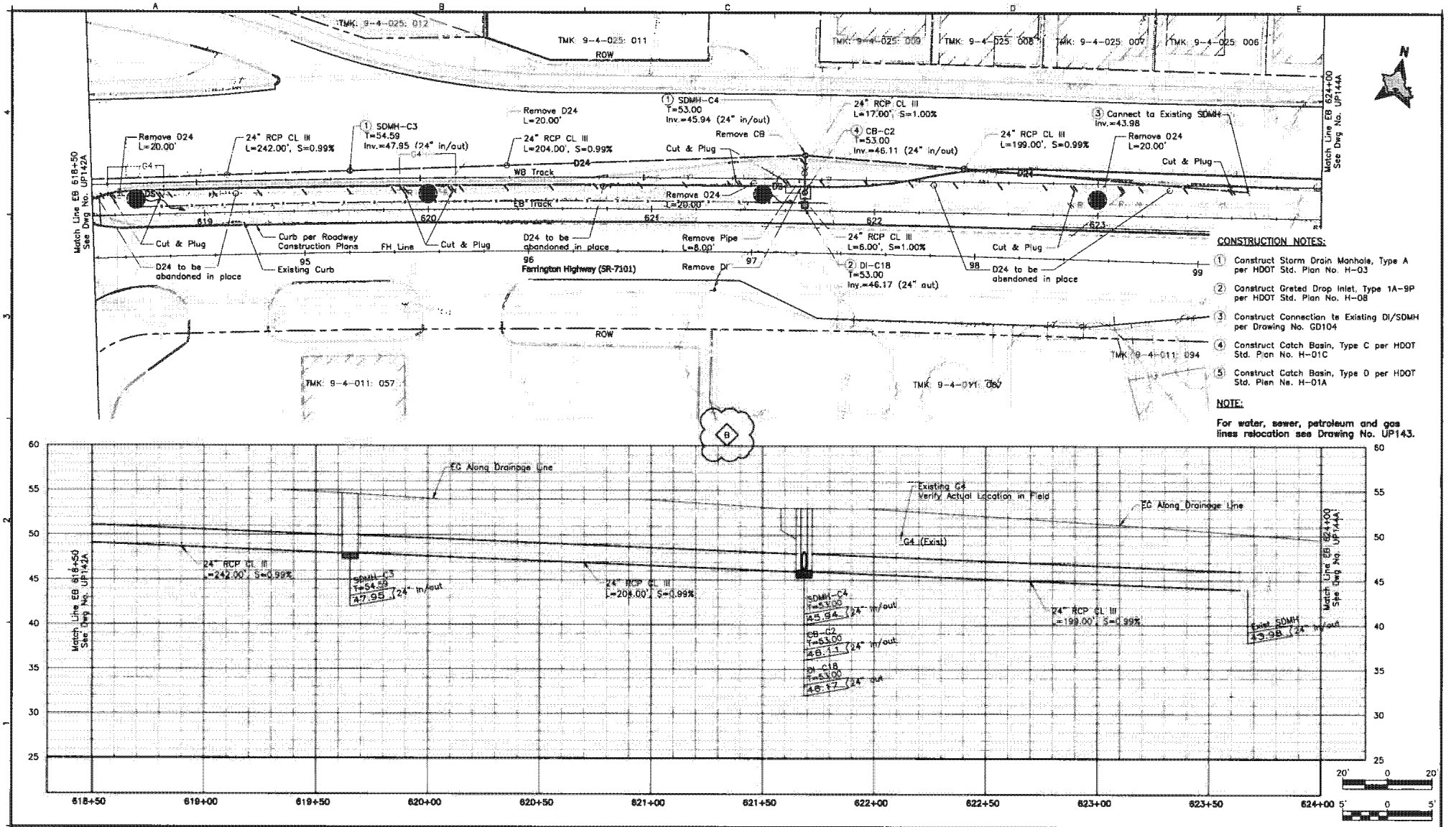


CONSTRUCTION NOTES:

1. Construct Storm Drain Manhole, Type A per HDOT Std. Plan No. H-03
2. Construct Greted Drop Inlet, Type 1A-9P per HDOT Std. Plan No. H-08
3. Construct Connection to Existing DI/SDMH per Drawing No. GD104
4. Construct Catch Basin, Type C per HDOT Std. Plan No. H-01C
5. Construct Catch Basin, Type D per HDOT Std. Plan No. H-01A

NOTE:

For water, sewer, petroleum and gas lines relocation see Drawing No. UP143.

Rev	By	Date	Description
B	MY	05-22-09	Added Profile & Misc. Update
A	MY	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: E Leung
Drawn: D Chua
Checked: N Orense
Approved: M Yonamine
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: LYON ASSOCIATES

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

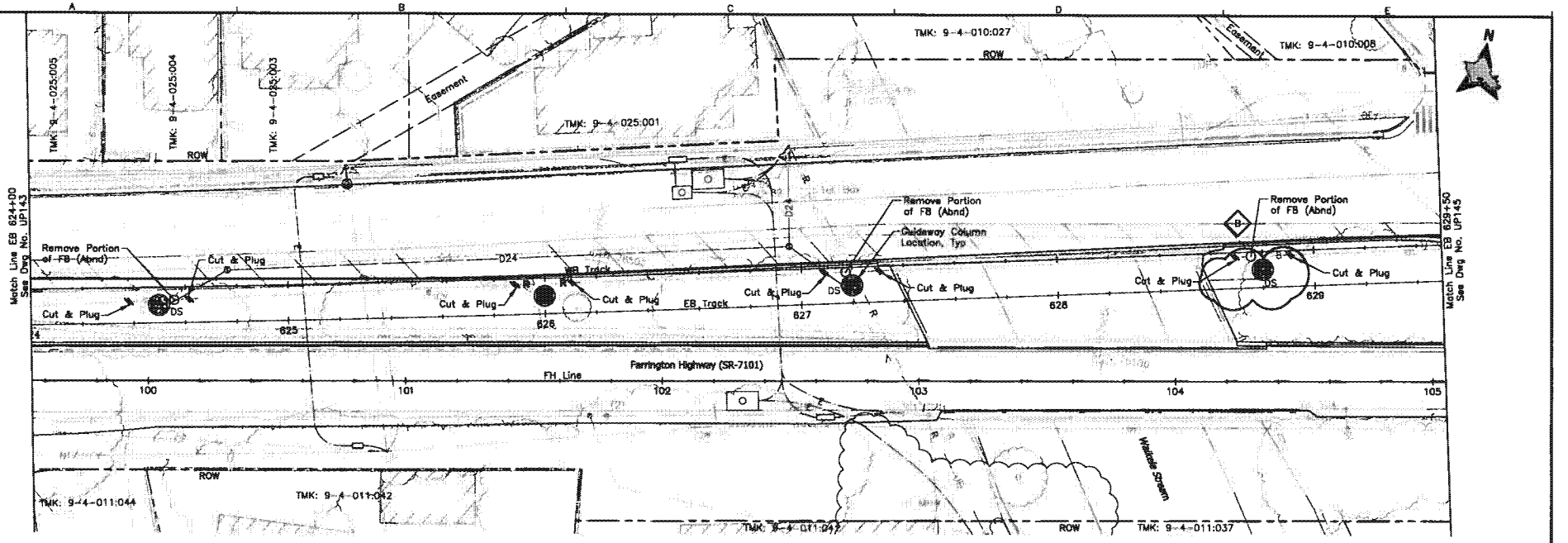
WEST O'AHU/FARRINGTON DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 618+50 TO EB 624+00 SHEET 2 OF 2

Contract No.: DB-1200
CADD File: WF-D03-UP143A
Drawing No: UP143A
Rev. B
Scale: 1"=20' H, 1"=5' V
Page No. 104 of 314

AR00077626



NOTE:

For drainage relocations, see Drawing No. UP144A.

20' 0 20'

Rev	By	Date	Description
B	JY	05-22-09	Drainage Revision
A	JY	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: D Toba
Drawn: D Toba
Checked: H Andrews
Approved: J Yamamoto
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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

WEST O'AHU/FARRINGTON DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 624+00 TO EB 629+50 SHEET 1 OF 2

Contract No.: DB-1200
CADD File: WF-D03-UP144
Drawing No: UP144 Rev. B
Scale: 1"=20'
Page No. 105 of 314

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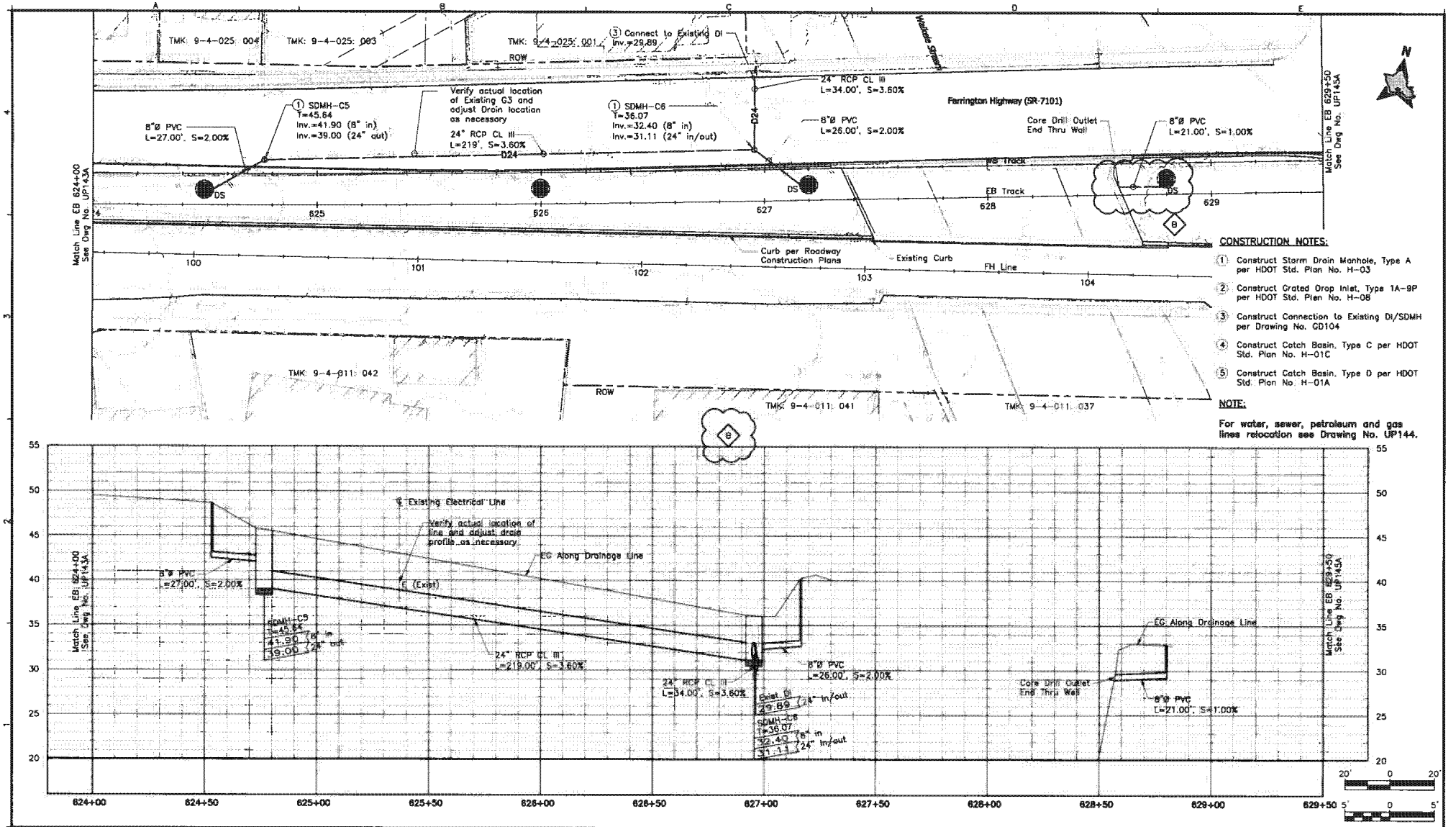


CONSTRUCTION NOTES:

1. Construct Storm Drain Manhole, Type A per HDOT Std. Plan No. H-03
2. Construct Grated Drop Inlet, Type 1A-9P per HDOT Std. Plan No. H-08
3. Construct Connection to Existing DI/SDMH per Drawing No. GD104
4. Construct Catch Basin, Type C per HDOT Std. Plan No. H-01C
5. Construct Catch Basin, Type D per HDOT Std. Plan No. H-01A

NOTE:

For water, sewer, petroleum and gas lines relocation see Drawing No. UP144.

Rev	By	Date	Description
B	MY	05-22-09	Added Profile & Misc. Update
A	MY	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: E Leung
Drawn: D Chua
Checked: N Drense
Approved: M Yonamine
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: LYON ASSOCIATES

For reduced prints, original page size in inches.

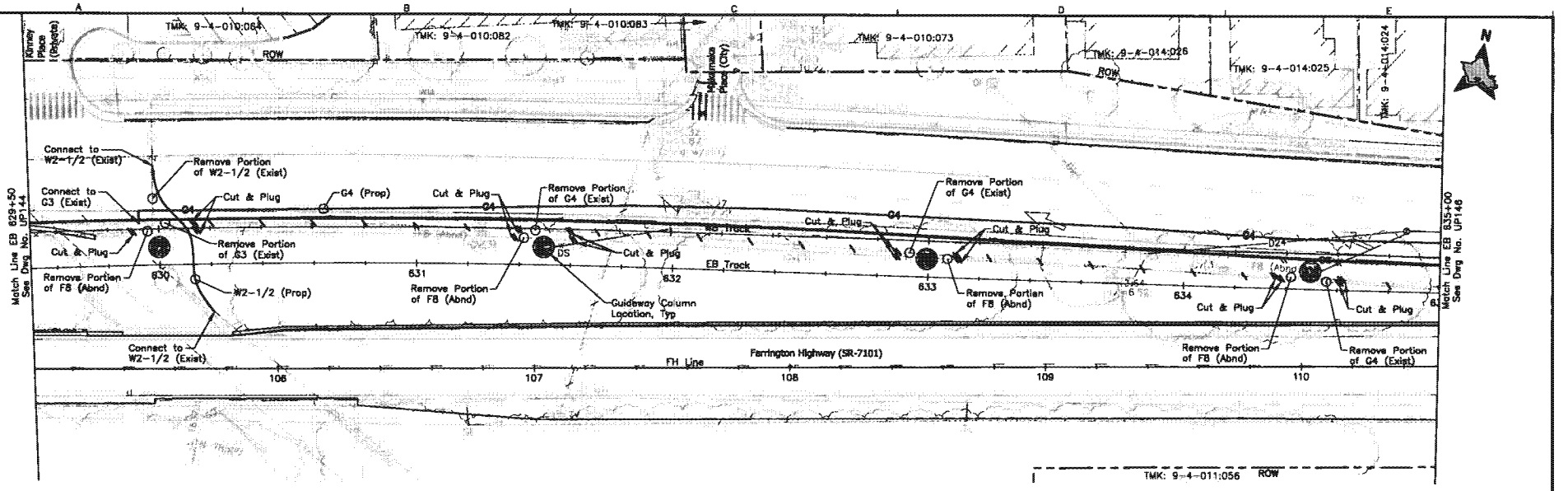
WEST O'AHU/FARRINGTON DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 624+00 TO EB 629+50 SHEET 2 OF 2

Contract No.: DB-1200
CADD File: WF-D03-UP144A
Drawing No: UP144A
Rev. B
Scale: 1"=20' H, 1"=5' V
Page No. 106 of 314

AR00077628



NOTE:

For drainage relocations, see Drawing No. UP145A.

20' 0 20'

4' 0 4'

Rev	By	Date	Description
A	JY	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: D Toba
Drawn: D Toba
Checked: H Andrews
Approved: J Yamamoto
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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

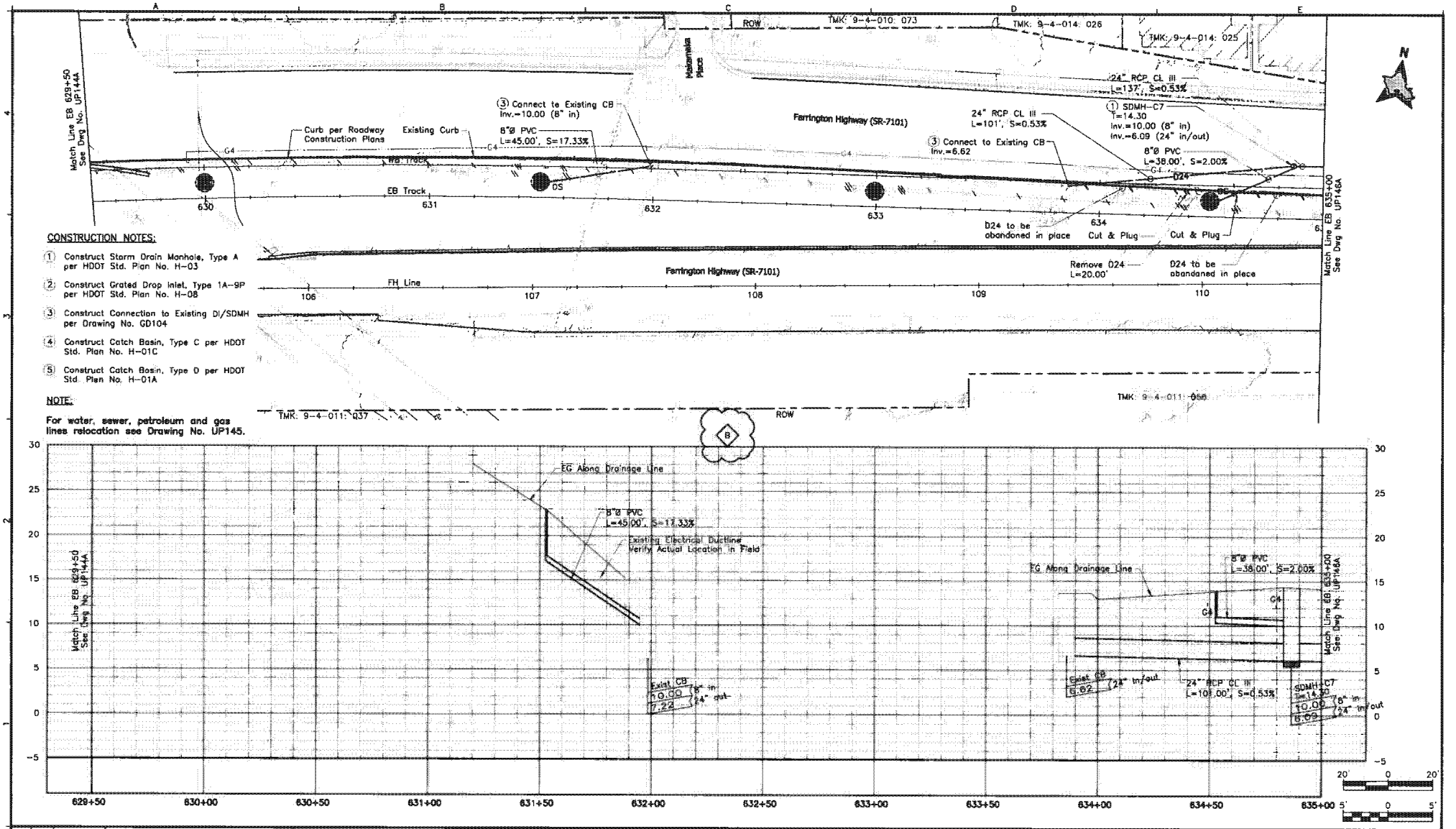
WEST O'AHU/FARRINGTON DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 629+50 TO EB 635+00 SHEET 1 OF 2

Contract No.: 08-1200
CADD File: WF-D03-UP145
Drawing No: UP145
Rev. A
Scale: 1"=20'
Page No. 107 of 314

AR00077629



CONSTRUCTION NOTES:

1. Construct Storm Drain Manhole, Type A per HDOT Std. Plan No. H-03
2. Construct Grated Drop Inlet, Type 1A-9P per HDOT Std. Plan No. H-08
3. Construct Connection to Existing DI/SDMH per Drawing No. GD104
4. Construct Catch Basin, Type C per HDOT Std. Plan No. H-01C
5. Construct Catch Basin, Type D per HDOT Std. Plan No. H-01A

NOTE:

For water, sewer, petroleum and gas lines relocation see Drawing No. UP145.

Rev	By	Date	Description
B	MY	05-22-09	Added Profile & Misc. Update
A	MY	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: E Leung
Drawn: D Chua
Checked: N Orense
Approved: M Yonamine
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: LYON ASSOCIATES

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

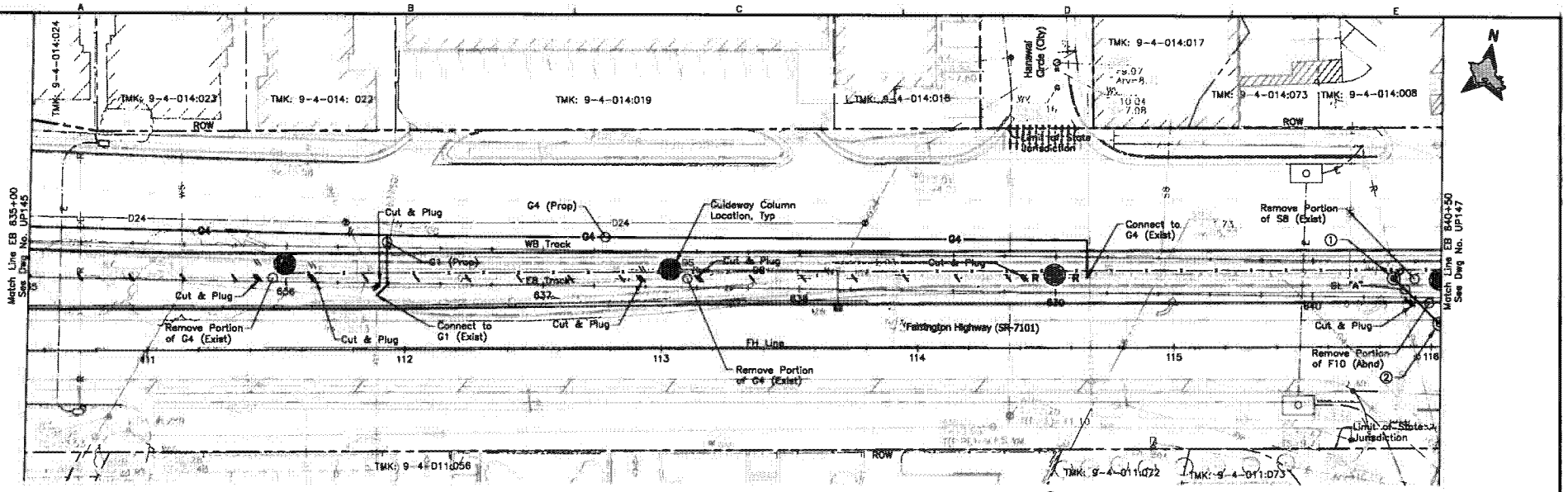
WEST O'AHU/FARRINGTON DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 629+50 TO EB 635+00 SHEET 2 OF 2

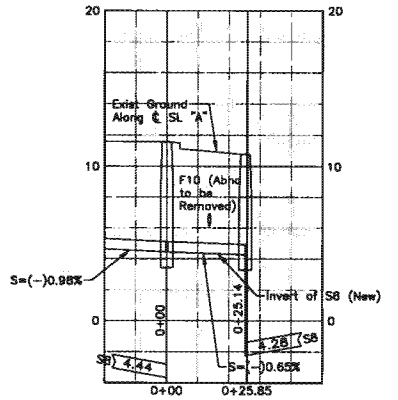
Contract No.: DB-1200
CADD File: WF-003-UP145A
Drawing No: UP145A
Rev. B
Scale: 1"=20' H, 1"=5' V
Page No. 108 of 314

AR00077630



① STA 115+85.64 FH Line, O/S 26.54' Lt.
=0+00 SL "A"
New SMH
Connect to S8 (Exist)

② STA 16+03.27 FH Line, O/S 8.78' Lt.
=0+25.14 SL "A"
New SMH



PROFILE: SL "A"

20' 0 20'

4' 0 4'

NOTE:

For drainage relocations, see Drawing No. UP148A.

Rev	By	Date	Description
B	JY	05-22-09	Added Profile and Misc. Revisions
A	JY	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: D Taba
Drawn: D Taba
Checked: H Andrews
Approved: J Yamamoto
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: R. M. TOWILL CORPORATION

For reduced prints, original page size in inches:

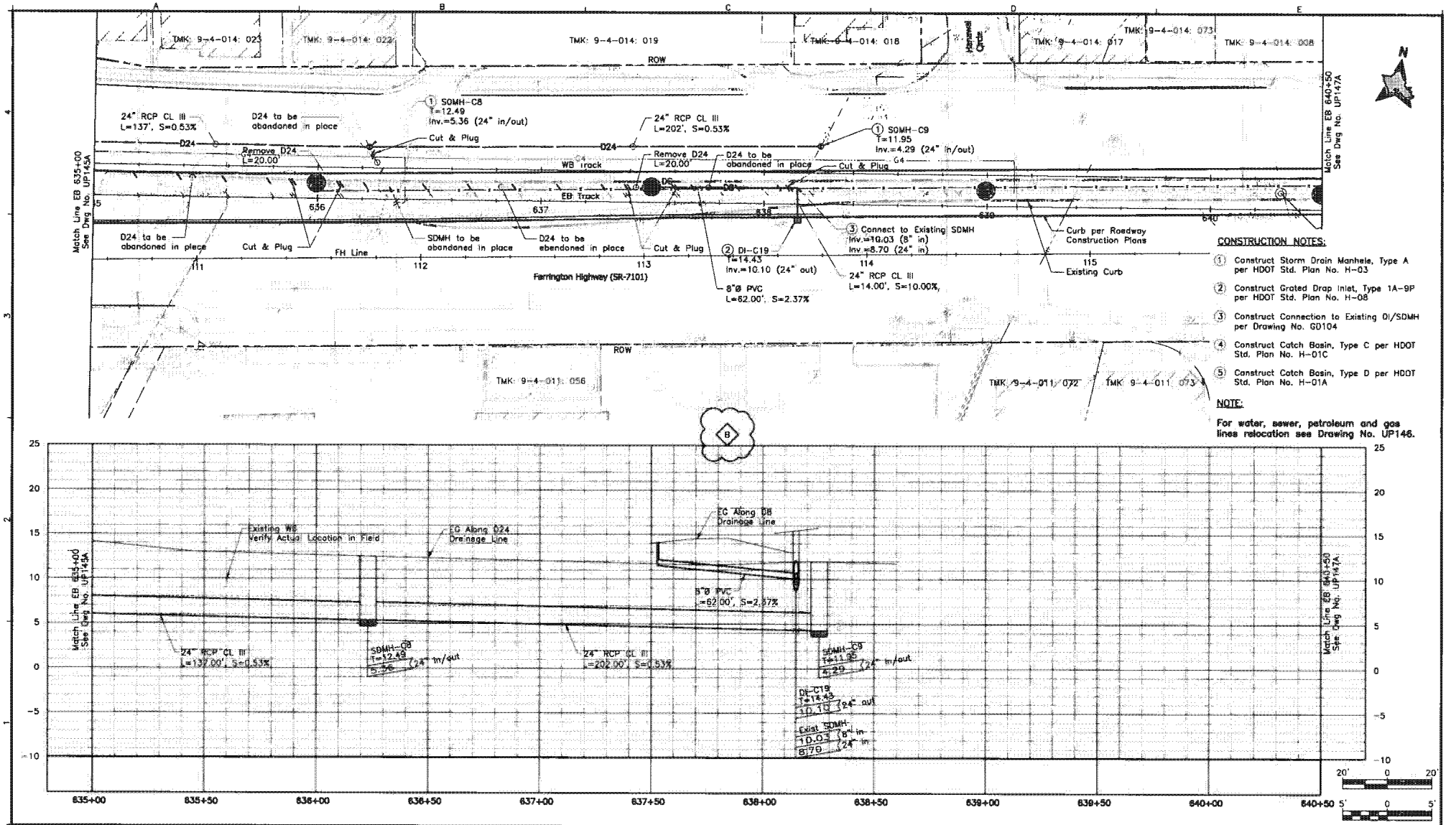
WEST O'AHU/FARRINGTON DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 635+00 TO EB 640+50 SHEET 1 OF 2

Contract No.: DB-1200
CADD File: WF-D03-UP146
Drawing No: UP146
Rev. B
Scale: 1"=20'
Page No. 109 of 314

AR00077631



CONSTRUCTION NOTES:

1. Construct Storm Drain Manhole, Type A per HDOT Std. Plan No. H-03
2. Construct Grated Drop Inlet, Type 1A-9P per HDOT Std. Plan No. H-08
3. Construct Connection to Existing DI/SDMH per Drawing No. GD104
4. Construct Catch Basin, Type C per HDOT Std. Plan No. H-01C
5. Construct Catch Basin, Type D per HDOT Std. Plan No. H-01A

NOTE:

For water, sewer, petroleum and gas lines relocation see Drawing No. UP146.

Rev	By	Date	Description
B	MY	05-22-09	Added Profile & Misc. Update
A	MY	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: E Leung
Drawn: D Chue
Checked: N Orense
Approved: M Yanamine
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: LYON ASSOCIATES

For reduced prints, original page size in inches:

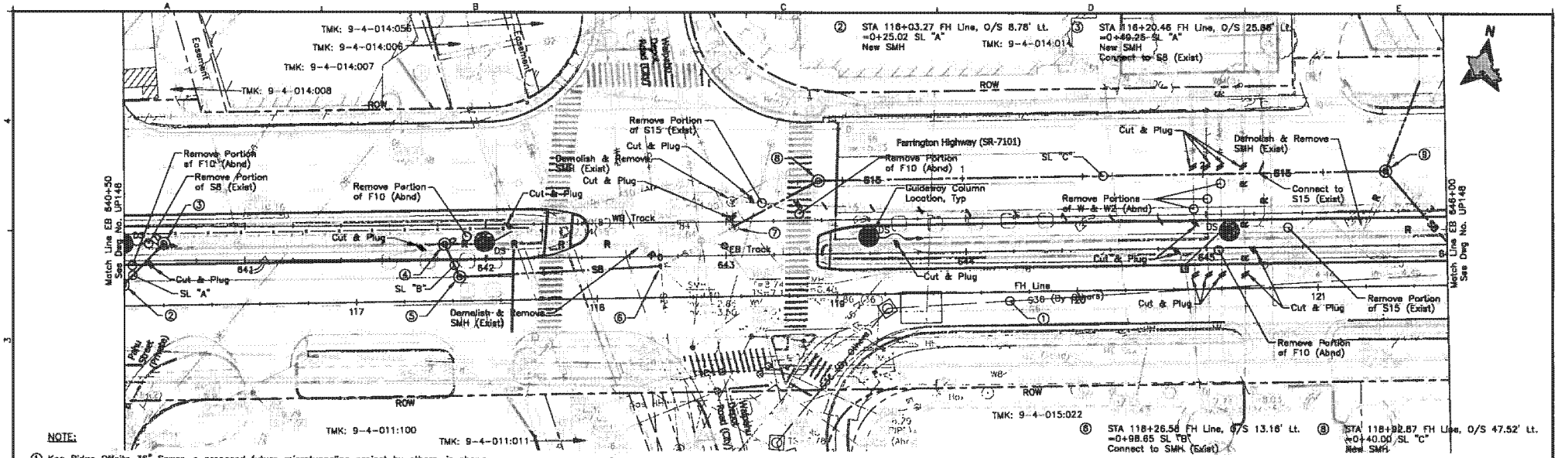
WEST O'AHU/FARRINGTON DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 635+00 TO EB 640+50 SHEET 2 OF 2

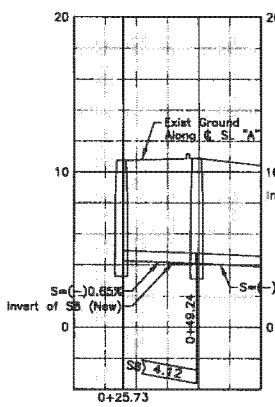
Contract No.: DB-1200
CADD File: WF-D03-UP146A
Drawing No: UP146A
Rev. B
Scale: 1"=20' H, 1"=5' V
Page No. 110 of 314

AR00077632

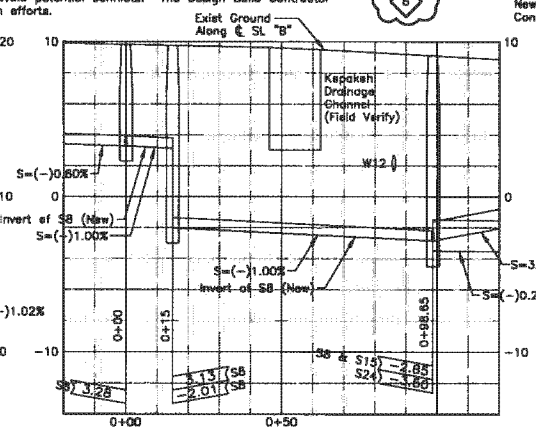


NOTE:

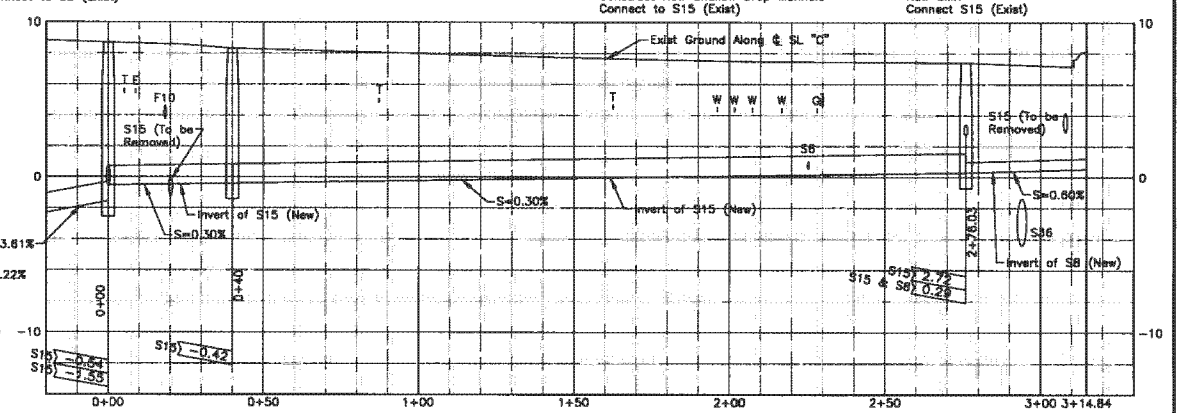
① Koa Ridge Offsite 36" Sewer, a proposed future microtunneling project by others, is shown for informational purposes only. The Design Build Contractor shall coordinate the location of the future line with the Project to avoid potential conflicts. The Design Build Contractor shall inform the City of all coordination efforts.



PROFILE: SL "A"



PROFILE: SL "B"



PROFILE: SL "C"

NOTE:

For drainage relocations, see Drawing No. UP147A.

Rev	By	Date	Description
B	JY	05-22-09	Added Profile and Misc. Revisions
A	JY	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: D Taba
Drawn: D Taba
Checked: H Andrews
Approved: J Yamamoto
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

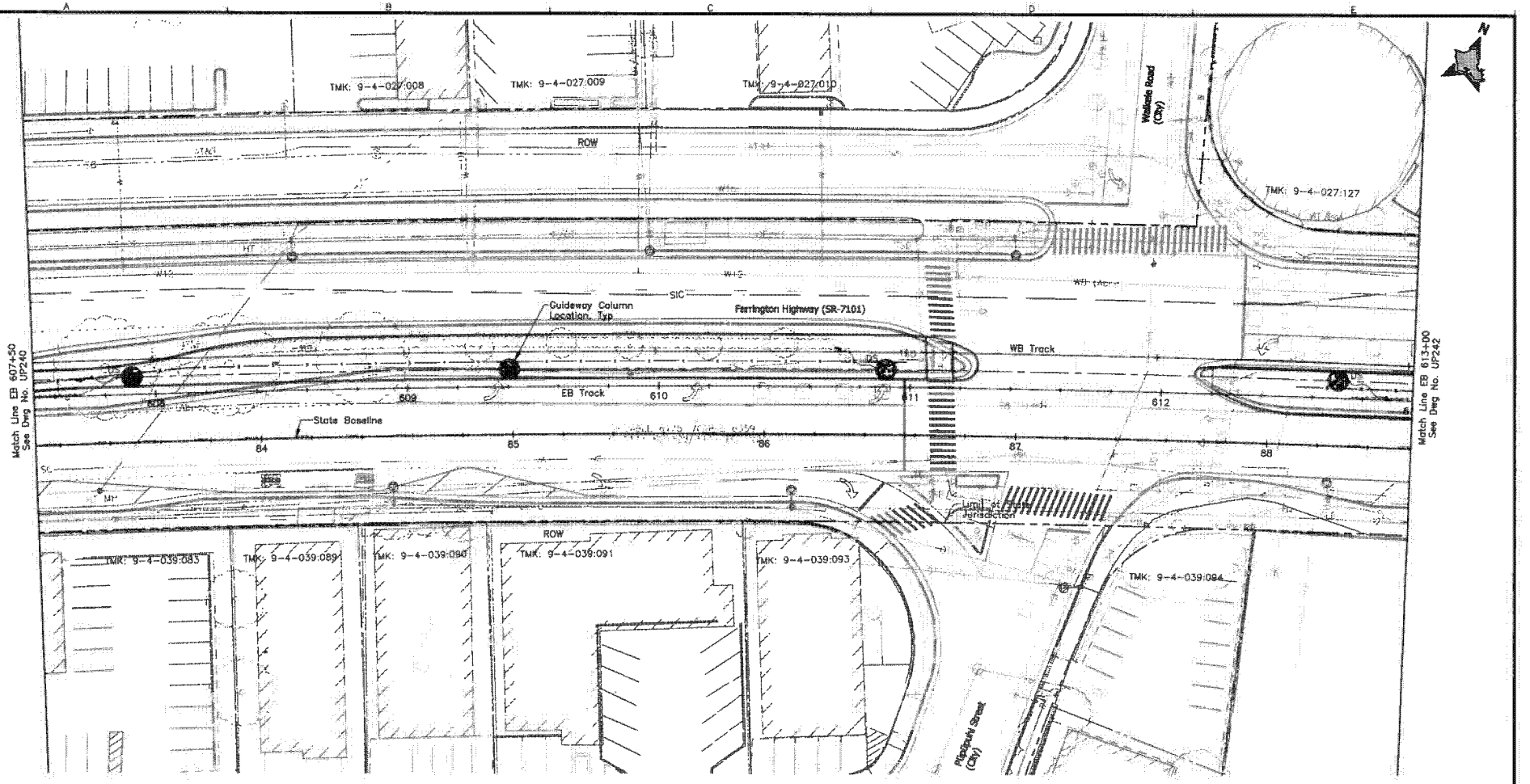
Subconsultant: R. M. TOWILL CORPORATION

For reduced prints, original page size in inches:

WEST O'AHU/FARRINGTON DESIGN-BUILD
UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS
EB 640+50 TO EB 646+00 SHEET 1 OF 2

Contract No.: DB-1200
CADD File: WF-D03-UP147
Drawing No: UP147
Rev. B
Scale: 1"=20'
Page No. 111 of 314

AR00077633



NOTE:

Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. The symbols for SIC line are carried from the project design and have not been modified to match standard HHCTCP symbols.

20' 0 20'

Rev	By	Date	Description
A	RCK	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: R Katahara
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: MKengineers
300 Ala Moana Street
Honolulu, Hawaii 96813
Phone: (808) 545-3522
Fax: (808) 545-3574
E-Mail: info@mkengineers.com

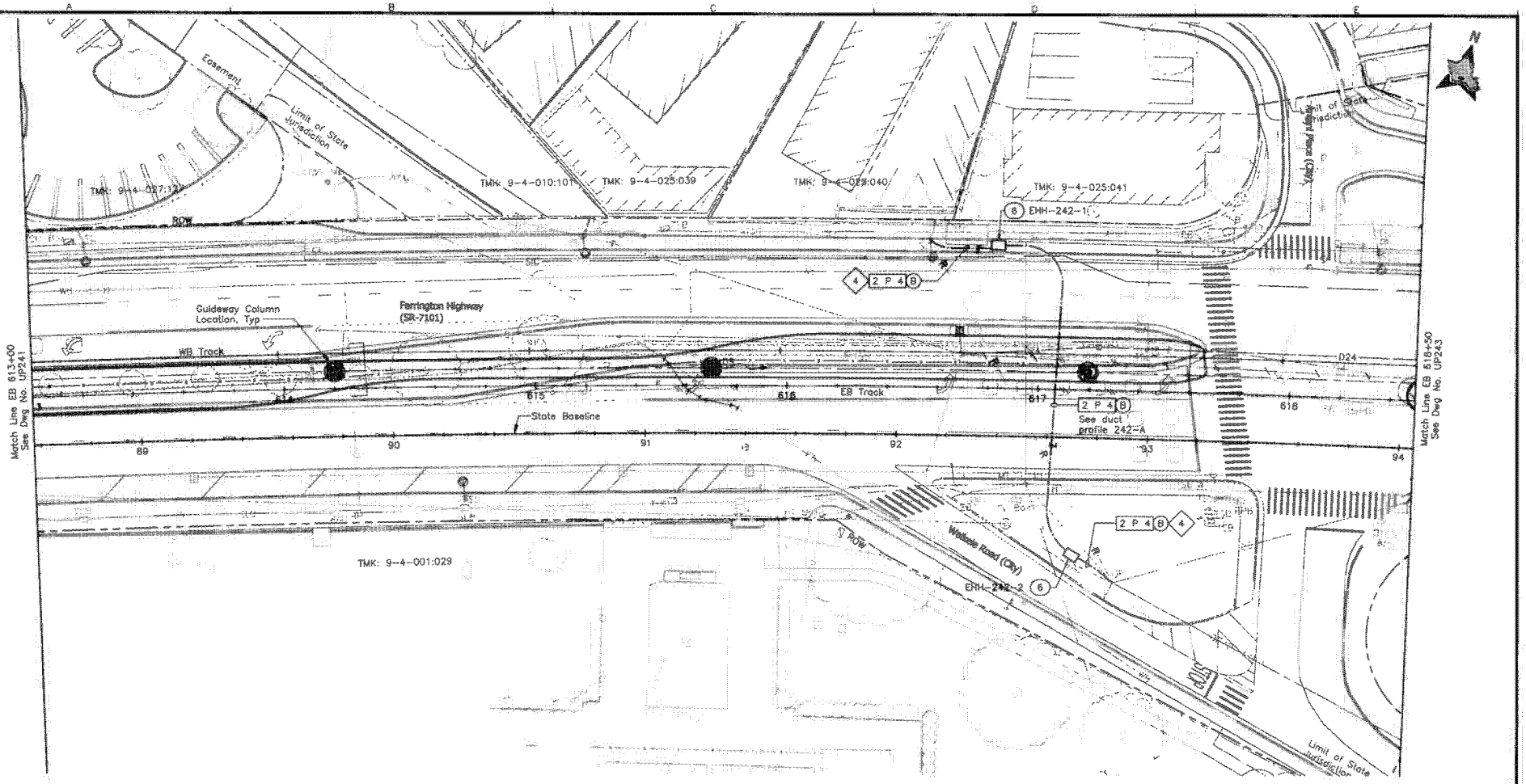
For reduced prints, original page size in inches:

WEST O'AHU/FARRINGTON DESIGN-BUILD

UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 607+50 TO EB 613+00

Contract No.: DB-1200
CADD File: WF--D03--UP241
Drawing No: UP241
Rev. A
Scale: 1"=20'
Page No. 194 of 314



NOTE:

Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. The symbols for SIC line are carried from the project design and have not been modified to match standard HHCTCP symbols.

NOTES:

4 Provide pole riser conduits in complement indicated up to applicable location on pole.

B

20' 0 20'

Rev	By	Date	Description
B	FKH	05-22-09	Update Drawing
A	RCK	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: R Katahara
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: MKengineers
255 Kalid Street
Honolulu, Hawaii 96819
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For reduced prints, original page size in inches:

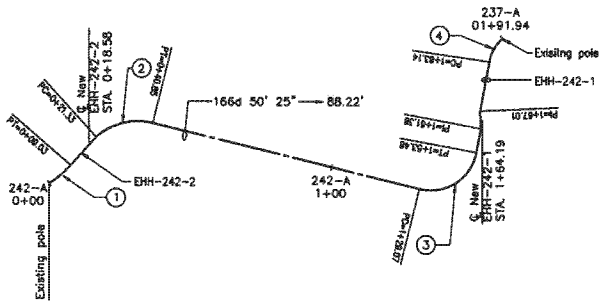
WEST O'AHU/FARRINGTON DESIGN-BUILD

UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

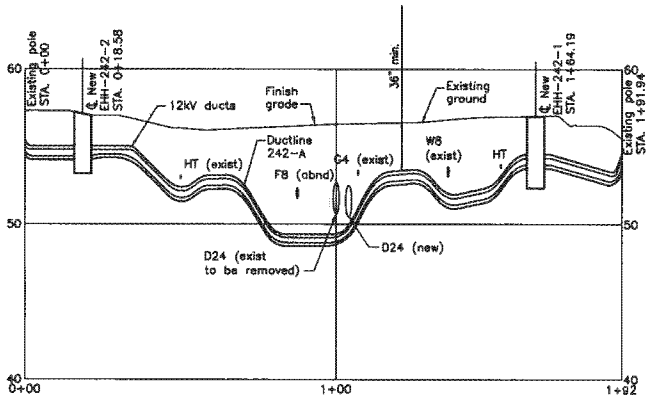
EB 613+00 TO EB 618+50

Contract No.: DB-1200
CADD File: WF-D03-UP242
Drawing No.: UP242
Rev.: B
Scale: 1"=20'
Page No. 195 of 314

AR00077635



HORIZONTAL GEOMETRY FOR ELECTRICAL DUCTLINE "242-A"							
No	Begin Station	End Station	Delta	Radius	Tangent	Chord	Arc Length
1	0+00	0+09.03	16d 26' 04"	31.49'	4.55'	9.00'	9.03'
2	0+21.33	0+40.85	55d 54' 04"	20.00'	10.61'	18.75'	19.51'
3	1+29.07	1+53.48	93d 14' 59"	15.00'	15.88'	21.81'	24.41'
4	1+83.14	1+91.94	43d 25' 53"	11.62'	4.63'	8.60'	8.81'



DUCT PROFILE 242-A

HORIZONAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" = 4'-0"

NOTES:

1. Provide minimum clearance to existing utilities per Hawaiian Electric Company note #14 on UG010.

20' 0 20'

Rev	By	Date	Description
A	FKH	05-22-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: F Hirakami
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 05-22-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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Subconsultant: MKengineers

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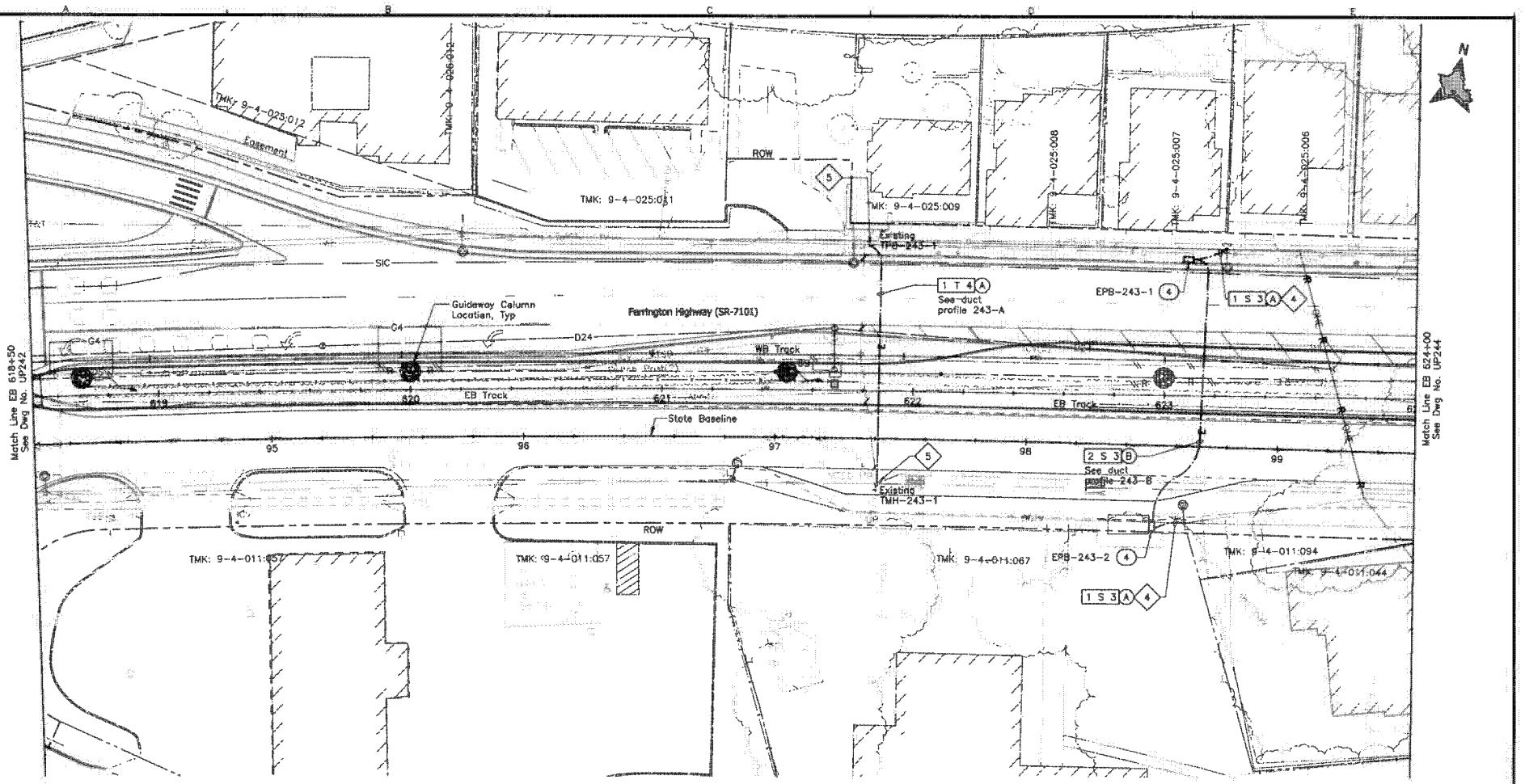
WEST O'AHU/FARRINGTON DESIGN-BUILD

UTILITY RELOCATION PLAN
DUCT PROFILE 242-A

Contract No.: DB-1200
CADD File: WF-D03-UP242A
Drawing No: UP242A
Rev. A
Scale: 1"=20'
Page No. 196 of 314

AR00077636



NOTE:

Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. The symbols for SIC line are carried from the project design and have not been modified to match standard HHCTCP symbols.

NOTES:

4. Provide pole riser conduits in complement indicated up to applicable location on pole.
5. Install conduits into manhole, handhole, or pullbox under applicable utility company supervision. See Detail 3/UP301.

B

20' 0 20'

Rev	By	Date	Description
B	FKH	05-22-09	Update Drawing
A	RCK	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: R Katahara
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: MKengineers
[redacted]

For reduced prints, original page size in inches:

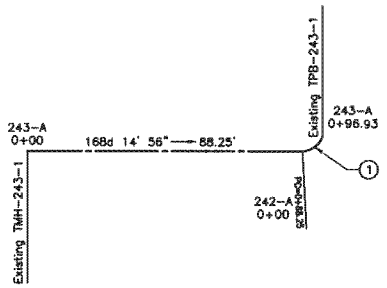
WEST O`AHU/FARRINGTON DESIGN-BUILD

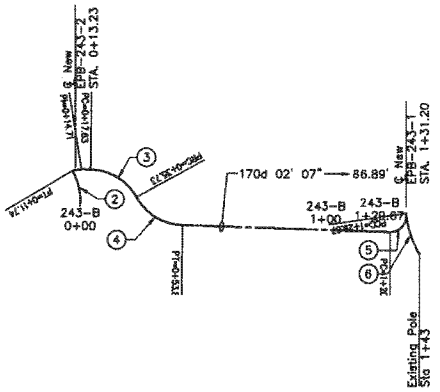
UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 618+50 TO EB 624+00

Contract No.: DB-1200
CADD File: WF-003-UP243
Drawing No: UP243
Rev. B
Scale: 1"=20'
Page No. 197 of 314

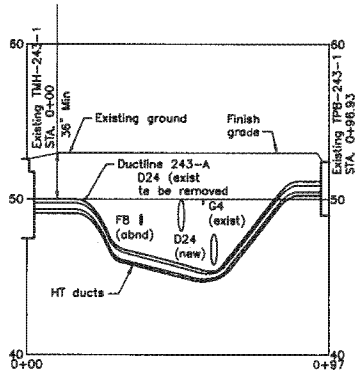
AR00077637

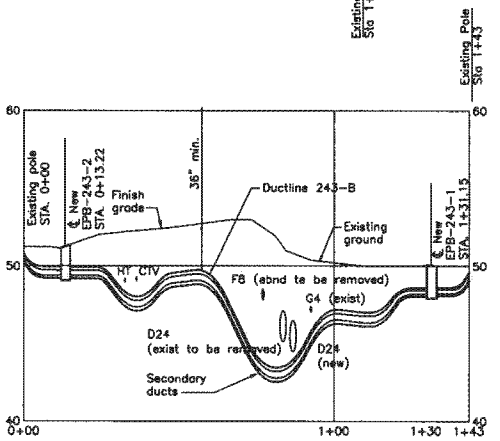




HORIZONTAL GEOMETRY FOR ELECTRICAL DUCTLINE "243-A"							
No	Begin Station	End Station	Delta	Radius	Tangent	Chord	Arc Length
1	0+88.25	0+96.93	68d 41' 45"	7.24'	4.95'	8.17'	8.68'

HORIZONTAL GEOMETRY FOR ELECTRICAL DUCTLINE "243-B"							
No	Begin Station	End Station	Delta	Radius	Tangent	Chord	Arc Length
2	0+00	0+11.74	36d 37' 40"	18.36'	6.08'	11.54'	11.74'
3	0+17.63	0+35.73	60d 14' 13"	17.22'	9.99'	17.28'	18.10'
4	0+35.73	0+53.84	60d 15' 44"	17.21'	9.99'	17.28'	18.10'
5	1+20.73	1+29.67	98d 29' 18"	5.20'	6.03'	7.88'	8.94'
6	1+29.67	1+43.46	25d 56' 05"	30.47'	7.02'	13.67'	13.79'





DUCT PROFILE 243-A

HORIZONAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" = 4'-0"

DUCT PROFILE 243-B

HORIZONAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" = 4'-0"

NOTES:

1. Provide minimum clearance to existing utilities per Hawaiian Electric Company note #14 on UG010.

20' 0 20'

Rev	By	Date	Description
A	FKH	05-22-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: F Hirakami
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 05-22-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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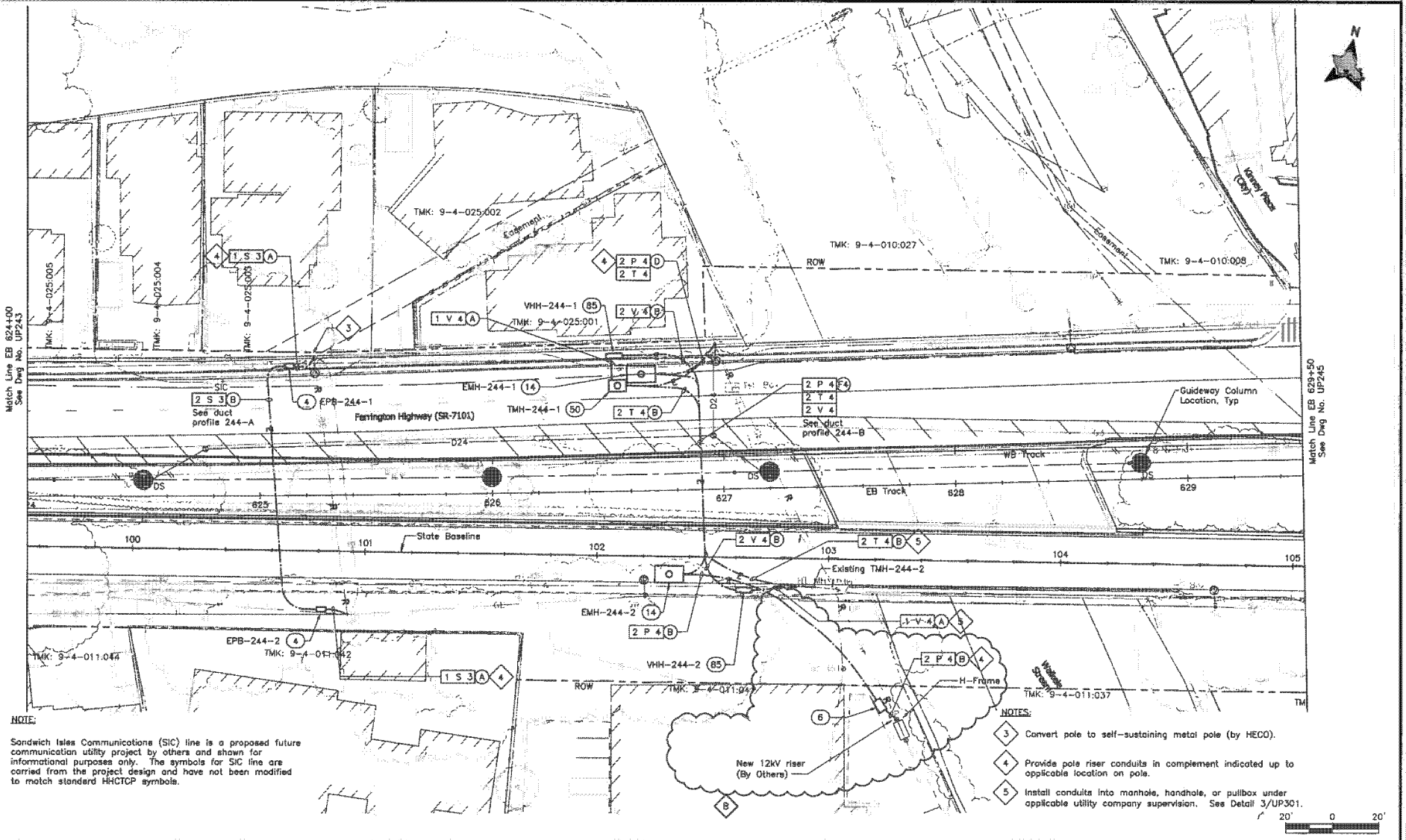
For reduced prints, original page size in inches: A B C D E

WEST O`AHU/FARRINGTON DESIGN-BUILD

UTILITY RELOCATION PLAN
DUCT PROFILE 243-A & 243-B

Contract No.: DB-1200
CADD File: WF-D03-UP243A
Drawing No: UP243A
Rev. A
Scale: 1"=20'
Page No. 198 of 314

AR00077638



NOTE:

Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. The symbols for SIC line are carried from the project design and have not been modified to match standard HHCTCP symbols.

NOTES:

3 Convert pole to self-sustaining metal pole (by HECO).

4 Provide pole riser conduits in complement indicated up to applicable location on pole.

5 Install conduits into manhole, handhole, or pullbox under applicable utility company supervision. See Detail 3/UP301.

20' 0 20'

Rev	By	Date	Description
B	FKH	05-22-09	Extend 12KV Ductline
A	RCK	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: R Katahara
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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For reduced prints, original page size in inches: A

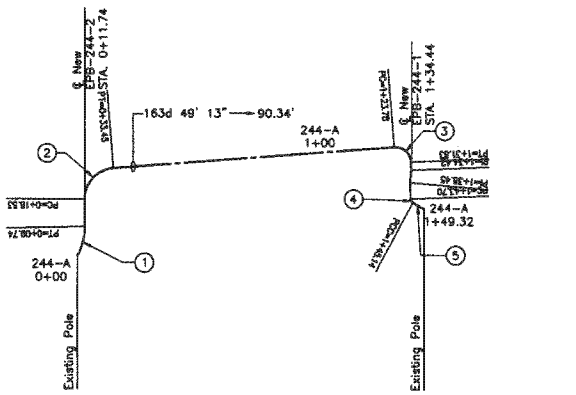
WEST O`AHU/FARRINGTON DESIGN-BUILD

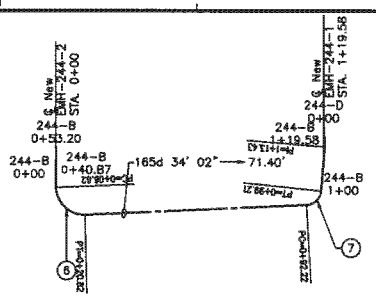
UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 624+00 TO EB 629+50

Contract No.: DB-1200
CADD File: WF-D03-UP244
Drawing No.: UP244
Rev.: B
Scale: 1"=20'
Page No. 199 of 314

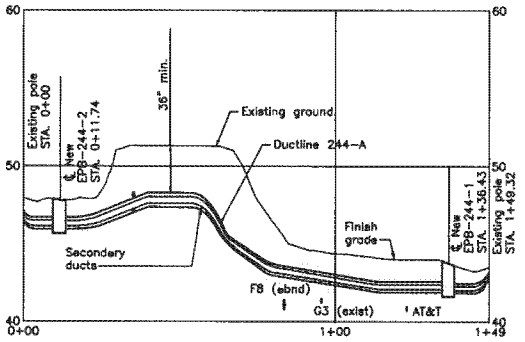
AR00077639





HORIZONTAL GEOMETRY FOR ELECTRICAL DUCTLINE "244-A"							
No	Begin Station	End Station	Delta	Radius	Tangent	Chord	Arc Length
1	0+00	0+09.74	29d 36' 15"	18.85'	4.98'	9.63'	9.74'
2	0+18.53	0+33.45	85d 28' 48"	10.00'	9.24'	13.57'	14.92'
3	1+23.78	1+31.83	92d 12' 50"	5.00'	5.20'	7.21'	8.05'
4	1+43.70	1+45.14	59d 29' 02"	1.38'	0.79'	1.37'	1.44'
5	1+45.14	1+49.32	11d 45' 37"	20.41'	2.10'	4.18'	4.19'

HORIZONTAL GEOMETRY FOR ELECTRICAL DUCTLINE "244-C"							
No	Begin Station	End Station	Delta	Radius	Tangent	Chord	Arc Length
8	0+00	0+20.82	88d 59' 14"	9.14'	8.98'	12.81'	14.20'
7	0+92.22	0+99.21	80d 50' 06"	4.95'	4.22'	6.42'	6.99'

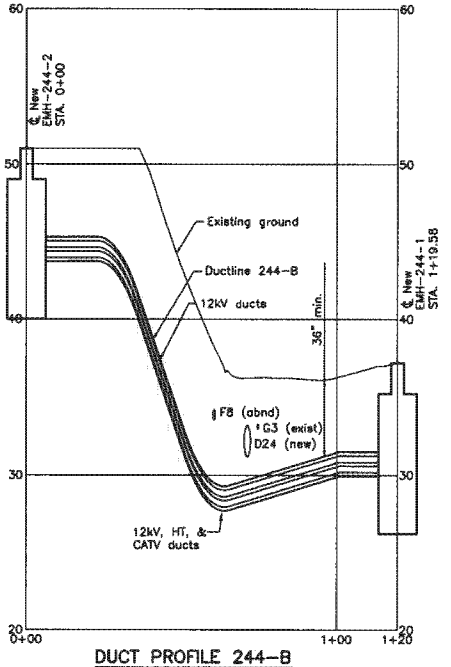


DUCT PROFILE 244-A

HORIZONAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" = 4'-0"

NOTES:

1. Provide minimum clearance te existing utilities per Hawaiien Electric Company note #14 on UG010.



DUCT PROFILE 244-B

HORIZONAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" = 4'-0"

NOTES:

1. Provide minimum clearance te existing utilities per Hawaiian Electric Company note #14 on UG010.

20' 0 20'

Rev	By	Date	Description
A	FKH	05-22-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: F Hirakami
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 05-22-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

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E-Mail: info@mkengineers.com

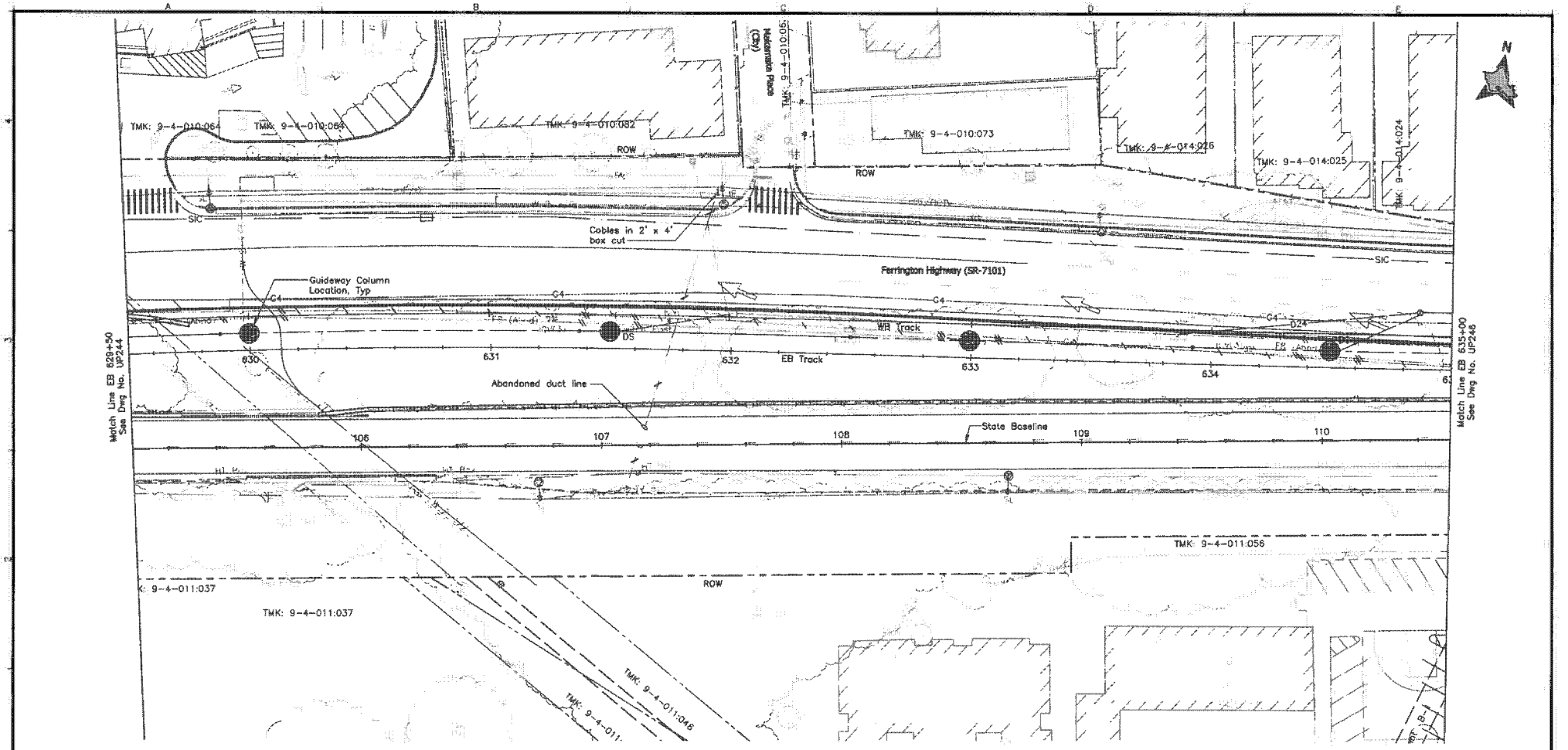
For reduced prints, original page size in inches: A B C D E

WEST O'AHU/FARRINGTON DESIGN-BUILD

UTILITY RELOCATION PLAN
DUCT PROFILE 244-A & 244-B

Contract No.: DB-1200
CADD File: WF-D03-UP244A
Drawing No: UP244A
Rev. A
Scale: 1"=20'
Page No. 200 of 314

AR00077640



NOTE:

Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. The symbols for SIC line are carried from the project design and have not been modified to match standard HHCTCP symbols.

20' 0 20'

Rev	By	Date	Description
A	RCK	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: R Katahara
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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For reduced prints, original page size in inches:

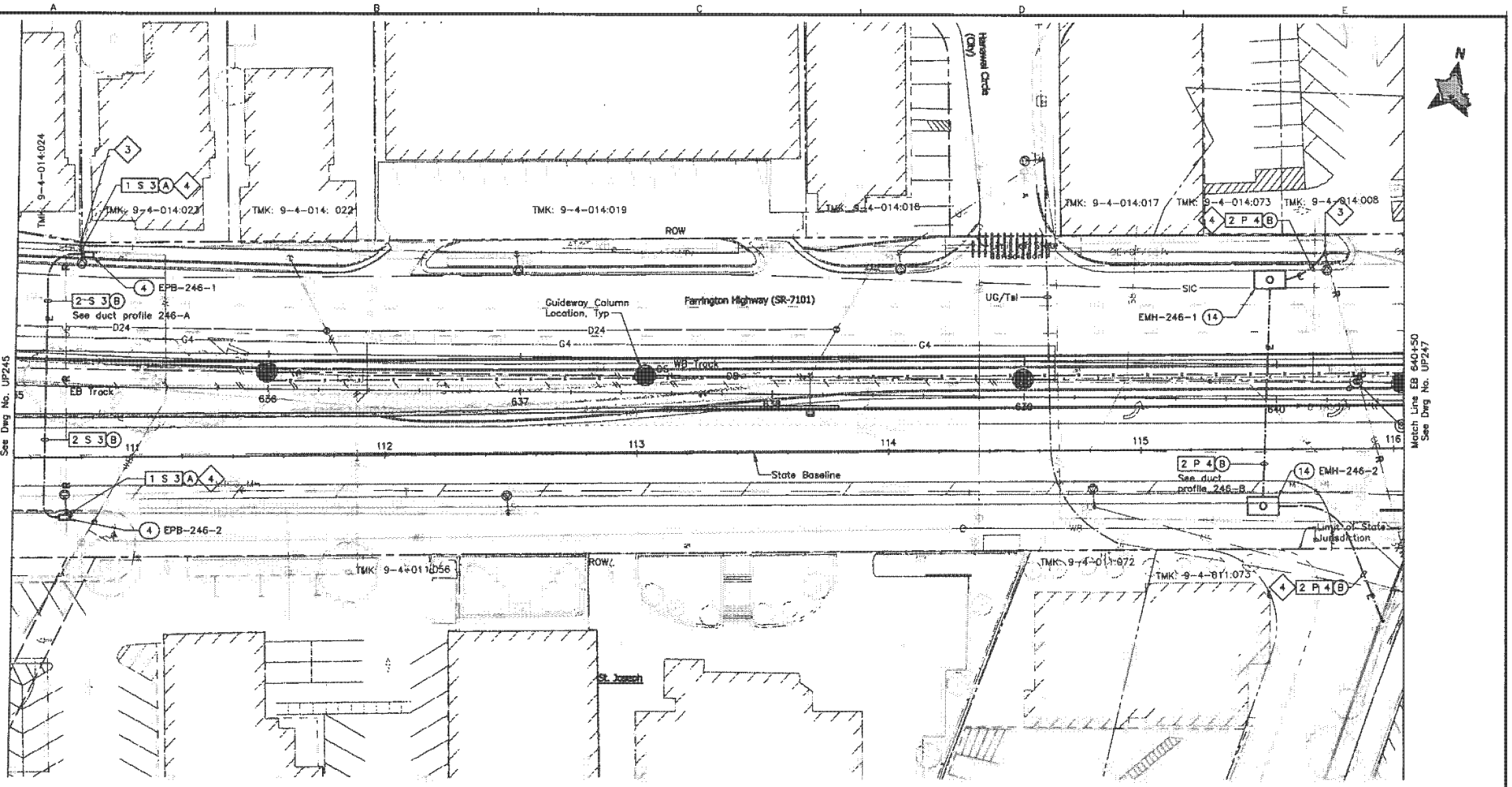
WEST O'AHU/FARRINGTON DESIGN-BUILD

UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 629+50 TO EB 635+00

Contract No.: DB-1200
CADD File: WF-003-UP245
Drawing No.: UP245
Rev.: A
Scale: 1"=20'
Page No. 201 of 314

AR00077641



NOTE:

Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. The symbols for SIC line are carried from the project design and have not been modified to match standard HHCTCP symbols.

NOTES:

3. Convert pole to self-sustaining metal pole (by HECO).

4. Provide pole riser conduits in complement indicated up to applicable location on pole.

20' 0 20'

Rev	By	Date	Description
B	FKH	05-22-09	Update Drawing
A	RCK	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: R Katahara
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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Subconsultant: MKengineers
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For reduced prints, original page size in inches:

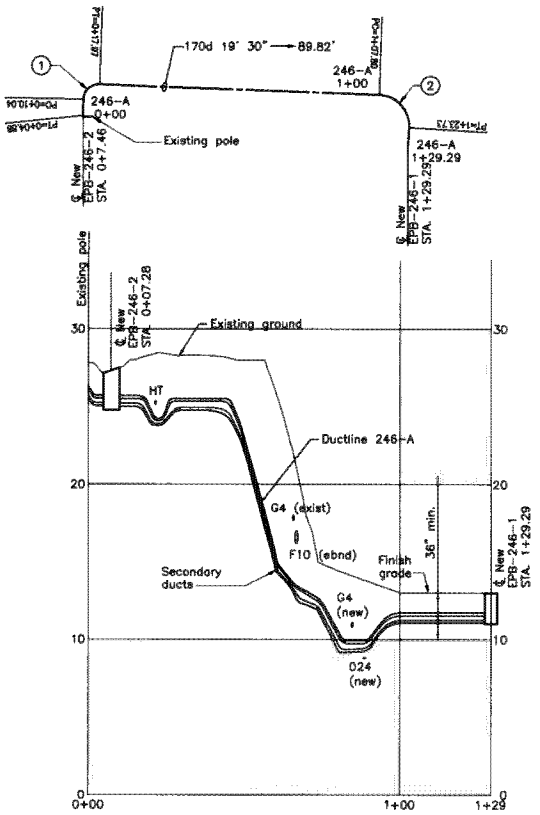
WEST O'AHU/FARRINGTON DESIGN-BUILD

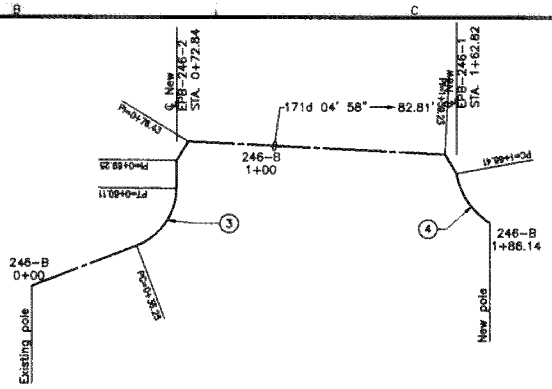
UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 635+00 TO EB 640+50

Contract No.: DB-1200
CADD File: WF-D03-UP246
Drawing No: UP246
Rev. B
Scale: 1"=20'
Page No. 202 of 314

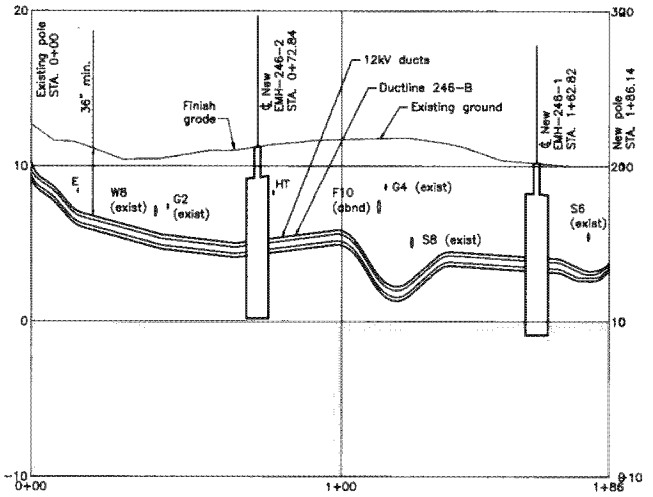
AR00077642





HORIZONTAL GEOMETRY FOR ELECTRICAL DUCTLINE "246-A"							
No	Begin Station	End Station	Delta	Radius	Tangent	Chord	Arc Length
2	0+10.04	0+17.97	90d 56' 40"	5.00'	5.08'	7.13'	7.94'
3	1+07.80	1+23.73	91d 18' 36"	10.00'	10.23'	14.30'	15.94'

HORIZONTAL GEOMETRY FOR ELECTRICAL DUCTLINE "246-B"							
No	Begin Station	End Station	Delta	Radius	Tangent	Chord	Arc Length
3	0+36.25	0+60.11	68d 20' 04"	20.00'	13.58'	22.46'	23.85'
4	1+66.41	1+86.14	46d 48' 57"	24.14'	10.45'	19.18'	19.73'



DUCT PROFILE 246-A

HORIZONAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" = 4'-0"

NOTES:

1. Provide minimum clearance to existing utilities per Hawaiian Electric Company note #14 on UG010.

DUCT PROFILE 246-B

HORIZONAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" = 4'-0"

NOTES:

1. Provide minimum clearance to existing utilities per Hawaiian Electric Company note #14 on UG010.

20' 0 20'

Rev	By	Date	Description
A	FKH	05-22-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: F Hirakami
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 05-22-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: MKengineers

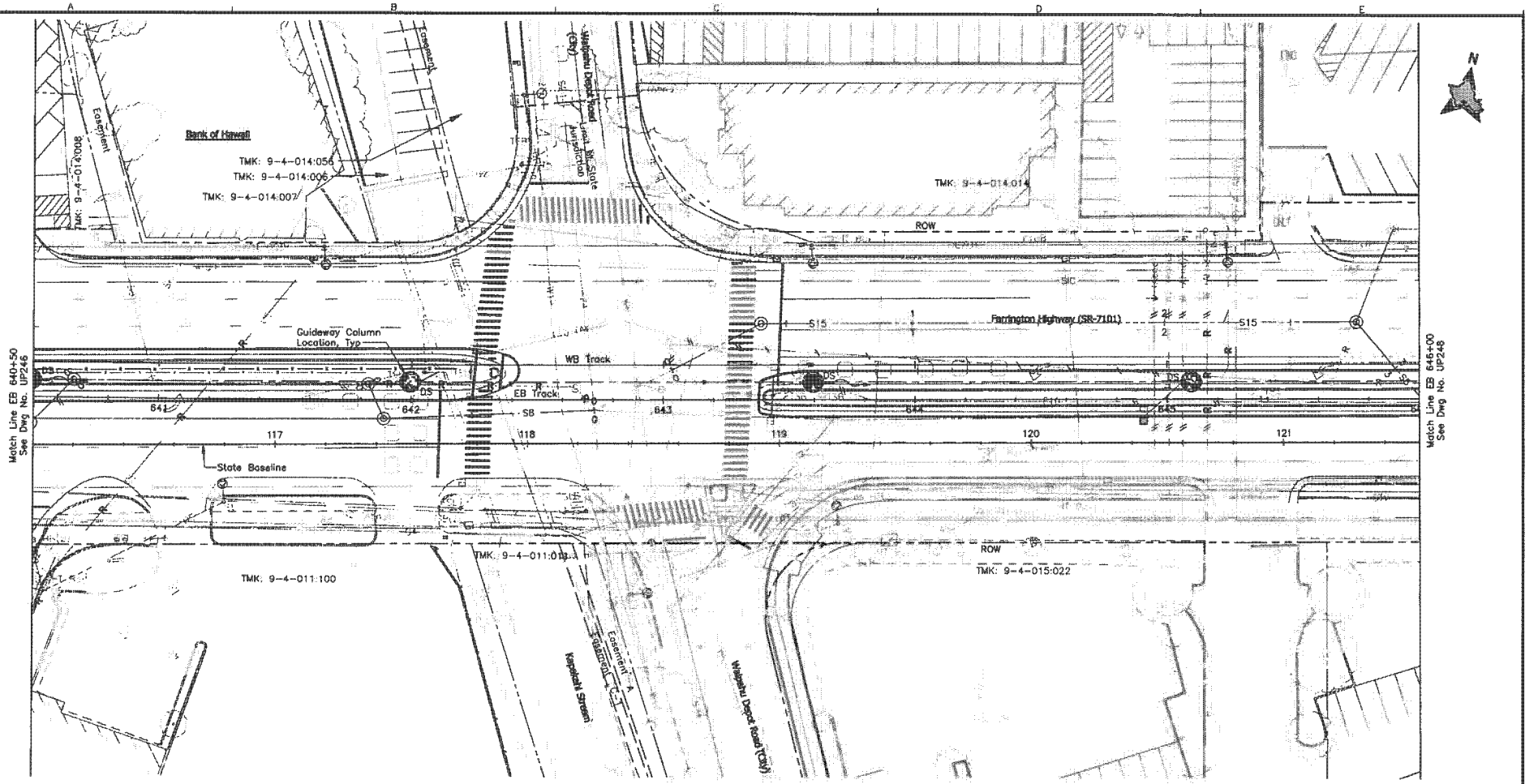
For reduced prints, original page size in inches:

WEST O'AHU/FARRINGTON DESIGN-BUILD

UTILITY RELOCATION PLAN
DUCT PROFILE 246-A & 246-B

Contract No.: DB-1200
CADD File: WF-D03-UP246A
Drawing No: UP246A Rev. A
Scale: 1"=20'
Page No. 203 of 314

AR00077643



NOTE:

Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. The symbols for SIC line are carried from the project design and have not been modified to match standard HHCTCP symbols.

20' 0 20'

Rev	By	Date	Description
A	RCK	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: R Katahara
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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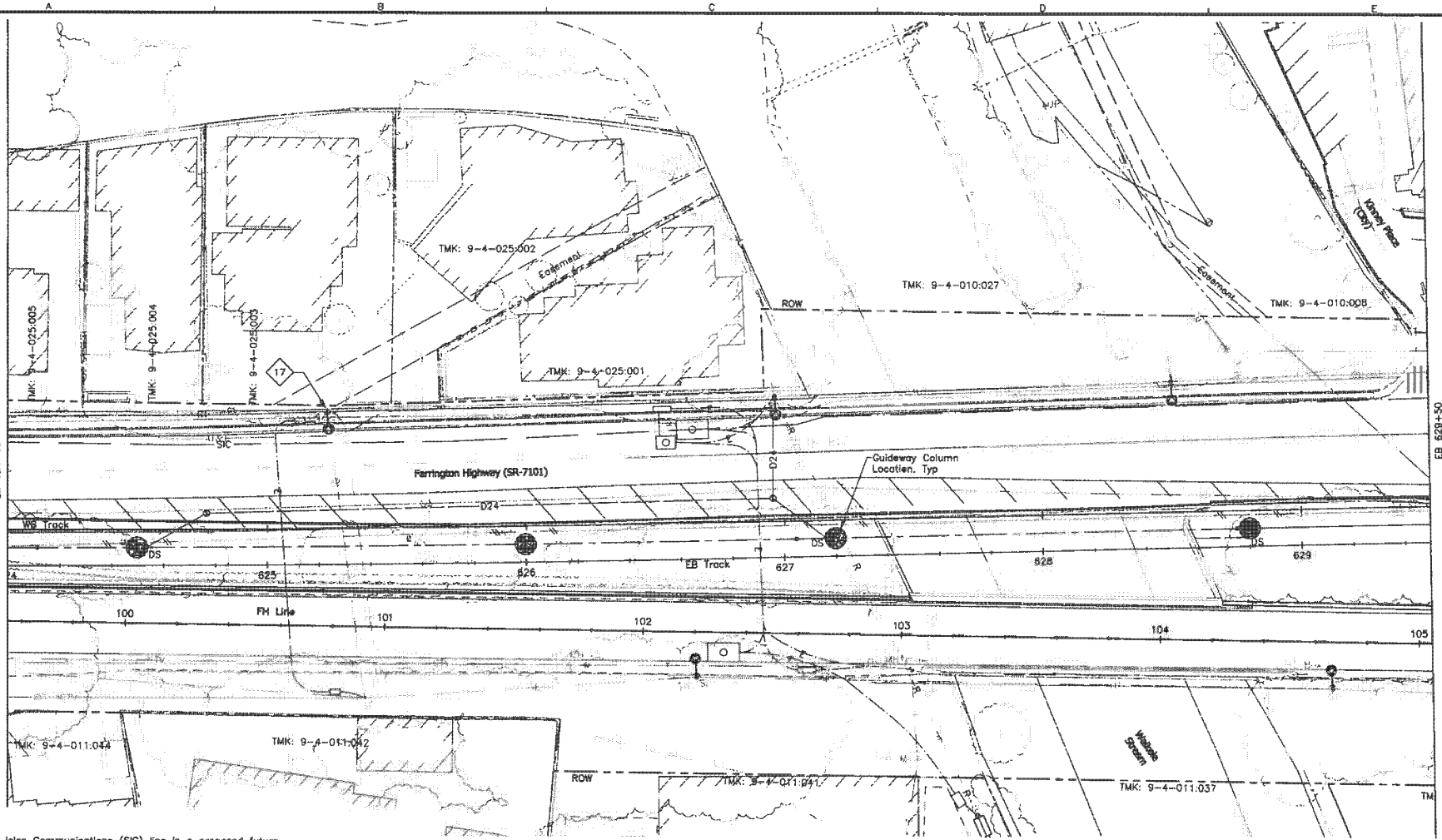
For reduced prints, original page size in inches:

WEST O`AHU/FARRINGTON DESIGN-BUILD

UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 640+50 TO EB 646+00

Contract No.: DB-1200
CADD File: WF-003-UP247
Drawing No.: UP247
Rev.: A
Scale: 1"=20'
Page No. 204 of 314



NOTE:

Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. The symbols for SIC line are carried from the project design and have not been modified to match standard HHCTCP symbols.

NOTES:

17 Attach existing street light conductors to new pole. Relocate existing light fixture from old pole to new pole unless a new fixture is indicated. Provide new bracket arm with length to match existing. Reconnect fixture; see detail A/SL415.

20' 0 20'

Rev	By	Date	Description
A	RCK	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: R Katahara
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: MKengineers
300 Kalihi Street
Honolulu, Hawaii 96819
Phone: (808) 845-9822
Fax: (808) 845-9874
E-Mail: info@mkhawaii.com

For reduced prints, original page size in inches:

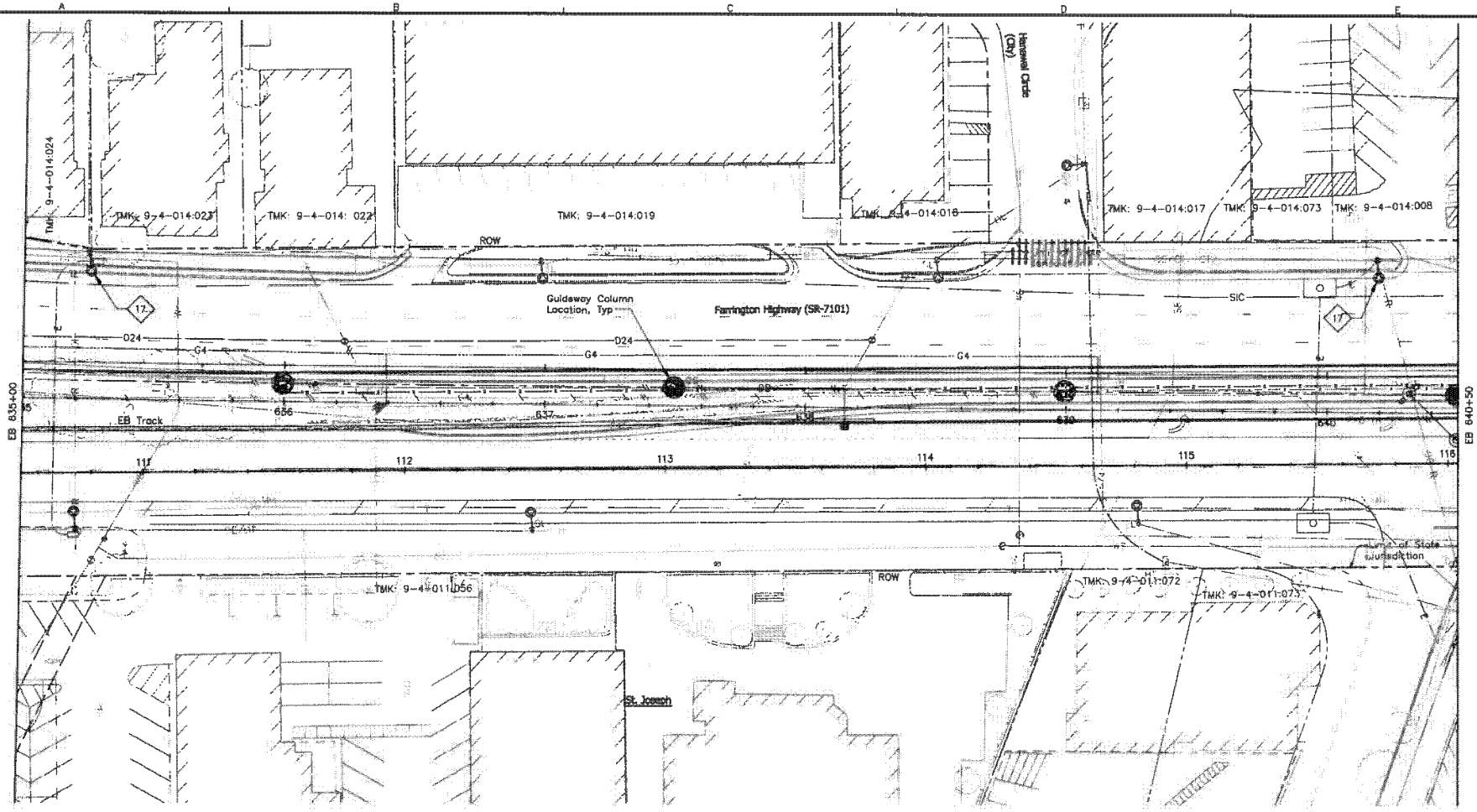
WEST O`AHU/FARRINGTON DESIGN-BUILD

UTILITY RELOCATION PLAN
STREET LIGHTING

EB 624+00 TO EB 629+50

Contract No.: DB-1200
CADD File: WF-D04-SL044
Drawing No: SL044
Rev. A
Scale: 1"=20'
Page No. 276 of 314

AR00077645



NOTE:

Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. The symbols for SIC line are carried from the project design and have not been modified to match standard HHCTCP symbols.

NOTES:

17 Attach existing street light conductors to new pole. Relocate existing light fixture from old pole to new pole unless a new fixture is indicated. Provide new bracket arm with length to match existing. Reconnect fixture; see detail A/SL415.

20' 0 20'

Rev	By	Date	Description
A	RCK	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: R Katahara
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: MKengineers
220 Ka'ahi Street
Honolulu, Hawaii 96819
Phone: (808) 848-2822
Fax: (808) 848-2874
E-Mail: info@mkengineers.com

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

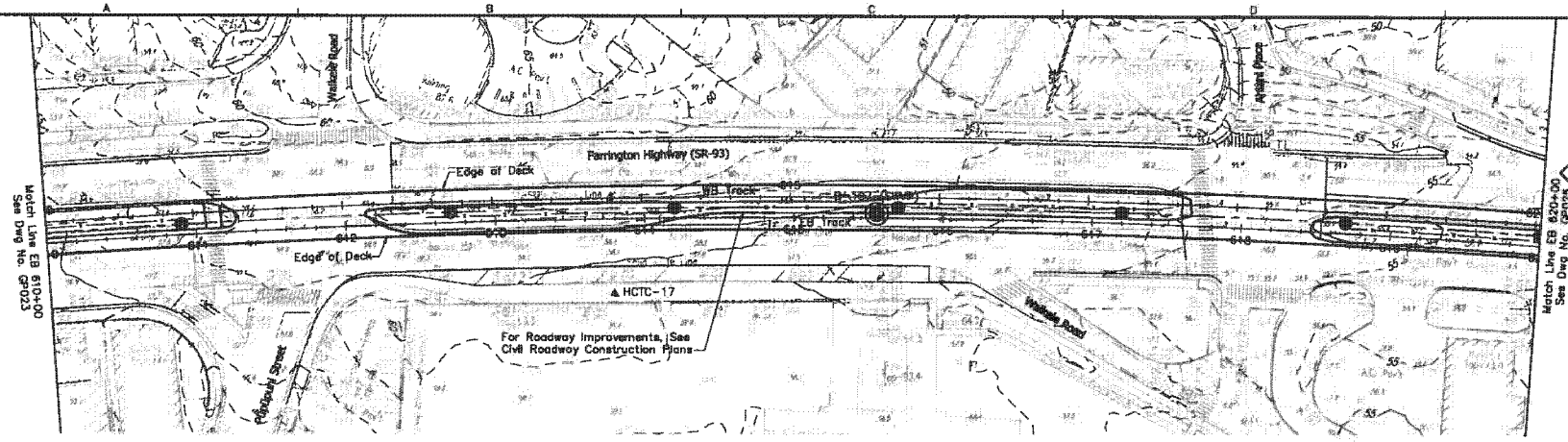
WEST O'AHU/FARRINGTON DESIGN-BUILD

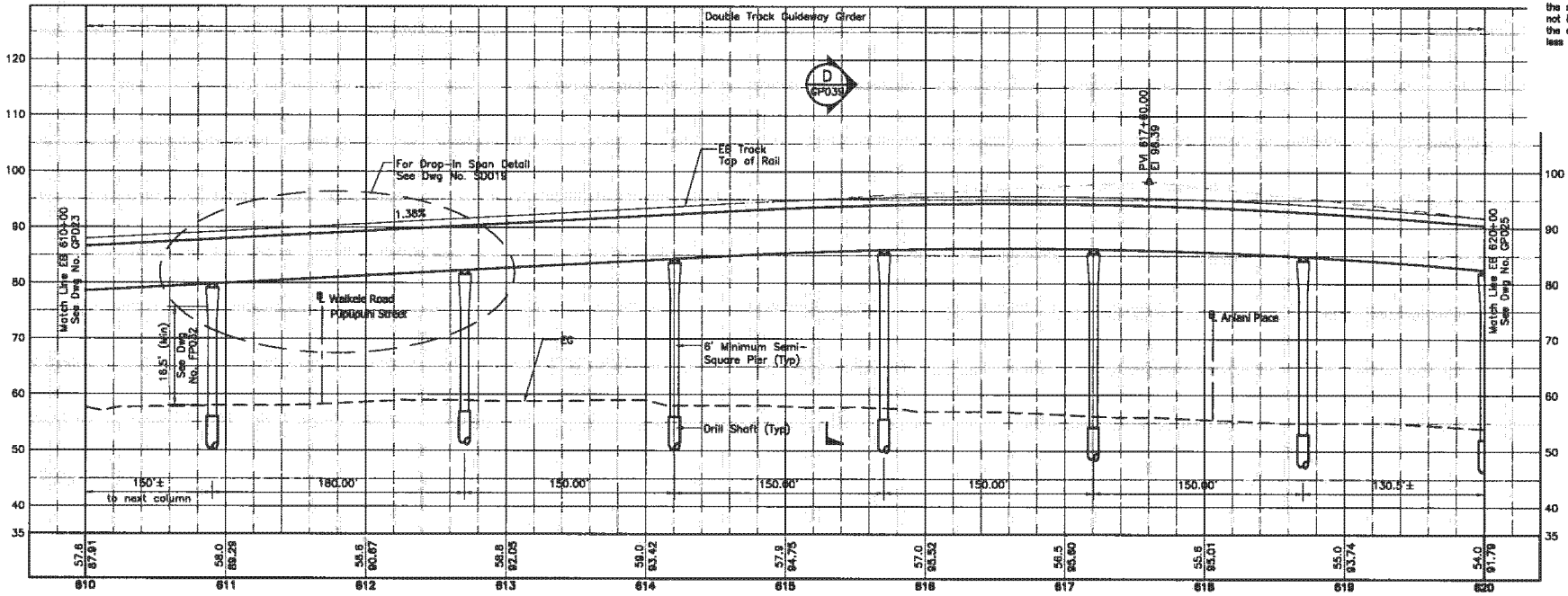
UTILITY RELOCATION PLAN
STREET LIGHTING

EB 635+00 TO EB 640+50

Contract No.: DB-1200
CADD File: WF-D04-SL046
Drawing No: SL046 Rev. A
Scale: 1"=20'
Page No. 277 of 314

AR00077646





NOTE:

1. See Dwg Nos. S0001 and S0002 for Structural General Notes, Symbols and Abbreviations.
2. The configuration shown relative to HRC work and site condition is under development and subject to change.
3. The depiction of retaining walls is for approximate location only. The type of wall and its foundation required to protect structural facilities against ground movement and settlement is to be determined by the Design-Builder. The Design-Builder shall also provide retaining walls that may not be shown, but are dependent on his approved grading plans.
4. Complete Structural and Geotechnical calculations and drawings must be provided for all newly constructed structures and for all facilities within the zone of construction influence.
5. Drilled shaft foundations are shown for reference only. The actual type and size of the pier foundations shall be determined by the Design-Builder.
6. Unless shown otherwise on the drawings, the semi-square columns, if used, shall not be less than 6-foot by 6-foot, and the associated drilled shafts shall not be less than 6-foot in diameter.

Rev	By	Date	Description
B	AB	05-22-09	Revised Notes
A	AB	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: D Yavarsky
Drawn: T Cochran
Checked: T Kimura
Approved: A Borst
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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

WEST O'AHU/FARRINGTON DESIGN-BUILD

STRUCTURAL PLAN & PROFILE

EB 610+00 TO EB 620+00

Contract No.: DB-1200
CADD File: WF-G04-GP024
Drawing No: GP024 Rev. B
Scale: 1"=40' H, 1"=10' V
Page No. 45 of 209

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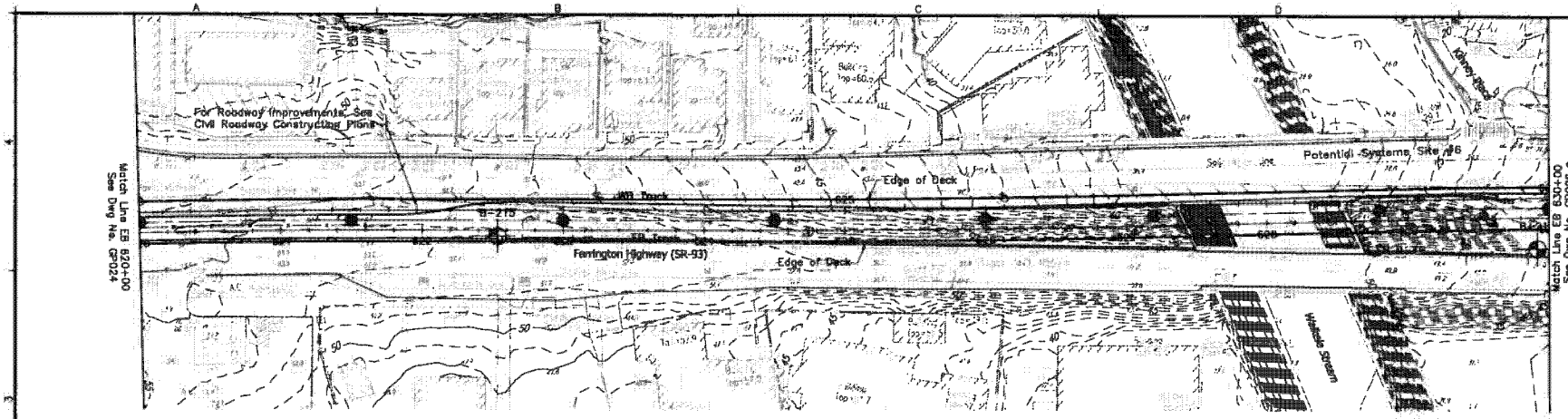

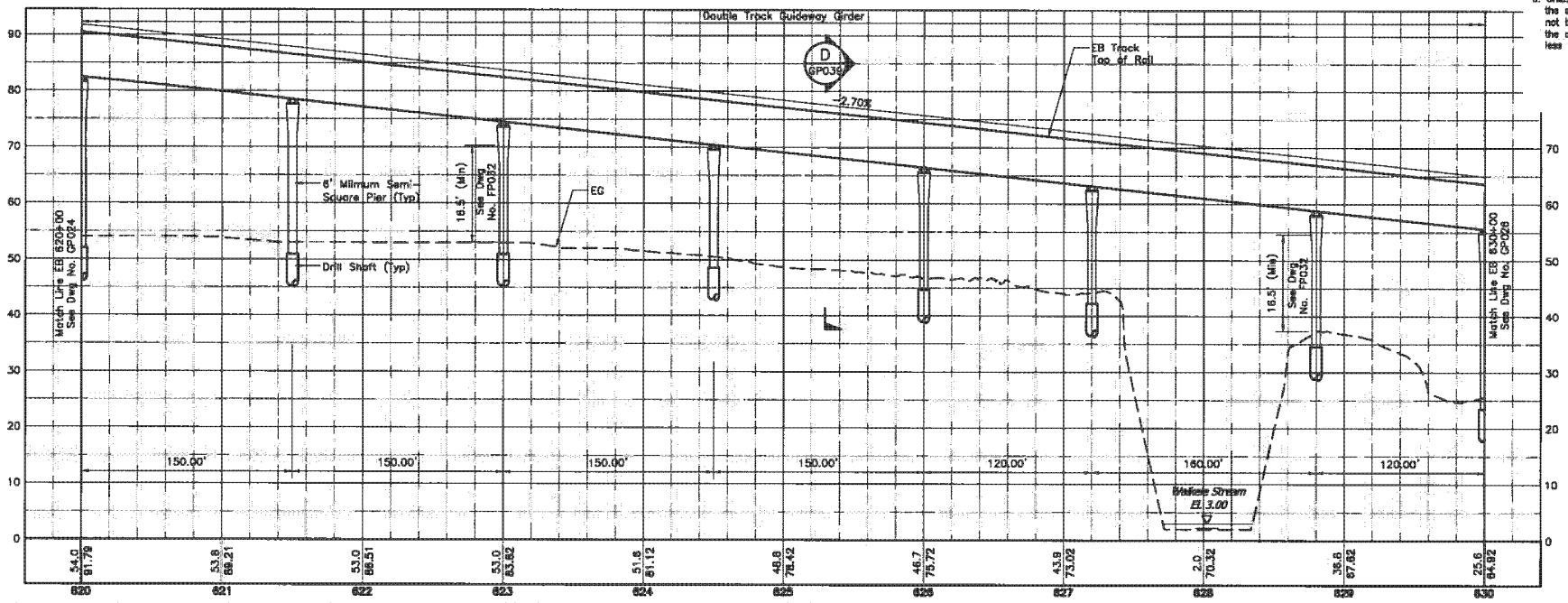

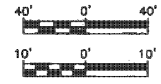

NOTE:

1. See Dwg Nos. SG001 and SG002 for Structural General Notes, Symbols and Abbreviations.
2. The configuration shown relative to NBC work and site condition is under development and subject to change.
3. The depiction of retaining walls is for approximate location only. The type of wall and its foundation required to protect structural facilities against ground movement and settlement is to be determined by the Design-Builder. The Design-Builder shall also provide retaining walls that may not be shown, but are dependent on his approved grading plans.
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6. Unless shown otherwise on the drawings, the semi-square columns, if used, shall not be less than 6-foot by 6-foot, and the associated drilled shafts shall not be less than 6-foot in diameter.

Rev	By	Date	Description
B	AB	05-22-09	Revised Notes
A	AB	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: D Yavorsky
Drawn: T Cochran
Checked: T Kimura
Approved: A Borst
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
For reduced prints, original page size in inches:

WEST O'AHU/FARRINGTON DESIGN-BUILD

STRUCTURAL PLAN & PROFILE

EB 620+00 TO EB 630+00

Contract No.: DB-1200
CADD File: WF-G04-GP025
Drawing No: GP025 Rev. B
Scale: 1"=40' H, 1"=10' V
Page No. 46 of 209

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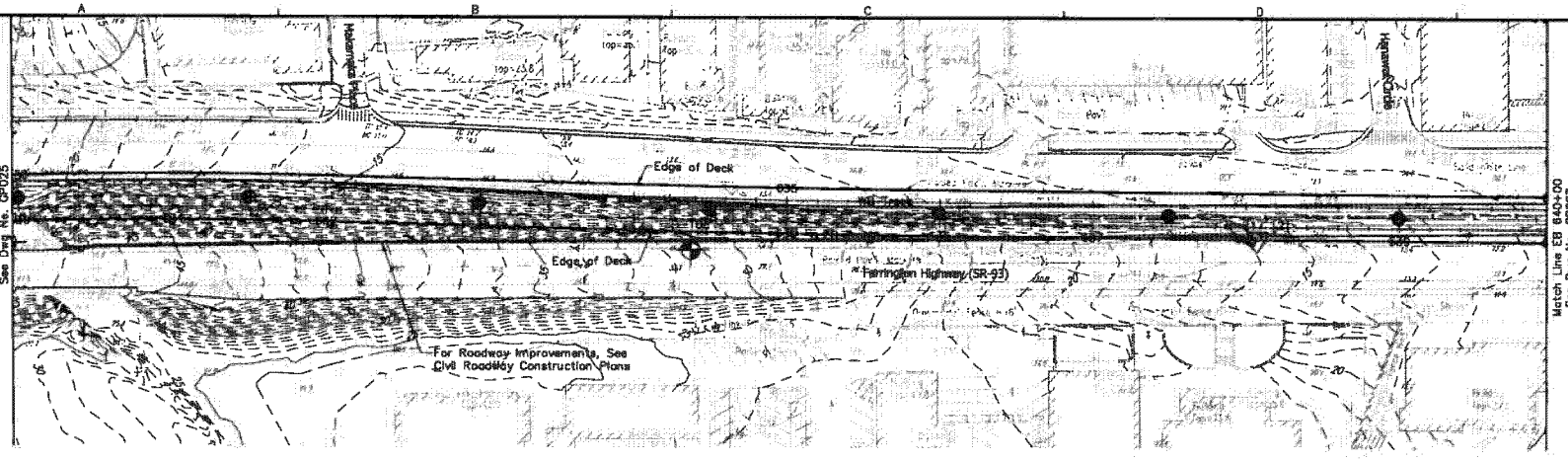

NOTE:

1. See Dwg Nos. SG001 and SG002 for Structural General Notes, Symbols and Abbreviations.
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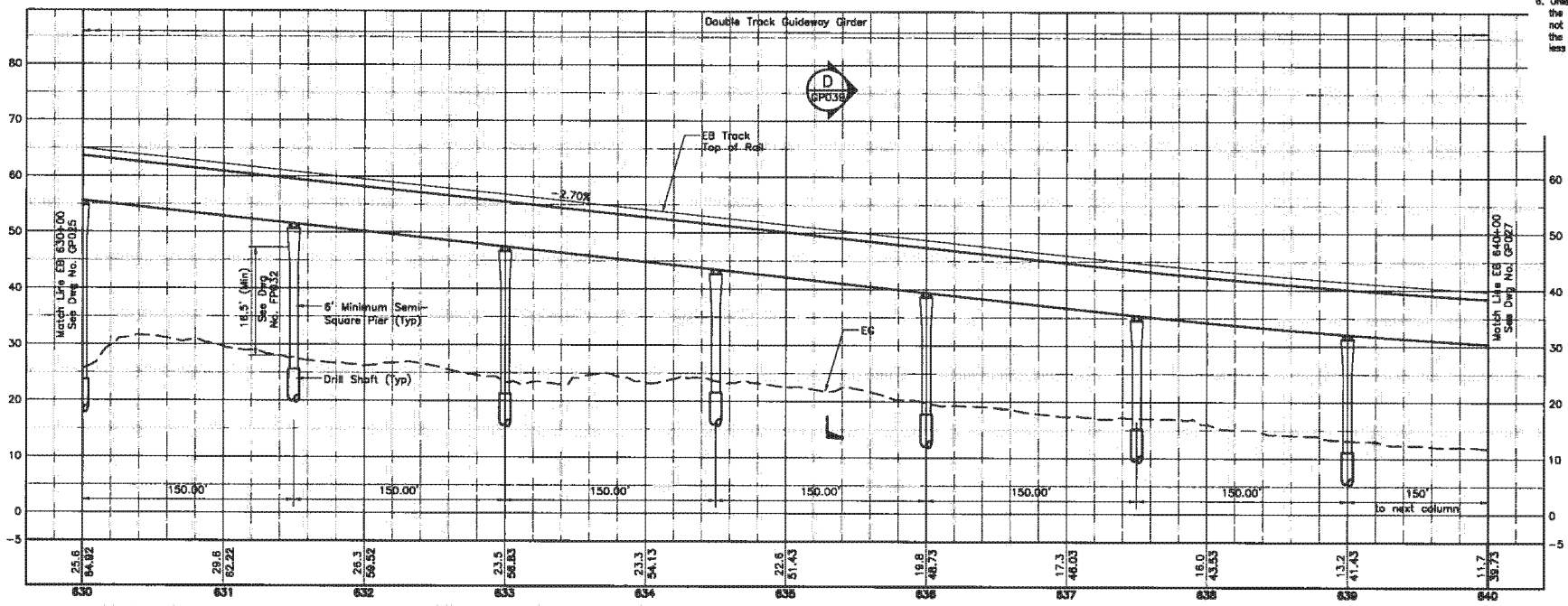
6. Unless shown otherwise on the drawings, the semi-square columns, if used, shall not be less than 6-foot by 6-foot, and the associated drilled shafts shall not be less than 8-foot in diameter.



Rev	By	Date	Description
B	AB	05-22-09	Revised Notes
A	AB	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: D Yavorsky
Drawn: T Cochran
Checked: T Kimura
Approved: A Borst
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

For reduced prints, original page size in inches: 1 2 3 4 5 6 7 8 9 10 11 12

WEST O'AHU/FARRINGTON DESIGN-BUILD

STRUCTURAL
PLAN & PROFILE

EB 630+00 TO EB 640+00

Contract No.: DB-1200
CADD File: WF-G04-GP026
Drawing No: GP026 Rev. B
Scale: 1"=40' H, 1"=10' V
Page No. 47 of 209

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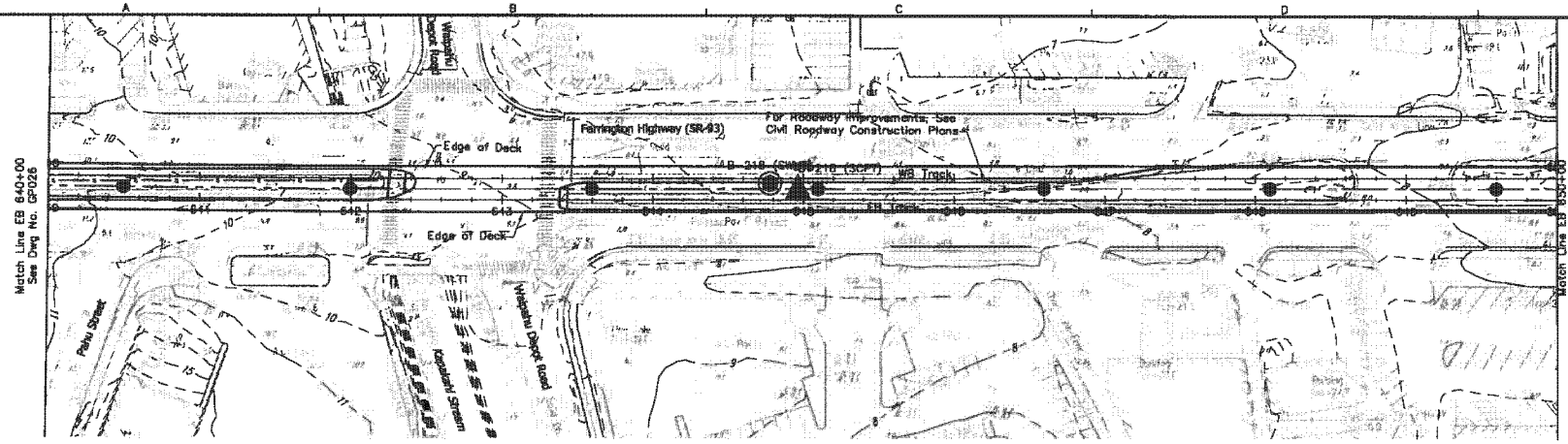

NOTE:

1. See Dwg Nos. SG001 and SG002 for Structural General Notes, Symbols and Abbreviations.
2. The configuration shown relative to HRT work and site condition is under development and subject to change.
3. The depiction of retaining walls is for approximate location only. The type of wall and its foundation required to protect structural facilities against ground movement and settlement is to be determined by the Design-Builder. The Design-Builder shall also provide retaining walls that may not be shown, but are dependent on his approved grading plans.
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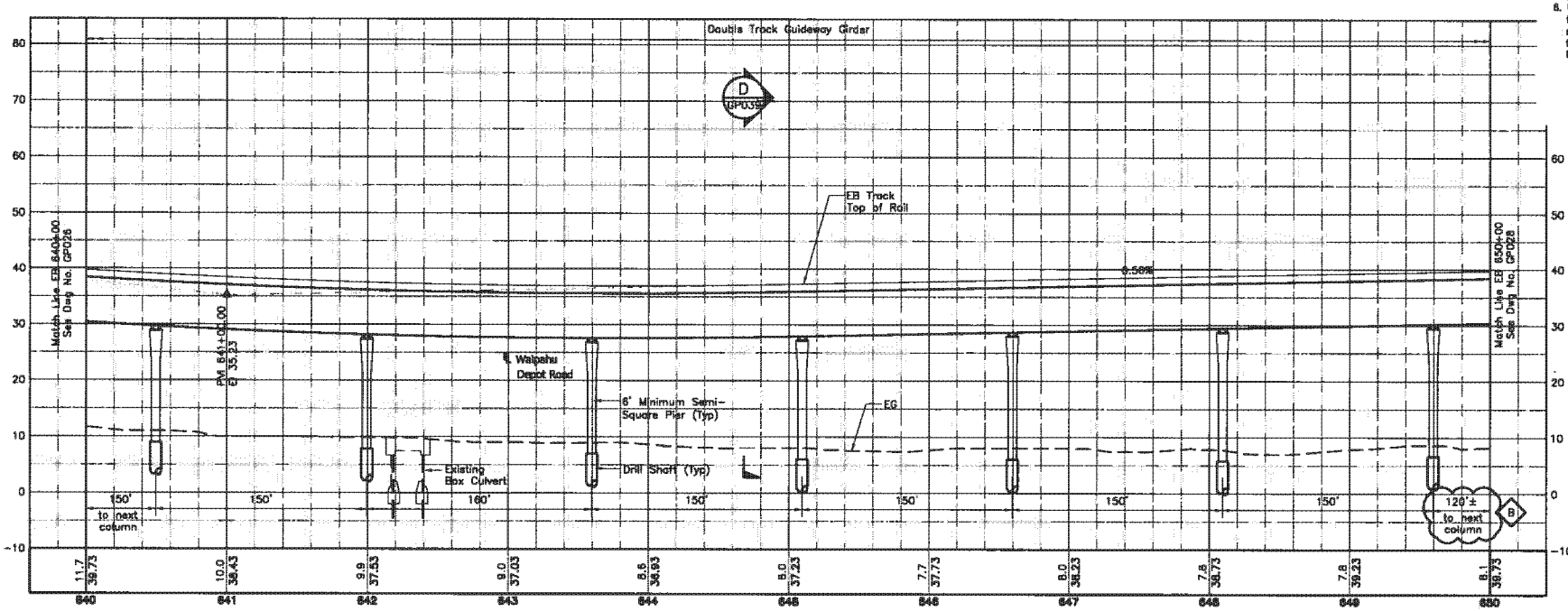
6. Unless shown otherwise on the drawings, the semi-square columns, if used, shall not be less than 5-foot by 5-foot, and the associated drilled shafts shall not be less than 8-foot in diameter.



40' 0' 40'

10' 0' 10'

Rev	By	Date	Description
B	AB	05-22-09	Revised Notes; Revised Dimensions
A	AB	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: D Yavorsky
Drawn: T Cochran
Checked: T Kimura
Approved: A Borst
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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WEST O'AHU/FARRINGTON DESIGN-BUILD

STRUCTURAL PLAN & PROFILE

EB 640+00 TO EB 650+00

Contract No.: DB-1200
CADD File: WF-G04-GP027
Drawing No.: GP027 Rev. B
Scale: 1"=40' H, 1"=10' V
Page No. 48 of 209

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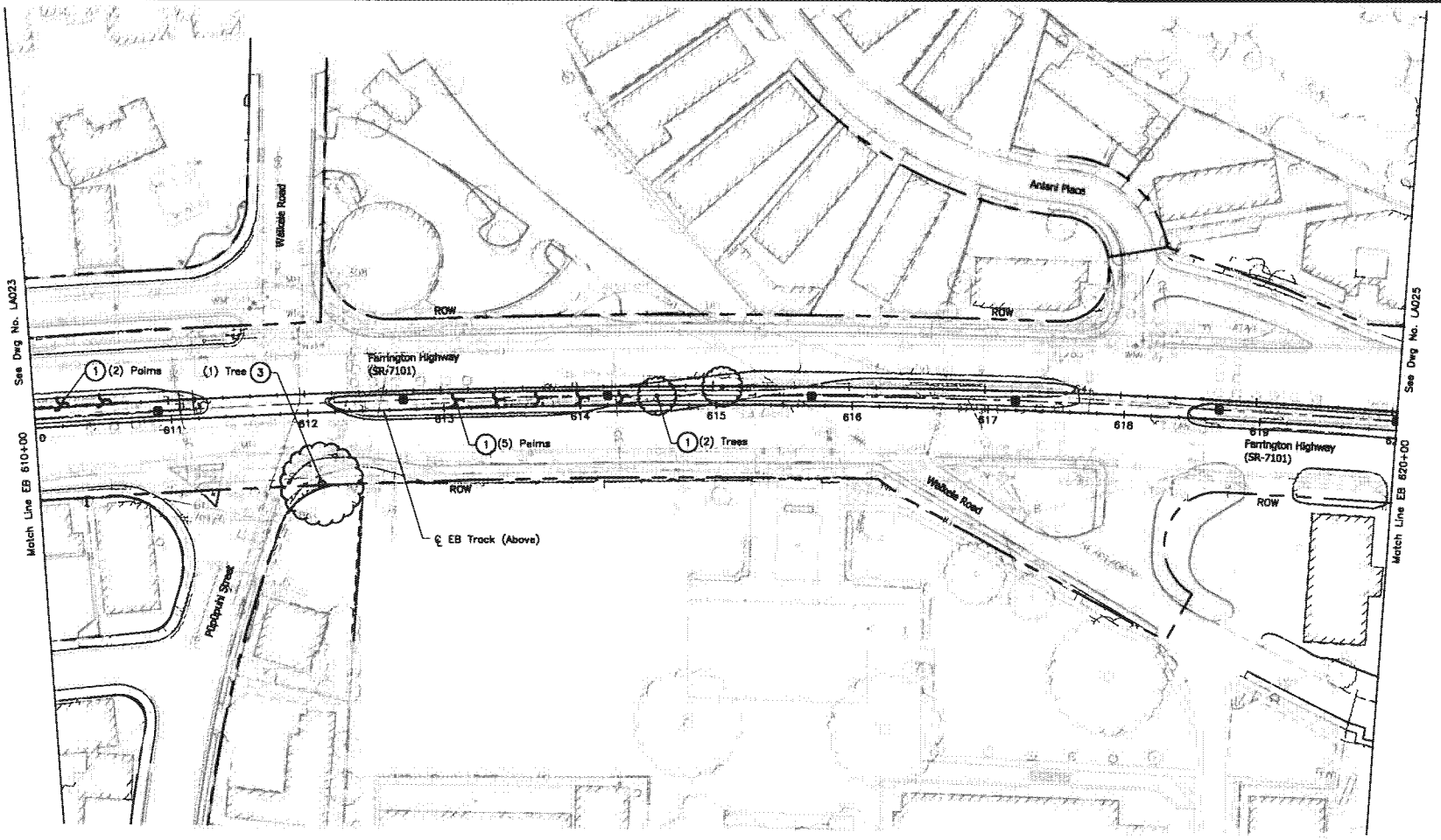

LEGEND

- Proposed Guideway Column.
- Existing Palm
- Existing Tree
- Existing Vegetation

CONSTRUCTION NOTES:

1. Salvage tree or palm for transplanting.
2. Remove tree or palm.
3. Protect in place tree or palm. (See Detail 1-LA101)

See roadway construction plan sheets for proposed roadway improvements.

40' 0 40'

Rev	By	Date	Description
A	AK	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: D Easterday
Drawn: M Weise
Checked: D Easterday
Approved: A Kutsunai
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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

WEST O'AHU/FARRINGTON DESIGN-BUILD

LANDSCAPE DEMOLITION PLAN

EB 610+00 TO EB 620+00

Contract No.: DB-1200
CADD File: WF-J02-LA024
Drawing No: LA024 Rev. A
Scale: 1"=40'
Page No. 162 of 209

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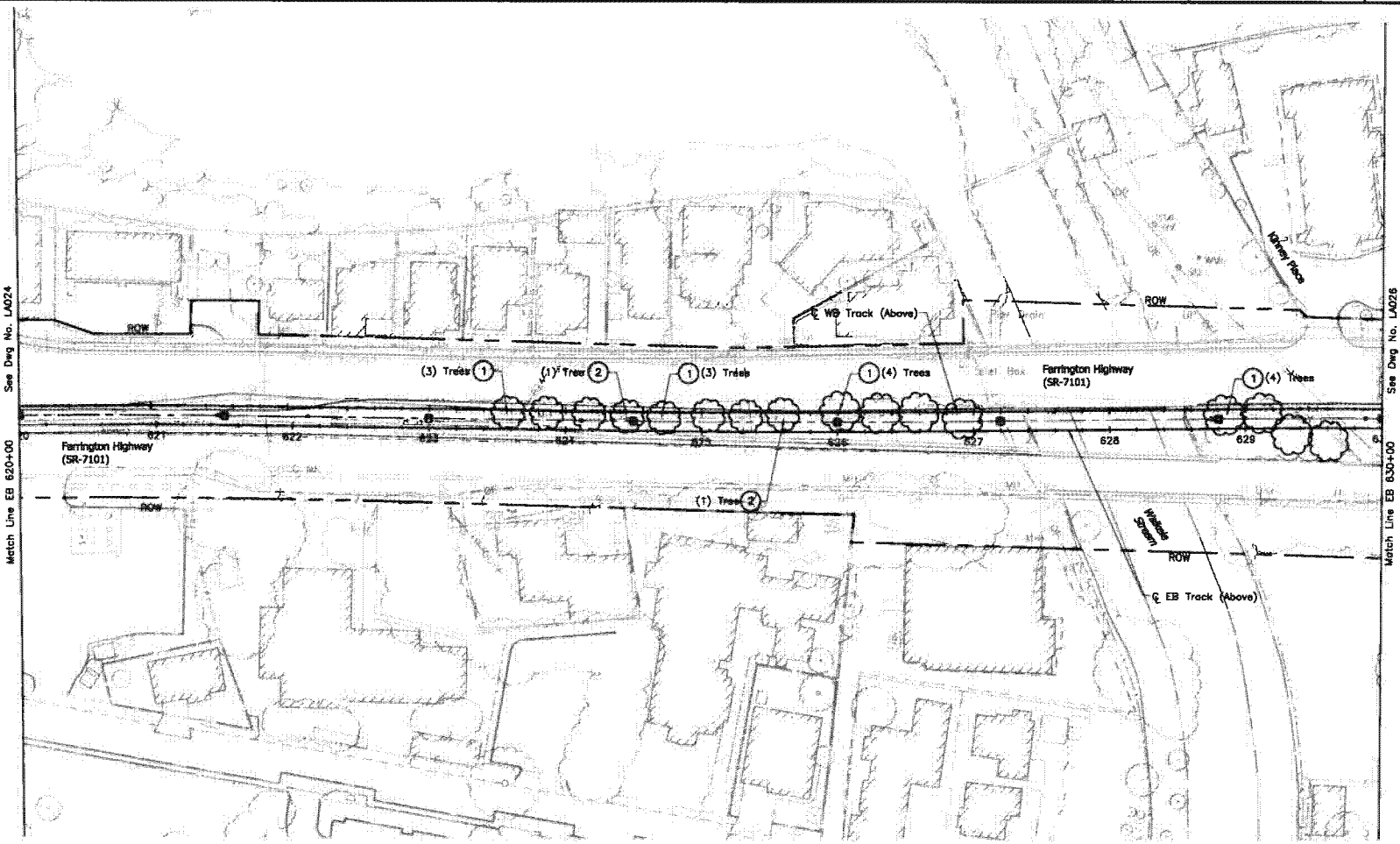

N

LEGEND

- Proposed Guideway Column.
- Existing Palm
- Existing Tree
- Existing Vegetation

CONSTRUCTION NOTES:

1. Salvage tree or palm for transplanting.
2. Remove tree or palm.
3. Protect in place tree or palm. (See Detail 1–LA101)

See roadway construction plan sheets for proposed roadway improvements.

40' 0 40'

Rev	By	Date	Description
A	AK	04–03–09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: D Easterday
Drawn: M Weiss
Checked: D Easterday
Approved: A Kutsunai
Date: 03–25–09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: PLANNING • CIVIL ENGINEERING LANDSCAPE ARCHITECTURE ENVIRONMENTAL CONSULTING
Belt Collins Hawaii Ltd.
2153 North King Street, Suite 200
Honolulu, Hawaii 96819
T: 808.521.5631 • F: 808.521.7515
www.beltcollins.com

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

WEST O'AHU/FARRINGTON DESIGN-BUILD

LANDSCAPE DEMOLITION PLAN

EB 620+00 TO EB 630+00

Contract No.: DB–1200
CADD File: WF–J02–LA025
Drawing No: LA025 Rev. A
Scale: 1"=40'
Page No. 183 of 209

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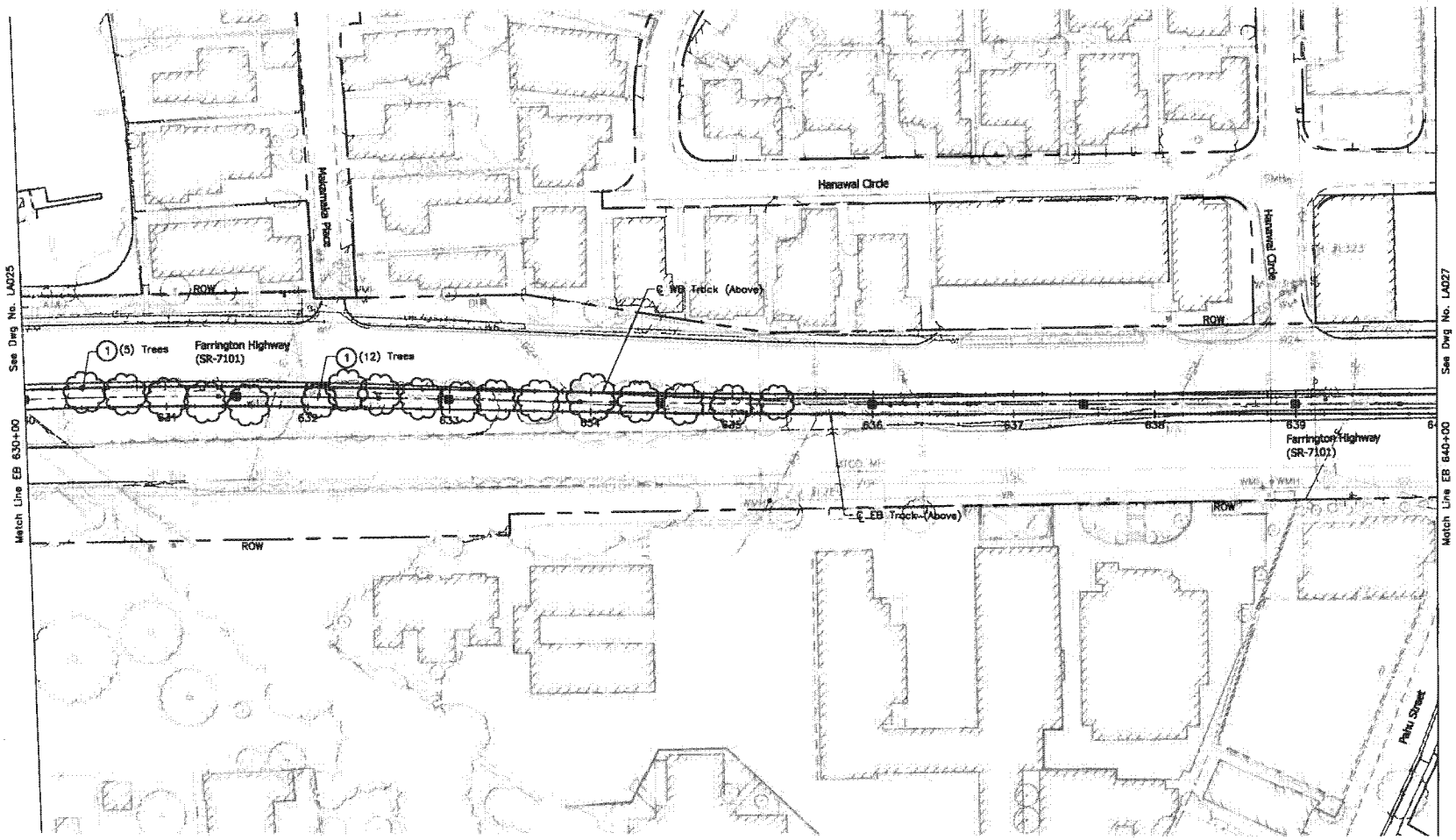

LEGEND

- Proposed Guideway Column.
- Existing Palm
- Existing Tree
- Existing Vegetation

CONSTRUCTION NOTES:

1. Salvage tree or palm for transplanting.
2. Remove tree or palm.
3. Protect in place tree or palm. (See Detail 1-LA101)

See roadway construction plan sheets for proposed roadway improvements.

40' 0 40'

Rev	By	Date	Description
A	AK	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: D Easterday
Drawn: M Weiss
Checked: D Easterday
Approved: A Kutsunai
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

For reduced prints, original page size in inches:

WEST O'AHU/FARRINGTON DESIGN-BUILD

LANDSCAPE DEMOLITION PLAN

EB 630+00 TO EB 640+00

Contract No.: DB-1200
CADD File: WF-J02-LA026
Drawing No: LA026 Rev. A
Scale: 1"=40'
Page No. 184 of 209

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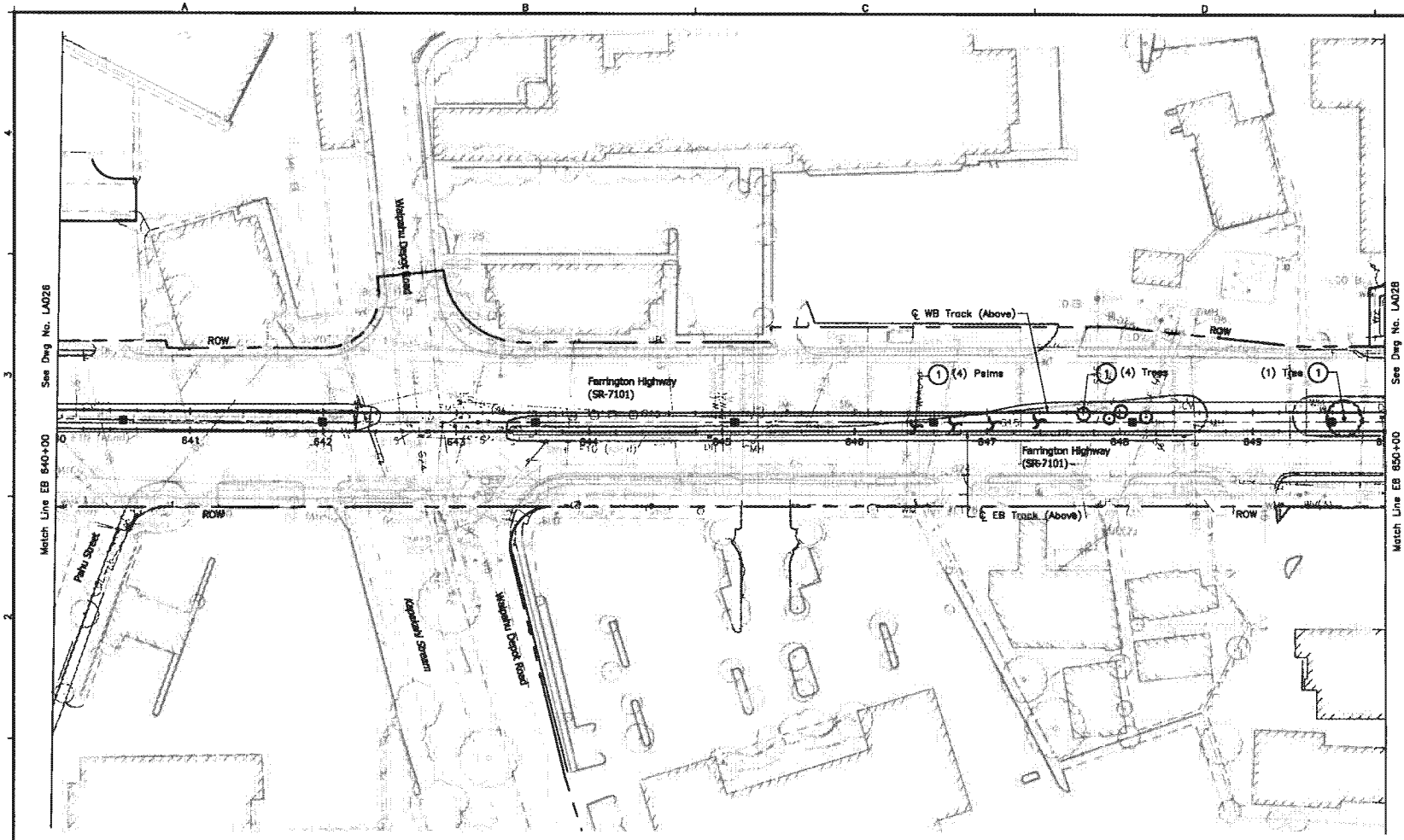


N

LEGEND

- Proposed Guideway Column.
- Existing Palm
- Existing Tree
- Existing Vegetation

CONSTRUCTION NOTES:

1. Salvage tree or palm for transplanting.
2. Remove tree or palm.
3. Protect in place tree or palm. (See Detail 1-LA101)

See roadway construction plan sheets for proposed roadway improvements.

40' 0 40'

Rev	By	Date	Description
A	AK	04-03-09	Issued For Bid

BID DOCUMENT
NOT FOR CONSTRUCTION

Designed: D Easterday
Drawn: M Weiss
Checked: D Easterday
Approved: A Kutsunai
Date: 04-03-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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

WEST O'AHU/FARRINGTON DESIGN-BUILD

LANDSCAPE DEMOLITION PLAN

EB 640+00 TO EB 650+00

Contract No.: DB-1200
CADD File: WF-J02-LA027
Drawing No: LA027 Rev. A
Scale: 1"=40'
Page No. 165 of 209

2009-03-25 9:54 AM L:\2008710100_HHCTCP\CAD\Blocks\Segments\WF-J02-SCLA.dwg

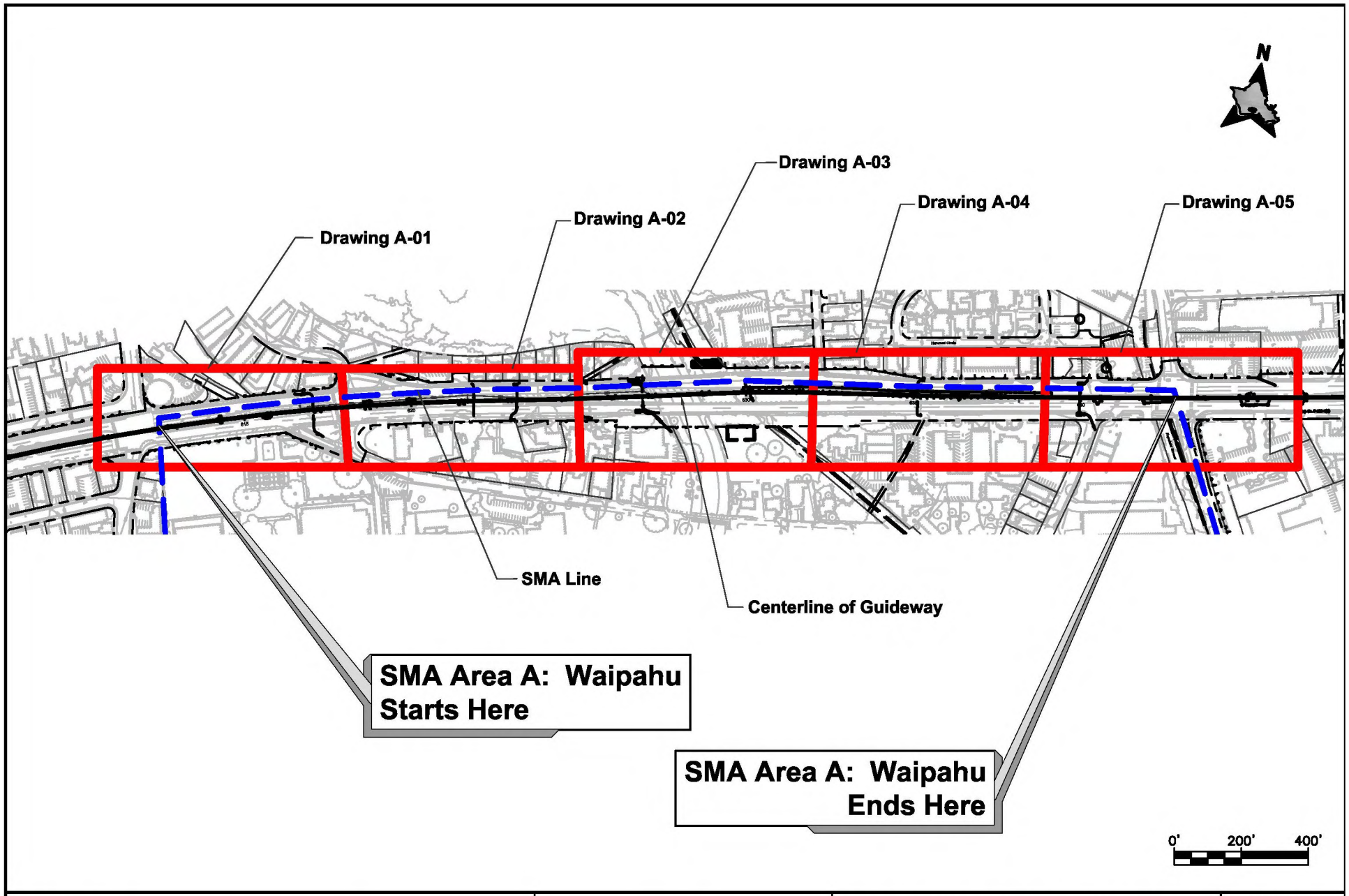
AR00077654

Attachment B:

Preliminary Engineering Project Drawings, SMA A: Waipahu

- A-00 to A-05: SMA Line Plan Sheets
- A-HR: Historic Resources
- A-FZ: Flood Zones
- A-FZ2: Flood Zones – 2011

AR00077655



CITY & COUNTY OF HONOLULU
DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

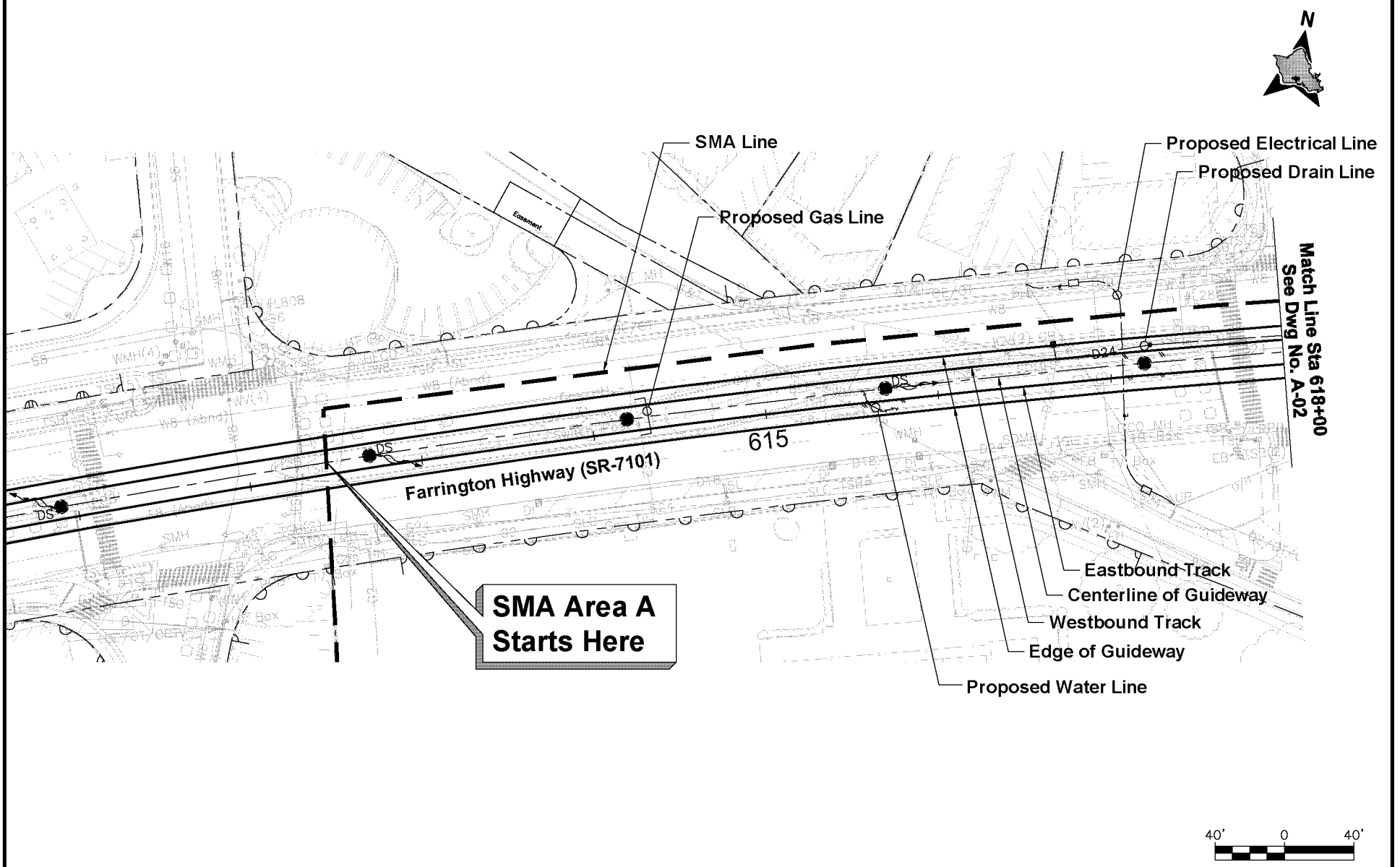
SPECIAL MANAGEMENT AREA LINES
SMA AREA A
PLAN

STA 611+00 TO STA 646+00

Drawing No: **A-00**

Date: 11/06/2009

AR00077656



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA A

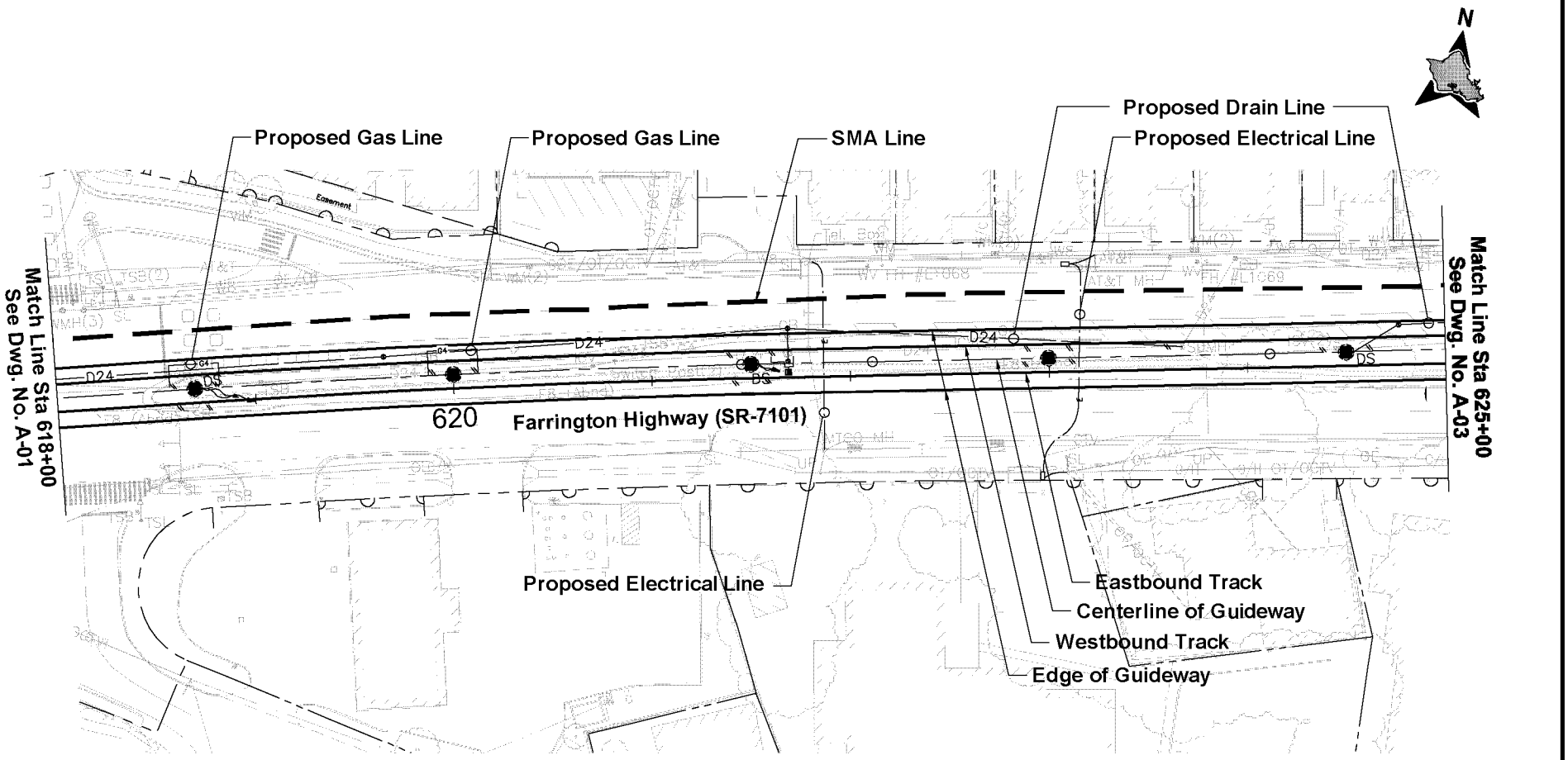
PLAN

STA 611+00 TO STA 618+00

Drawing No: **A-01**

Date: 11/06/2009

AR00077657



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA A

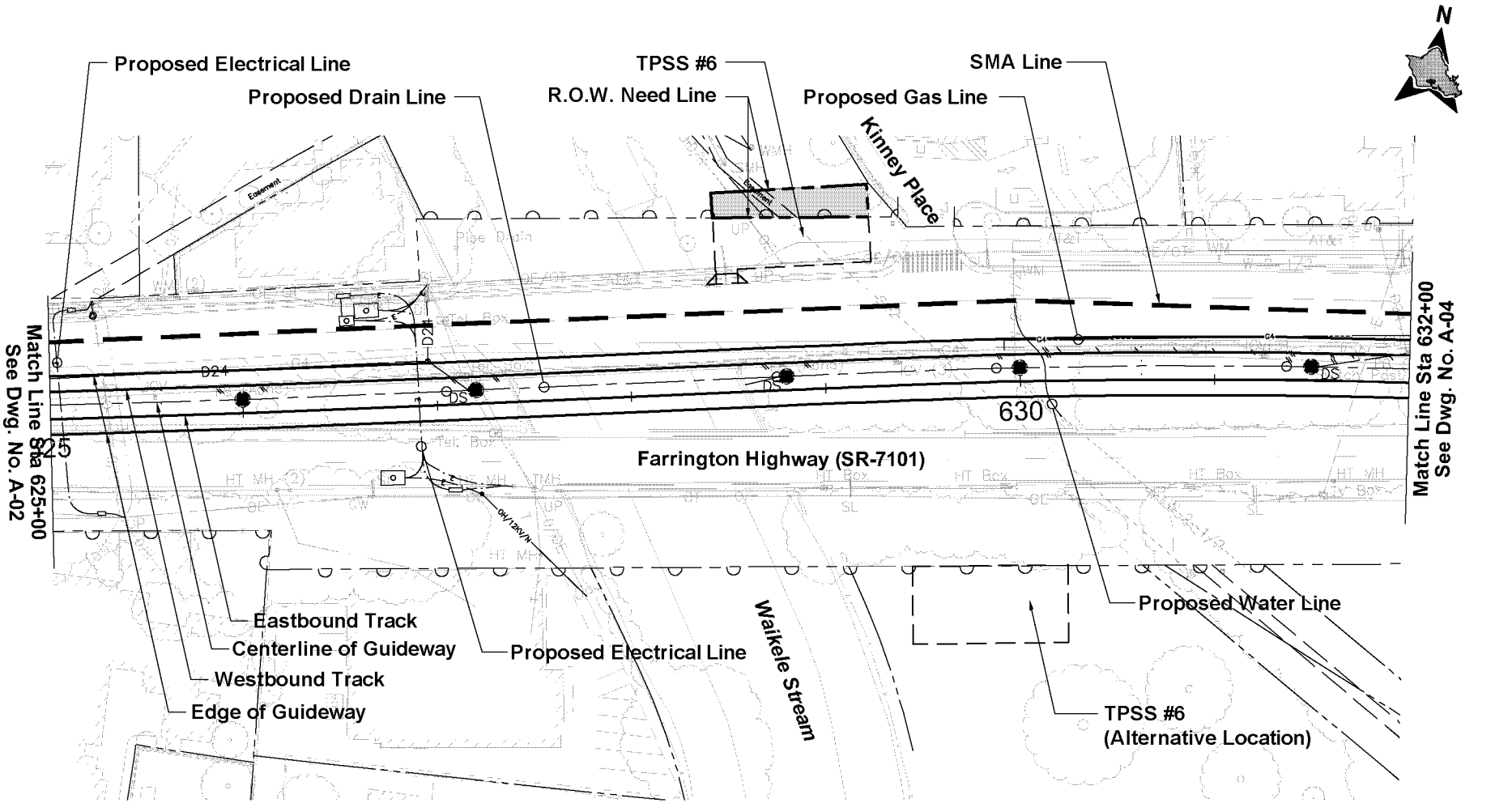
PLAN

STA 618+00 TO STA 625+00

Drawing No: **A-02**

Date: 11/06/2009

AR00077658



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA A

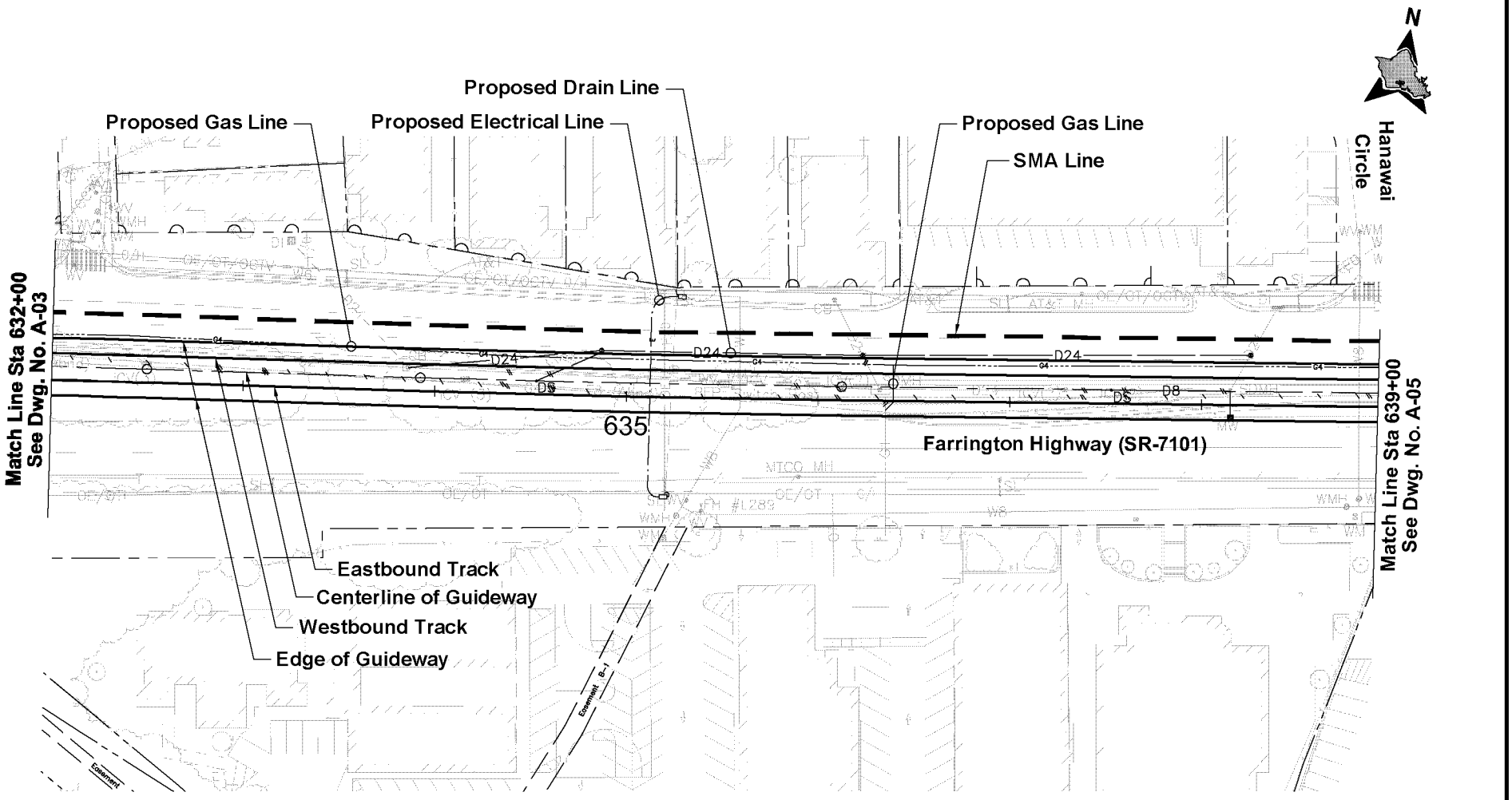
PLAN

STA 625+00 TO STA 632+00

Drawing No: **A-03**

Date: 11/06/2009

AR00077659



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA A

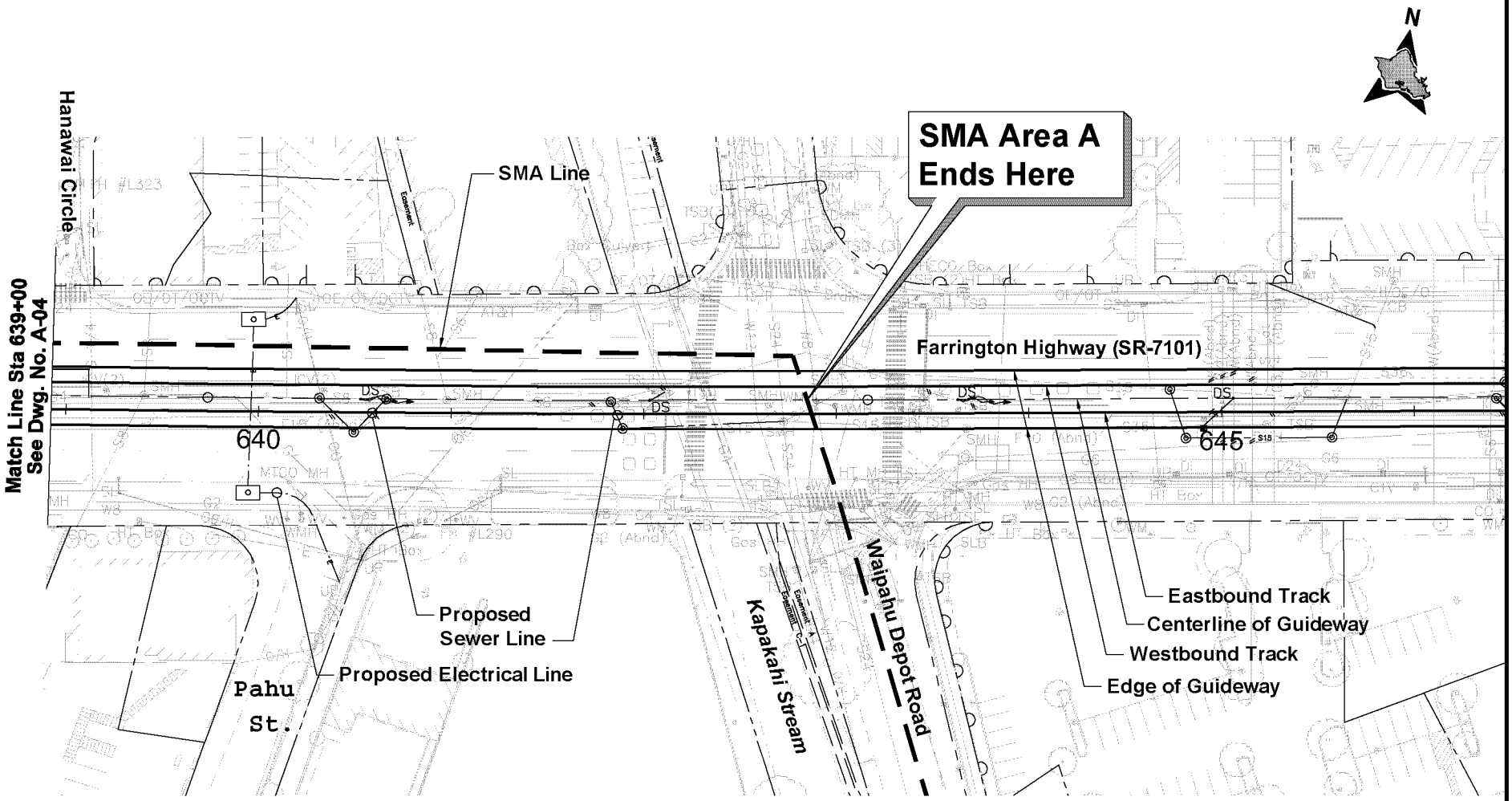
PLAN

STA 632+00 TO STA 639+00

Drawing No: **A-04**

Date: 11/06/2009

AR00077660



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA A

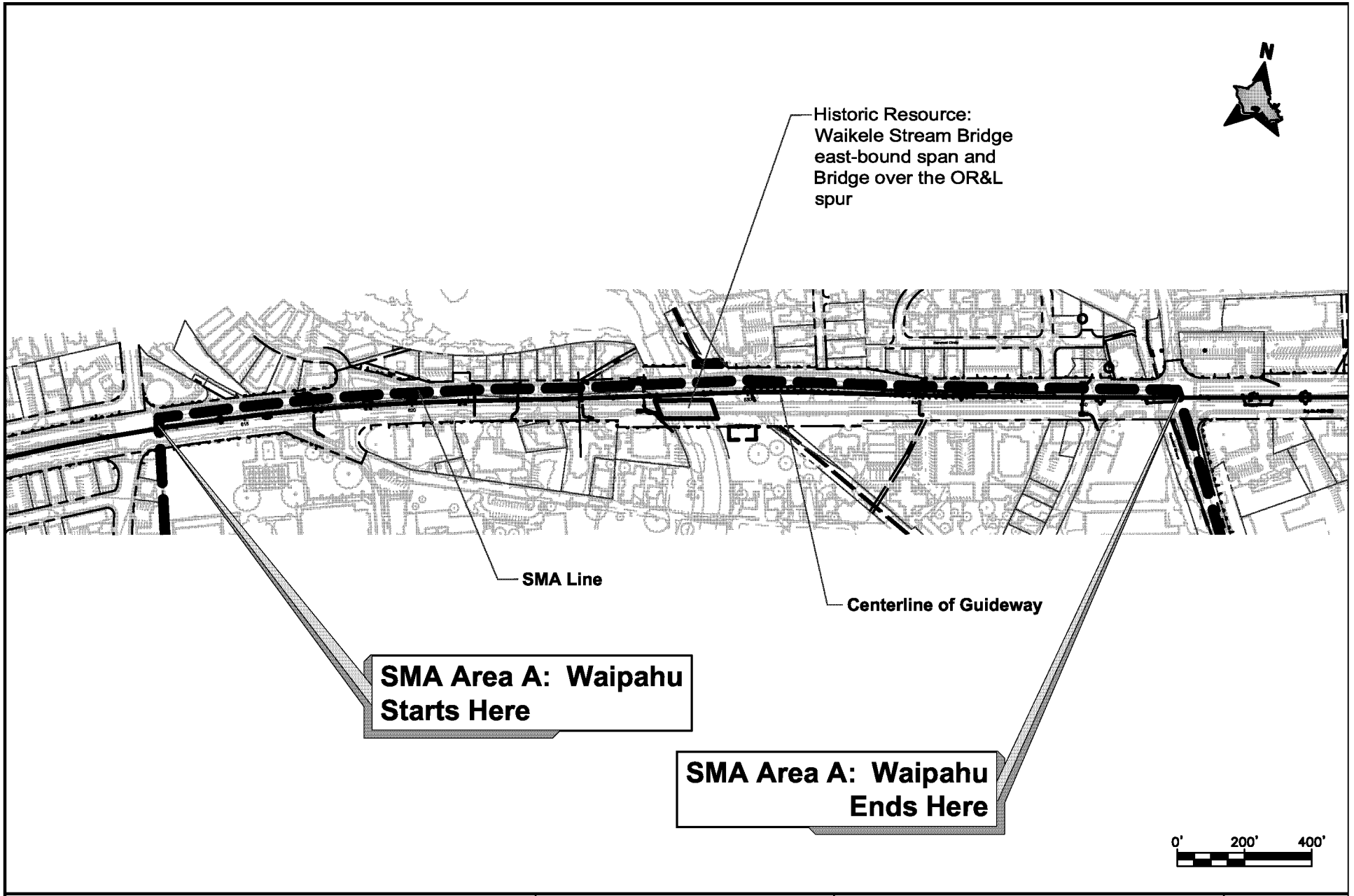
PLAN

STA 639+00 TO STA 646+00

Drawing No: **A-05**

Date: 11/06/2009

AR00077661



CITY & COUNTY OF HONOLULU
DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

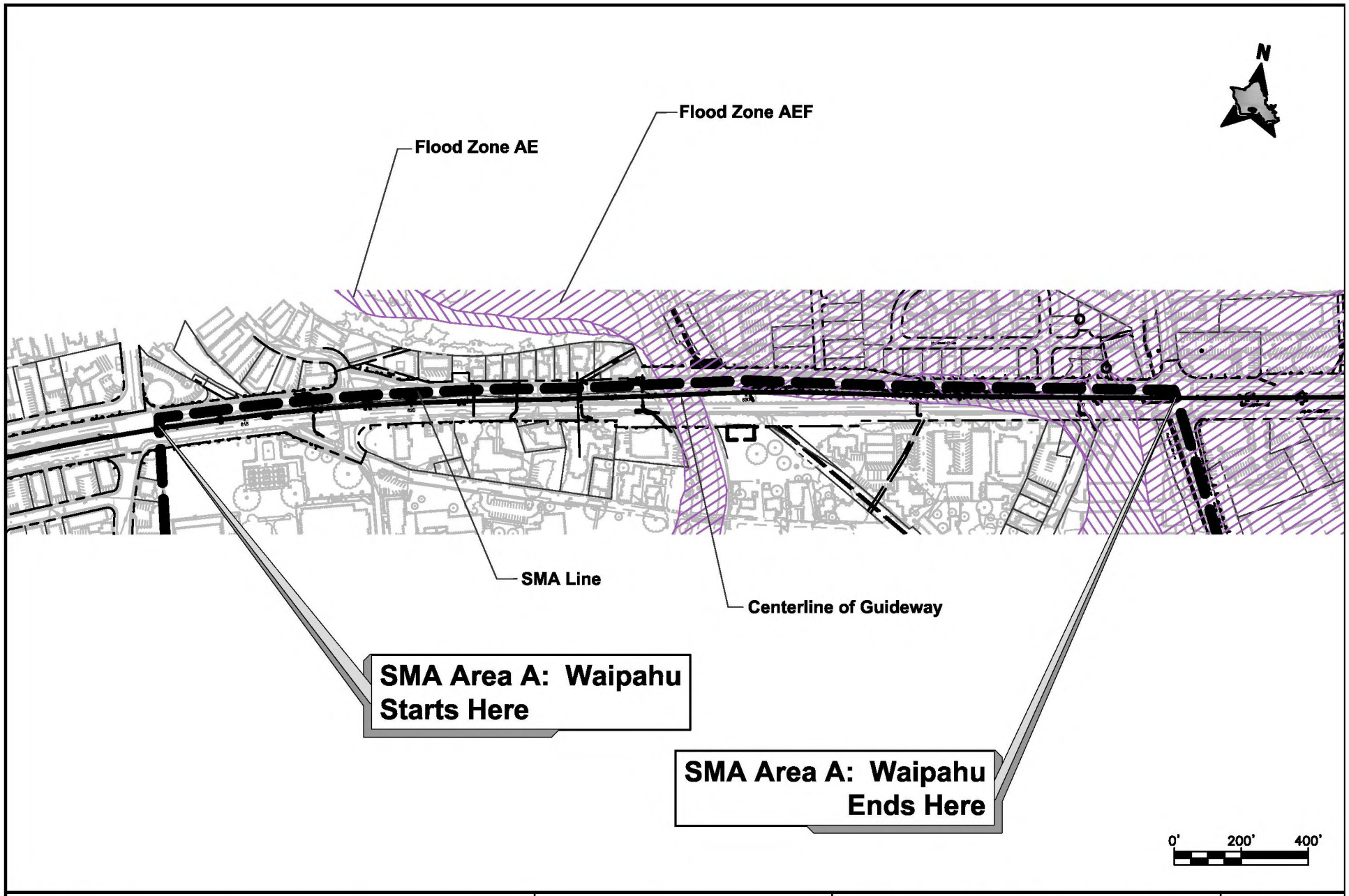
HONOLULU
HIGH-CAPACITY TRANSIT
CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES
SMA AREA A
PLAN

STA 611+00 TO STA 646+00

Drawing No:
A-HR

Date:
11/06/2009



CITY & COUNTY OF HONOLULU
DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

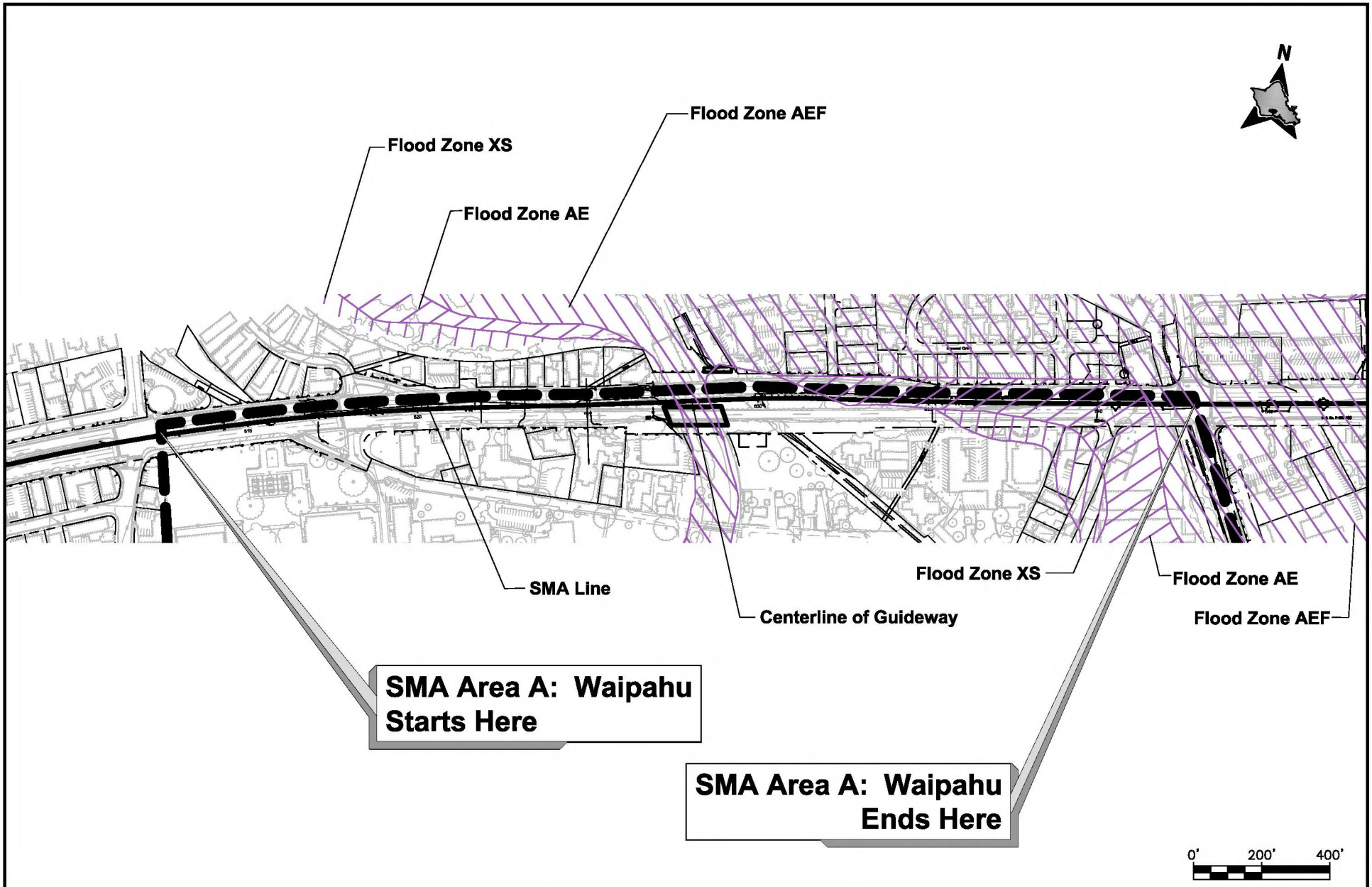
HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES
SMA AREA A
PLAN

STA 611+00 TO STA 646+00

Drawing No: **A-FZ**

Date: 11/06/2009



CITY & COUNTY OF HONOLULU
DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES
SMA AREA A
FLOOD ZONES 2011
STA 611+00 TO STA 646+00

Drawing No: **A-FZ2**

Date: 10/04/10

Attachment C:

Preliminary Engineering Plan/Profile Sheets, SMA B: MSF near LCC Utilities

These plan and profile sheets are excerpts from the following:

City and County of Honolulu
Department of Transportation Services
Rapid Transit Division (RTD)

West O'ahu/Farrington Design Build
Contract DB-1200
RFP Drawings

Conformed August 5, 2009

Prepared for: Honolulu High-Capacity Transit Corridor Project

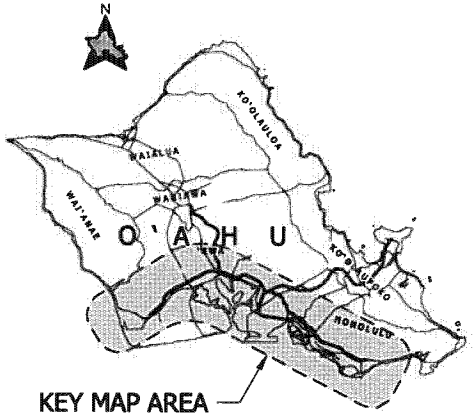
Prepared by: Parsons Brinckerhoff, General Engineering Consultant (GEC)

AR00077665

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

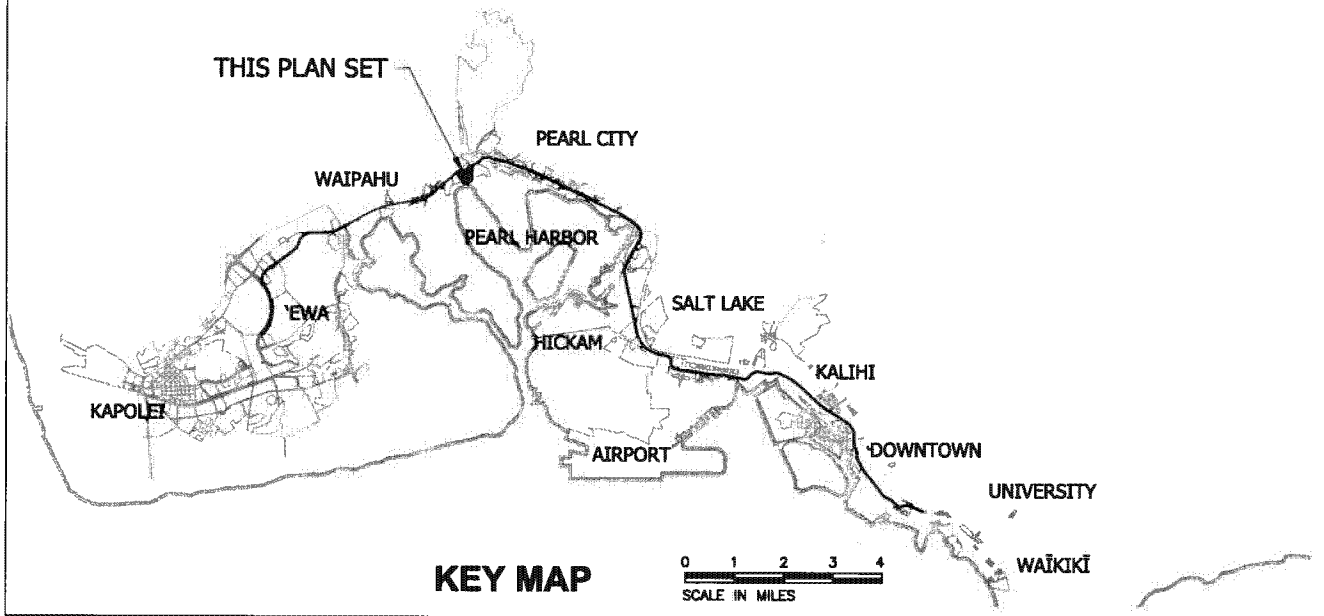
MAINTENANCE & STORAGE FACILITY

VOLUME 1 - YARD



City and County of Honolulu
Department of Transportation Services

Rapid Transit Division



KEY MAP

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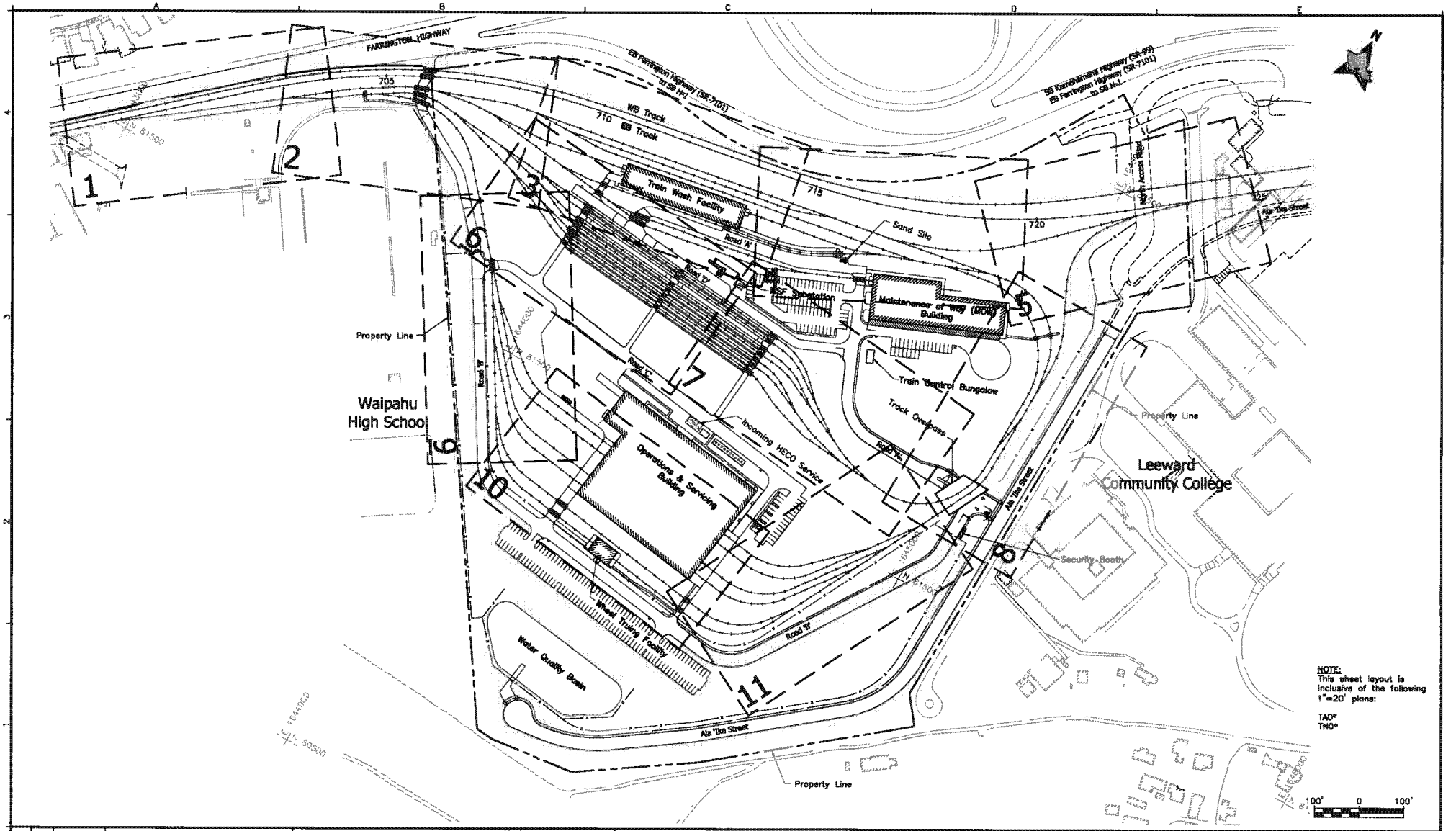

NOTE:
This sheet layout is inclusive of the following 1"=20' plans:

TA0*
TN0*

Rev	By	Date	Description
A	AB	07-24-09	Issued for Proposal

RFP DRAWING
NOT FOR CONSTRUCTION

Designed: M Hall
Drawn: J Derosier
Checked: J Davis
Approved: A Borst
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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MAINTENANCE & STORAGE FACILITY

SITE LAYOUT & SHEET INDEX KEY MAP

1"=20' PLANS

Contract No.: DB-200
CADD File: SCY-A05-GN006
Drawing No: GN006 Rev. A
Scale: 1"=100'
Page No. 5 of 259

2009-07-21 10:36 AM K:\CADD\Seg C M&SF Contract Deliverables\A - General\SCY-A05-GN006.dwg

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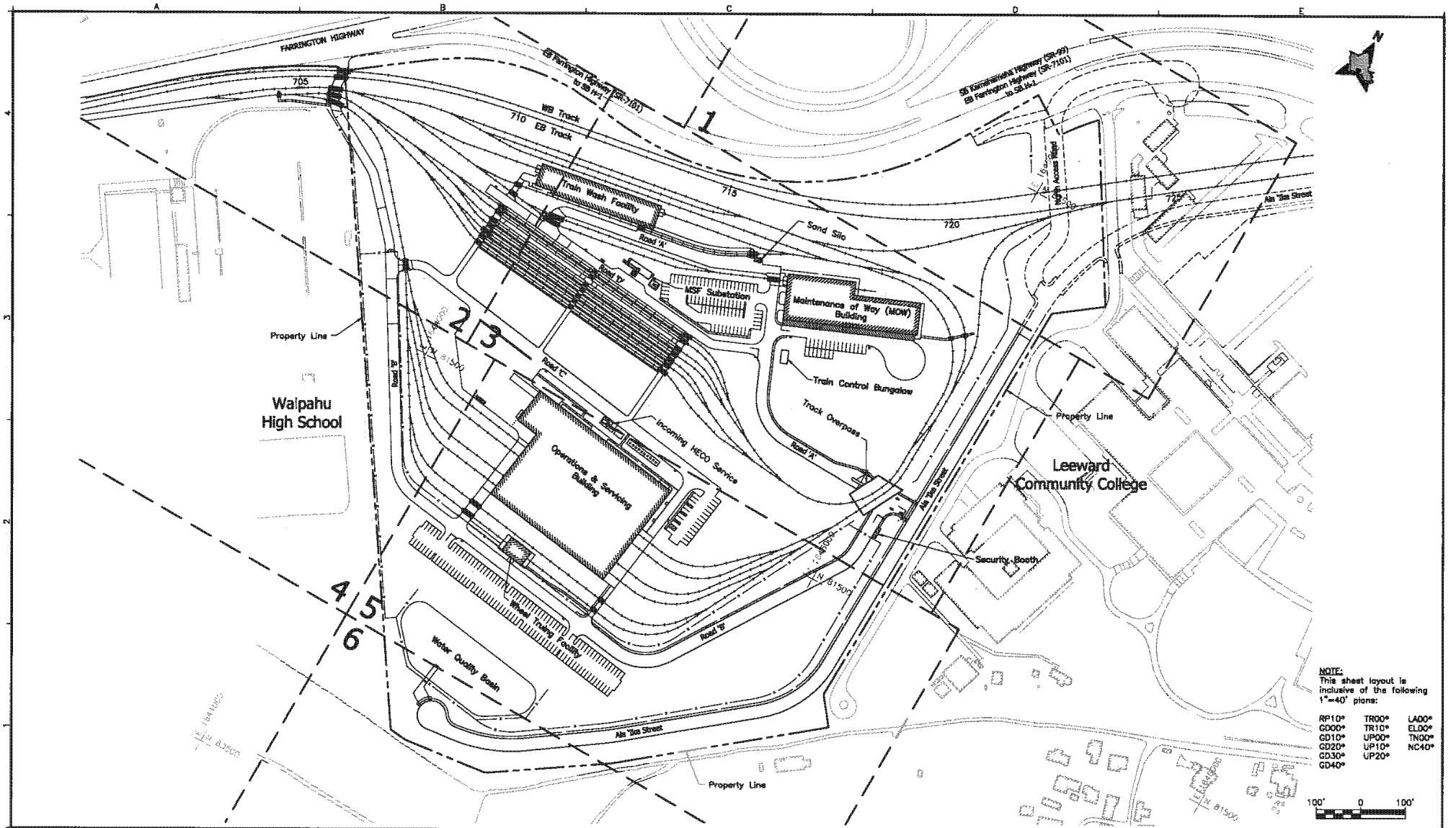

Rev	By	Date	Description
A	AB	07-24-09	Issued for Proposal

RFP DRAWING
NOT FOR CONSTRUCTION

Designed: M Hall
Drawn: J Derosier
Checked: J Davis
Approved: A Borst
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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MAINTENANCE & STORAGE FACILITY

SITE LAYOUT & SHEET INDEX KEY MAP

1"=40' PLANS

Contract No.: DB-200
CADD File: SCY-A05-GN007
Drawing No: GN007 Rev. A
Scale: 1"=100'
Page No. 6 of 259

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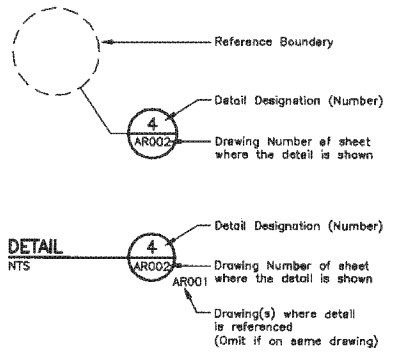
GENERAL NOTES

1. Origin of Coordinates: Hawaii State Plane Coordinate Grid System, Zone III with the North American Datum of 83 High Accuracy Reference Network (NAD83 HARN).
2. Elevations shown on these plans are reference to Mean Sea Level (MSL).
3. The top of rail profile shown represents the elevation of the top of low running rail.
4. Degree of Curve (Dc) values are expressed at arc definition.
5. All track points, except PI's are at centerline of proposed track, unless noted otherwise.
6. Underground facilities, poles, structures, and utilities have been plotted from available surveys and records. Their locations must be considered approximate only. There may be others, the existence of which is at present unknown. Verification of all the locations, shown or not shown, will be the responsibility of the Design-Builder.
7. The existing conditions shown hereon are based on LiDAR data collected in September and October of 2007, supplemental ground surveys were performed between September of 2007 and December of 2008, and record information from various design projects either constructed, under construction or proposed. The selected Design-Builder is responsible for verifying existing conditions prior to supplying advanced design documents to the RTD.
11. Contact the Hawaii Department of Transportation (HDOT) and/or the City and County of Honolulu for additional plan sheet details not included in the Standard Details Summary and Standard Plans Summary plan sheets.

SYMBOLS

DETAILS



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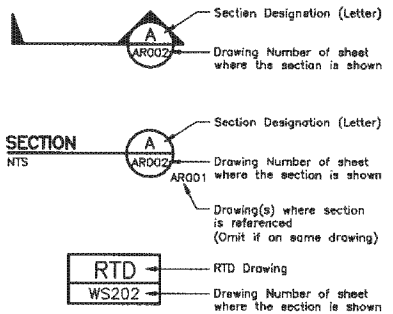
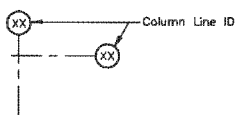


COLUMN LINE GRID INDICATOR



SPECIAL TERMS

Makai Ocean
Mauka Mountain

231° 41' 16" South Azimuth

GENERAL SYMBOLS

&	And
@	At
#	Number
ø	Diameter
%	Percent
=	Equal to
>	Greater Than
<	Less Than
≥	Greater Than or Equal To
≤	Less Than or Equal To

CIVIL SYMBOLS

CB10	Track Curve Name
△	Point of Intersection
⊙	PVC
	Point of Switch
	Station Equation
⬡	Roadway Curve Number
—— CUT ——	Limit of Cut Slope (Top of Slope)
—— FILL ——	Limit of Fill Slope (Toe of Slope)
	Limit of Grading
40	Existing Contours
80	Finish Contours
	Silt Fence
	Dust Control Fence
	SDMH
	Drain Inlet

HATCH

Station Platform

ABBREVIATIONS

Aggr	Aggregate
AHD, AH	Ahead
Approx	Approximate
B	Baseline
BK	Back
BT	Back Tangent
Bldg	Building
BVC	Begin Vertical Curve
BVCE	Begin Vertical Curve Elevation
BVCS	Begin Vertical Curve Station
℄	Centerline
CB	Catch Basin
CCTV	Closed Circuit Television Camera
Comm	Communications
Conc	Concrete
Const	Construction
DF	Direct Fixation
DI	Drainage Inlet
Dia	Diameter
Δ	Delta
DMH	Drainage Manhole
DS	Downspout
Dwg	Drawing
E	East
Ea	Actual Superelevation
Eu	Unbalanced Elevation
EB	Eastbound
EG	Existing Ground
El	Elevation
Elev	Elevation
EVC	End Vertical Curve
EVCE	End Vertical Curve Elevation
EVCS	End Vertical Curve Station
Exist	Existing
FA	Fire Alarm
FG	Finish Grade
Fin	Finish, Finished
FOC	Face of Curb
ft	Foot, Feet
GB	Grade Break
GBS	Gap Breaker Station
Gnd	Ground
H	Horizontal
HWY	Highway
Jt(s)	Joint(s)
L	Length
Lc	Length of Curve
LH	Left Hand
LiDAR	Light Detection and Ranging
Ls	Length of Spiral
LT	Left
LVC	Length of Vertical Curve
Max	Maximum
Min	Minimum
MHN	Manhole, Negative
MHP	Manhole, Positive
MPH	Miles Per Hour
N	North
N/A	Not Applicable
NB	Northbound
NIC	Not In Contract
N.I.C.	Not in Contract
No.	Number
OD	Outside Diameter
PC	Point of Curve
PI	Point of Intersection
PITO	Point of Intersection of Turnout
POB	Point of Beginning
POC	Point on Curve
POE	Point of Ending
POT	Point on Tangent
POVC	Point on Vertical Curve
POVT	Point on Vertical Tangent
PS	Point of Switch
PSI	Pounds Per Square Inch
PT	Point of Tangent
PVC	Point of Vertical Curvature
PVI	Point of Vertical Intersection
PVT	Point of Vertical Tangency
R	Radius
Reinf	Reinforce, Reinforcing
RH	Right Hand
Rm	Room
ROW	Right-of-Way
RPM	Revolutions Per Minute
RT	Right
S	South
SB	Southbound
SDMH	Storm Drain Manhole
Shldr	Shoulder
Sht	Sheet
Sig	Signal
Sq	Square
St	Street
Sta	Station
T	Tangent Distance
T&B	Top & Bottom
T.O.	Turnout
TOR	Top of Rail
TPSS	Traction Power Substation
Typ	Typical
UG	Underground
V	Vertical
W	West
WB	Westbound
w/	With

Rev	By	Date	Description
A	JK	07-24-09	Issued For Proposal

RFP DRAWING NOT FOR CONSTRUCTION

Designed: J Sugibayashi
Drawn: J Sugibayashi
Checked: L Fong
Approved: J Kage
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: SATO AND ASSOCIATES, INC.
CONSULTING ENGINEERS • CIVIL & STRUCTURAL
HONOLULU, OAHU, HAWAII • WAILUKU, MAUI, HAWAII

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MAINTENANCE & STORAGE FACILITY

GENERAL CIVIL NOTES, SYMBOLS, AND ABBREVIATIONS

SHEET 1 OF 1

Contract No.: DB-20D
CADD File: SCY-B01-CG001
Drawing No: CG001 Rev. A
Scale: N/A
Page No. 9 of 259

2009-07-20 10:26 AM R:\08024-HHCTCP\DWG\SCY-B01-CG001.dwg

Last Plot Date: 06/15/09

AR00077669

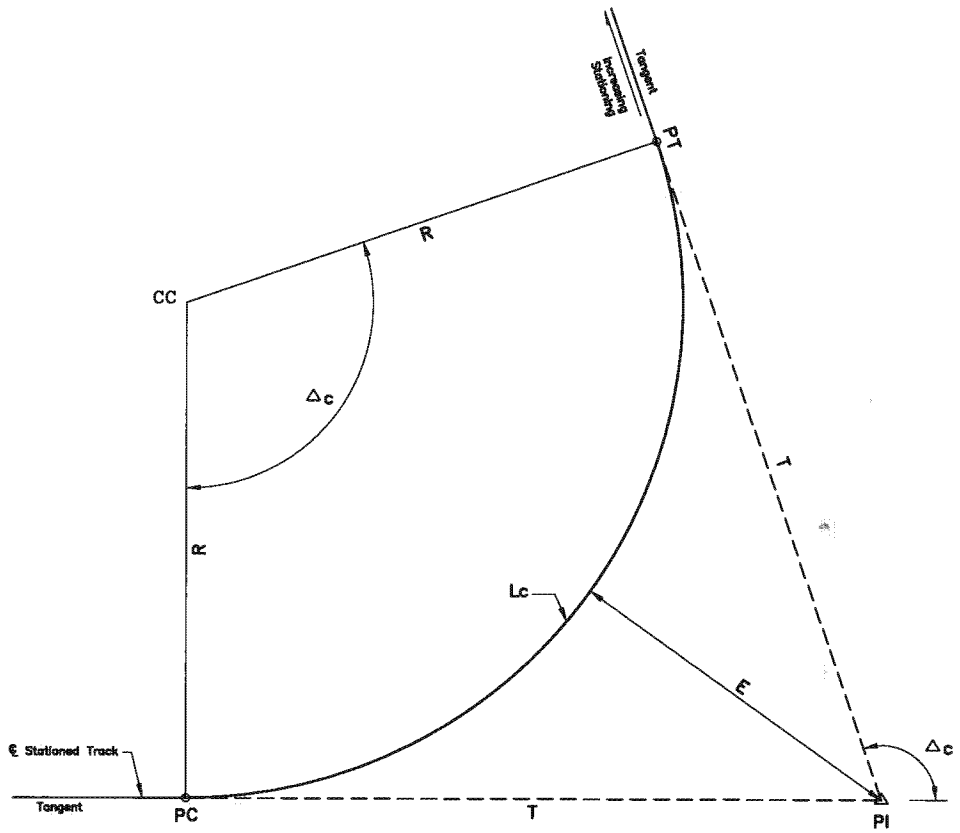
TRACK ALIGNMENT ABBREVIATIONS:

HORIZONTAL:

Δc = Central Angle of Circular Curve
CC = Circular Curve Center
PI = Point of Intersection
PC = Point of Curvature
PT = Point of Tangency
R = Radius of Circular Curve
T = Tangent Length of Circular Curve = $R \tan(\Delta/2)$
Lc = Length of Circular Curve = $\pi R (\Delta/180)$
E = External Distance from P.I. of Circular Curve to Circular Curve = $R(\text{Ex}\sec\frac{\Delta}{2})$
D_c = Degree of Curve (Arc Definition) = $\frac{5729.578}{R}$

VERTICAL:

PVT = Point of Vertical Tangent
PVC = Point of Vertical Curve
PVI = Point of Vertical Intersection
LVC = Length of Vertical Curve



Rev	By	Date	Description
A	AB	07-24-09	Issued for Proposal

RFP DRAWING
NOT FOR CONSTRUCTION

Designed: N/A
Drawn: J Derosier
Checked: E Liberman
Approved: A Borst
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION
Prime Consultant: PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
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MAINTENANCE & STORAGE FACILITY
TRACK ALIGNMENT ABBREVIATIONS

Contract No.: DB-200
CADD File: SCY-B01-CG005
Drawing No: CG005 Rev. A
Scale: NTS
Page No. 13 of 259

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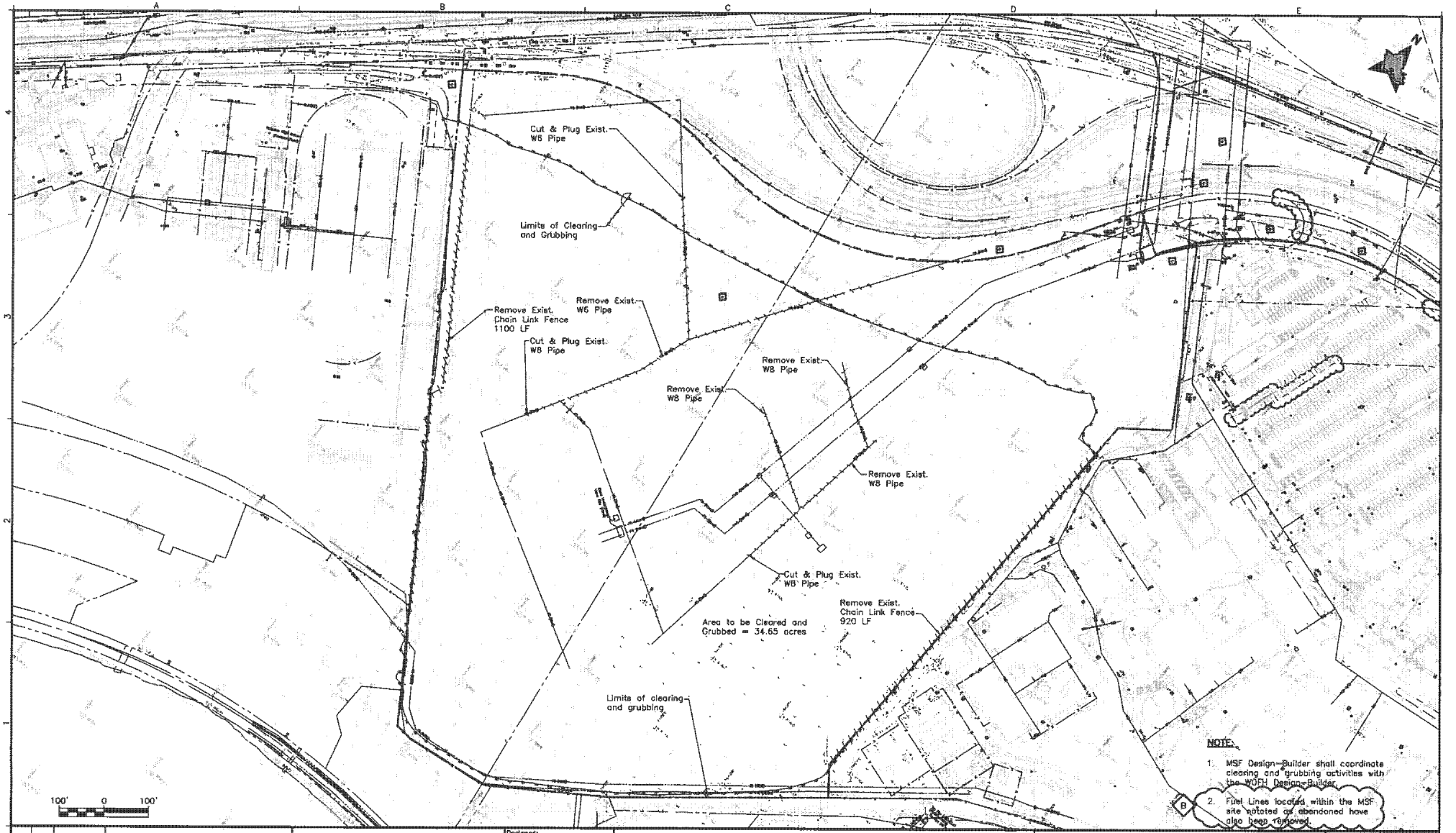

NOTE:

1. MSF Design-Builder shall coordinate clearing and grubbing activities with the WOFH Design-Builder.
2. Fuel Lines located within the MSF site noted as abandoned have also been removed.

Rev	By	Date	Description
B	JK	10-02-09	Note Added
A	JK	07-24-09	Issued For Proposal

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RFP DRAWING
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Designed: J Sugibayashi
Drawn: J Sugibayashi
Checked: L Fong
Approved: J Kage
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2230 - Honolulu, HI 96813

Subconsultant: SATO AND ASSOCIATES, INC.
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MAINTENANCE & STORAGE FACILITY

EXISTING CONDITIONS & DEMOLITION PLAN

SHEET 1 OF 1

Contract No.: DB-200
CADD File: SCY-B03-TD001
Drawing No: TD001
Rev. B
Scale: 1"=100'
Page No. 18 of 259

Date Generated: 28 Sep 2009 - 2:39pm
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Last Plot Date: 06/15/09

AR00077671

Tax Map Key Number	Parcel Acquisitions	House Number	Street Name	Land Use
9-4-008:010	Partial	–	–	Public
9-4-008:020	Partial	94-1211	Farrington Hwy	Public
9-4-008:025	Partial	–	–	Public
9-4-008:030	Utility Easement	–	–	Public
9-6-001:001	Utility Easement	–	–	Public
9-6-003:001	Utility Easement	–	–	Public
9-6-003:043	Access Easement	–	–	Public
9-6-003:044	Partial	–	–	Public
9-6-003:048	Partial	96-43, 96-45 96-129	Ala Ike	Public
9-6-003:048	Partial	96-50	Farrington Hwy	Public
9-6-003:049	Access Easement	–	–	Public

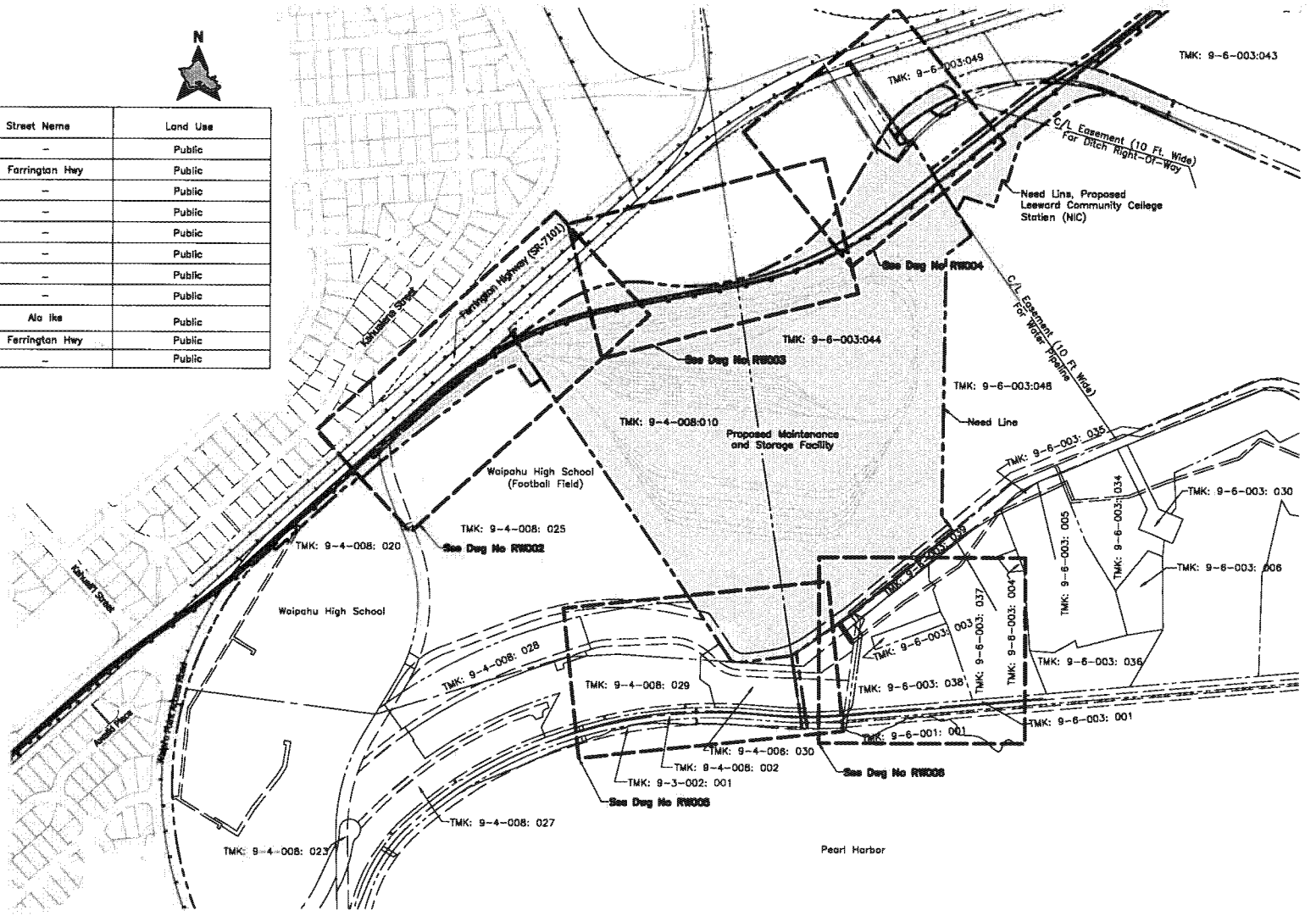
NOTES:

1. ROW acquisition may be in the form of an aerial easement; an easement allowing joint use; subdivision of property with transfer of title; transfer of title for the entire parcel; or some other form to be documented by Land Court registration.
2. Construction easements are the responsibility of the Design-Build Contractor and should be defined during the final design phase and are not reflected on plans.

LEGEND

- Right-of-Way (ROW) / Parcel Need
- Access Permitted
- No Vehicle Access Permitted
- No Access Permitted
- Limited Access
- ROW Line
- Property Line
- Easement Line
- C/L Easement Line

200' 0 200'



Rev	By	Date	Description
A	AB	07-24-09	Issued For Proposal

RFP DRAWING NOT FOR CONSTRUCTION

Designed: L Karamatsu
Drawn: L Karamatsu
Checked: K Wong
Approved: A Borst
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
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MAINTENANCE & STORAGE FACILITY

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

SHEET 1 of 6

Contract No.: DB-200
CADD File: SCY-B04-RW001
Drawing No: RW001 Rev. A
Scale: 1"=200'
Page No. 17 of 259

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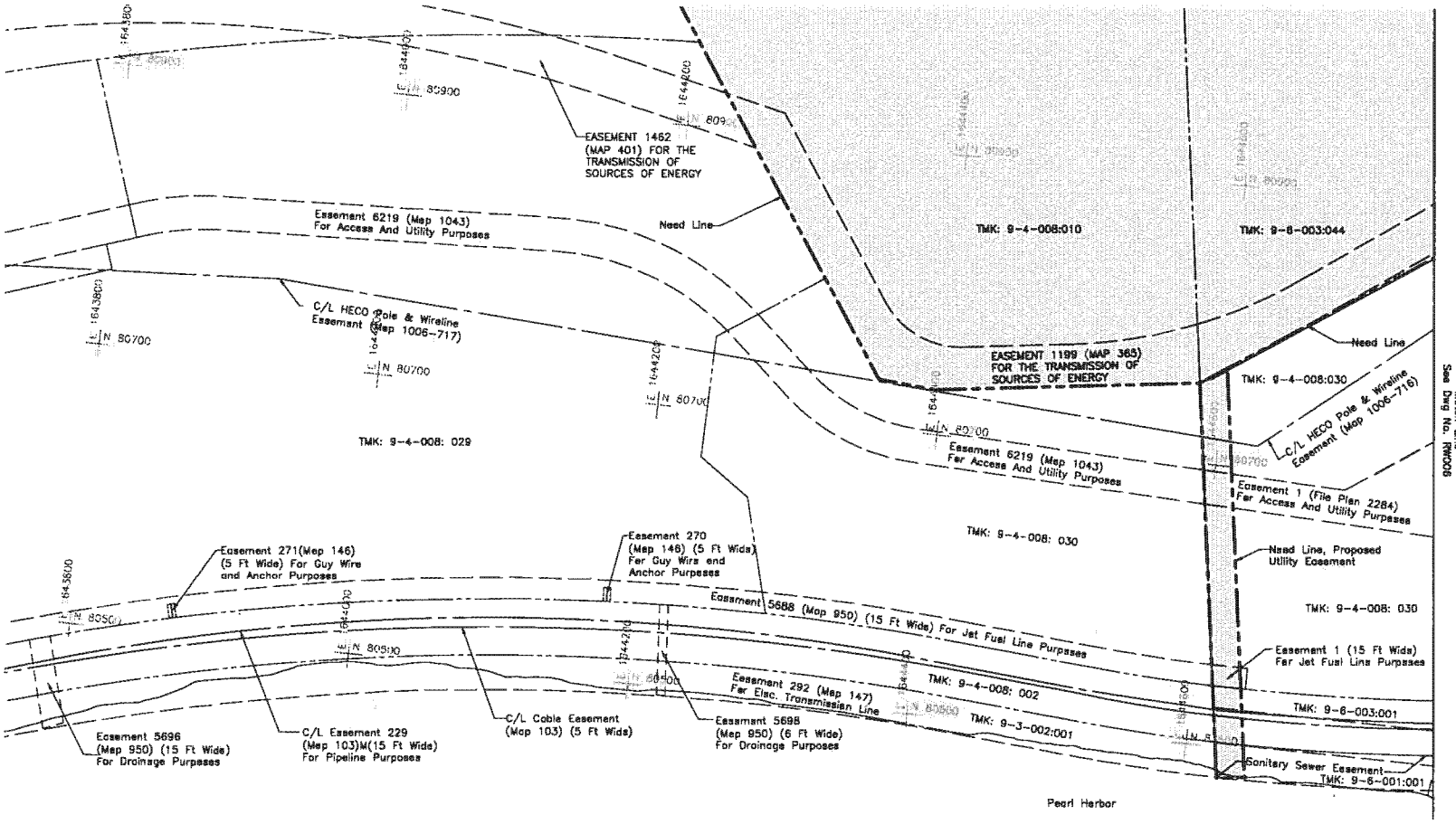

NOTES:

1. ROW acquisition may be in the form of an aerial easement; an easement allowing joint use; subdivision of property with transfer of title; transfer of title for the entire parcel; or some other form to be documented by Land Court registration.
2. Construction easements are the responsibility of the Design-Build Contractor and should be defined during the final design phase and are not reflected on plans.
3. See Dwg No. RW001 for Right-of-Way notes and legend.

Tax Map Key Number	Parcel Acquisitions	House Number	Street Name	Land Use
9-4-008:010	Partial	–	–	Public
9-4-008:030	Utility Easement	–	–	Public
9-6-001:001	Utility Easement	–	–	Public
9-6-003:001	Utility Easement	–	–	Public
9-6-003:044	Partial	–	–	Public

40' 0 40'

KEY PLAN

Rev	By	Date	Description
A	AB	07-24-09	Issued For Proposal

RFP DRAWING NOT FOR CONSTRUCTION

Designed: L Keramatsu
Drawn: L Keramatsu
Checked: K Wong
Approved: A Borst
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

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MAINTENANCE & STORAGE FACILITY

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

SHEET 5 of 6

Contract No.: DB-200
CADD File: SCY-B04-RW005
Drawing No: RW005 Rev. A
Scale: 1"=40'
Page No. 21 of 259

2009-07-21 9:30 AM K:\CADD\03 Civil\Yard – Navy Drum Site\Sheet Files\SCY-B04-RDW.dwg

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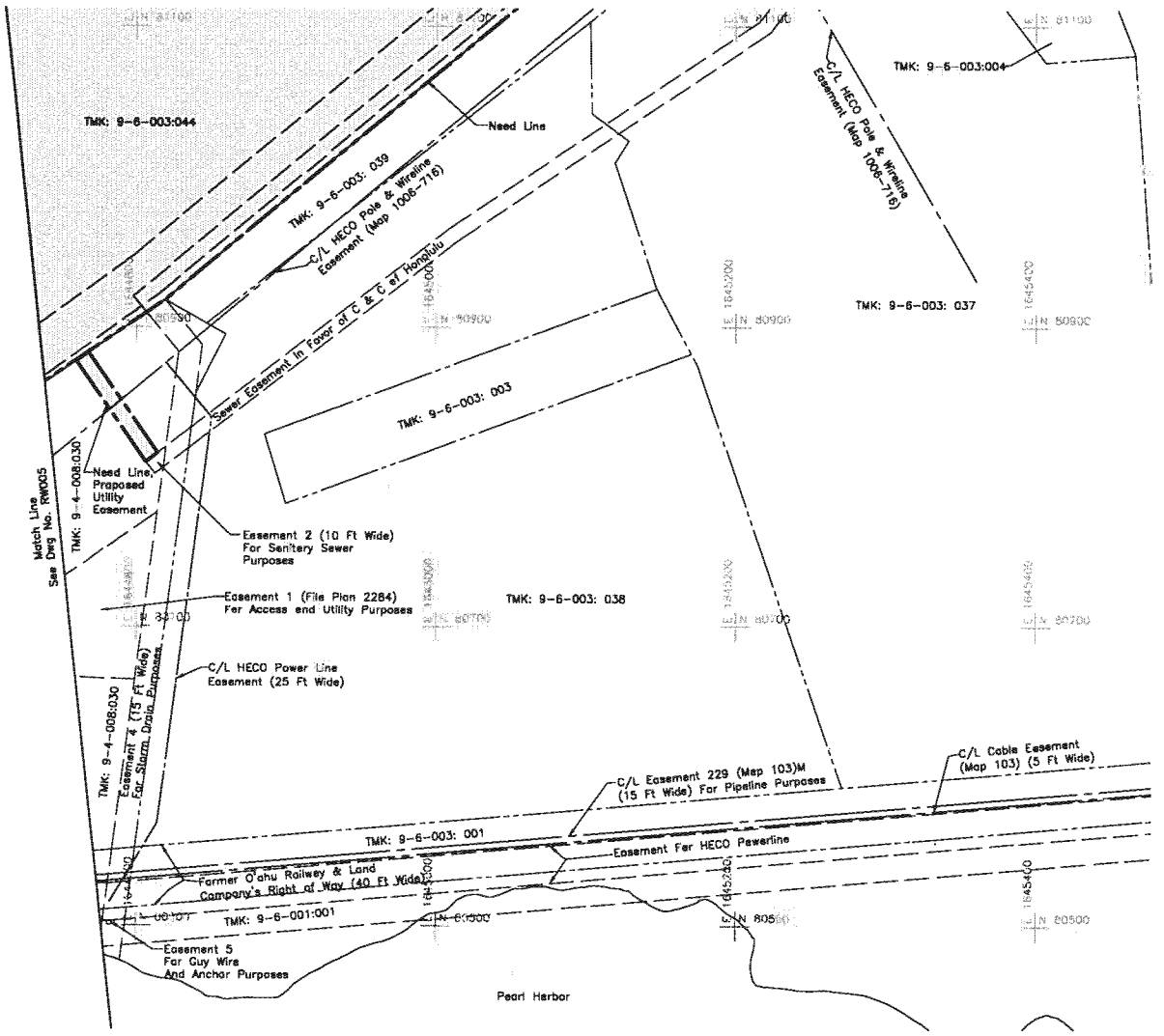

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1. ROW acquisition may be in the form of an aerial easement; an easement allowing joint use; subdivision of property with transfer of title; transfer of title for the entire parcel; or some other form to be documented by Land Court registration.
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Tax Map Key Number	Parcel Acquisitions	House Number	Street Name	Land Use
9-4-008:030	Utility Easement	–	–	Public
9-6-003:044	Partial	–	–	Public

40' 0 40'

KEY PLAN

Rev	By	Date	Description
A	AB	07-24-09	Issued For Proposal

RFP DRAWING NOT FOR CONSTRUCTION

Designed: L Karamatsu
Drawn: L Karamatsu
Checked: K Wong
Approved: A Borst
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

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MAINTENANCE & STORAGE FACILITY

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

SHEET 6 of 6

Contract No.: DB-200
CADD File: SCY-B04-RW006
Drawing No: RW006 Rev. A
Scale: 1"=40'
Page No. 22 of 259

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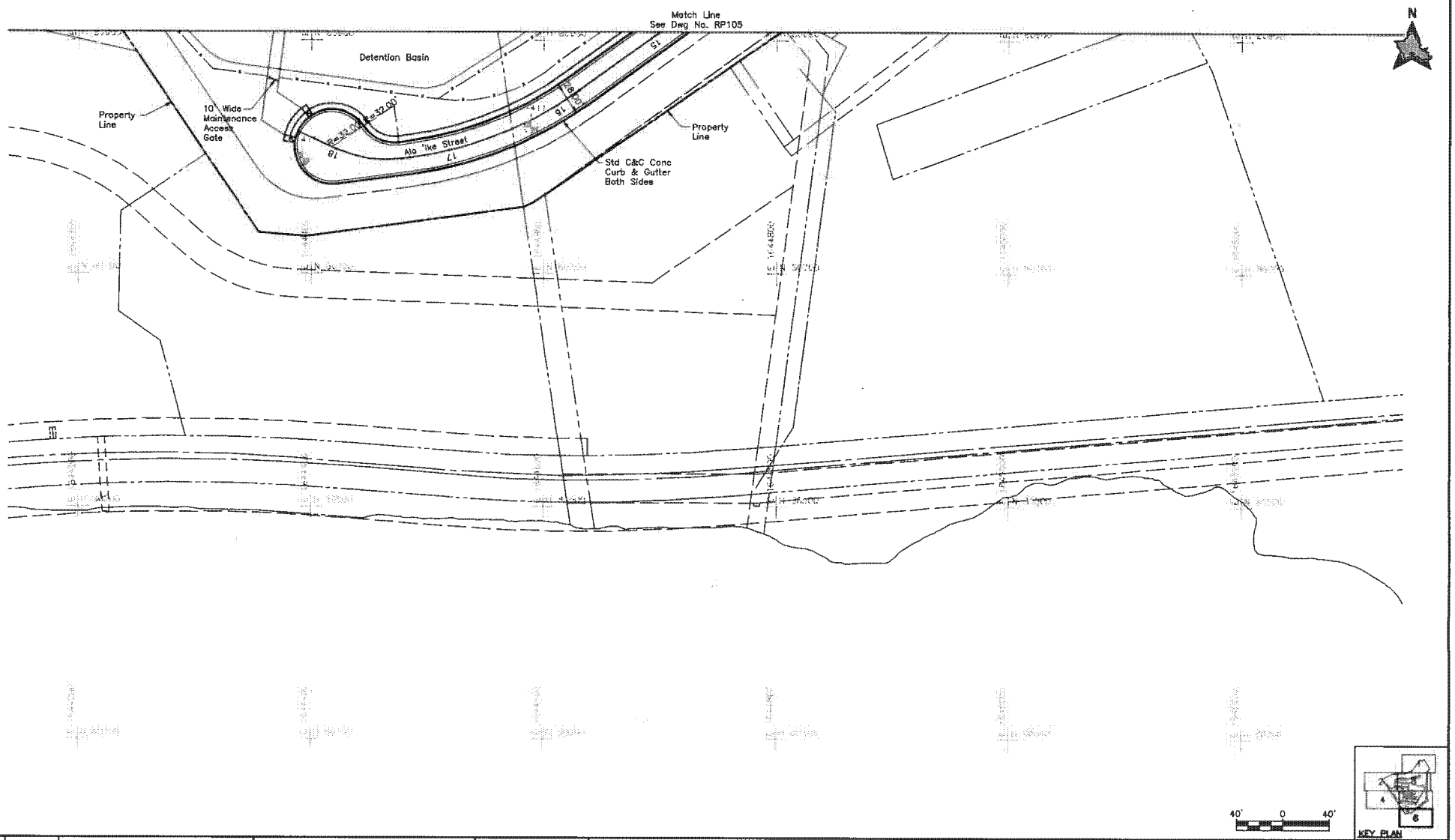

Rev	By	Date	Description
A	JK	07-24-09	Issued For Proposal

2009-07-20 11:43 AM R:\08024-HHCTCP\DWG\SCY-B10-RP100.dwg

Last Plot Date: 06/17/09

RFP DRAWING
NOT FOR CONSTRUCTION

Designed: J Sugibayashi
Drawn: J Sugibayashi
Checked: L Fong
Approved: J Kage
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

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Subconsultant: SATO AND ASSOCIATES, INC.
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MAINTENANCE & STORAGE FACILITY

CIVIL SITE PLAN

SHEET 6 OF 6

Contract No.: DB-200
CADD File: SCY-B10-RP106
Drawing No: RP106 Rev. A
Scale: 1"=40'
Page No. 89 of 259

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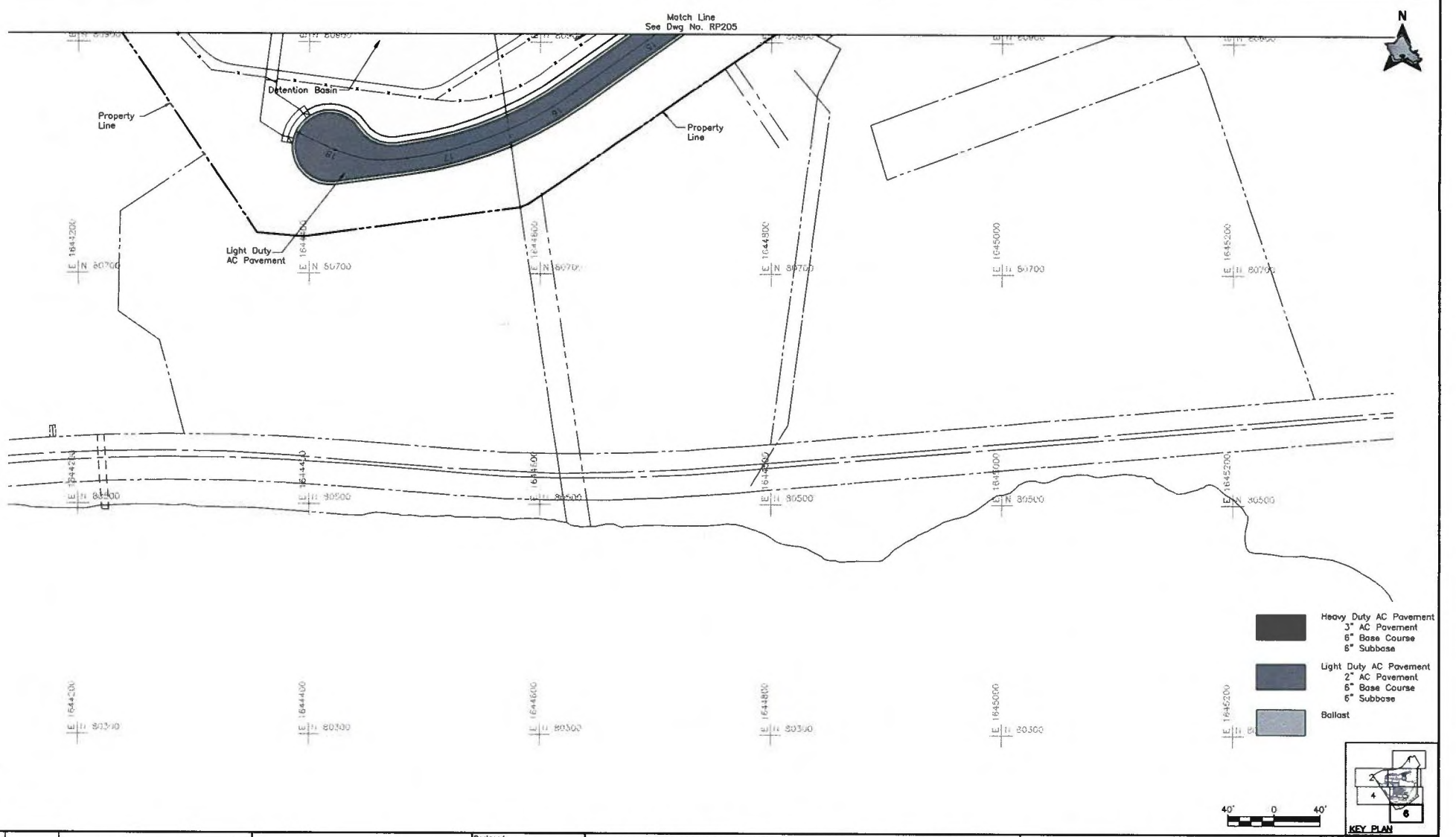

Rev	By	Date	Description
A	JK	07-24-09	Issued For Proposal

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Last Plot Date: 06/17/09

RFP DRAWING
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Drawn: J Sugibayashi
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Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

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MAINTENANCE & STORAGE FACILITY

PAVEMENT PLAN

SHEET 5 OF 5

Contract No.: DB-200
CADD File: SCY-B15-CD106
Drawing No: CD106 Rev. A
Scale: 1"=40'
Page No. 102 of 259

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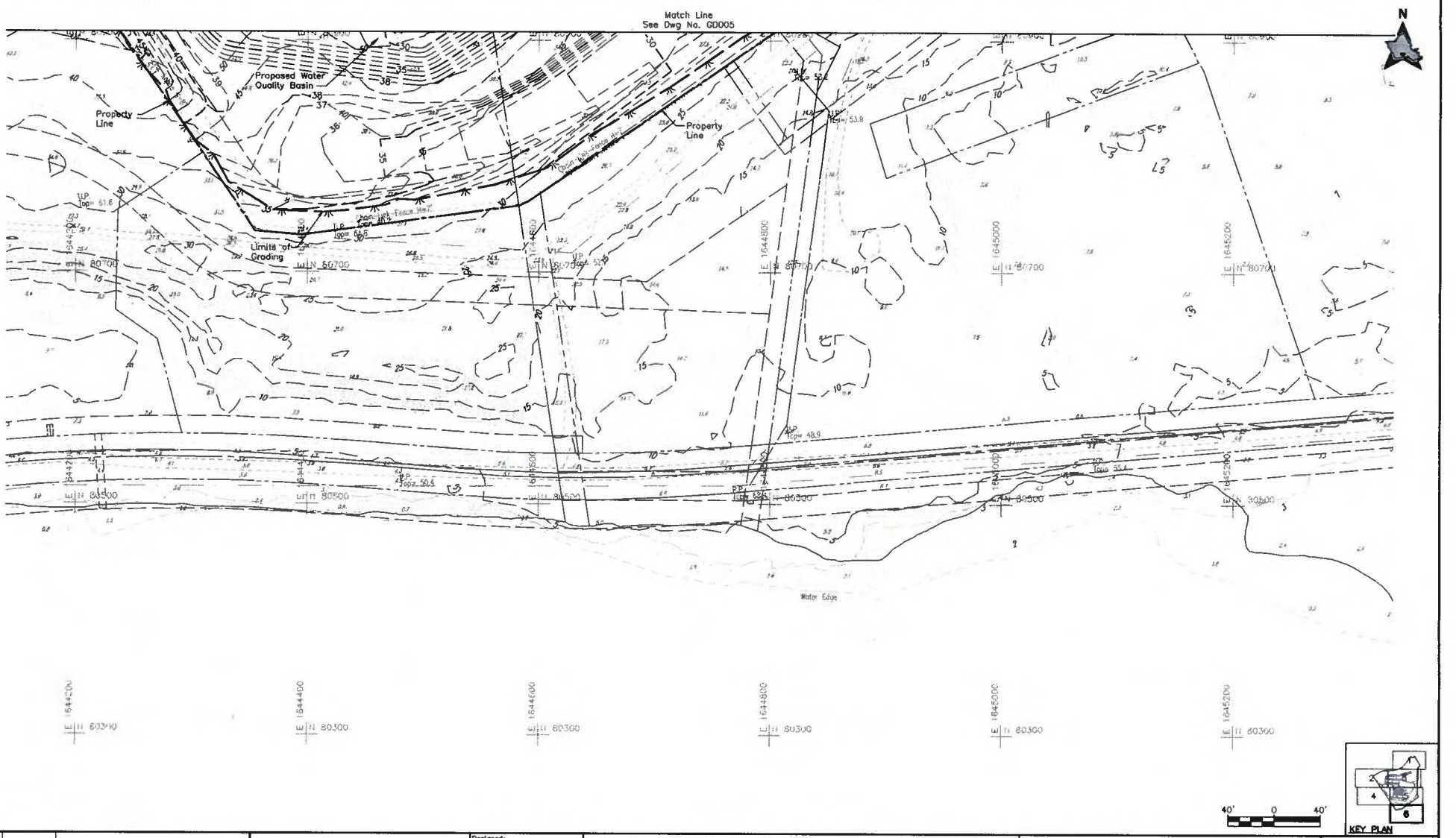

Rev	By	Date	Description
A	JK	07-24-09	Issued For Proposal

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Last Plot Date: 06/18/09

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Designed: T Miyasato
Drawn: T Miyasato
Checked: L Fong
Approved: J Kage
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

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MAINTENANCE & STORAGE FACILITY

MASS GRADING PLAN

SHEET 6 OF 6

Contract No.: DB-200
CADD File: SCY-B16-GD006
Drawing No: GD006 Rev. A
Scale: 1"=40'
Page No. 108 of 259

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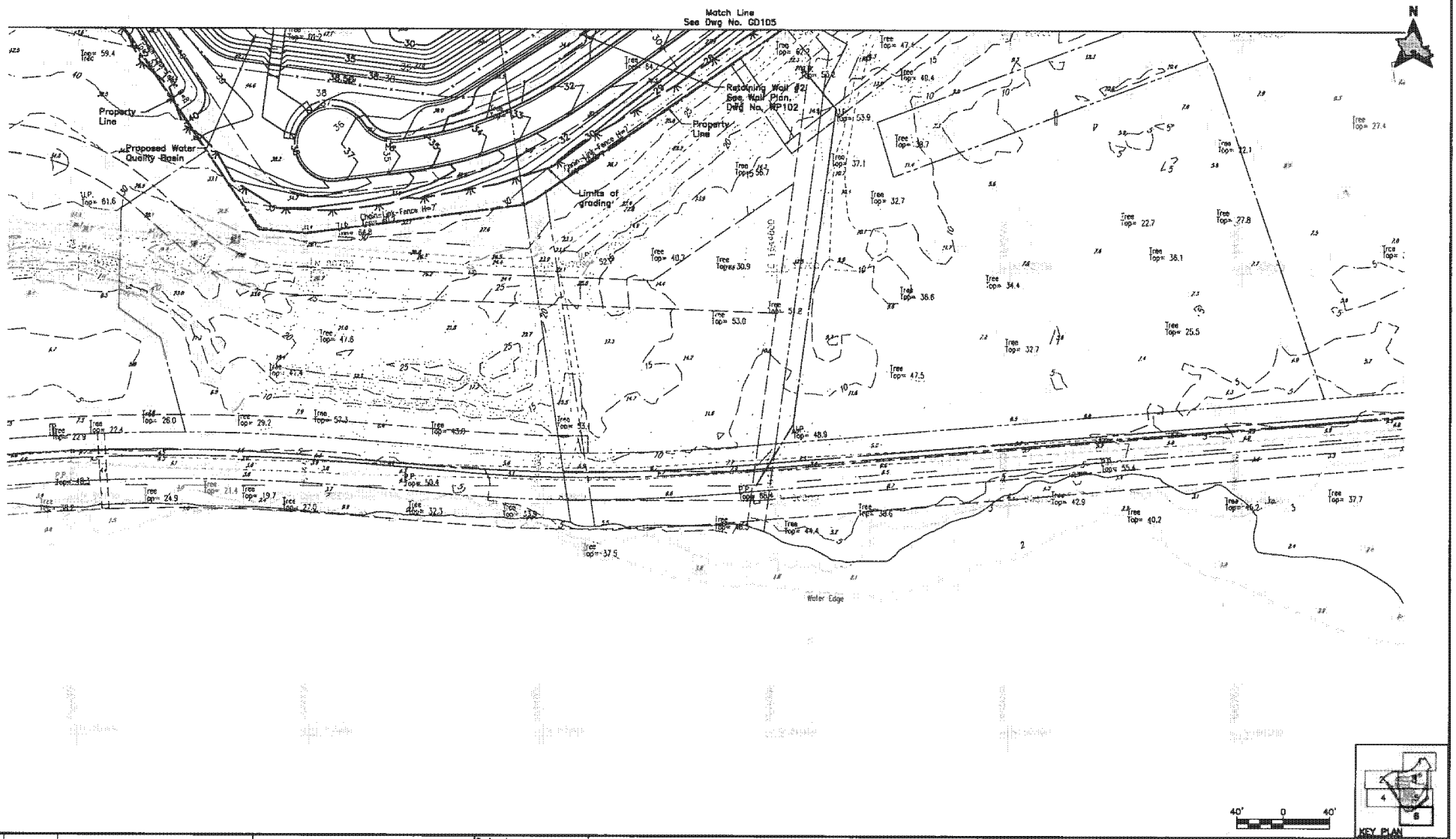

Rev	By	Date	Description
A	JK	07-24-09	Issued For Proposal

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Drawn: T Miyasato
Checked: L Fong
Approved: J Kage
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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MAINTENANCE & STORAGE FACILITY

GRADING PLAN

SHEET 6 OF 6

Contract No.: DB-200
CADD File: SCY-B16-GD106
Drawing No: GD106 Rev. A
Scale: 1"=40'
Page No. 114 of 259

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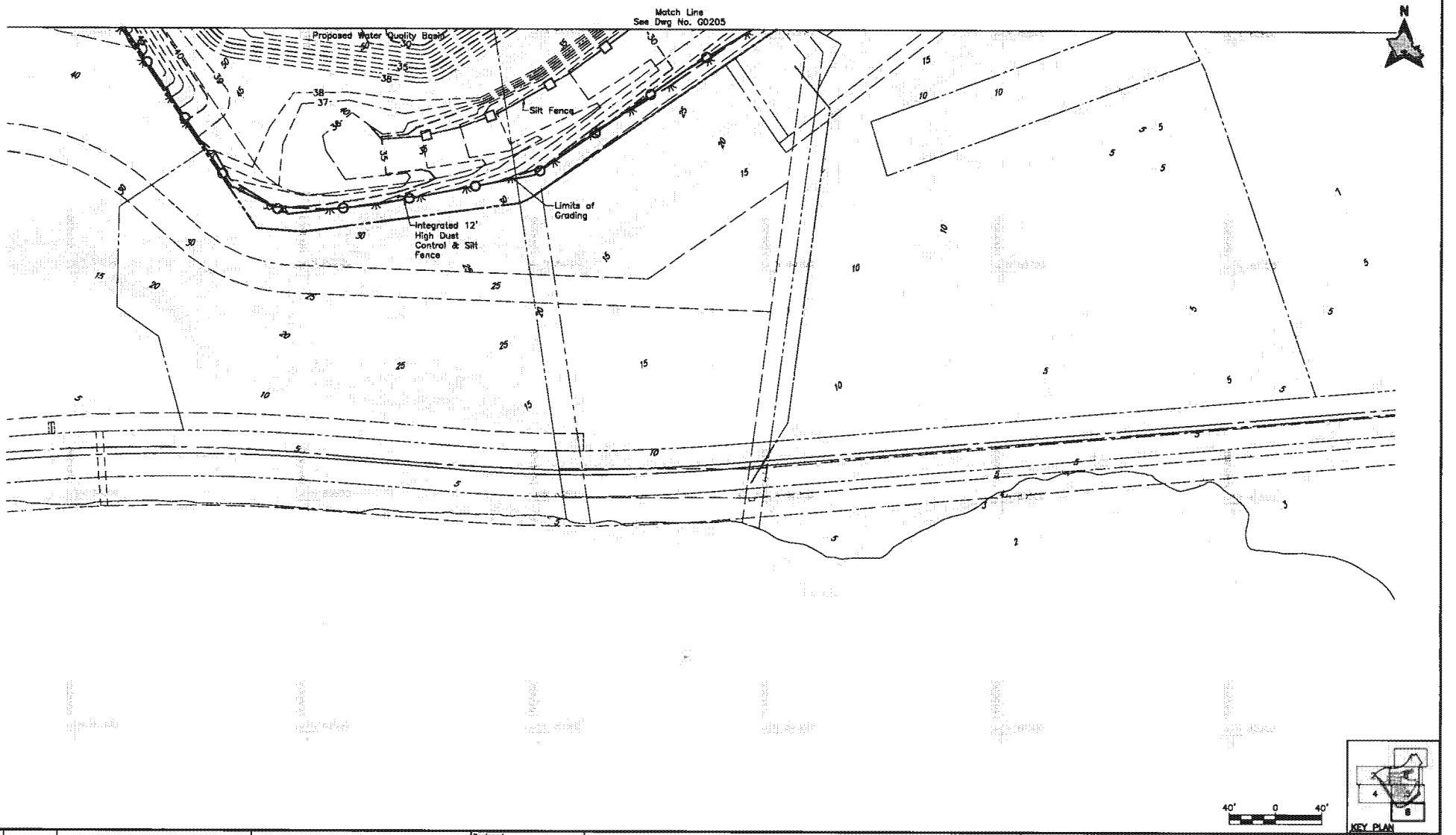

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Date: 07-24-09

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MAINTENANCE & STORAGE FACILITY

EROSION CONTROL PLAN FOR MASS GRADING

SHEET 6 OF 6

Contract No.: 08-200
CADD File: SCY-B18-GD206
Drawing No: GD206 Rev. A
Scale: 1"=40'
Page No. 120 of 259

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Last Plot Date: 06/16/09

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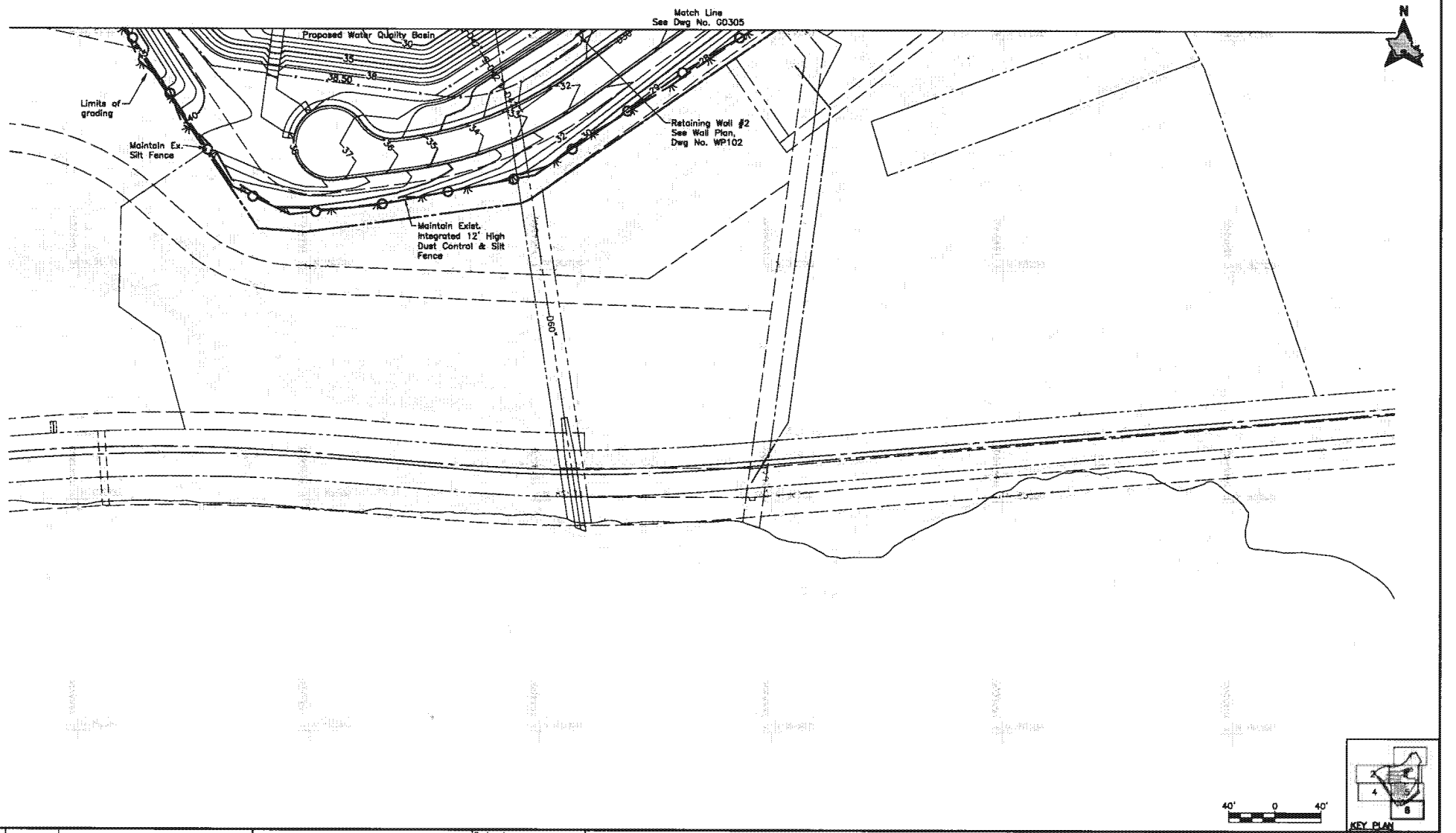

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Date: 07-24-09

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MAINTENANCE & STORAGE FACILITY

EROSION CONTROL PLAN

SHEET 6 OF 6

Contract No.: DB-200
CADD File: SCY-B16-GD306
Drawing No: GD306 Rev. A
Scale: 1"=40'
Page No. 126 of 259

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Date Saved: Mon, 20 JUL 2009 - 11:29am
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Last Plot Date: 06/17/09

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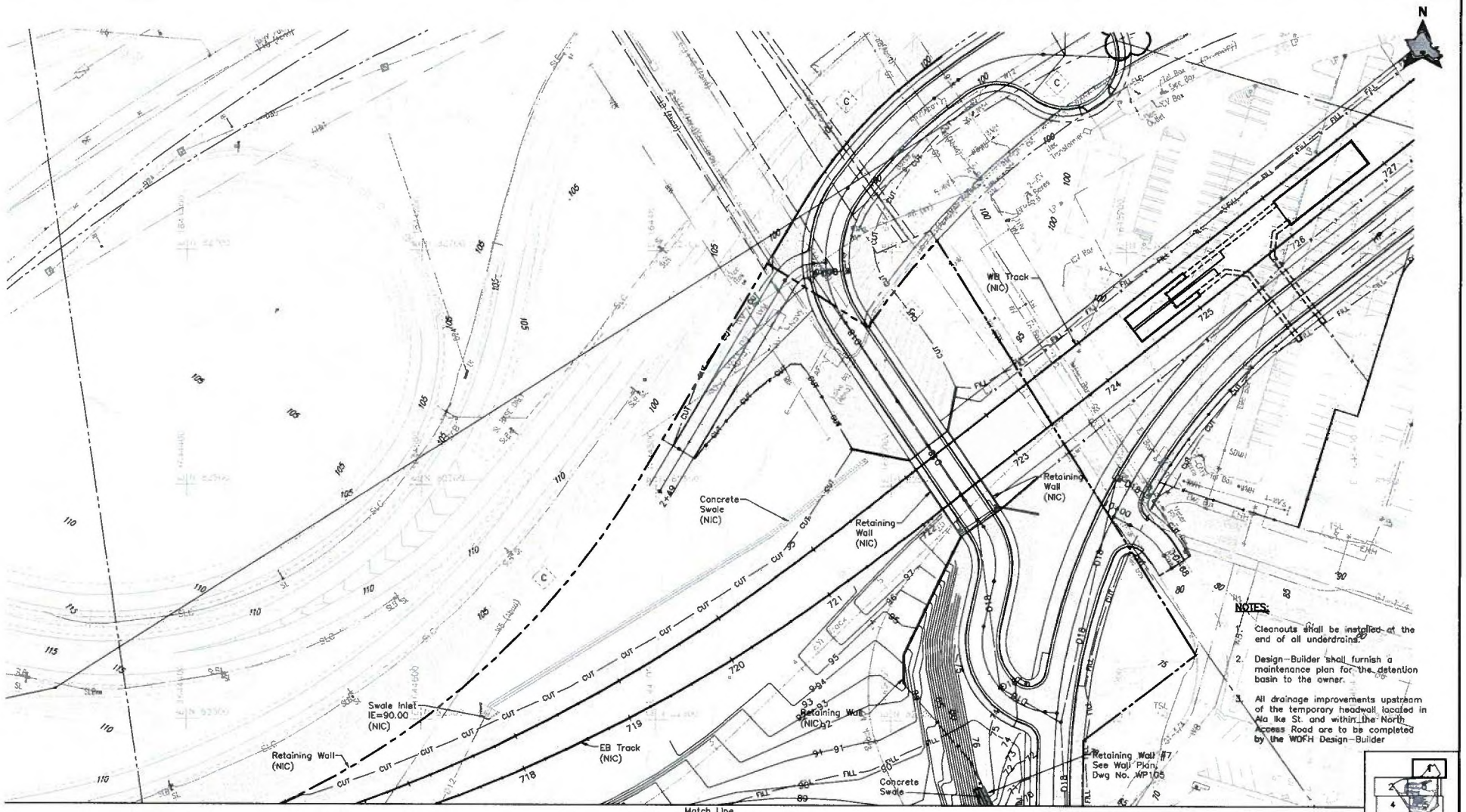

NOTES:

1. Cleanouts shall be installed at the end of all underdrains.
2. Design–Builder shall furnish a maintenance plan for the detention basin to the owner.
3. All drainage improvements upstream of the temporary headwall located in Ala Ike St. and within the North Access Road are to be completed by the WOFH Design–Builder

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Date: 07-24-09

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MAINTENANCE & STORAGE FACILITY

DRAINAGE PLAN

SHEET 1 OF 6

Contract No.: DB-200
CADD File: SCY-B16-GD401
Drawing No: GD401 Rev. A
Scale: 1"=40'
Page No. 127 of 259

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Last Plot Date: 06/17/09

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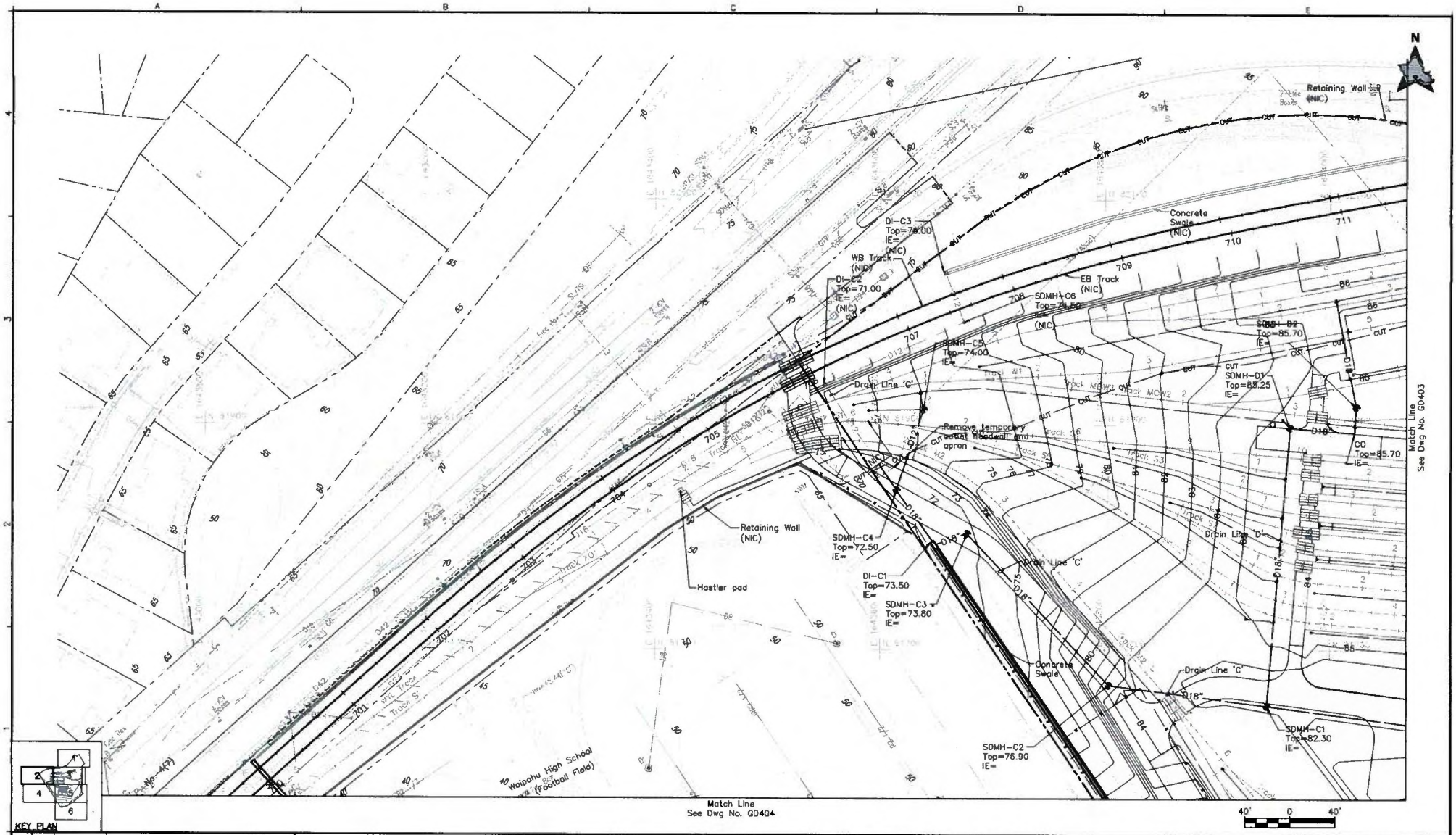

Rev	By	Date	Description
A	JK	07-24-09	Issued For Proposal

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Approved:
Date:

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

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MAINTENANCE & STORAGE FACILITY

DRAINAGE PLAN

SHEET 2 OF 6

Contract No.: DB-200
CADD File: SCY-B16-GD402
Drawing No: GD402 Rev. A
Scale: 1"=40'
Page No. 128 of 259

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Last Plot Date: 06/17/09

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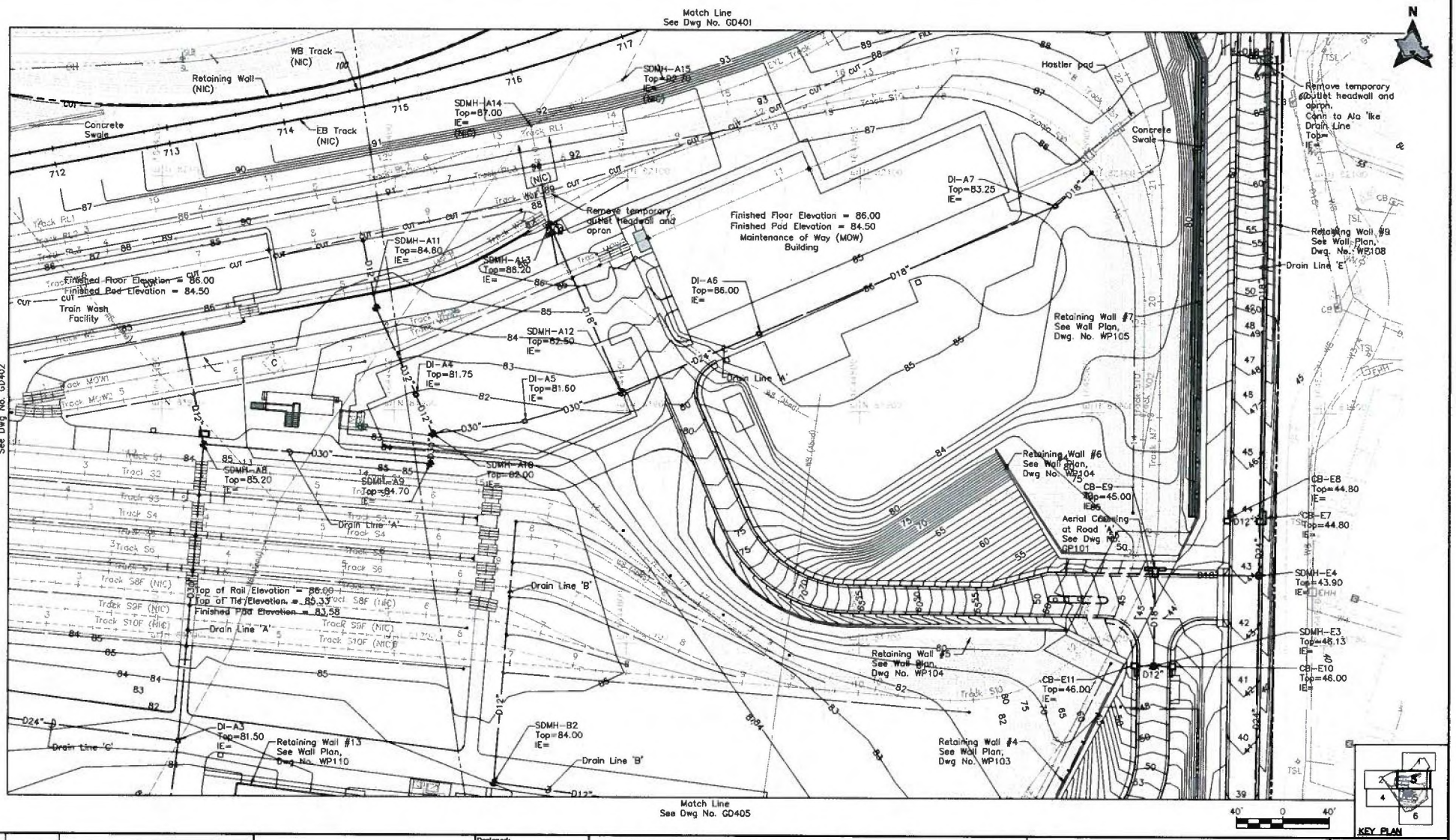

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RFP DRAWING
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Checked: L Fong
Approved: J Kage
Date: 07-27-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

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MAINTENANCE & STORAGE FACILITY

DRAINAGE PLAN

SHEET 3 OF 6

Contract No.: DB-200
CADD File: SCY-B16-GD403
Drawing No: GD403 Rev. A
Scale: 1"=40'
Page No. 129 of 259

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Last Plot Date: 06/17/09

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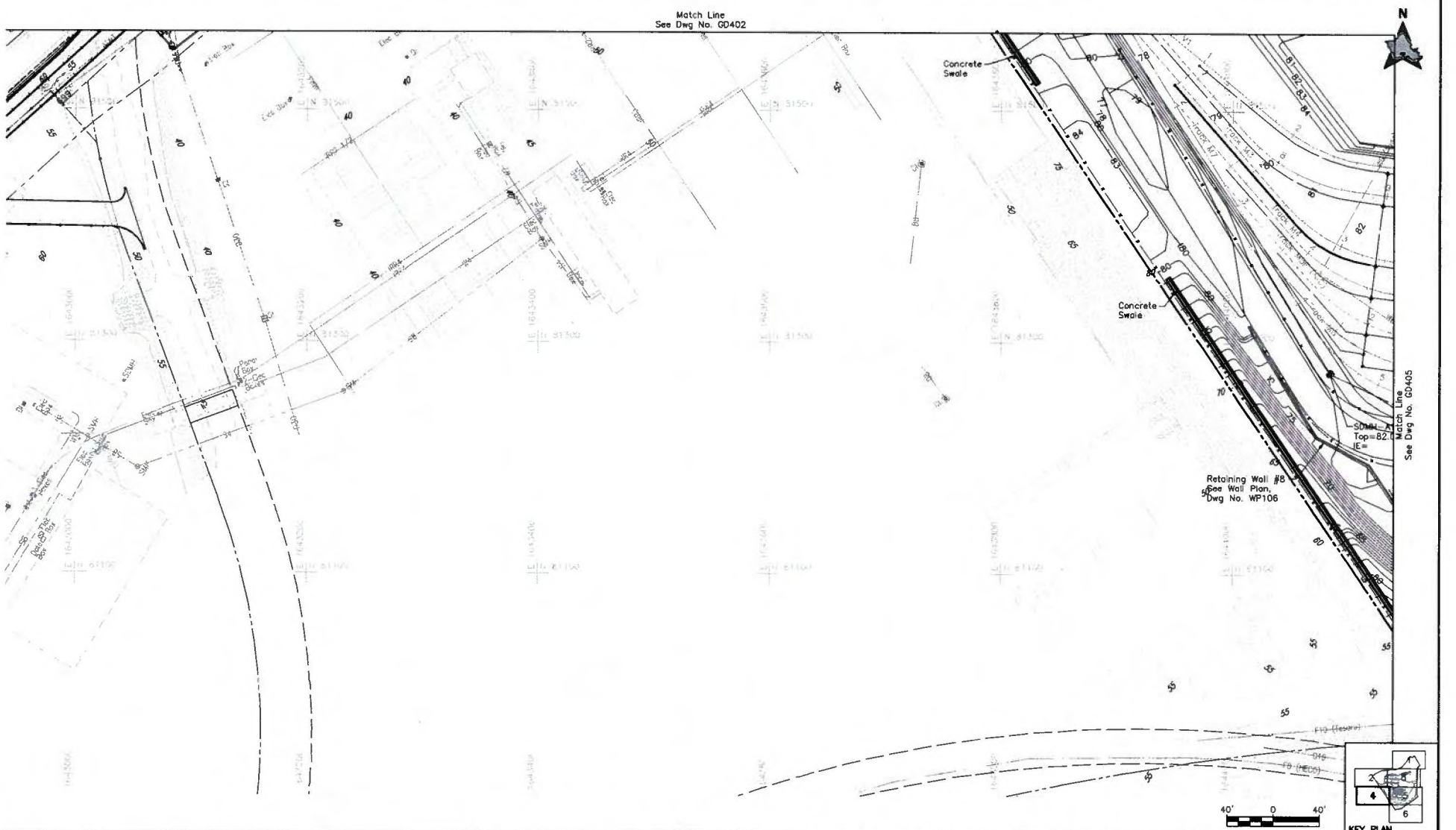

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MAINTENANCE & STORAGE FACILITY

DRAINAGE PLAN

SHEET 4 OF 6

Contract No.: DB-200
CADD File: SCY-B16-GD404
Drawing No: GD404 Rev. A
Scale: 1"=40'
Page No. 130 of 259

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Last Plot Date: 06/17/09

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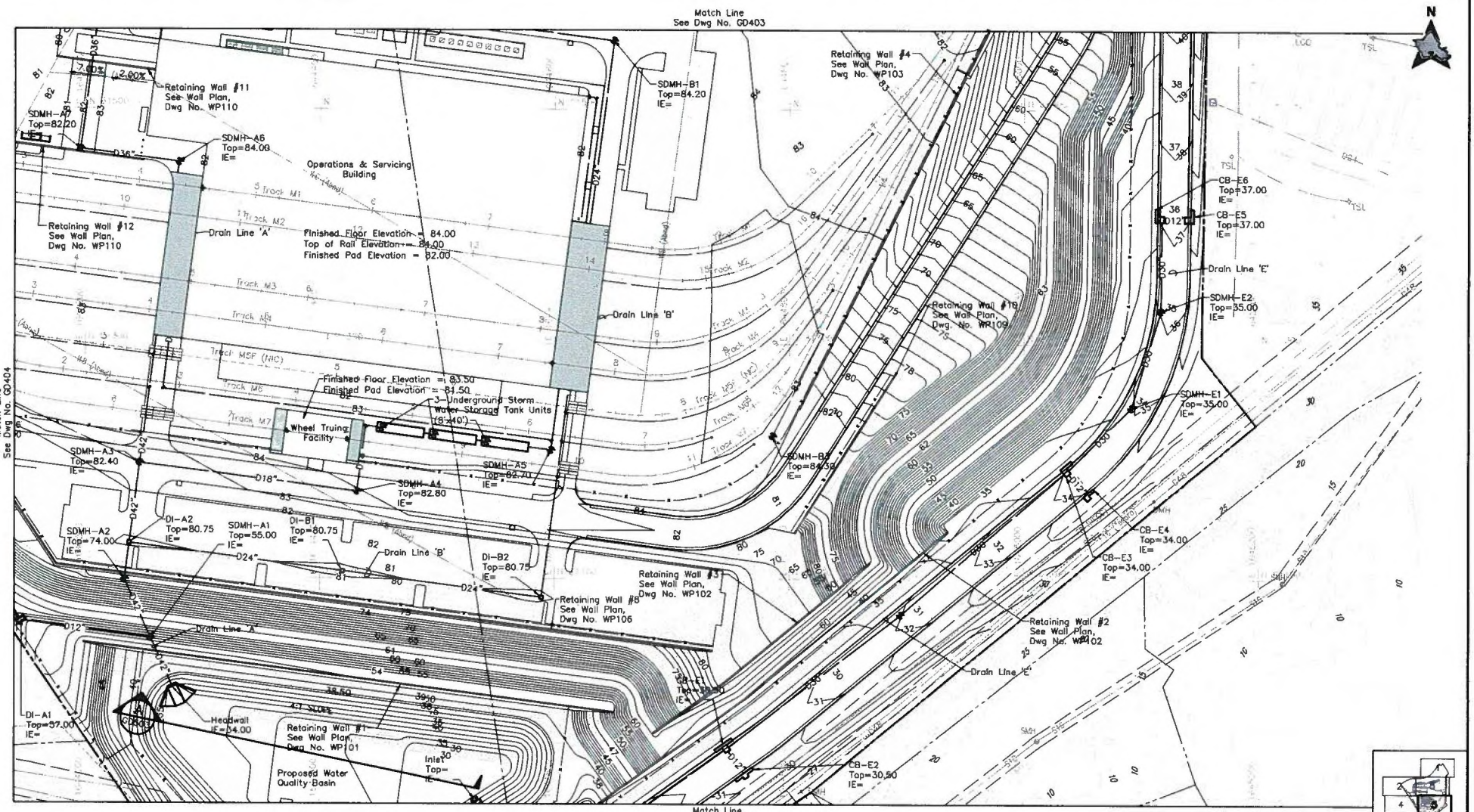

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MAINTENANCE & STORAGE FACILITY

DRAINAGE PLAN

SHEET 5 OF 6

Contract No.: DB-200
CADD File: SCY-B16-GD405
Drawing No: GD405 Rev. A
Scale: 1"=40'
Page No. 131 of 259

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Last Plot Date: 06/17/09

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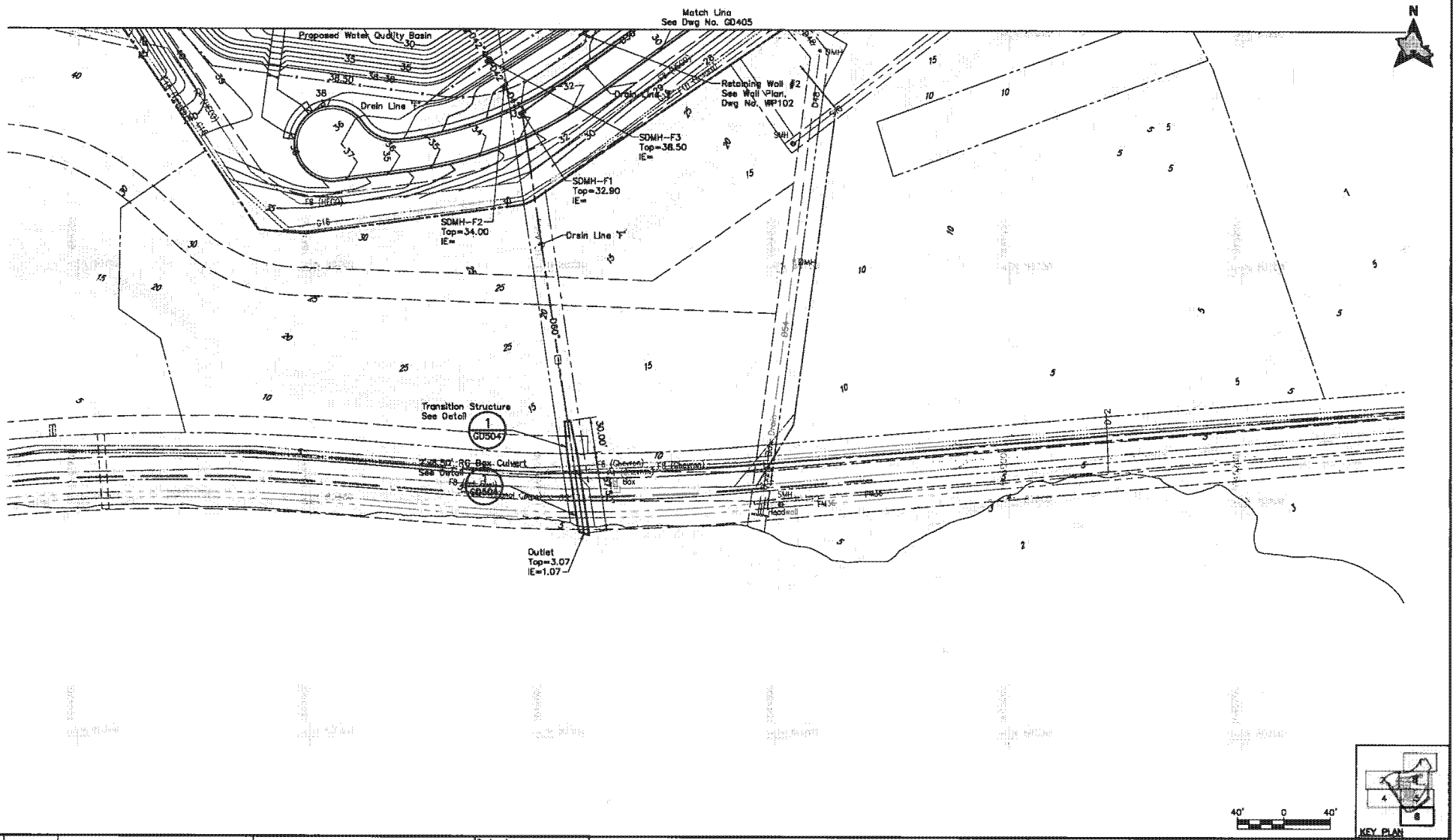

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MAINTENANCE & STORAGE FACILITY

DRAINAGE PLAN

SHEET 6 OF 6

Contract No.: DB-200
CADD File: SCY-B16-GD406
Drawing No: GD406 Rev. A
Scale: 1"=40'
Page No. 132 of 259

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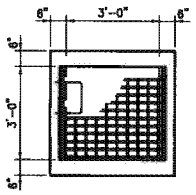

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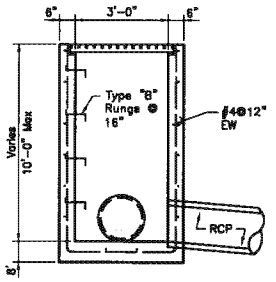
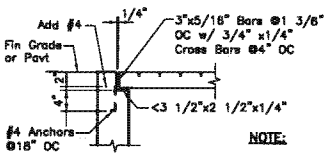


SECTION

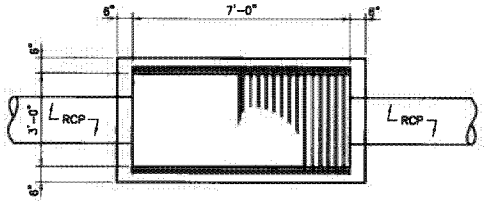
3'x3' CONC DRAIN INLET DETAIL (CDI)
1/2"=1'-0"



NOTE:

Hot dip galvanized frame, grate, & accessories after fabrication.

GRATE SEAT DETAIL
1"=1'-0"



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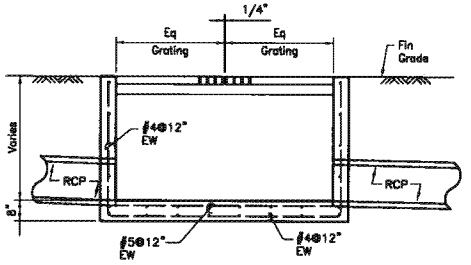
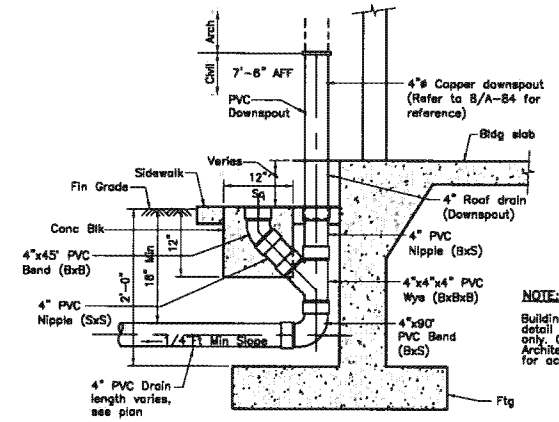


SECTION

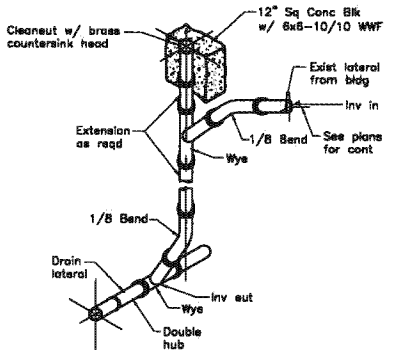
3'x7' CONC DRAIN INLET DETAIL (CDI)
1/2"=1'-0"



NOTE:

Building & footing elements in this detail are for illustrative purposes only. Contractor shall refer to the Architectural and Structural plans for actual dimensions.

ROOF DRAIN CONNECTION DETAIL
NTS



CLEANOUT DETAIL (COTG)
NTS

0 1' 2'

0 1' 2' 4'

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A	JK	07-24-09	Issued For Proposal

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RFP DRAWING
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Drawn: R Kimura
Checked: L Fong
Approved: J Kage
Date: 07-24-09

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MAINTENANCE & STORAGE FACILITY

DRAINAGE DETAILS

SHEET 1 OF 4

Contract No.: DB-200
CADD File: SCY-B17-GD501
Drawing No: GD501 Rev. A
Scale: As Noted
Page No. 133 of 259

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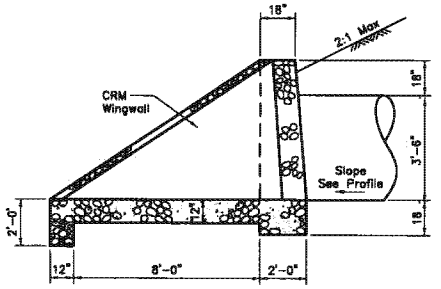
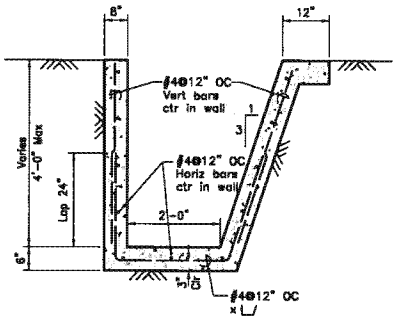
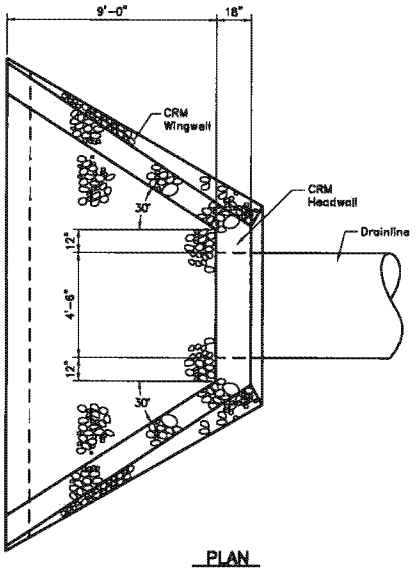


SECTION

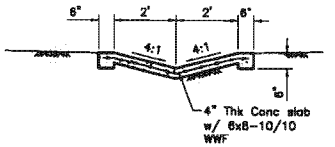


TYPICAL CONC DITCH SECTION
3/4"=1'-0"



PLAN

CRM OUTLET DETAIL
3/8"=1'-0"



CONCRETE SWALE DETAIL
3/4"=1'-0"

0 1' 2' 4' 8'

0 1' 2' 4'

Rev	By	Date	Description
A	JK	07-24-09	Issued For Proposal

RFP DRAWING
NOT FOR CONSTRUCTION

Designed: J Sugibayashi
Drawn: R Kimura
Checked: L Fong
Approved: J Kage
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: SATO AND ASSOCIATES, INC. CONSULTING ENGINEERS • CIVIL & STRUCTURAL HONOLULU, OAHU, HAWAII • SAKAMI, MAUI, HAWAII

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MAINTENANCE & STORAGE FACILITY

DRAINAGE DETAILS

SHEET 2 OF 4

Contract No.: DB-200
CADD File: SCY-B17-GD502
Drawing No: GD502 Rev. A
Scale: As Noted
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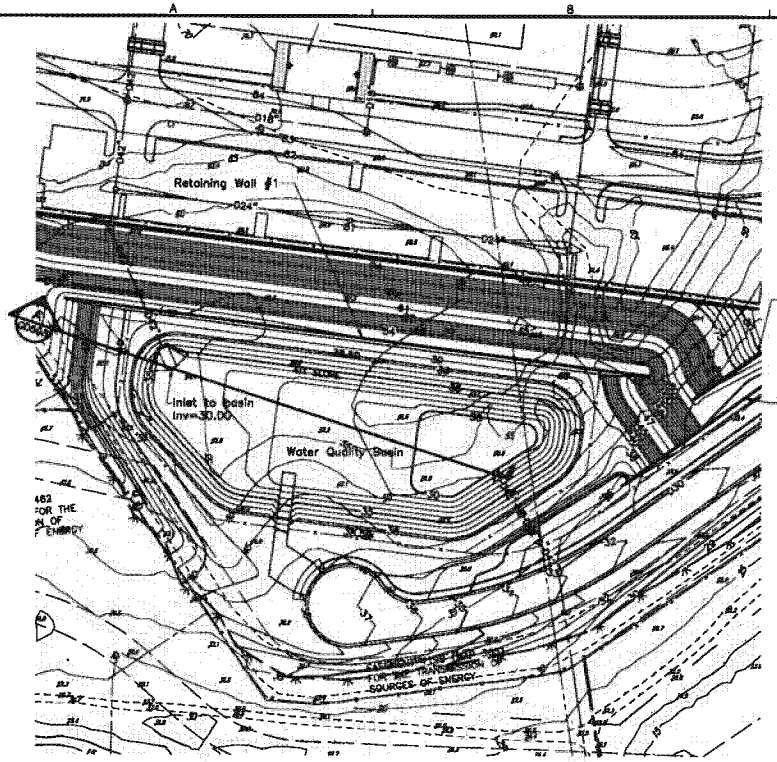
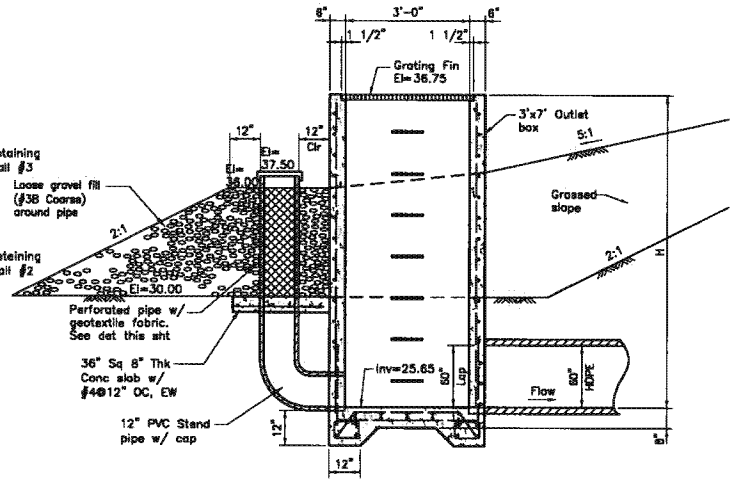
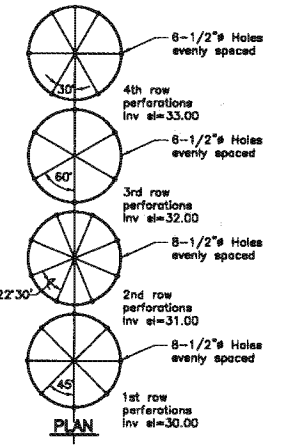


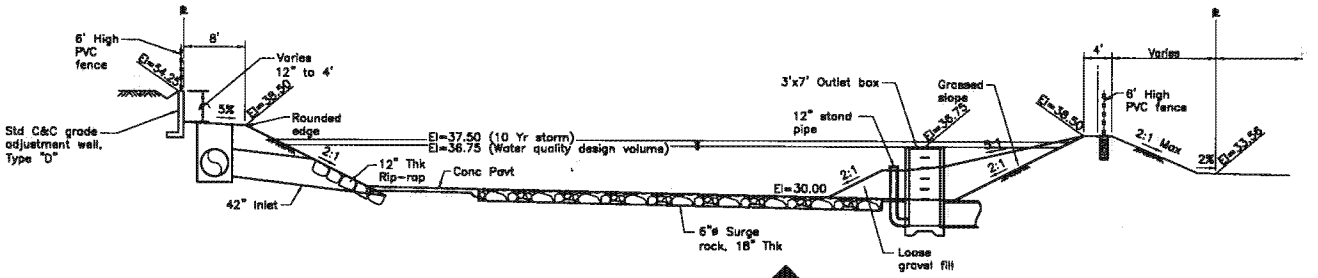
WATER QUALITY BASIN PLAN
1"=100'



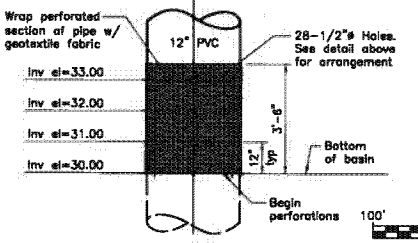
STAND PIPE/OVERFLOW DETAIL
1/2"=1'-0"



PLAN



SECTION A
1/8"=1'-0"



ELEVATION

PERFORATION DETAIL
1/2"=1'-0"

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Designed: J Sugiboyoshi
Drawn: R Kimura
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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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MAINTENANCE & STORAGE FACILITY

DETENTION BASIN DETAILS

SHEET 3 OF 4

Contract No.: DB-200
CADD File: SCY-817-GD503
Drawing No: GD503 Rev. A
Scale: As Noted
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Last Plot Date: 06/17/09

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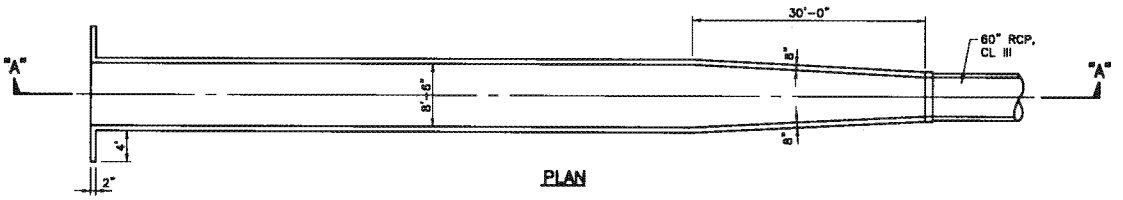
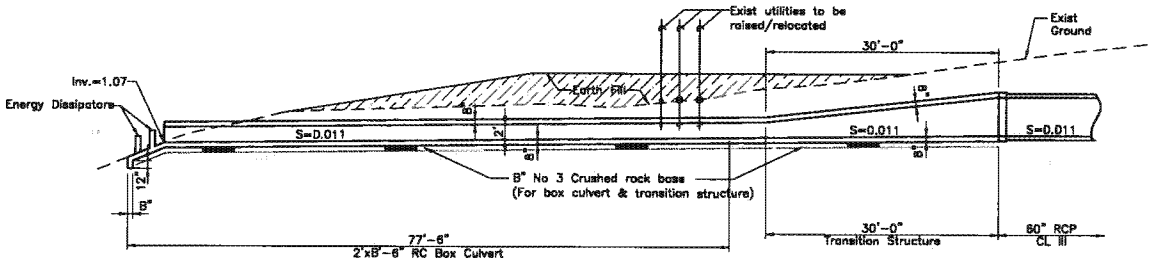


PLAN



SECTION "A-A"

RC BOX CULVERT & TRANSITION STRUCTURE

1/8"=1'-0"

NOTES:

1. Existing utilities shown in detail Section "A-A" are for schematic purposes only. Design-Builder shall verify locations of existing utility lines in conflict with the Drain or box Culvert.
2. Design-Builder shall relocate or raise any utility lines obstructing Drain or Box Culvert.
3. Design-Builder shall ensure adequate cover over all drainage structures and utilities.
4. This detail is for reference only. Design-Builder shall verify actual drain line slopes and existing conditions.

0 2' 4' 8' 16'

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Last Plot Date: 06/17/09

RFP DRAWING
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Drawn: R Kimura
Checked: L Fong
Approved: J Kage
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
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MAINTENANCE & STORAGE FACILITY

BOX CULVERT DETAILS

SHEET 4 OF 4

Contract No.: DB-200
CADD File: SCY-B17-GD504
Drawing No: GD504 Rev. A
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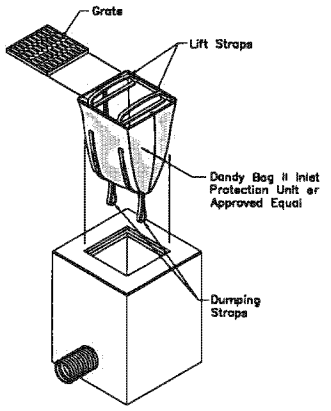
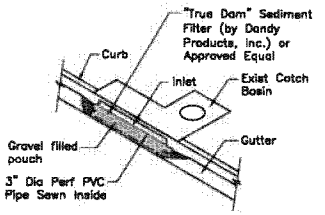
BEST MANAGEMENT PRACTICES:

The following procedures should be implemented during construction of the project.

1. The Design-Builder at his own expense, shall keep the project area and surrounding areas free from dust nuisance. Work shall be in conformance with the Air Pollution Control Standards and Regulations of the State Department of Health for immediate construction.
2. Design-Builder shall install temporary stabilized entrances at ingress and egress sites.
3. Design-Builder shall install silt fencing along the project site's limits of grading, as indicated. Design-Builder shall install dust fence at the exterior.
4. Design-Builder shall install CB inlet filters.
5. Use waterwagons and/or sprinklers to control dust.
6. Design-Builder shall grass or landscape exposed areas immediately after grading work is completed.
7. At the end of construction operation, the existing CB's and inlets surrounding the project site shall be inspected and any accumulated sediment and debris found in the CB's and inlets shall be removed. Flushing into the CB's and inlets is prohibited.



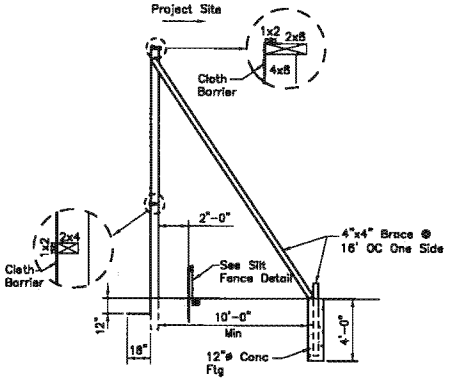
AT DRAIN INLET



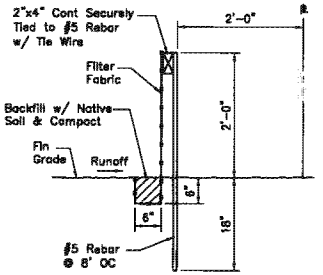
AT CATCH BASIN

NOTE:

The Design-Builder shall remove inlet filters during times of above normal rainfall events and replace them when the event has passed.

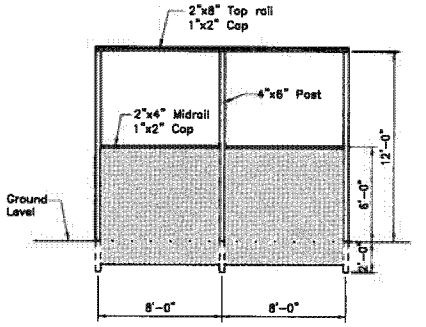


SIDE VIEW



SILT FENCE DETAIL
1"=1'-0"

SEDIMENT CONTROL FILTER
NTS



ELEVATION

NOTES:

1. Cloth barrier not shown in front view.
2. Cloth barrier to be "geotextile" or "Nursery Shade".
3. Lumber sizes are nominal inches.
4. As shown cloth to be buried at base to indicated dimension.
5. 1"x2" cloth barrier caps to be nailed @ 12" OC.
6. Burlap is not acceptable as the cloth barrier.
7. Cloth to have no horizontal seams.
8. Vertical seams to be made over uprights only.
9. All seams to be capped with minimum 1"x2".
10. All joints to be securely fastened by mechanical means.

12' HIGH INTEGRATED DUST CONTROL & SILT FENCE
NTS

0 6" 1' 2'

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Designed: T Miyasato
Drawn: R Kimura
Checked: L Fong
Approved: J Kage
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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MAINTENANCE & STORAGE FACILITY

EROSION CONTROL DETAILS

SHEET 1 OF 1

Contract No.: DB-200
CADD File: SCY-B17-GD601
Drawing No: GD601 Rev. A
Scale: As Noted
Page No. 137 of 259

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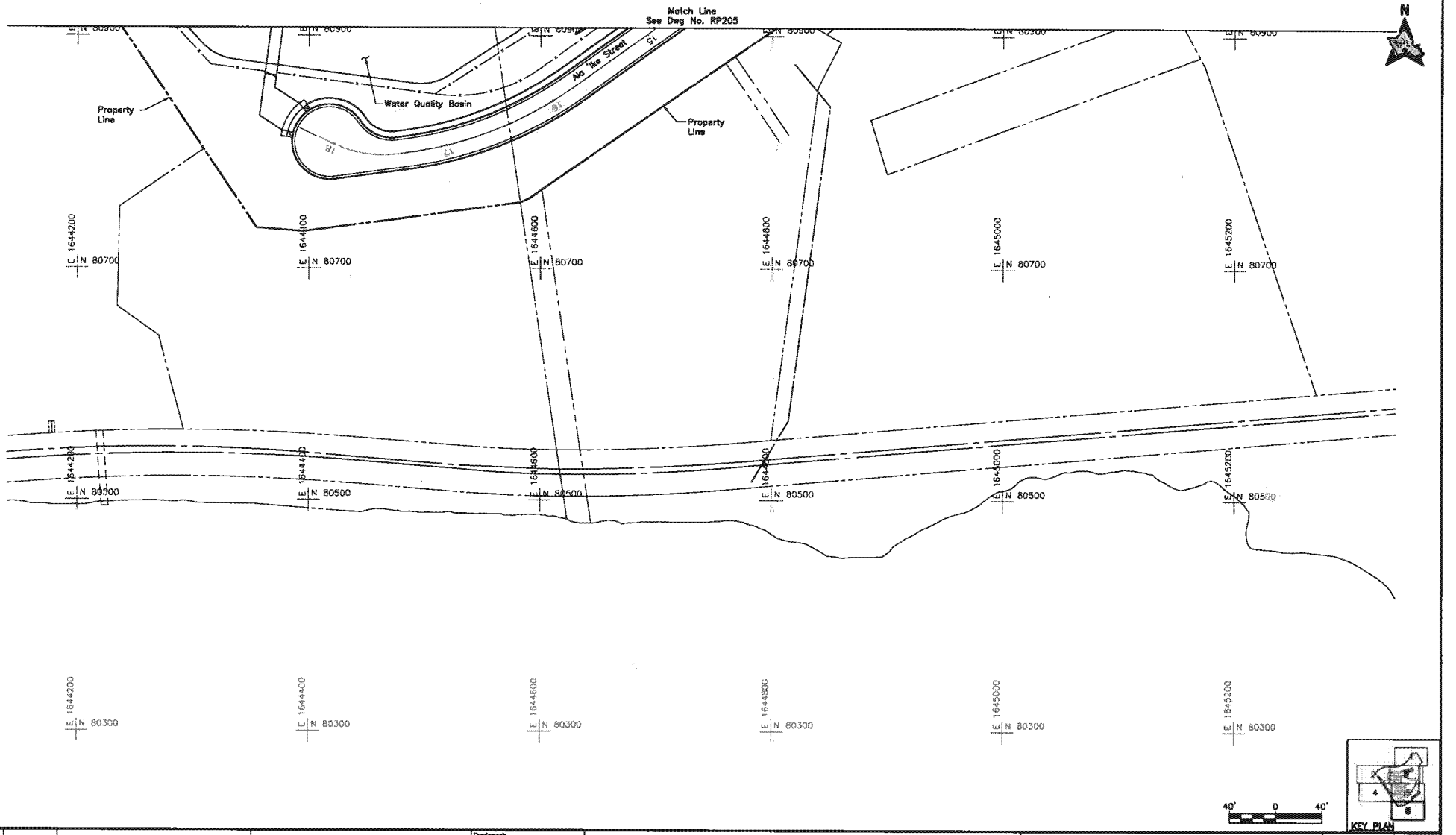

Rev	By	Date	Description
A	JK	07-24-09	Issued For Proposal

RFP DRAWING
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Designed: J Sugibayashi
Drawn: J Sugibayashi
Checked: L Fong
Approved: J Kage
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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MAINTENANCE & STORAGE FACILITY

STRIPING AND SIGNAGE PLAN

SHEET 4 OF 4

Contract No.: DB-200
CADD File: SCY-C02-TR106
Drawing No: TR106 Rev. A
Scale: 1"=40'
Page No. 147 of 259

2009-07-20 10:34 AM R:\08024-HHCTCP\DWG\SCY-C02-TR100.dwg

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Last Plot Date: 06/17/09

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GENERAL UTILITIES NOTES

1. All construction work shall be done in accordance with the rules and regulations of the governmental agency having jurisdiction over the work. The Design-Builder shall notify the appropriate governmental agency having jurisdiction over the work to arrange for inspectional services.

2. The Design-Builder shall verify all dimensions and details shown on the drawings prior to the start of construction. Any discrepancy shall be immediately brought to the attention of the City.

3. Obtain all standards and drawings related to this project from the Utility Companies. Verify that the Utility Company's Project Drawings are the same as the Contract Drawings. Notify the City of any differences between them. If differences exist, obtain a resolution prior to proceeding with the work which is affected.

4. The underground pipes, cables, manholes, handholes, service boxes, or ductlines known to exist from search of records are indicated on the plans. The Design-Builder shall verify the locations and depths of existing utility lines and exercise proper care when excavating in the area. Wherever connections of new utilities to existing utilities are shown on the plans, the Design-Builder shall expose the existing lines at the proposed connections to verify their locations and depths prior to excavation for the new lines. The Design-Builder shall verify the operational status of all existing utilities to be removed or abandoned in place. Any discrepancy shall be brought to the attention of the City.

5. The Design-Builder shall exercise care when performing his work and shall be held liable for any damages incurred to the existing facilities, utilities and other features, whether shown or not on plans, as a result of his operations. All damaged portions shall be replaced in accordance with the requirements of the affected owner or user at the Design-Builder's expense.

6. All existing utilities to remain in use, whether or not shown on the plans, shall be protected at all times by the Design-Builder unless specified on the plans to be abandoned. Any damage to the existing utilities shall be repaired and paid for by the Design-Builder.

7. Existing utilities shall remain in service and in place at all times. If relocation of the existing utilities is required for the Design-Builder's convenience, interruption of service shall be kept to a minimum and shall be done at the Design-Builder's expense, and only with the approval of the City and the affected utility company.

8. Confined Space
For entry by HDOT or City personnel, including inspectors, into a permit required confined space as defined in 29 CFR Part 1910.146(b), the Design-Builder shall be responsible for providing:

   A. All safety equipment required by the confined space regulations applicable to all parties other than the construction industry, to include, but not limited to, the following:

      a. Full body harnesses for up to two personnel.
      b. Lifeline and associated clips.
      c. Ingress/egress and fall protection equipment.
      d. Two-way radios (walkie-talkies) if out of line-of-sight.
      e. Emergency (escape) respirator (10 minute duration).
      f. Cellular telephone to call for emergency assistance.
      g. Continuous gas detector (calibrated) to measure oxygen, hydrogen sulfide, carbon monoxide and flammables (capable of monitoring at a distance at least 20-feet away).
      h. Personal multi-gas detector to be carried by inspector.

   B. Continuous forced air ventilation adequate to provide safe entry conditions.
   C. One attendant/rescue personnel topside (two, if conditions warrant it).

9. Pursuant to Chapter 6E, HRS, in the event any artifacts or human remains are uncovered during construction operations, the Design-Builder shall immediately suspend work and notify the Honolulu Police Department, the State Department of Land and Natural Resources-Historic Preservation Division (1-808-692-8015), and the Engineer. In addition, for non-City projects, the Design-Builder shall inform the Civil Engineering Branch, Department of Planning and Permitting (1-808-768-8084); and for City projects, notify the responsible City agency.

10. The existing improvements on the premises and in adjacent areas that are not to be removed shall be preserved and protected. Any and all damages resulting from the Design-Builder's construction operations shall be replaced and repaired to original condition, to the satisfaction of the owner.

11. The Design-Builder shall provide an adequate and safe non-skid bridging material, including shoring, over trenches in pavement areas. The bridging shall be able to support all types of vehicular traffic.

12. Unless otherwise noted, no trench shall be opened more than 300 feet in advance of installed and tested pipeline and/or ductline.

13. The Design-Builder shall not cause falling rocks, oil or debris in any form to fall, slide or flow onto adjoining properties, streets or natural water-courses. Should such violation occur, the Design-Builder shall immediately make all remedial action necessary.

14. Adequate provisions shall be made to prevent surface waters from damaging the cut face of excavated trenches. Furthermore, adequate provisions shall be made to prevent sediment-laden runoff from leaving the site.

15. The Design-Builder shall be responsible for conformance with the applicable provisions of the Water Quality and Water Pollution Control Standards contained in the Hawaii Administrative Rules, Chapter 11-54, "Water Quality Standards" and Chapter 11-55, "Water Pollution Control". As well as Chapter 14 of the Revised Ordinances of Honolulu, as amended, Best Management Practices shall be employed at all times during construction.

16. The Design-Builder shall be responsible for any sewage spills caused during construction. The Design-Builder shall notify the State Department of Health and utilize appropriate sampling and analyzing procedures.

17. The Design-Builder shall coordinate, if applicable, construction of electrical, telephone, cable television, water, sewer, and gas line relocation work with Hawaiian Electric Company, Hawaiian TelCom, Oceanic Time Warner Cable, Board of Water Supply, Department of Environmental Services, and The Gas Co., respectively. All coordination shall be considered incidental to utility relocation work.

18. Where necessary, reconstruction of sidewalk, gutter and driveway area shall conform to the standard details of the governmental agency having jurisdiction over the work.

19. The Design-Builder shall coordinate with the land owners and users as needed to carry out the work.

20. Origin of Coordinates: Hawaii State Plane Coordinate Grid System, Zone III with the North American Datum of 83 High Accuracy Reference Network (NAD83 HARN).

21. Elevations shown on these plans are referenced to Mean Sea Level (MSL).

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

1. The Design-Builder shall obtain and comply with the National Pollutant Discharge Elimination System (NPDES) requirements for Oahu District permit projects. This is available at the Oahu District Office at 727 Kakoi Street (ph. 1-808-831-6793). Due to potential cost impacts, the Design-Builder needs to be aware of these requirements.

2. The Design-Builder shall complete and submit a Design-Builder's Certification of NPDES Compliance, including completion of the Best Management Practice (BMP) Checklist and submittal of a written BMP plan and drawings, prior to issuance of the permit to perform work upon State Highways.

3. The Design-Builder shall follow the guidelines in the City and County of Honolulu's "Best Management Practices Manual for Construction Sites in Honolulu", in developing, installing and maintaining the Best Management Practices (BMPs) for the project.

4. The Design-Builder shall follow the guidelines in the City and County of Honolulu's "Rules for Soil Erosion Standards and Guidelines" for the project.

PUBLIC HEALTH, SAFETY & CONVENIENCE NOTES

1. The Design-Builder shall observe and comply with all Federal, State and local laws required for the protection of public health and safety and environmental quality.

2. The Design-Builder, at his own expense, shall keep the project and its surrounding areas free from dust nuisance. The work shall be in conformance with the Air Pollution Standards of the State Department of Health. The State may require supplementary measures as necessary.

ADJUSTMENT TO EXISTING UTILITIES NOTE

Adjust all utility valve box frames & covers, water meter boxes, manhole frames & covers (shown and not shown), street monument covers, etc., to new finish grade. Coordinate with private companies and city agencies for work on each respective utility.

STATE OF HAWAII UTILITY NOTIFICATION CENTER

Prior to excavation, the Design-Builder is required by Section 269E of Hawaii Revised Statutes, to contact the Hawaii One Call Center at 1-866-423-7287.

FIRE DEPARTMENT NOTES

1. Provide a fire apparatus access road for every facility, building or portion of a building hereafter constructed or moved into or within the jurisdiction when any portion of the facility or any portion of an exterior wall of the first story of the building is located more than 150 feet (45,720 mm) from fire apparatus access as measured by an approved route around the exterior of the building or facility, Section 902.2.1, 1997 UFC.

2. The road shall be of an unobstructed width of not less than 20 feet, an unobstructed vertical clearance of not less than 13 feet 6 inches, capable of supporting the 73,000-pound weight of our fire apparatus and be made of all-weather driving capabilities. The turning radius of a fire apparatus road shall meet county requirements. Dead end fire apparatus access roads in excess of 150 feet (45,720 mm) shall be provided provided with approved turnarounds that meet county requirements.

3. Provide a water supply, approved by the County, capable of supplying the required fire flow for fire protection, to all premises upon which facilities or buildings, or portions thereof, are hereafter constructed, or moved into or within the County. On-site fire hydrants and mains capable of supplying the required fire flow shall be provided when any portion of the facility or building is in excess of the 150 feet (45,720 mm) from a water supply on a fire apparatus access road, as measured by approved route around the exterior of the facility or building, Section 903.2 as amended, 1997 UFC.

4. Provide an acceptance test for the fire hydrant system after installation is complete. Submit a copy of the acceptance test to the fire chief within five (5) working days after the completion of the test section 1001.5.2 as amended, 1997 UFC.

5. Fire apparatus access roads and water supplies for fire protection shall be installed and made serviceable prior to and during the time of construction.

STORM DRAINAGE NOTES

1. The Design-Builder shall verify and check all dimensions, lengths, slopes, top and invert elevations, and details of drainage structures prior to start of construction. Any discrepancy shall be brought immediately to the attention of the Engineer for clarification.

2. Longitudinal drainage along the highway and/or roadway shall be maintained at all times.

3. Existing drainage system shall be functional at all times during construction. The Design-Builder shall furnish materials, equipment, labor, tools and incidentals necessary to maintain flow.

4. Existing drainage structures to be replaced by new shall be abandoned in place unless otherwise noted on the plans to be removed. All pipelines to be abandoned in place shall be cut and sealed per HDOT requirements.

Rev	By	Date	Description
A	JK	07-24-09	Issued For Proposal

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Last Plot Date: 08/17/09

RFP DRAWING
NOT FOR CONSTRUCTION

Designed: J Sugibayashi
Drawn: J Sugibayashi
Checked: L Fong
Approved: J Kage
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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MAINTENANCE & STORAGE FACILITY

GENERAL UTILITIES NOTES, SYMBOLS, AND ABBREVIATIONS

SHEET 1 OF 7

Contract No.: DB-200
CADD File: SCY-D01-UG001
Drawing No: UG001 Rev. A
Scale: N/A
Page No. 148 of 259

AR00077693

NOTES FOR CONSTRUCTION WITHIN STATE RIGHT-OF-WAY

1. The Design-Builder shall obtain a permit to perform work upon State Highways from the Oahu District Engineer, State Highways, at 727 Kakoi Street, prior to commencement of work within the State's Highway Right-of-Way.

2. All construction and restoration work within the State's right-of-way, including the legal relations and responsibility to the public, shall be done in accordance with all applicable sections of the current "Standard Specifications for Road, Bridge, and Public Works Construction" and the "Specifications for Installation of Miscellaneous Improvements within State Highways", of the State Highways Division, unless otherwise specified by the Contract Plans and Specifications.

3. Work may be performed only between the hours of 8:30 a.m. and 3:00 p.m., Monday through Friday, except holidays, unless otherwise permitted by the District Engineer.

   During work hours, only one lane of traffic shall be closed, unless otherwise approved in writing by the District Engineer.

   At certain locations, no lane closure will be allowed during the "Back to School Jam", Thanksgiving weekend, Christmas/New Year period and at other times as directed by the Highways Division.

4. The Design-Builder shall provide, install, and maintain all necessary signs, lights, flares, barricades, markers, cones and other protective facilities, and shall take all necessary precautions for the protection, convenience, and safety of public traffic. All such protective facilities and precautions to be taken shall conform with the "Administrative Rules of Hawaii Governing the Use of Traffic Control Devices at Work Sites on or Adjacent to Public Streets and Highways" adopted by the Director of Transportation, and the current U.S. Federal Highways Administration "Manual on Uniform Traffic Control Devices, Part VI-Standards and Guides for Traffic Controls for Street and Highway Construction, Maintenance, Utility and Incident Management Operations".

   Lane closures shall conform to the Traffic Control Plan incorporated into these construction plans and must be approved by the Division prior to the issuance of the permit.

5. The minimum pavement structure shall consist of:

   a. Residential driveways, on minor Highways:

      1) 2-1/2" asphalt concrete (Mix IV), 6" aggregate base course and 12" subbase, or 2-1/2" asphalt concrete and 6" Glassphalt concrete base course.

      2) 6" of Class "A" concrete reinforced with 6" x 6" - W2.9 x W2.9 wire mesh on 12" aggregate subbase, if deemed necessary by the Engineer.

   b. Commercial driveways and sideroads on minor Highways:

      1) 2-1/2" asphalt concrete (Mix IV), 6" Glassphalt concrete base course and 12" subbase, or 4" asphalt concrete (Mix IV) and 8" Glassphalt concrete base course.

      2) 8" of Class "A" concrete reinforced with 6" x 6" - W2.9 x W2.9 wire mesh on 12" aggregate subbase, if deemed necessary by the Engineer.

   c. Channelized intersections on major Highways:

      1) 4" asphalt concrete (Mix IV), 8" Glassphalt concrete base course and 12" aggregate subbase, or 4" asphalt concrete (Mix IV) and 12" Glassphalt concrete base course.

6. No material and/or equipment shall be stockpiled or otherwise stored within the highway right-of-way except at locations designated in writing and approved by the Engineer. If use of a location is approved by the Engineer, a permit to use the property within the highway right-of-way shall be obtained from the State Highways.

7. Compaction tests shall be taken in accordance with the Specifications for installation of miscellaneous improvements within State Highways, as follows:

   a. Subbase: one (1) compaction test per lift per 200 lineal feet of roadway.

   b. Base Course: one (1) compaction test per lift per 200 linear feet of roadway.

   c. One (1) compaction test per lift per 300 lineal feet of trench.

   d. A copy of the test result shall be submitted to the District Engineer.

6. The Design-Builder shall take a profile along the centerline of the proposed utility trench both before commencing trench excavation work and after trench has been repaved. Profiles shall be submitted to the District Engineer and shall be used to verify that the roadway surface has been restored to its original condition or smoother.

9. The distance from the paved surface to the testing edge of a ten-foot long straight edge between two points shall not exceed 3/16 inch.

10. Approval of permit construction plans shall be valid for a period of one (1) year from the date of notification of approval to the applicant. In the event that construction does not commence within this one year period, the applicant will be required to resubmit the construction plans for the Division's review and approval.

11. All regulatory, guide, and construction signs and barricades shall have a high-intensity reflective background.

12. The Design-Builder shall inform the State Highway's Permit Office (1-808-831-8712) at least two (2) days prior to closing any lanes.

13. Driveways shall be kept open unless the owners of the properties using these Right-of-Ways are otherwise provided for satisfactorily.

14. Where pedestrian walkways exist they shall be maintained in a safe and passable condition, or other facilities for pedestrians shall be provided. Passages between walkways at intersections shall likewise be provided. All walkways shall conform to ADA requirements.

15. The Design-Builder shall reference to the satisfaction of the District Engineer, all existing traffic signs, posts and pavement markings prior to the commencement of construction. The Design-Builder shall replace or repair all traffic signs, posts and pavement markings disturbed by his activities, at his expense, unless directed otherwise by the District Engineer or his representative.

16. The Design-Builder shall exercise care when performing work in or adjacent to the State Highway Right-of-Way. All damages shall be immediately reported to the respective Utility Companies, and/or City or State Agencies. The repair work shall be done at the Design-Builder's expense, to the satisfaction of the District Engineer or other affected owner or user.

17. The Design-Builder shall notify the State Highways' Highway Lighting and Traffic Signal Supervisor, (1-808-837-5056) three (3) days prior to commencing work.

18. The Design-Builder shall notify the City Department of Transportation Services, Traffic Signal Engineer (1-808-523-4589) three (3) days prior to any signalized intersection work.

19. Traffic signals shall be kept operational during construction. Temporary operational microwave or other approved detection devices shall be installed three (3) working days prior to any signalized intersection excavation work. All work shall be done in accordance to the requirements of the Department of Transportation Services, City and County of Honolulu, and paid for by the Design-Builder.

20. The Design-Builder shall notify Oahu Transit Services, Inc. (OTS) Ed Sniffen at 1-808-848-4571 or Lowell Tom at 1-808-848-4578, two (2) weeks prior to commencing any work. The Design-Builder shall inform OTS of the location and scope of work, proposed closure of any street or traffic lanes, and the need to relocate any bus stop.

21. The permit to perform work upon State Highways may be revoked because of default in any of the following, but not limited to conditions:

    a. Work performed before or after permitted hours.

    b. Failure to maintain roadway surfaces in a smooth and safe condition.

    c. Failure to clean up construction debris generated from project work.

    d. Failure to provide proper traffic control.

    e. Failure to replace damaged pavement markings and signs.

22. The Design-Builder shall notify the State Highways Permit Office (1-808-831-8712) at least two (2) days prior to performing any trench restoration work. This work shall include any backfilling and compacting of trench materials; any placing and compacting of base course material; and any paving operations. Any trench restoration work performed by the Design-Builder that is not witnessed by a State Representative will be required to be removed and restored with a State Representative present. All restoration work will be at the Design-Builder's expense.

23. Temporary cold mix trench patches will be permitted in any given area for a maximum duration of two (2) weeks, and shall be a minimum of two (2) inches thick. All temporary patches shall be placed over properly placed and compacted backfill and base course layers. Design-Builder shall be responsible for maintaining all temporary patches and to make repairs to unsatisfactory patches within 24 hours.

24. The Design-Builder will make every effort to minimize the use and the duration of use of steel plates. All steel plates shall have a non-skid surface. The state may require the backfilling and patches of trenches due to the excessive usage of steel plates.

25. Plastic Marking Tape. Provide plastic marking tape that is acid and alkali resistant polyethylene film 6 inches wide with minimum thickness of 0.004 inch. Provide tape with minimum strength of 1750 psi lengthwise and 1500 psi crosswise. Manufacture tape with integral wires, soil backing or other means to enable detection by a metal detector when the tape is buried up to 3 feet deep. Manufacture tape specifically for marking and locating underground utilities. Provide the metallic core of the tape encased in a protective jacket or provided with other means to protect it from corrosion. Conform to the following tape color and bear a continuous printed inscription describing the specific utility.

    Red: Electric

    Yellow: Gas, Oil, Dangerous Materials

    Orange: Telephone, Telegraph, Television, Police and Fire Communications

    Blue: Water Systems

    Green: Sewer Systems

26. The Design-Builder shall provide the District Engineer with As-Built plans upon completion of the work done in the State Right-of-Way. This shall be done prior to the Department's release of the performance bond.

Rev	By	Date	Description
A	JK	07-24-09	Issued For Proposal

RFP DRAWING
NOT FOR CONSTRUCTION

Designed: J Sugibayashi
Drawn: J Sugibayashi
Checked: L Fong
Approved: J Kaga
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: SATO AND ASSOCIATES, INC.
HONOLULU, OAHU, HAWAII

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

MAINTENANCE & STORAGE FACILITY

GENERAL UTILITIES NOTES, SYMBOLS, AND ABBREVIATIONS

SHEET 2 OF 7

Contract No.: DB-200
CADD File: SCY-D01-UG002
Drawing No: UG002 Rev. A
Scale: N/A
Page No. 149 of 259

Date Scheduled: 23 Jul 2009 - 1:17pm
CAD File Name/R: \08024-HHCTCP\DWG\SCY-D01-UG000.dwg
Last Plot Date: 06/17/09

2009-07-20 10:35 AM R:\08024-HHCTCP\DWG\SCY-D01-UG000.dwg

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WATER NOTES

1. Unless otherwise specified, all materials and construction of water system facilities and appurtenances shall be in accordance with the STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, dated 1994, as amended, of the Hawaii Highways Division, Department of Transportation, and the City and County of Honolulu Board of Water Supply's "WATER SYSTEM STANDARDS", DATED 2002, THE "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 1991, and all subsequent amendments and additions.

2. All plans approved by the Board of Water Supply (BWS) are based solely on the adequacy of the water supply. All other features of the water system, such as lines, grades, fittings, drainage, etc., and other features of improvements shall not be the responsibility of the BWS.

3. The Design-Builder shall notify BWS Capital Projects Division, Construction Section in writing and submit six (6) sets of approved construction plans one week prior to commencing work on the water system.

4. The existence and location of underground utilities and structures as shown on the plans are from the latest available data but is not guaranteed as to the accuracy or the encountering of other obstacles during the course of the work. The Design-Builder shall be responsible and pay for all damages to existing utilities. The Design-Builder shall not assume that where no utilities are shown, that none exist.

5. Re-approval shall be required if this project is not under construction within a period of two (2) years from the date of approval.

6. The Design-Builder shall be responsible for the protection of all water lines during construction. The Design-Builder shall be especially careful when excavating behind water lines, tees, and bends wherever there is a possibility of water line movement due to the removal of the supporting earth beyond the existing reaction blocks. The Design-Builder shall take whatever measure necessary to protect the water lines, such as constructing special reaction blocks (with BWS approval) and/or modifying his construction method.

7. Prior to any excavating, the Design-Builder shall verify in the field the location of existing water mains and appurtenances.

8. All water mains and appurtenances shall be subjected to a hydrostatic test pressure of 150 psi by the Design-Builder in accordance with DIVISION 300 – CONSTRUCTION, SECTION 302.28, PIPE PRESSURE TEST of the "WATER SYSTEM STANDARDS", dated 2002. During the 30-minute pressure test, and after the pressure has stabilized, the pressure shall not drop more than 10 psi.

9. After installation of tapping sleeve and tapping valve and prior to tapping the existing water main, the assembly shall be pressure tested at 150 psi on both sides of the valve and in accordance with the "WATER SYSTEM STANDARDS", dated 2002.

10. The Design-Builder shall chlorinate the entire inside surface of each pipe and fitting with disinfection solution of 5 ounces of sodium hypochlorite mixed with 10 gallons of water. (For connection only)

11. Prior to installation, the Design-Builder shall submit for approval by BWS, the manufacturer's certification that all cast iron (gray or ductile) fittings for the project conform in all respects to the Water System Standards, dated 2002.

12. Polygon shope for mechanical joint glands as described in AWWA Standard C111 shall be "straight-sided" or an approved equal on a job-to-job basis.

13. The Design-Builder shall cut and plug all existing unused laterals at the main whether or not shown on the plans. The damaged area shall be repaired to an equal or better condition than the immediate area. All work shall be done at the expense of the Design-Builder.

14. The Design-Builder shall obtain a National Pollutant Discharge Elimination System (NPDES) permit prior to chlorination and/or dewatering. A copy of the permit shall be submitted to the BWS, Capital Projects Division, Construction Section.

15. Pipe cushion shall be of high resistivity material. The Design-Builder shall submit a soil certification that high resistant cushion material has a resistivity greater than 5,000 OHM-CM. Remainder of the backfill material shall be as specified in the Water System Standards. Pipe cushion and backfill material shall contain no hazardous substances above regulatory action levels including but not limited to lead, asbestos, mercury, chromium, cadmium, zinc, strontium, and polychlorinated biphenyls (PCB).

16. All ductile iron pipe, fittings, and valves shall be wrapped with two layers of 8 mil polyethylene wrap.

17. Cleaning shall be by the use of "pigs" introduced into the pipelines and run completely through all installed pipelines and all branch lines for fire hydrants. "Pigging" of service laterals is not required. Bare foam "pigs" shall be used to swab piping clean as each length of the pipeline is installed. Each "pig" shall consist of a cylindrical piece of polyurethane foam with a density of 3-7 pounds per cubic foot and a vinyl-coated nose. Outside diameter of the "pig" shall be equal to 1-1/4 to 1-1/2 times the inside diameter of the pipe being installed. The length of the "pig" shall be 1-1/2 to 2 times its diameter. Prior to use, the "pig" shall be submerged in a chlorine solution of 1 oz. of 5% chlorine bleach in 5 gallons of water. "Pigging" of the pipeline shall be considered incidental to the installation of the new pipeline.

18. Install 4 mil thick, non-metallic, blue colored, 6 inches wide warning tape over centerline of the pipe and below the base course along the entire length of trench. Tape should be marked with "CAUTION WATER LINE BURIED BELOW".

19. Polyvinyl chloride (PVC) pipes shall be Class 150 or 200 for diameters 12" and smaller, and Class 150 only for diameters greater than 12". All ductile iron valves and metallic fittings shall be wrapped with two layers of 8 mil polyethylene wrap. No bending of polyvinyl chloride pipes shall be permitted. The installation of PVC pipe, according to the plans and specifications as bid on by the Design-Builder, may require additional design work. Additional fittings and special couplings shall be considered incidental to the unit price bid in the proposal for PVC pipe. Any additional design work shall be the responsibility of the Design-Builder.

20. All Polyvinyl Chloride (PVC) pipe deflections shall be accomplished only by the use of special PVC deflection couplings. Deflection around curves shall be accomplished only by the use of PVC deflection couplings.

21. The Design-Builder shall furnish and install polyethylene wrap, 3 feet minimum at all taps (for DI pipe and copper lateral combination only) and plastic pipe (PE tubing) 3 feet long after meters for all service lateral connections.

22. All sections of the water main requiring reinforced concrete jacketing shall be ductile iron pipe Class 52 with ductile iron fittings or concrete cylinder pipe and fittings.

23. Bossed tees are required for all lateral and ARV connections to PVC mains.

24. The Design-Builder shall install electronic markers to ALL mains and test the electronic markers prior to installations to verify proper operation. BWS personnel shall verify the number and locations of placed electronic markers before final paving of the project.

25. The Design-Builder shall verify all existing service lateral locations whether shown or not shown on plans prior to commencing with any of the work and shall not assume that where no services are shown, none exist.

26. The Design-Builder shall adjust all manhole frames/valve boxes/meter boxes within the resurfaced area. The Design-Builder shall be responsible for "referencing" these manholes/valve boxes/meter boxes to facilitate the adjustments.

27. Any adjustments to the existing water system required during construction to meet requirements of BWS Standards, whether shown on the plans or not, shall be done by the Design-Builder at no cost to BWS.

28. At the electrical/signal ductline water crossings, adjust all electrical/signal ductline elevations to maintain 6" vertical clear separation from all waterlines (12" clear for all electrical/signal ductline structures larger than 16") at no cost to BWS.

29. Maintain 3'-0" minimum horizontal clear separation between all waterline systems and nearest electrical/signal ductlines paralleling the water system at no cost to BWS.

30. Maintain 3'-0" minimum horizontal clear separation between street light/traffic signal standards (including any modular units) and the nearest water system. Design-Builder shall field verify for any conflicts at each street light/traffic signal standard location. Where conflicts occur, the Design-Builder shall coordinate with the Engineer to revise the street light/traffic signal standard to provide the required clearances at no cost to BWS.

31. Maintain 3'-0" minimum cover for all existing waterlines (18" minimum for service laterals) from new finish grade. The Design-Builder shall probe the waterline and service laterals and submit the probing data to BWS Capital Projects Division, Construction Section. Any adjustments to the existing water system to meet the minimum cover and the requirements of the BWS standards, whether shown on plans or not, shall be done by the Design-Builder at no cost to BWS.

32. Requests for water outages shall be submitted to the Board of Water Supply construction inspector not less than fourteen (14) calendar days in advance. The request shall indicate the specific area, date, time, and the anticipated duration of the proposed outage. Outages shall be approved at the convenience of the Board of Water Supply. The Design-Builder shall plan all work to minimize the number and duration of outages. The Board of Water Supply shall perform the initial notification of affected consumers. However, if a scheduled outage is canceled for the convenience of the Design-Builder, the Design-Builder shall immediately notify the affected consumers of the cancellation and re-notify them not less than one (1) and not more than two (2) calendar days prior to the rescheduled outage. Design-Builder notifications shall be at no additional cost to the Board of Water Supply.

33. The Design-Builder shall be solely responsible for all assumptions, deductions, or conclusions he/she may make or derive from the subsurface information or data furnished on the plans. The Design-Builder must satisfy himself/ herself through his/her own investigations as to what subsurface conditions are to be encountered.

34. All water main trenches shall be backfilled as called for under DIVISION 300 – CONSTRUCTION, SECTION 302.03, TRENCH BACKFILL of the "WATER SYSTEM STANDARDS", dated 2002. Compaction of trench backfill shall meet applicable requirements of "THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION", September 1986, of the Counties of the State of Hawaii, or the State Department of Transportation Standards for Projects within State Highways.

35. The Design-Builder shall be responsible for the proper disposal of all effluent associated with the construction activity and the disinfection and hydrotesting operations to safeguard public health and safety in accordance with applicable Department of Health requirements. All permits and licenses for construction water disposal, including all applications, charges, fees, and taxes, are the responsibility of the Design-Builder.

36. All air relief valves shall have a minimum working pressure range of 0 to 150 psi.

37. The use of corrosion resistant coated Cor-Ten® T-Bolts and Nuts for underground mechanical joint installations shall be allowed in lieu of Type 316 stainless steel bolts and nuts as required in DIVISION 200, SECTION 202.02, MECHANICAL JOINT, of the 2002 WATER SYSTEM STANDARDS.

Rev	By	Date	Description
A	JK	07-24-09	Issued For Proposal

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RFP DRAWING
NOT FOR CONSTRUCTION

Designed: J Sugibayashi
Drawn: J Sugibayashi
Checked: L Fong
Approved: J Kage
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: SATO AND ASSOCIATES, INC.

For reduced prints, original page size in inches:

MAINTENANCE & STORAGE FACILITY

GENERAL UTILITIES NOTES, SYMBOLS, AND ABBREVIATIONS

SHEET 3 OF 7

Contract No.: DB-200
CADD File: SCY-001-UG003
Drawing No: UG003 Rev. A
Scale: N/A
Page No. 150 of 259

Last Plot Date: 06/17/09

AR00077695

SEWER NOTES

1. All sewer construction shall be performed in accordance with the Standard Specifications for Public Works Construction, September 1986, Standard Details for Public Works Construction, September 1984, as amended, of the Department of Public Works, City and County of Honolulu and Counties of Kauai, Maui and Hawaii, current City practices, the Revised Ordinances of Honolulu, 1990 as amended, and the Design Standards of the Department of Wastewater Management, Vol. 1, July 1993.

2. In the event that any change in alignment or grade for the proposed sewers are required due to unforeseen conflict with other utilities, the engineer in charge or the maker of the plans shall be responsible for the required changes which are to be presented to the Department of Planning and Permitting for approval.

3. The Design-Builder shall notify the Wastewater Branch, Department of Design and Construction, at 1-808-768-8788 or 1-808-768-8770 to arrange for inspectional services and submit four (4) sets of approved construction plans seven (7) days prior to commencement of construction work. The Design-Builder shall pay for all inspection costs.

4. Crushed rock cradle is permitted where soil is stable. In areas of unstable soil, the maker of the plans and the construction engineer will determine the pipe support required.

5. Trees in the road right-of-way shall be situated a minimum of six (6) feet from the City's sewer lines.

6. The underground pipes, cables or ductlines known to exist by the designer from his research of records are indicated on the plans. The Design-Builder shall verify the location and depth of the facilities, including and affecting sewer lines, in the presence of the DPP inspector and exercise proper care in excavating the area. The Design-Builder shall be responsible and shall pay for all damaged utilities.

7. Sewer lateral location measured along the front property line shall be six (6) feet from the front property corner unless otherwise noted on the plans and should not straddle electrical transformer pad.

8. Slope for sewer laterals shall be 1.00% unless otherwise noted.

9. Building plumbing facilities shall be controlled by sewer lateral inverts.

10. The Design-Builder shall be responsible for maintaining continuous sewer service to all affected areas during construction.

11. The Design-Builder shall submit to the Department of Planning and Permitting mylar "as-built" tracings of the construction plans as actually constructed, showing all changes from the original plans.

12. The Design-Builder shall be responsible for any sewage spills caused during construction. The Design-Builder shall notify the State Department of Health and utilize appropriate sampling and analyzing procedures. The Design-Builder shall be responsible for all public notifications and press releases.

13. The Design-Builder shall install "Rainstopper" manhole inserts in all sewer manholes with Type "SA" frame and cover.

14. All drop and shallow drop sewer manholes shall be lined with plastic liners. Also, if the velocity exceeds ten (10) feet per second (fps), the sewer manhole shall be plastic lined.

15. The Design-Builder shall obtain approval for advance sewer riser agreement at the Department of Planning and Permitting and obtain building permit for plumbing work before any advance riser is made.

16. All sewer pipe joints within easements shall be wrapped with geotextile root barrier.

17. Sewer pipe thirty (30) inches and larger shall be of corrosion resistant material or protected internally with lining.

18. S4C pipe cradle seals shall be installed ten (10) feet from all sewer manholes to prevent soil migration. See Dwg No. CD004.

19. Geotextile fabric to envelop the pipe cradle and select backfill material shall be provided where water or unstable soil conditions are encountered.

20. Confined Space

    For entry by City personnel, including inspectors, into a permit required confined space as defined in 29 CFR PART 1910.146(b), the Design-Builder shall be responsible for providing:

    i. All safety equipment required by the confined space regulations applicable to all parties other than the construction industry, to include, but not limited to, the following:

       a. Full body harnesses for up to two personnel.

       b. Lifeline and associated clips.

       c. Ingress/egress and fall protection equipment.

       d. Two-way radios (walkie-talkies) if out of line-of-sight.

       e. Emergency (escape) respirator (10 minute duration).

       f. Cellular telephone to call for emergency assistance.

       g. Continuous gas detector (calibrated) to measure oxygen, hydrogen sulfide, carbon monoxide and flammables (capable of monitoring at a distance at least 20-feet away).

       h. Personal multi-gas detector to be carried by inspector.

    ii. Continuous forced air ventilation adequate to provide safe entry conditions.

    iii. One attendant/rescue personnel topside (two, if conditions warrant it).

21. Sewers shall be laid at least 6 feet, horizontally, from any existing or proposed water main. When conditions prevent a lateral separation of 6 feet, a sewer may be laid closer than 6 feet to the water main under the following condition:

    i. It is laid in a separate trench or it is laid in the same trench with the water main located to one side on a bench on undisturbed earth.

    ii. The elevation of the top (crown) of the sewer is at least six (6) inches below the bottom (invert) of the water main.

    iii. Other alternatives such as a concrete jacket shall be considered.

22. Water laterals and water meter boxes should not be placed over or near sewer laterals. Water valves, air release valves, bends and concrete blocks, fire hydrants, etc. should not be placed over or near sewer lines and laterals.

23. Whenever a sewer line vertically crosses water mains, the sewer line must be jacketed with reinforced concrete for a minimum of 5 feet on both sides of the point of crossing if the sewer is above the water main and for 3 feet on both sides if the sewer is below the water main. However, jacketing may be eliminated if the sewer line is below the water main and the separation is greater than 24 inches and structural requirements are met. See Std. Det. S-5 for the detail of the reinforced concrete jacket for pipes 12 inches and smaller. For pipes greater than 12 inches in diameter, provide a new detail of the reinforced concrete jacket.

24. Adjust all affected sewer manhole (smh) frames and covers to new finish grade as required. For smh adjustments upward less than 3", see Std. Det. S-25. for smh adjustments upward greater than 3" or for any adjustments downward, reconstruct smh top from below the cone section.

25. The sewer system, including all lateral connections and services, shall be operational at all times. No service interruption is permitted. When work on existing sewer is required, the Design-Builder shall provide equipment necessary to redirect sewage around the sewer and manholes. Bypassing plans and schedules shall be approved by the Engineer prior to implementation. Bypass request shall be submitted to the Engineer for review 30 days prior to the start of the bypass work.

26. When connecting to a live sewer, the Design-Builder shall abide by all conditions that the State Department of Health sets forth to mitigate any wastewater spill that may occur. The Design-Builder shall inform the City inspector five (5) working days prior to the actual connection. The Design-Builder shall be responsible for any fines and penalties due to any spills resulting from the connection.

27. The Design-Builder shall ensure that the gravity sewer line is free of debris or other obstructions prior to making any on-line flow connections.

28. Prior to final acceptance, all sewer lines installed shall be flushed with water and any accumulated construction debris and other foreign materials shall be removed and disposed of by the Design-Builder.

29. Should the Design-Builder excavate beyond the trench pavement width, as specified in the Standard Details for Public Works Construction, dated September 1984, and such action results in a greater load to the pipe, the Design-Builder shall provide, at the Design-Builder's expense, a higher class of bedding material that will withstand the added load.

CHEVRON PRODUCTS COMPANY GUIDELINES FOR WORK NEAR CHEVRON PRODUCTS CO. PIPELINES

Chevron Hawaii Refinery has one or more petroleum product pipelines in an easement that runs through or immediately adjacent to HHCTCP. These pipelines are used for the transmission of petroleum products at high temperatures and pressures. The pipelines are coated and cathodically protected. They require frequent inspection and maintenance.

It is absolutely necessary that Chevron be provided access to these buried pipelines at all times, 24 hours a day, seven days a week. Therefore, HHCTCP must adhere to the following guidelines:

1. If the easement area is fenced or walled in, Chevron must have a gate key unless the area is attended on a 24-hour basis.

2. Storage of material on the easement shall be avoided. This includes parking lots.

3. A minimum overhead clearance of 15 feet must be maintained within the easement.

4. Heavy landscaping (trees, shrubs, sprinklers, etc.) should be kept off the easement.

5. Heavy obstructions should be kept off the easement (e.g. buildings, walls, equipment pads, etc.).

6. No top-to-bottom obstructions will be permitted in the easement (e.g. power poles, sewer manholes, sewer clean-outs, bridge abutments, etc.).

7. Light obstructions (e.g. grass, paving (asphaltic concrete), curb crossings, etc.) are considered reasonable. Grassed areas must be suitable for all-weather vehicular travel.

6. Chevron's Company Representative will stake the pipelines at Design-Builder's request. Determination of pipeline elevations shall be Design-Builder's responsibility and at Design-Builder's expense.

9. The pipeline easement access road must be kept open at all times. Authorization to block access roads at any time during the construction period must be obtained from Chevron Products Company.

10. Avoid running any sewers, fences, sprinkler lines, pipelines, cables, curbs, etc., within the easement in a parallel orientation to the easement centerline. Crossings are permitted but must be held to a minimum of 45 degrees to easement centerline.

11. Sewer and electrical conduit crossings should be kept a minimum of four feet clear below Chevron's pipelines for the full easement width. If this condition cannot be met, the crossings should be encased in six inches of concrete, with a minimum two (2) feet clear below Chevron's pipelines.

12. Except for item 11 above, all crossing facilities should be at least 24 inches clear below Chevron's pipelines for the full easement width. Crossings above Chevron's pipelines are not permitted.

13. Removal of fill from the easement should not result in there being less than three (3) feet minimum cover over the lines.

14. Trenches across the pipelines shall be limited to a maximum width of five feet less unless the lines are supported in a manner accepted in advance by Chevron Products Company.

15. All excavations and backfilling operations in Chevron's easement must be witnessed by a Chevron Company Representative. Design-Builder shall provide Chevron with 48 hours notice prior to beginning work within Chevron's easement. All backfill material within six (6) inches of our pipelines must be of finely graded dirt or sand. All excavations within two (2) feet of our pipelines must be accomplished by hand digging. Work shall be handled in an expeditious manner in order to keep Chevron's pipelines uncovered for as short a period as possible.

16. Fill Chevron's easement should be limited to four feet maximum cover over Chevron's pipelines. Chevron will stake the pipelines upon request so that Design-Builder can excavate to determine the depth of the pipelines.

17. Regrading of adjacent property should not adversely affect drainage of the easement area or pose a hazard to the easement such as landslides or erosion.

18. The slope must be kept reasonably level across the easement. Maximum should be 5:1 to provide for backhoe operation.

19. All costs pertaining to damage of Chevron's pipelines, their coatings, or the cathodic protection devises, or damage of property and injury to persons caused directly or indirectly by this work, will be to Design-Builder's account. Any repair work on the lines resulting from Design-Builder's project shall be performed by Chevron Products Company and billed to Design-Builder.

Rev	By	Date	Description
A	JK	07-24-09	Issued For Preposal

RFP DRAWING NOT FOR CONSTRUCTION

Designed: J Sugibayashi
Drawn: J Sugibayashi
Checked: L Fong
Approved: J Kege
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 · Honolulu, HI 96813

Subconsultant: SATO AND ASSOCIATES, INC.
CONSULTING ENGINEERS • CIVIL & STRUCTURAL
HONOLULU, OAHU, HAWAII • KAHULUI, MAUI, HAWAII

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

MAINTENANCE & STORAGE FACILITY

GENERAL UTILITIES NOTES, SYMBOLS, AND ABBREVIATIONS

SHEET 4 OF 7

Contract No.: DB-200
CADD File: SCY-D01-UG004
Drawing No: UG004 Rev. A
Scale: N/A
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Last Plot Date: 06/17/09

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HECO FUEL PIPELINE EXCAVATION NOTES

1. HECO's fuel oil pipelines are of carbon steel construction with specialized corrosion protective coatings, insulation coverings, cathodic protection, and specific backfill material. Any excavation work which affects these components on HECO's fuel oil pipeline requires careful reconstruction to insure pipeline integrity, structural strength, and corrosion protection.

2. The Design-Builder shall call USA North at 1-800-227-2600 for field verification of HECO's underground fuel pipelines a minimum of two (2) working days prior to trenching.

3. The Design-Builder shall contact the following individual at least 48 hours prior to any trenching or backfilling near the existing HECO underground fuel pipelines: Colin Higa (HECO Senior Shift Supervisor) at 1-808-543-4540.

4. The Design-Builder is responsible for properly supporting and protecting the underground fuel pipes, coatings, cathodic protection, and insulation at all times. When trench excavation is adjacent to or beneath HECO's existing underground fuel pipelines, the Design-Builder is responsible for:

   A. Sheeting and bracing the excavation to prevent slides, cave-ins, and settlements.

   B. Supporting and protecting existing structures or facilities with beams, struts, or under-pinnings.

5. HECO stand-by inspector must be on-site anytime the excavation is near the underground fuel pipelines. The cost of such inspection will be charged to the Design-Builder.

6. Once the Design-Builder reaches the pipeline backfill material, the Design-Builder shall use only hand tools to further excavate and remove the remaining backfill.

7. The Design-Builder shall take great care when excavating the pipeline backfill and nearing the fuel oil pipelines to prevent damage to the insulation and protective coating on the pipelines. Any handling or work on these pipelines shall be by HECO personnel or by the Design-Builder under HECO's supervision. The cost of HECO's assistance in providing proper support, protection, and testing of its underground fuel oil pipelines will be charged to the Design-Builder. The Design-Builder shall exercise due care and precautions to avoid disturbing any fuel pipelines, pipe supports, expansion joints and temporary guards and shall work cautiously at all times to avoid accidents.

8. The Design-Builder shall be responsible for any damages to HECO's facilities and all costs associated with the damage and repair as a result of his operations. Repair work shall be done by HECO or by the Design-Builder under HECO's supervision.

9. If the coating is damaged in any way, it is imperative that the HECO stand-by inspector on-site be notified as soon as possible such that the coating may be repaired before backfilling. Even a nick or pinhole puncture in the protective coating can jeopardize the integrity and reliable operation of the underground fuel pipe system.

10. The underground fuel pipelines may or may not be in use during construction. However, the pipelines contain fuel oil at all times. In the event that the pipelines, its coatings, cathodic protection, or insulation are damaged, the Honolulu Power Plant Shift Supervisor must be immediately notified so HECO personnel can, depending on the extent of the damage, secure the damaged section and report any oil spills to the proper authority. In case of pipeline damage or suspected damage, immediately contact the Honolulu Power Plant Shift Supervisor at 1-808-533-2102 (this phone number is manned 24 hours a day).

11. If any portion of the pipeline backfill is removed during excavation, the replacement backfill shall be "crusher run" material which is non-native to the surrounding soil and free of oils, salts, and other deleterious material. The backfill shall be compacted 6" lifts around the pipe to ensure the stability of the new backfill.

TESORO HAWAII CORPORATION CONSTRUCTION NOTES AND GUIDELINES FOR WORK NEAR TESORO HAWAII CORPORATION PIPELINES

1. All work shall be in accordance with "Design and Construction Guidelines for Projects Near Tesoro Hawaii Corporation Pipelines and Fuel Storage Facilities."

2. Tesoro Hawaii Corp. will be provided access to the pipelines and facilities at all times, twenty-four (24) hours a day, seven (7) days a week. If the easement area is to be fenced or walled in, Tesoro Hawaii Corp. will be provided with a gate key unless the area is attended on a twenty-four (24) hour basis.

3. Storage of material or equipment on the easement should be avoided. This includes parking lots for long term storage of material and vehicles.

4. A minimum overhead clearance of fifteen (15) feet must be maintained within the easement.

5. Extensive landscaping (trees, shrubs, sprinklers, etc.) should be kept off of the easement.

6. Large structures and obstructions (buildings, walls, equipment pads, etc.) should be kept off of the easement.

7. Top to bottom obstructions (power poles, sewer manholes, sewer cleanouts, bridge abutments, etc.) will not be permitted in the easement.

8. Light landscaping and structures (grass, paving, curb crossings, etc.) are considered reasonable. Grassed areas must be suitable for all weather vehicular travel.

9. A Tesoro Hawaii Corp. representative will stake the pipelines at Design-Builder's request. The Tesoro Hawaii Corp. Pipeline Inspector shall be notified at least 48 hours prior to excavations* in order that the representative can locate the Tesoro Hawaii Corp. Pipeline. Determination of pipeline elevations and locations shall be the Design-Builder's responsibility and at the Design-Builder's expense. All maps and drawings provided by Tesoro Hawaii Corp. of its pipelines and pipeline facilities are approximations and the Design-Builder shall be responsible to verify the precise location all underground facilities prior to the start of construction. The Tesoro Hawaii Corp. Inspector's number can be contacted at 1-808-479-0527.

10. The pipeline easement access road must be kept open at all times. Authorization to block access roads at any time during Design-Builder's construction period must be obtained from Tesoro Hawaii Corporation's Supply and Distribution Manager.

11. Avoid installing sewers, fences, sprinkler lines, pipelines, cables, curbs, etc., within the easement in a parallel or near parallel orientation to the easement centerline. Crossings are permitted but must be held to a minimum of forty-five degrees (45) to easement centerline.

12. Sewer and electrical conduit crossings should be held to a minimum clearance of two (2) feet below Tesoro Hawaii Corporation's pipelines for the full easement width. If this condition cannot be met, the crossings should be encased in six (6) inches of concrete.

13. Except for item 12 above, all crossing facilities should be at least twenty four (24) inches clear below pipelines for the full easement width. Crossings above pipelines are generally not accepted.

14. Removal of fill from the easement is limited to not less than three (3) feet minimum cover over the lines. If residential or business buildings are within fifty (50) feet of the pipeline, four (4) feet of cover is required.

15. Trenches across the pipelines shall be limited to a maximum width of ten (10) feet unless the lines are supported in a manner acceptable to Tesoro Hawaii Corp.

16. If the pipeline is to be exposed during construction, adequate protection and support shall be provided during construction activities and after hours to prevent damage to or destruction of the fuel pipelines.

17. All excavations and backfilling operations in Tesoro Hawaii Corporation's easement must be witnessed by a Tesoro Hawaii Corp. representative. All backfill material within six (6) inches of pipelines shall be of finely sifted native dirt or man-made sand (grade C-33). All excavations within three (3) feet of pipelines must be accomplished by hand digging. Work shall be handled in an expeditious manner in order to keep pipelines uncovered as briefly as possible.

18. Grading of abutting property should not adversely effect drainage of the easement area or pose a hazard to the easement such as slides or erosion.

19. The slope of the final grade must be kept reasonably level across the easement. Maximum should be 5:1 to provide for backhoe operation and repair vehicles.

20. All crossing metallic facilities with potentials that could interfere with Tesoro Hawaii Corporation's cathodic protection current shall place a neoprene dielectric blanket between the crossing facility and the Tesoro Hawaii Corp. facility for the full length of the easement. In addition, a cathodic protection survey report shall be submitted and approved by Tesoro Hawaii Corp. stating the proposed crossing facility will not, in any way, adversely affect Tesoro Hawaii Corp. facilities.

21. All costs pertaining to damage of the pipelines, their cathodic protection devices, or damage of property and injury to persons caused directly or indirectly by this work, shall be charged to the Design-Builder. Any repair work on the pipelines resulting from the Design-Builder's project shall be performed by the Design-Builder with the authorization of Tesoro Hawaii Corp. or by Tesoro Hawaii Corp. personnel and billed to the Design-Builder.

22. The Design-Builder shall be responsible for traffic conditions over any Tesoro Hawaii Corp. pipeline or pipeline facility relating to their construction activities. The Design-Builder shall provide steel plates or non-compacted soil berms in areas of equipment traffic and limit traffic to these access ways.

*NOTE: Excavations include grading and grubbing of the project area above the Tesoro Hawaii Corp. Pipeline or in the vicinity of the Tesoro Hawaii Corp. surface structures such as valve vaults, valve cages and control devices.

Rev	By	Date	Description
A	JK	07-24-09	Issued For Proposal

RFP DRAWING NOT FOR CONSTRUCTION

Designed: J Sugibayashi
Drawn: J Sugibayashi
Checked: L Fong
Approved: J Kege
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2230 - Honolulu, HI 96813

Subconsultant: SATO AND ASSOCIATES, INC.
CONSULTING ENGINEERS - CIVIL & STRUCTURAL
HONOLULU, OAHU, HAWAII • WAILUKU, MAUI, HAWAII

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MAINTENANCE & STORAGE FACILITY

GENERAL UTILITIES NOTES, SYMBOLS, AND ABBREVIATIONS

SHEET 5 OF 7

Contract No.: DB-200
CADD File: SCY-D01-UG005
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Last Plot Date: 06/17/09

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THE GAS COMPANY CONSTRUCTION NOTES FOR 16" GAS TRANSMISSION LINE

1. The Gas Company (TGC) 16-inch high pressure gas transmission line is plastic coated and cathodically protected. The Design-Builder shall be extremely careful when working near the gas pipeline.
2. Prior written clearance must be obtained from TGC, Maps and Records Department, 515 Kamakee Street, Honolulu, HI 96814 at least five (5) working days before starting excavation near any of TGC pipelines.
3. Since pipeline locations on field maps are approximate, the Design-Builder, after obtaining written clearance, shall call One Call Concepts, a minimum of five (5) working days before starting excavation to arrange for field location of existing gas lines. The telephone number is 1-866-423-7287.
4. The Design-Builder shall notify TGC, Distribution Department, 24 hours prior to excavating and backfilling any pipeline. The telephone number is 1-808-594-5556.
5. The Design-Builder shall have the sole responsibility to perform field verification, including hand digging methods.
6. The Design-Builder shall excavate and backfill around the pipeline in the presence of a representative of TGC. All backfill within 12 inches of the pipeline shall be sand, monsand or select cushion material approved by TGC.
7. Minimum vertical and horizontal clearance between gas pipeline and other pipelines, conduits, or other structures shall be 24 inches. Adequate support and protection for gas pipelines exposed in the trench shall be provided by the Design-Builder and approved by TGC.
8. The Design-Builder shall work in an expeditious manner in order to keep uncovered gas line exposure to a minimum.
9. The Design-Builder shall notify TGC immediately after any damage has been caused to the existing gas pipelines, their coatings or their cathodic protection devices. The telephone number is 1-808-535-5933, 24 hours a day. The Design-Builder shall be liable for any damage to TGC facilities. Repair work on such damage shall be performed by TGC with payment for this work to be borne by the Design-Builder.

THE GAS COMPANY CONSTRUCTION NOTES FOR GAS FACILITIES OTHER THAN 16" TRANSMISSION LINE

1. TGC gas pipelines are plastic coated and cathodically protected. The Design-Builder shall be extremely careful when working near these gas pipelines.
2. Written clearances must be obtained from TGC, Maps and Records Department, 515 Kamakee Street, Honolulu, HI 96814 at least five (5) working days before starting excavation near these gas pipelines.
3. Since gas line locations on field maps are approximate, the Design-Builder, after obtaining written clearance, shall call One Call Concepts a minimum of five (5) working days before starting excavation to arrange for field location of the existing gas pipelines. The telephone number is 1-866-423-7287.
4. The Design-Builder shall excavate and backfill around gas pipelines in the presence of a representative of TGC. All backfill within six (6) inches of any gas pipeline shall be select cushion material approved by TGC.
5. For relocation of any gas pipeline, the Design-Builder shall notify TGC five (5) working days before starting work. The telephone number is 1-808-594-5574. The Design-Builder shall provide the necessary excavation and backfill, obtain traffic permits, and restore pavement, sidewalks, and other facilities. Any relocation of gas facilities shall be done by TGC and paid for by the Design-Builder.
6. The Design-Builder shall notify TGC immediately after any damage has been caused to existing gas pipelines, coatings, or its cathodic protection devices. The telephone number is 1-808-535-5933, 24 hours a day. The Design-Builder shall be liable for any damage to TGC facilities. Repair work on such damage shall be done by TGC with payment for this work to be borne by the Design-Builder.
7. Minimum vertical or horizontal clearance between the gas pipelines and other pipelines, conduits, ductlines, or other facilities shall be 12 inches. Adequate support and protection for gas pipelines exposed in the trench shall be provided by the Design-Builder and approved by TGC.
8. The Design-Builder shall work in an expeditious manner in order to keep the uncovered gas pipelines exposed for as short a period of time as possible.

CONSTRUCTION NOTES FOR WORK WITHIN THE STATE ENERGY CORRIDOR (SEC)

1. Unless otherwise noted, all applicable construction work shall be done in accordance with: the Hawaii Standard Specifications For Road, Bridge, and Public Works Construction, 1994, and Standard Plans, 2008, of the Department of Transportation, State of Hawaii, as amended; and the Standard Specifications For Public Works Construction, September 1986, and Standard Details For Public Works Construction, September 1984, as amended, of the Department of Public Works, City and County of Honolulu, and the Counties of Kauai, Maui, and Hawaii.
2. The underground pipes, cables or ductlines known to exist by the designer from his search of records are indicated on the plans. The Design-Builder shall verify the locations and depths of the facilities and exercise proper care in excavating in the area. Wherever connections of new utilities to existing utilities are shown on the plans, the Design-Builder shall expose the existing lines at the proposed connections to verify their locations and depths prior to excavation for the new lines.
3. The existing utilities have been shown on these plans insofar as it is possible to do so. Their locations as shown are approximate only and the Design-Builder shall make an independent check on the ground by probing and with the various utility companies and governmental agencies to ascertain their exact locations.
4. The Design-Builder shall protect all existing utilities whether shown on the plans or not. Before disrupting service of any utility, the Design-Builder shall contact the Engineer and the responsible utility authority. Damage to existing utilities as a result of construction activities shall be repaired by the Design-Builder at no additional cost to the State, and at no cost to the affected utility authority.
5. The Design-Builder shall make arrangements for utilities such as electricity, etc. required for their operations, and all costs for these utilities shall be borne by the Design-Builder.
6. All existing utilities to remain in use, whether or not shown on the plans, shall be protected at all times by the Design-Builder during construction unless specified on the plans to be abandoned. Any damage to the existing utilities shall be repaired and paid for by the Design-Builder.
7. Unless relocation is called for on the plans, existing utilities shall remain in-service and in place. If relocation of existing utilities is required for the Design-Builder's convenience, interruption of service shall be kept to a minimum and shall be done at the Design-Builder's expense, and only with the approval of the Engineer. Prior to relocating existing utilities, the Design-Builder shall coordinate the work with State ODT Harbors Division in order to minimize any disruption.
8. The Design-Builder shall verify and check all dimensions and details shown on the drawings prior to the start of construction. Any discrepancy shall be immediately brought to the attention of the Engineer for clarification.
9. The Design-Builder shall observe and comply with all Federal, State and local laws required for the protection of public health, safety, and environmental quality.
10. The Design-Builder shall provide, install, and maintain all necessary signs, barricades, and other protective facilities and shall take all necessary precautions for the protection, convenience, and safety of the public.
11. The Design-Builder shall apply for a permit with a noise control plan and other required pollution control plans.
12. If there are any fuel spillages, existing leaks, etc. found during construction, report the foregoing to the Hazard Evaluation and Emergency Response Unit (ph. no. 1-808-586-4248) of the Department of Health. For non-working hours, call the State Hospital Operator (ph. no. 1-808-247-2191).
13. The Design-Builder shall notify the Engineer and State Historic Preservation Division upon uncovering any potential historical artifacts or items of archaeological significance.
14. No Design-Builder shall perform any construction activity so as to cause falling rocks, soil or debris in any form to fall, slide, or flow onto adjoining properties, streets or natural watercourses. Should such violations occur, the costs incurred for any remedial action by the state shall be payable by the Design-Builder.
15. The Design-Builder shall be responsible for conformance with the applicable provisions of Chapter 54, Water Quality Standards and Chapter 55, Water Pollution Control, of Title 11, Administrative Rules of the State Department of Health.
16. All existing improvements that are disturbed and not planned to be demolished shall be replaced or restored to their original or better condition.
17. The Design-Builder shall coordinate the work within the SEC with State DOT Harbors Division.
18. The Design-Builder shall comply with all safety requirements defined by the State DOT-Harbors Division.
19. The Design-Builder shall follow appropriate procedures for handling asbestos-containing materials as indicated in the Specifications, and shall conform to all applicable Federal, State and local regulations regarding asbestos-containing materials, when tapping, cutting, handling or otherwise disturbing pipes or ducts containing asbestos material.
20. Unless otherwise noted, all applicable construction work shall be done in accordance with: the The Design-Builder will not be allowed to discharge dewatering effluent directly into the drainage system. Dewatering required for construction shall be in accordance with Hawaii Administrative Rules, Chapter 11-54, Water Quality Standards, and the approved Notice of General Permit Coverage (NGPC) for this project.

Rev	By	Date	Description
A	JK	07-24-09	Issued For Proposal

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RFP DRAWING
NOT FOR CONSTRUCTION

Designed: J Sugibayashi
Drawn: J Sugibayashi
Checked: L Feng
Approved: J Kage
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PARSONS BRINCKERHOFF
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For reduced prints, original page size in inches:

MAINTENANCE & STORAGE FACILITY
GENERAL UTILITIES NOTES, SYMBOLS, AND ABBREVIATIONS
SHEET 6 OF 7

Contract No.: DB-200
CADD File: SCY-D01-UG006
Drawing No: UG006 Rev. A
Scale: N/A
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Last Plot Date: 08/17/09

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UTILITIES SYMBOLS

- AT&T — Exist AT&T Line
- CTV — Exist Cable Television
- OCTv — Exist Cable Television, Overhead
- FOC — Exist Communication Fiber Optic
- D24 — Exist Drain Line (Size in Inches)
- OE — Exist Electrical Line, Overhead
- E — Exist Electrical Line
- FA — Exist Fire Alarm
- F6 — Exist Fuel or Oil Line (Size in Inches)
- FM12 — Exist Force Main (Size in Inches)
- G6 — Exist Gas Line (Size in Inches)
- NPW12 — Exist Non-Potable Water Line (Size in Inches)
- SIC — Exist Sandwich Isle Communications Line
- S12 — Exist Sewer Line (Size in Inches)
- SC — Exist Signal Corps Line
- SLC — Exist Street Light Conduit
- OT — Exist Telephone Line, Overhead
- T — Exist Telephone Line
- TSC — Exist Traffic Signal Conduit
- W12 — Exist Water Line (Size in Inches)

- D24 — Prop Drain Line (Size in Inches)
- F6 — Prop Fuel or Oil Line (Size in Inches)
- G6 — Prop Gas Line (Size in Inches)
- NPW12 — Prop Non-Potable Water Line (Size in Inches)
- S8 — Prop Sewer Line (Size in Inches)
- W12 — Prop Water Line (Size in Inches)

- Prop Air Relief Valve
- Prop Backflow Preventor
- Prop Catch Basin
- Prop Catch Basin
- Prop Clean Out
- Prop Drain Inlet
- Prop Drain Manhole
- Prop Swale
- Prop Fire Hydrant
- Prop Gas Manhole
- Prop Gas Valve
- Prop Sewer Manhole
- Prop Water Meter
- Prop Water Manhole
- Prop Water Valve
- Cut and Plug
- Abandon In Place
- R — R — Demolish/Remove

- Exist Air Relief Valve
- Exist AT&T Box
- Exist AT&T Manhole
- Exist Backflow Preventer
- Exist Utility Box
- Exist Catch Basin
- Exist Catch Basin
- Exist Cable TV Box
- Exist Clean Out
- Exist Drain Inlet
- Exist Drain Manhole
- Exist Dry Standpipe
- Exist Electrical Box
- Exist Electrical Manhole
- Exist Electrical Transformer
- Exist Fire Alarm Box
- Exist Fire Hydrant
- Exist Gas Manhole
- Exist Gas Valve
- Exist Guy Wire
- Exist Irrigation Control Valve Box
- Exist Irrigation Control Valve
- Exist Light Pole
- Exist Manhole
- Exist Street Monument
- Exist Pole (EP, U.P.)
- Exist Pedestrian Street Light
- Exist Traffic Sensor
- Exist Street Light
- Exist Street Light Box
- Exist Sewer Manhole
- Exist Telephone Box
- Exist Telephone Manhole
- Exist Traffic/Pedestrian Street Light
- Exist Traffic Signal Box
- Exist Traffic Street Light
- Exist Water Meter
- Exist Water Manhole
- Exist Water Valve

Notes:

1. Underground utility lines and/or structures, if shown, are provided for information only and are based on information shown on plans/maps prepared by others. The information shown, therefore, may or may not be representative of actual field conditions. The underground utility lines and/or structures may or may not be present at the locations shown or other underground utility lines and/or structures not shown may be present.
2. For electrical and communications utilities symbols see Dwg. No. UG008.

UTILITIES ABBREVIATIONS

&	And
Abnd	Abandoned
AC	Asphalt Concrete
AF	Air Force
Approx	Approximate
ARV	Air Relief Valve
Ave	Avenue
℄	Baseline
BFP	Backflow Preventor
BGGV	Bevel-geared gate valve
Blk	Black
Blvd	Boulevard
Bot	Bottom
BWS	Board of Water Supply
CATV	Cable Television
℄	Centerline
C&C	City and County
CB	Catch Basin
CBMH	Catch Basin Manhole
CL	Chain Link
CMU	Concrete Masonry Unit
CO	Cleanout
Col	Column
Comm	Communication
Conc	Concrete
COTG	Cleanout Top Grade
CRM	Concrete Rubble Masonry
CTV	Cable TV
D	Diameter or Drain
Det	Detail
DI	Drainage Inlet
DMH	Drainage Manhole
DS	Down Spout
DSP	Dry Stand Pipe
DTS	Department of Transportation Services
Dwg	Drawing
Dwg No.	Drawing Number
Dwy	Driveway
E/Elec	Electric, Electrical
EB	Electrical Box
EH	Electrical Handhole
Elec	Electric, Electrical
Elev/El	Elevation
EP	Electric Pole
EMH	Electrical Manhole
EV	Electrical Vault
Exist	Existing
F	Fuel
FA	Fire Alarm
FAB	Fire Alarm Box
FH	Fire Hydrant, Farrington Highway
FM	Force Main
FM-OW	Oily Water Force Main
FM-SS	Sanitary Sewer Force Main
FMH	Fuel Manhole
FOC	Fiber Optic Cable

FSA	Fire Safety Alarm
Fwy	Freeway
G	Gas
GM	Gas Meter
GMH	Gas Manhole
Gnd	Ground
GP	Guard Post/Guy Pole/Gate Post
GV	Gas Valve, Gate Valve
GW	Guy Wire
H	Height
HB	Hose Bibb
HECO	Hawaiian Electric Company
HH	Handhole
HITS	Hawaii Information Transfer System
HP	High Pressure
HT	Hawaiian Telcom
HVP	High Voltage Power
HW	Headwall
Hwy	Highway
ICB	Irrigation Control Box
ICV	Irrigation Control Valve
Inv	Invert
Irr	Irrigation
kV	Kilovolt
Lat	Lateral
LF	Linear Foot
Ln	Lane
LP	Light Pole
Lt	Light
MB	Mailbox
MH	Manhole
MHP	Manhole (Positive)
MHN	Manhole (Negative)
Misc	Miscellaneous
MTCO	Mutual Telephone Company
MW	Monitoring Well
NPW	Non-Potable Water
N/A	Not Applicable
NS	North-South Road
OCTv	Overhead Cable Television
OH/O/H	Overhead
OHE	Overhead Electrical
O/S	Offset
OT	Overhead Telephone
OW	Oily Water
PB	Pullbox
Pkwy	Parkway
PPB	Pedestrian Push Button
Pl	Place
PM	Petroleum Marker
PP	Power Pole
Prop	Proposed
PVC	Polyvinyl Chloride
Pwr	Power
RCP	Reinforced Concrete Pipe

Rd	Road
ROW	Right of Way
S	Sewer or Spread
SC	Signal Corps Line
SDMH	Storm Drain Manhole
SIC	Sandwich Isle Communications
Sig	Signal
SL	Street Light
SL-OW	Oily Water Sewer Line
SL-SS	Sanitary Sewer Line
SLB	Street Light Box
SLC	Street Light Conduit
SSMH-OW	Oily Water Sewer Manhole
SSMH-SS	Sanitary Sewer Manhole
SS	Sanitary Sewer
St	Street
St Mon	Street Monument
St NAME	Street Name
Sta	Station
Std	Standard
T	Top
TBD	To Be Determined
TCB	Traffic Control Box
Tel	Telephone
Temp	Temporary
TGC	The Gas Company
TL	Traffic Light
TMH	Telephone Manhole
TP	Telephone Pole, Top Pipe
TPOL	Traffic Signal Pole
TRB	Traffic Box
TS	Top Stem
TSB	Traffic Signal Box
TSC	Traffic Signal Conduit
TSL	Traffic Signal Light
TSLB	Traffic Signal Light Box
TV	Television
TW	Top Wall
Typ	Typical
UB	Utility Box
UD	Underdrain
UMH	Utility Manhole
UP	Utility Pole
U.P./SL	Utility Pole with Street Light
USN	United States Navy
USAF	United States Air Force
Util	Utility
VB	Valve Box
W	Water
WM	Water Meter
WMH	Water Manhole
Wtr	Water
WV	Water Valve
WVB	Water Valve Box
WVMH	Water Valve Manhole
X-WALK	Crosswalk

Rev	By	Date	Description
A	JK	07-24-09	Issued For Proposal

RFP DRAWING NOT FOR CONSTRUCTION

Designed: J Sugibayashi
Drawn: J Sugibayashi
Checked: L Fong
Approved: J Kage
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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Subconsultant: SATO AND ASSOCIATES, INC.
CONSULTING ENGINEERS • CIVIL & STRUCTURAL
HONOLULU, OAHU, HAWAII • WAILUKU, MAUI, HAWAII

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MAINTENANCE & STORAGE FACILITY

GENERAL UTILITIES NOTES, SYMBOLS, AND ABBREVIATIONS

SHEET 7 OF 7

Contract No.: DB-200
CADD File: SCY-D01-UG007
Drawing No.: UG007 Rev. A
Scale: N/A
Page No. 154 of 259

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Date Generated: 22 Jul 2009 - 7:13pm
CAD File Name: R:\08024-HHCTCP\DWG\SCY-D01-UG000.dwg
Last Plot Date: 06/17/09

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PULLBOX, HANDHOLE, MANHOLE SCHEDULE

- (8) 5' x 7' HECO Handhole
- (9) 6' x 11' HECO Handhole
- (44) 2' x 4' HT Pullbox (435TB)
- (46) 3' x 5' HT Handhole
- (47) 4' x 6' HT Handhole
- (84) 2' x 4' CATV Pullbox
- (85) 2' x 6' CATV Pullbox
- (86) 3' x 5' CATV Handhole
- (110) 4'W x 6'L x 6'D SC Maintenance Hole

ELECTRICAL SYMBOLS

- [O] Manhole or Maintenance Hole
- [ ] Handhole or Pullbox
- UON Unless Otherwise Noted
- — - — Underground Ductline
- ——→ Ductline, Stub-Out 5'-0" from edge of sidewalk or as indicated on plan. Provide concrete stub-out marker.
- ◇1 Key Note Indicator
- 2 E 4 (A) Duct Section Indicator

Duct Designation

2 E 4 (A)

- Duct Section "A" see Duct Section Details (2 / UP302)
- Conduit Size
- System "P" Primary Electric (12KV)
  - "S" Secondary Electric
  - "V" Cable Television
  - "T" Telephone/Telecommunications
  - "SC" U.S. Army Signal Corps
  - "SP" Spare
- Number of Ducts

GENERAL UTILITIES NOTES

1. Refer to general utilities notes, symbols, abbreviations and utility relocation notes on other "UG" sheets (UG001 to UG007 and UG009–UG012).
2. All ductline installation shall be encased in concrete, PVC Schedule 40 unless otherwise specified. See detail 2/UP301.
3. Scope of Work: The Design–Builder shall furnish all labor, equipment and services to properly perform and fully complete all work shown on the Contract Drawings and in accordance with Contract Specifications as summarized below:
   a. The Design–Builder is responsible to provide all underground electrical and communications utility support structures, stubbed–up risers and at–grade equipment concrete pads.
   b. All handholes and pullboxes located next to uncurbed roadways shall be designed to comply with AASHTO LRFD Bridge Design Specifications, Second Edition for HL–93 truckload (axle load = 32,000lbs; wheel load = 16,000lbs) or shall be protected by post barriers to prevent vehicles from driving over the handholes and pullboxes.
   c. Utility owners (except for Signal Corps) are responsible to provide poles, cables, and equipment for electrical and communications utilities and remove all poles, cables, and equipment for electrical and communications utilities where indicated on the Contract Drawings. Where new Signal Corps (SC) ducts and maintenance holes are indicated on the Contract Drawings, the Contractor shall also provide the communication cables and splices in coordination with the Signal Corps Engineer.
   d. The Design–Builder shall provide the required number of as–built drawings showing the offsets, stationing and vertical elevation of the ductline(s) constructed.
   e. All ductlines, handholes, transformers, switches, and miscellaneous utility equipment within private property will be covered by a blanket utility easement. Easement dimensions are noted on the plans only for padmount transformers and switches. Coordinate easement dimensions and requirements for all other utility facilities with the appropriate utility.

Rev	By	Date	Description
A	FKH	07–24–09	Issued for Proposal

RFP DRAWING
NOT FOR CONSTRUCTION

Designed: F Hirakami
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Date: 07–24–09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
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MAINTENANCE & STORAGE FACILITY

UTILITIES NOTES AND SYMBOLS
ELECTRICAL & COMMUNICATIONS

Contract No.: DB–200
CADD File: SCY–001–UG008
Drawing No: UG008 Rev. A
Scale: As noted
Page No. 155 of 259

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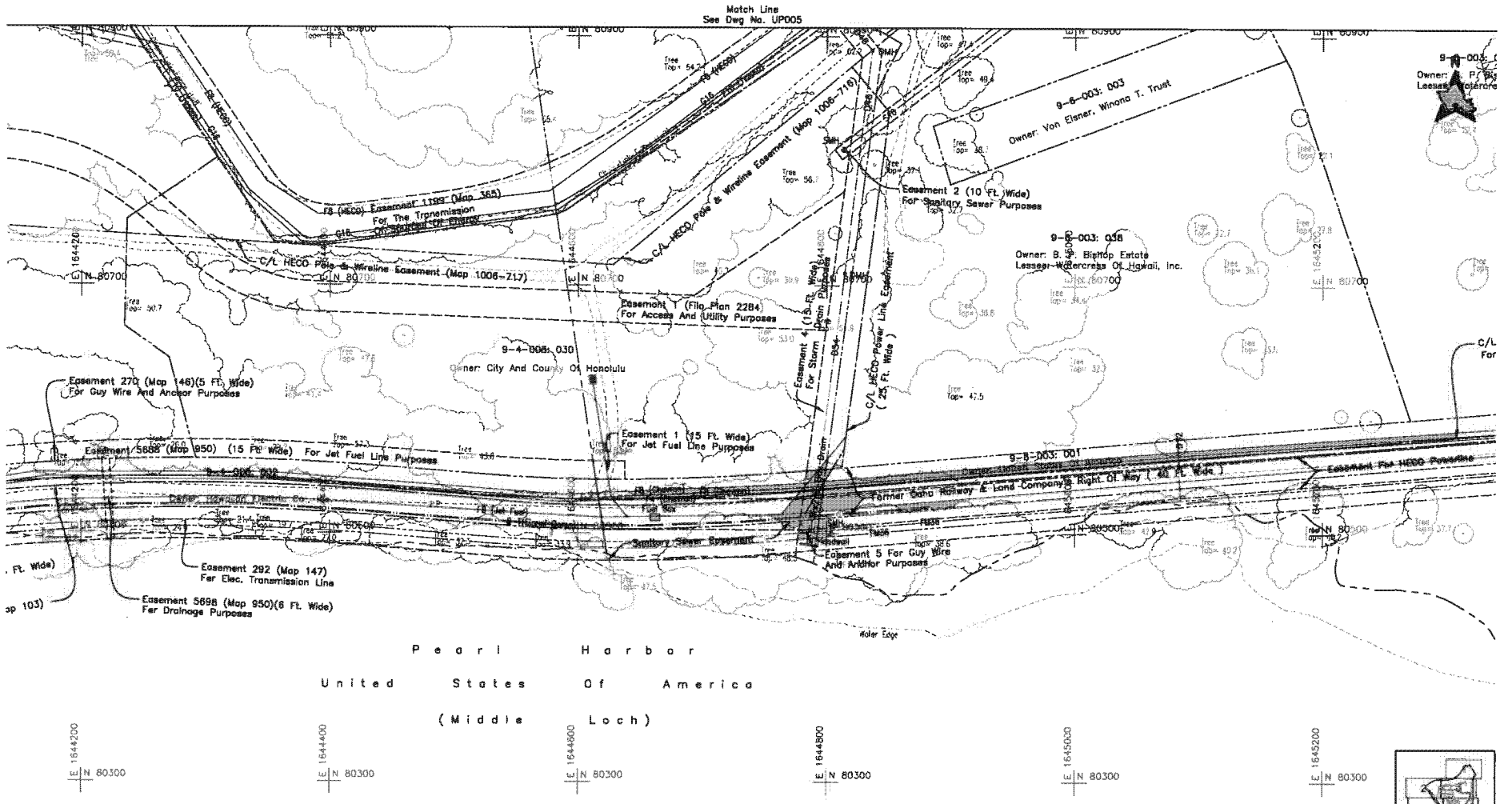

Rev	By	Date	Description
A		07-24-09	Issued For Proposal

RFP DRAWING
NOT FOR CONSTRUCTION

Designed: N/A
Drawn: J. Cadiz
Checked: K. Nishio
Approved: K. Nishio
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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1180 NORTH KING STREET, SUITE 1300
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MAINTENANCE & STORAGE FACILITY

COMPOSITE PLAN
EXISTING UTILITIES

SHEET 6 OF 6

Contract No.: DB-200
CADD File: SCY-002-UP006
Drawing No: UP006 Rev. A
Scale: 1"=40'
Page No. 165 of 259

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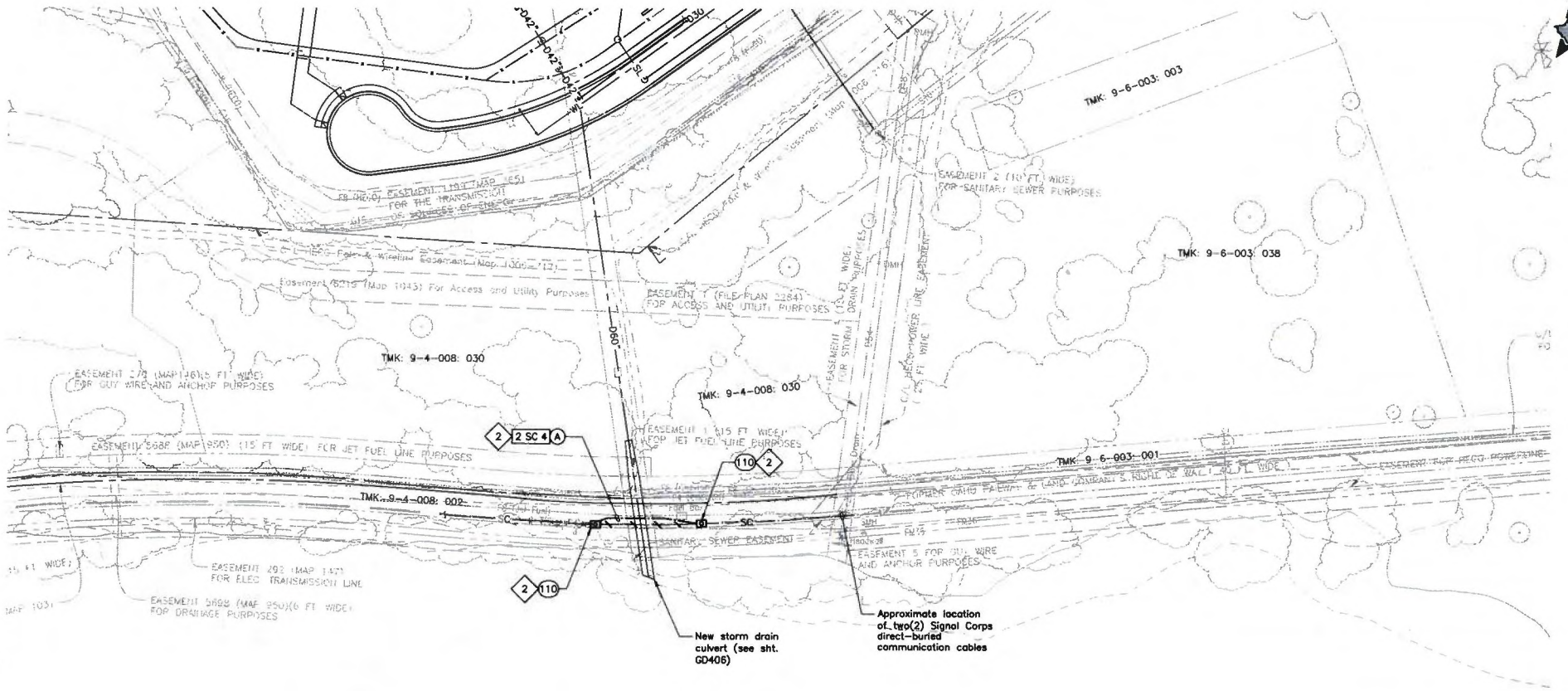
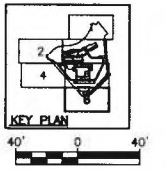


NOTES:

1. Light lines denote existing conditions.
   Bold lines denote new work.
   Bold backslashes on underground lines denote removal work.

2. Intercept existing direct buried cables with new maintenance holes, provide new ducts and cables between maintenance holes, splice new cables to existing cables, and remove existing cables in accordance with Standard Specification 33 80 00 requirements.



Rev.	By	Date	Description
A	FKH	07-24-09	Issued for Proposal

RFP DRAWING
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Designed: F Hirokami
Drawn: D Saito
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Approved: P Uyeda
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
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MAINTENANCE & STORAGE FACILITY

SITE UTILITIES PLAN
ELECTRICAL & COMMUNICATIONS

SHEET 3 OF 3

Contract No.: DB-200
CADD File: SCY-D04-UP206
Drawing No: UP206 Rev. A
Scale: 1"=40'
Page No. 173 of 259

SYMBOLS

STRUCTURAL SYMBOLS

- Concrete Retaining Wall
- Soil Nail Retaining Wall
- Segmental Retaining Wall
- Edge of Building
- Earth
- Draining Aggregate/Ballast
- Low Permeable Soil
- Existing grade before mass grading
- 55 Finish Grade
- Centerline Track No.
- D2A" Utility Pipe

DETAILS

Reference Boundary

4 / AR002 — Detail Designation (Number); Drawing Number of sheet where the detail is shown

DETAIL NTS — 4 / AR002 — Detail Designation (Number); Drawing Number of sheet where the detail is shown; AR001 Drawing(s) where detail is referenced (Omit if on same drawing)

A / AR002 — Section Designation (Letter); Drawing Number of sheet where the section is shown

SECTION NTS — A / AR002 — Section Designation (Letter); Drawing Number of sheet where the section is shown; AR001 Drawing(s) where section is referenced (Omit if on same drawing)

GENERAL SYMBOLS

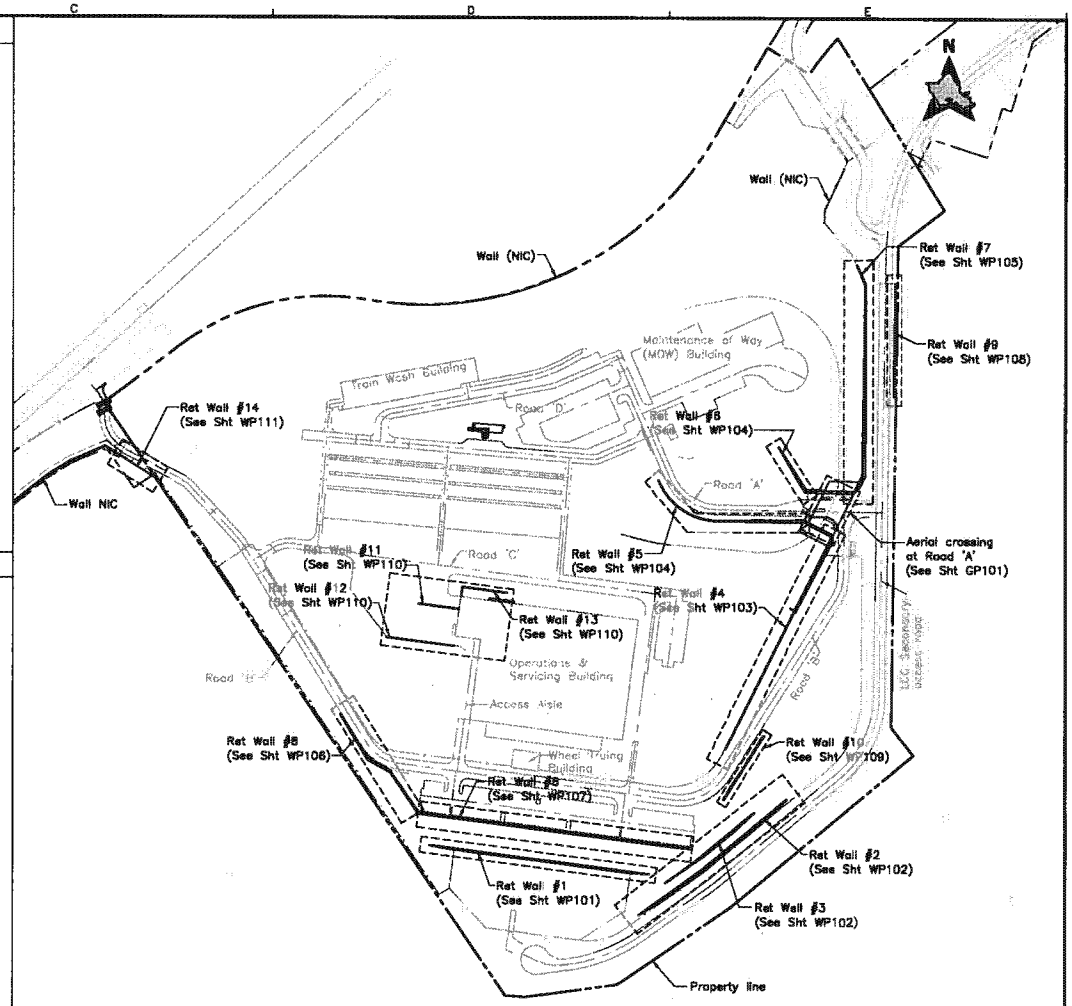
#	Diameter	⊥	Perpendicular
&	And	∥	Parallel
%	Percent	√	Square Root
#	Number		
≥	Greater than or equal to		
≤	Less than or equal to		
@	At		
±	Plus or minus		

ABBREVIATIONS

A	Peak Ground Acceleration
AASHTO	American Association of State Highway & Transportation Officials
ACI	American Concrete Institution
Approx	Approximate, Approximately
ASTM	American Society for Test and Materials
AW	Assigned Weight
AWS	American Welding Society
℄	Baseline
BLE	Baseline Elevation
Bm	Beam
Bott	Bottom
℄	Centerline
CIP	Cast in Place
CJ	Construction/Control Joint
Clr	Clear
Conc	Concrete
Cont	Continued
Dia	Diameter
DL	Dead Load
DS-X	Drilled Shaft Number
dwg	Drawing
EA	Each
Ed	Edition
EF	Each Face
EL	Elevation
EQ	Equal
equiv	Equivalent
ES	Each Side
FC, f'c	Compressive stress of concrete
f'ci	Compressive stress of concrete at intial prestress
FG El	Finish Grade Elevation
FT	Tension Stress
ft	Feet
FFE	Finish Floor Elevation
G-X	Girder Number
HDOT	Hawaii Department of Transportation
HHCTCP	Honolulu High-Capacity Transit Corridor Project
Horiz	Horizontal
Jt	Joint
kh	Horizontal Seismic Acceleration Coefficient
K	Kips
KLF	Kips per Linear Foot
lbs	Pounds
LCC	Leeward Community College
LL	Live Load
LMV	Light Metro Vehicle
LRFD	Load Resistance Factor Design
Matl	Material
Min	Minimum
MOW	Maintenance of Way
MSF	Maintenance Storage Facility
NIC	Not In Contract
NO	Number
NTS	Not To Scale
OC	On Center
OS	Offset
PCF	Pounds per Cubic Feet
PLF	Pound per Linear Foot
PSI	Pounds per Square Inches
PSF	Pounds per Square Feet
PVC	Polyvinyl Chloride
Ret	Retaining
RFP	Request for Proposal
SL	Sewer Line
SDMH	Storm Drain Manhole
Sht	Sheet
SRW	Segmental Retaining Wall
SSMH	Sanitary Sewer Manhole
Sta	Station, Stationing
Stl	Steel
Sym	Symmetrical
T&B	Top & Bottom
Thk	Thick, Thickness
TOF	Top of Footing
Tw	Thickness of Wall
Typ	Typical
UNO	Unless Noted Otherwise
Vert	Vertical
WP	Work Point
WWF	Welded Wire Fabric
w/	With
ø	Diameter

Wall Dimensions

'A'	Toe Length
'B'	Wall Thickness at Bottom of Wall
'D'	Distance to Key from Toe
'F'	Footing Thickness
'H'	Height
'Ha'	Bottom Stem Height
'Kd'	Key Depth
'Kw'	Key Width
'Tw'	Wall Thickness at Top of Wall
'W'	Footing Width



KEY PLAN
NTS

Rev	By	Date	Description
A	DD	07-24-09	Issued For Proposal

RFP DRAWING NOT FOR CONSTRUCTION

Designed: K Niimi
Drawn: K Gobriel
Checked: T Pham
Approved: D Doi
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PARSONS BRINCKERHOFF
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MAINTENANCE & STORAGE FACILITY

GENERAL STRUCTURAL ABBREVIATIONS, SYMBOLS, AND KEY PLAN

SHEET 1 OF 1

Contract No.: DB200
CADD File: SCY-G01-SG003
Drawing No: SG003 Rev. A
Scale: NTS
Page No. 181 of 259

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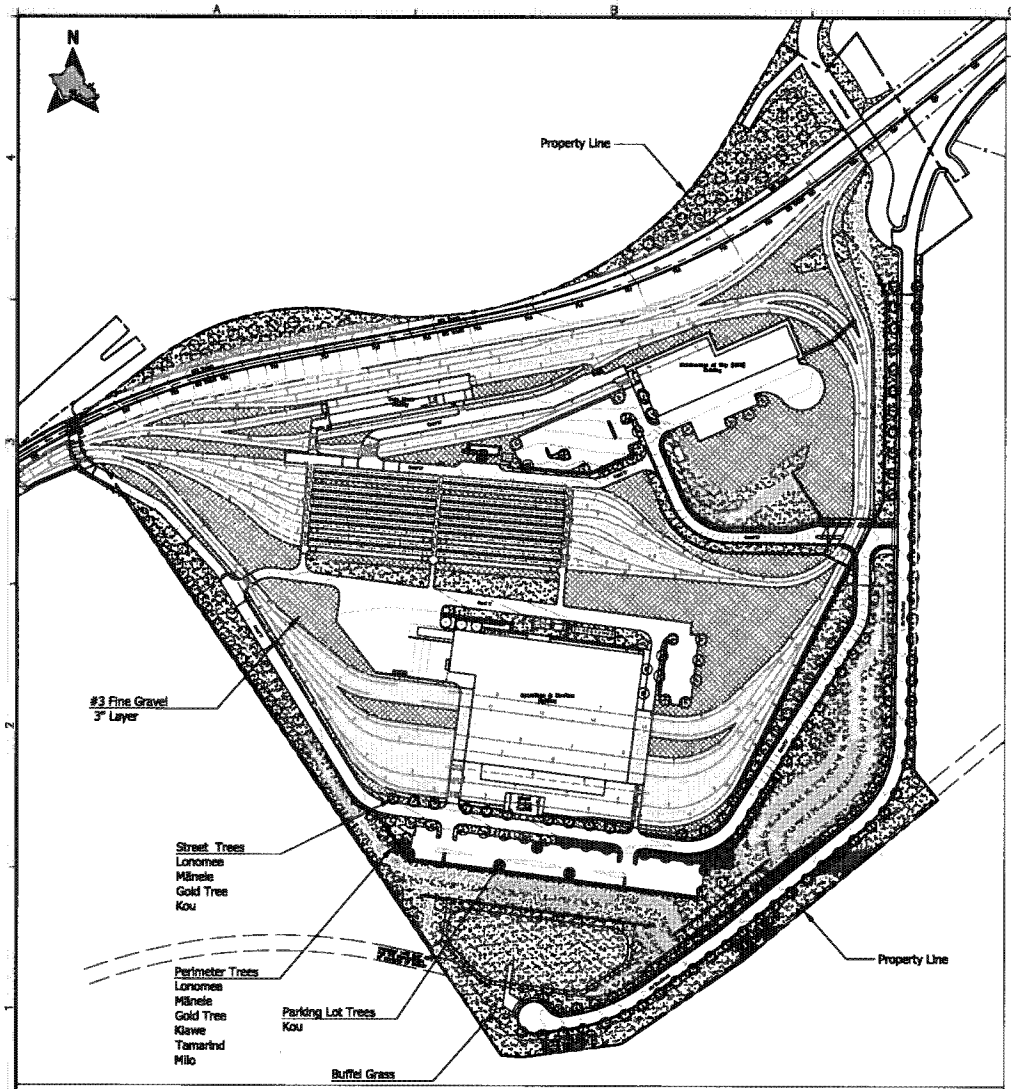

OVERALL PLAN

120' 0 120'

NOTES, LEGEND & ABBREVIATIONS

PLANTING NOTES:

1. For slopes steeper than 2.5:1, install 100% biodegradable erosion control blanket (lasts up to 12 months)
2. Vegetated roof system shall be a modular system. Trays can be lifted to provide access to the roof below for easier maintenance than a monolithic green roof.
3. Plant lists provided can be supplemented with additional plants as determined by Design Builder.
4. Certain plants and trees may not be commonly available. Design Builder shall order plants early to ensure availability.
5. See sheet SCY-J06-LA101 for additional planting notes.

IRRIGATION NOTES:

1. Achieving LEED Water Efficiency credit 1.1, Reduce by 50% is mandatory. The plant species chosen are drought tolerant, native, or adpated plants that exist or once grew in this area. The plants and tree spacing will help earn a low species and density factor in the calculations vs. a baseline case of more lawn and shrubs. The largest reduction in irrigation water use will come from implementing all or portions of the irrigation system as drip irrigation. Initial cost of drip system will be higher than traditional pop-ups, but the greater efficiency will use less water and save money in the long term.
2. The vegetated roof over the Operations and Servicing Building will require permanent irrigation to maintain the plants during extended dry periods. This will affect the chances of achieving WE credit 1.2, but a vegetated roof could also help earn Sustainable Sites credit 7.2, Heat Island Effect – Roof.
3. If vegetated roof over Operations and Servicing Building is not pursued, then Water Efficiency credit 1.2 can be achieved if the irrigation system is removed after one year of plant establishment period. If this option is chosen, reduce irrigation levels gradually over a three month period prior to removal of the system to acclimate the plantings. Adjust irrigation levels as necessary to maintain healthy growth.
4. Design Builder shall be held responsible for all materials, scheduling, products, warranties and methods for execution of work.
5. The irrigation subcontractor shall verify water pressure prior to construction.
6. Design Builder is responsible for the coordination of the installation of all sleeves, conduits, mains and laterals under pavement and through walls and shall assure that these items are laid prior to the placement of pavement/wall. Stub-outs and conduits running through the building structure will be done by electrician.
7. Install sprinkler heads 6" away from walkways and paved areas. Adjust all sprinkler heads to obtain head to head coverage. Adjust flow control of control valves to minimize misting.
8. The Design Builder and the owner's maintenance representative shall program the irrigation controller to accommodate the landscape and site requirements, and shall instruct the representative on the operation of the complete system.
9. Junction boxes shall be used for wire splices.

LEGEND:

- Street Trees
- Perimeter Trees
- Parking Lot Trees
- Buffel Grass
- #3 Fine Gravel

ABBREVIATION LIST

&	And
Abbr	Abbreviation, Abbreviated
Ac	Acre(s)
Approx	Approximate
Cal	Caliper
℄	Centerline
CLF	Chain Link Fence
Conc	Concrete
CY	Cubic Yard
Dia	Diameter
Dwg	Drawing
ea	Each
Eq	Equal
Fig.	Figure
ft	Foot, Feet
gal	Gallon(s)
Hdr	Header
Ht	Height
in.	Inch
Irr	Irrigation
LF	Linear Foot
m	Meter
Min	Minimum
No. (Nos.)	Number(s)
NTS	Not to Scale
OC	On Center
Perp	Perpendicular
SF	Square Foot, Square Feet
Sht	Sheet
Spr	Sprinkler
Std	Standard
SY	Square Yard
Typ	Typical
Vert	Vertical
WL	Water Line
Wtr	Water
WM	Water Main
Xsect	Cross Section
Yd	Yard

Rev	By	Date	Description
A	KP	07-24-09	Issued for Proposal

RFP DRAWING NOT FOR CONSTRUCTION

Designed: K Sasaki
Drawn: C Kimura
Checked: J Kurokawa
Approved: K Parmar
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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MAINTENANCE & STORAGE FACILITY

OVERALL PLAN, GENERAL LANDSCAPING NOTES, LEGEND & ABBREVIATIONS

Contract No.: DB-200
CADD File: SCY-J01-LG001
Drawing No: LG001 Rev. A
Scale: AS NOTED
Page No. 201 of 259

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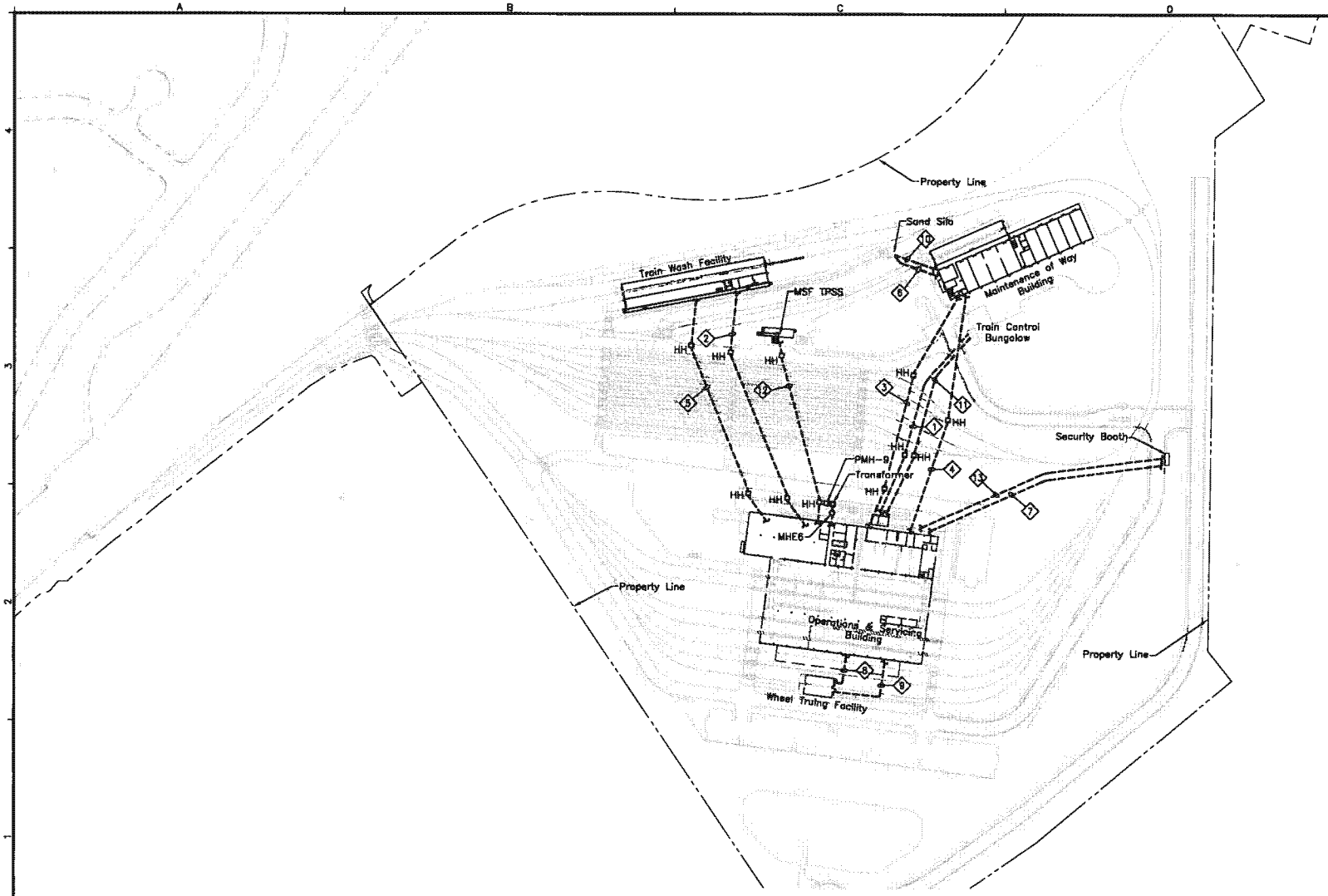

GENERAL NOTES:

1. Refer to utility site drawings UP202 and UP203 for information on utility service requirements.
2. Refer to underground ductbank drawings TN001 thru TN005 for additional underground conduit requirements.
3. Refer to EL101 for one-line power distribution diagram.
4. Conduit sizes and quantities shown are estimates. Design Builder is responsible for final design.
5. Provide telecom conduits to hubs located in each building. Coordinate design with Core Systems integration manager.

KEYED NOTES:

1. Provide 4-4"C for telecom cabling to Train Control Bungalow.
2. Provide feeder to Train Wash Facility.
3. Provide normal and emergency power feeders to Maintenance of Way Building.
4. Provide 3-4"C for telecom cabling to Maintenance of Way Building.
5. Provide 2-2"C for telecom cabling to Train Wash Facility.
6. Provide 1-2"C for telecom cabling to Sand Silo.
7. Provide 1-2"C for telecom cabling to Security Booth.
8. Provide feeders to Wheel Truing Facility.
9. Provide 1-2"C for telecom cabling to Wheel Truing Facility.
10. Provide power feeder to Sand Silo.
11. Provide feeder to Train Control Bungalow from standby power.
12. Provide 4-4"C for telecom cabling to MSF TPSS.
13. Provide emergency power feeder to Security Booth.

OVERALL ELECTRICAL SITE PLAN (1 / EC001)
1"=100'

100' 0 100'

Rev	By	Date	Description
A	KH	07-24-09	Issued for Proposal

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RFP DRAWING NOT FOR CONSTRUCTION

Designed: J Hemphill
Drawn: J Mohapp
Checked: R Reseman
Approved: K Herris
Date: 07-24-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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MAINTENANCE & STORAGE FACILITY
OVERALL ELECTRICAL SITE PLAN

Contract No.: DB-200
CADD File: SCY-L02-EC001
Drawing No: EC001 Rev. A
Scale: 1"=100'
Page No. 210 of 259

Attachment D:

Preliminary Project Figures, SMA B: MSF near LCC Utilities

- B-00 to B-02: SMA Line Plan Sheets
- B-HR: Historic Resources
- B-FZ: Flood Zones
- B-FZ2: Flood Zones – 2011
- B-CS1: Cross Section Plan
- B-CS2: Cross Sections

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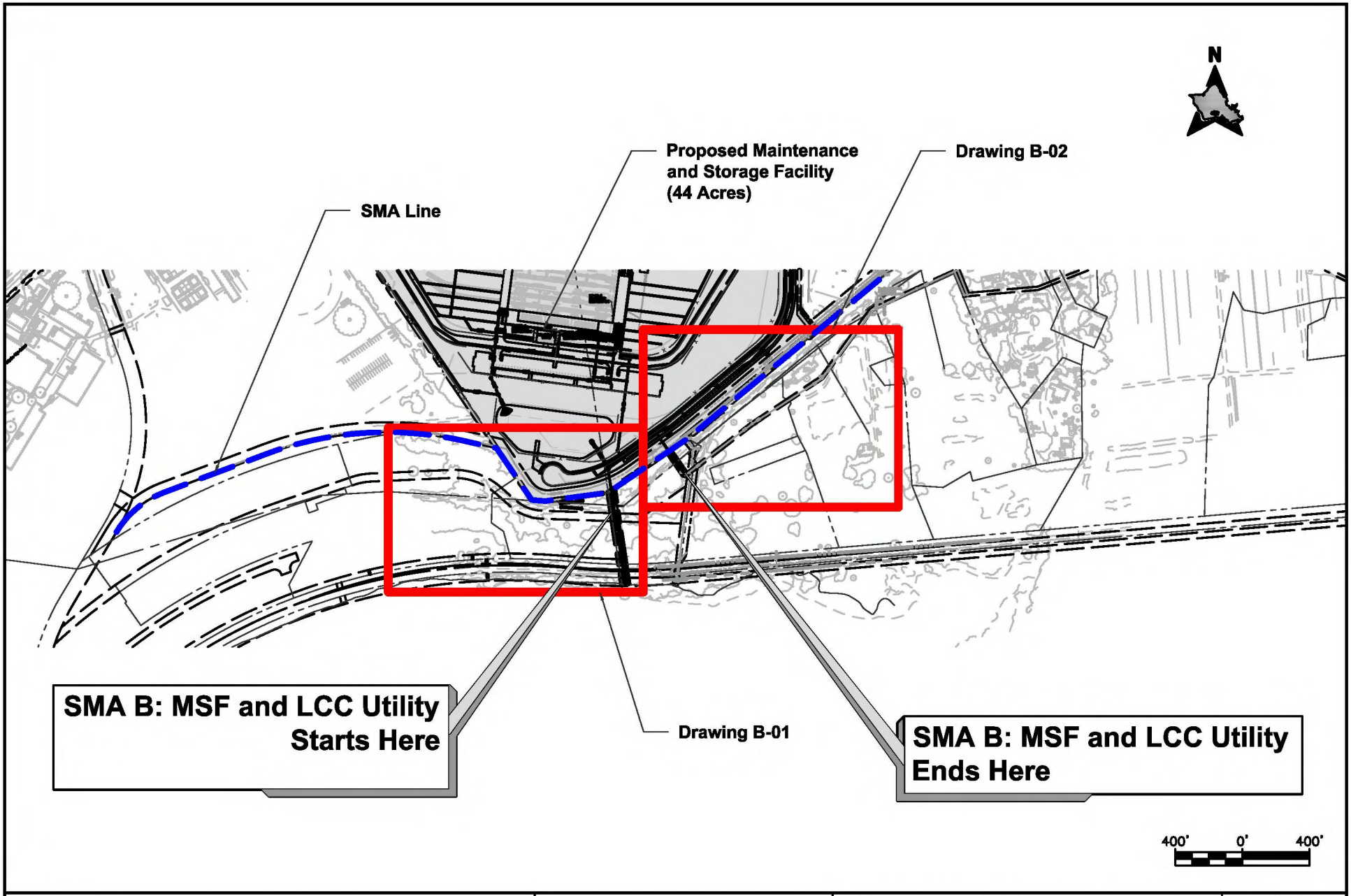


CITY & COUNTY OF HONOLULU
DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

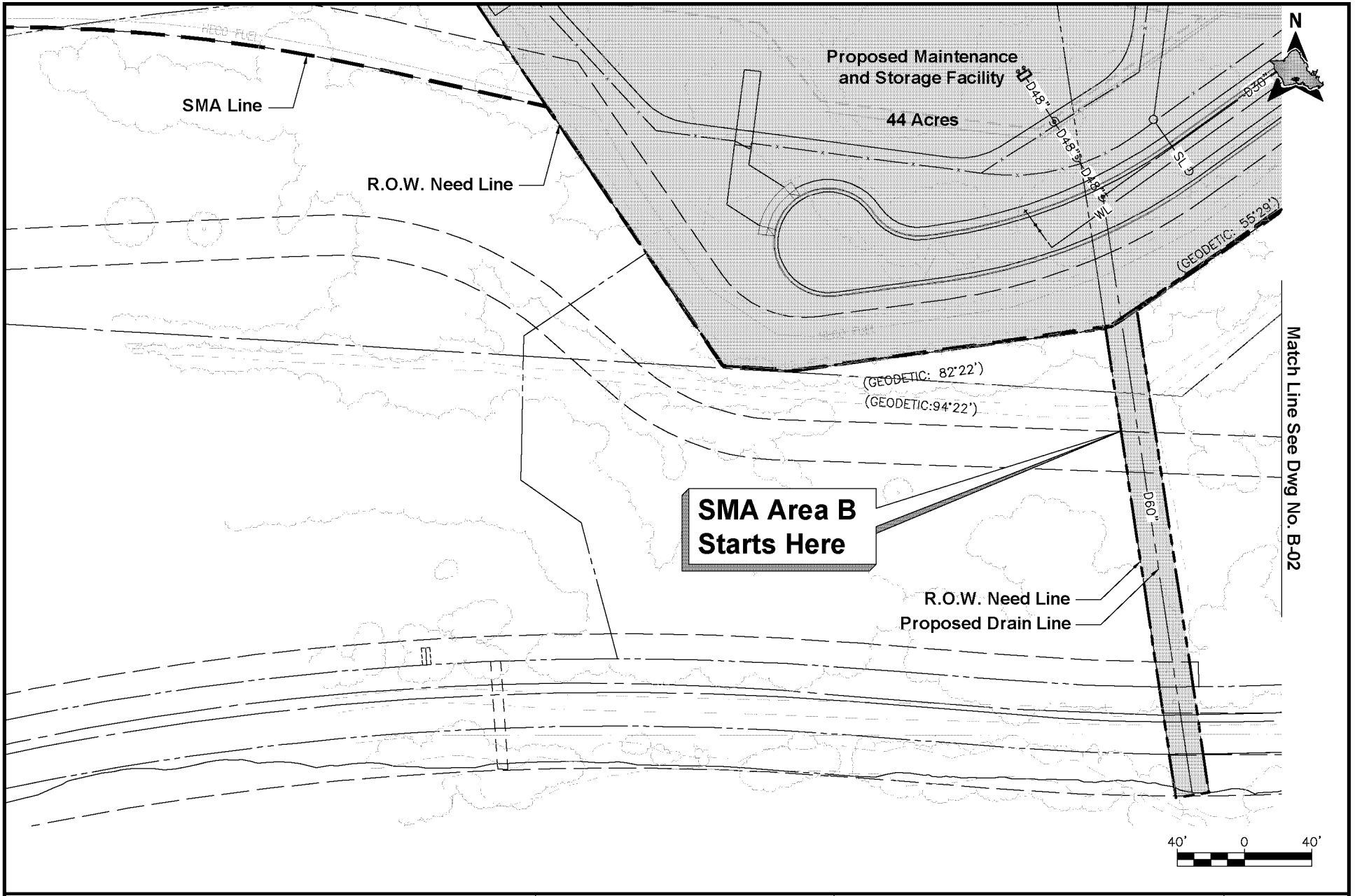
SPECIAL MANAGEMENT AREA LINES
SMA AREA B
PLAN

LCC YARD

Drawing No: **B-00**

Date: 11/06/2009

AR00077707



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA B

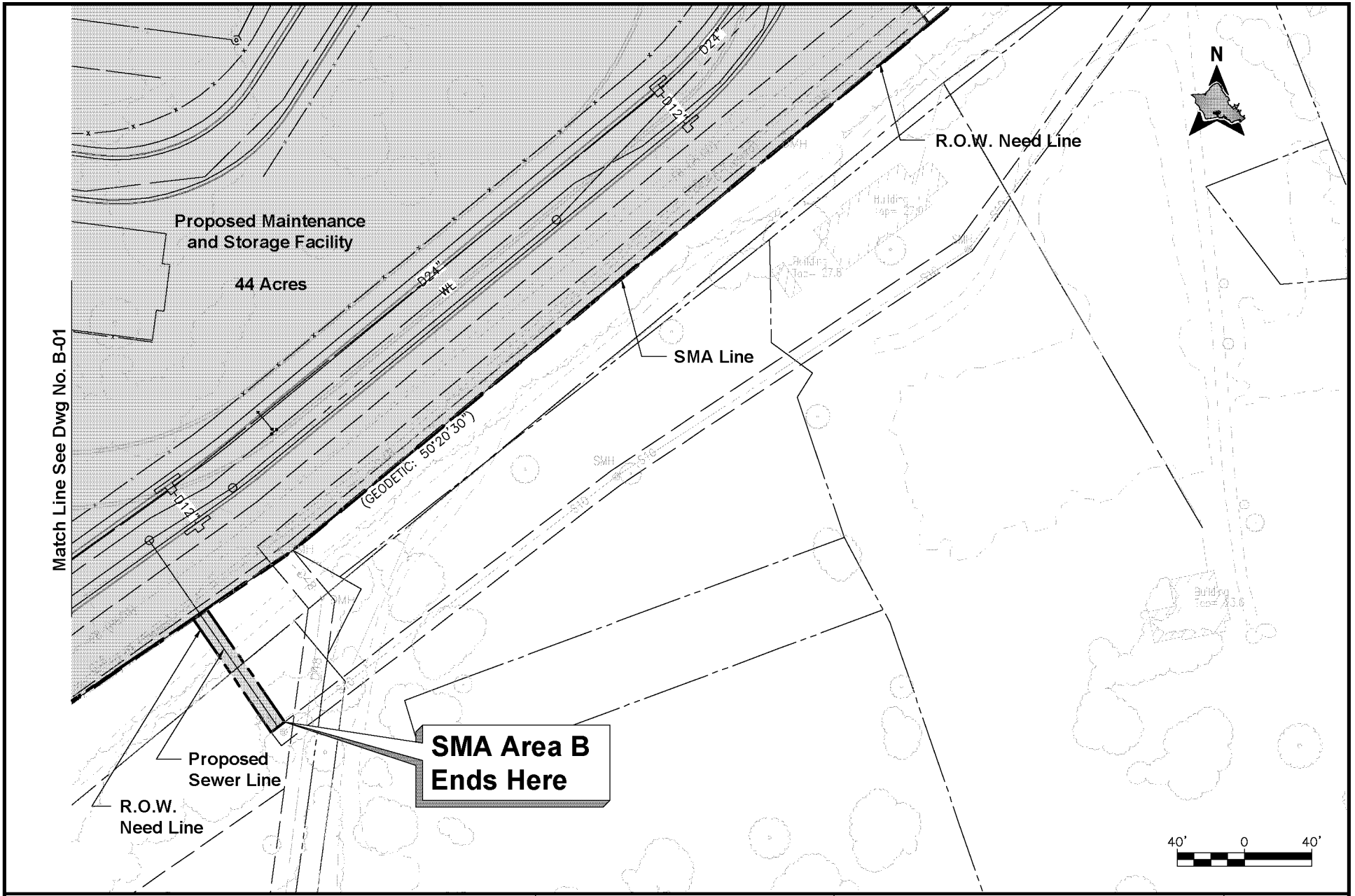
PLAN

LCC YARD (SHEET 1 OF 2)

Drawing No: **B-01**

Date: 11/06/2009

AR00077708



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA B

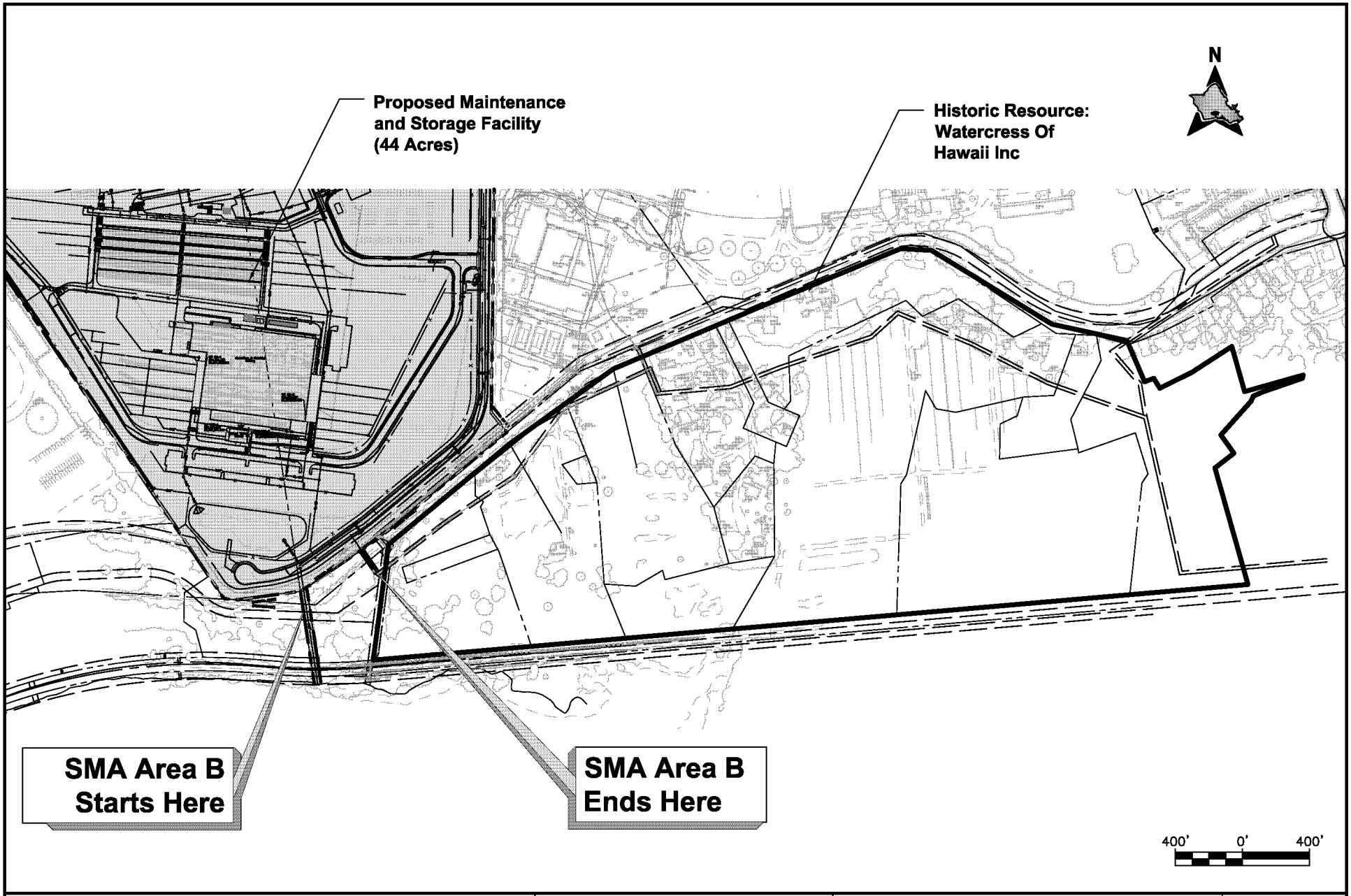
PLAN

LCC YARD (SHEET 2 OF 2)

Drawing No: **B-02**

Date: 11/06/2009

AR00077709



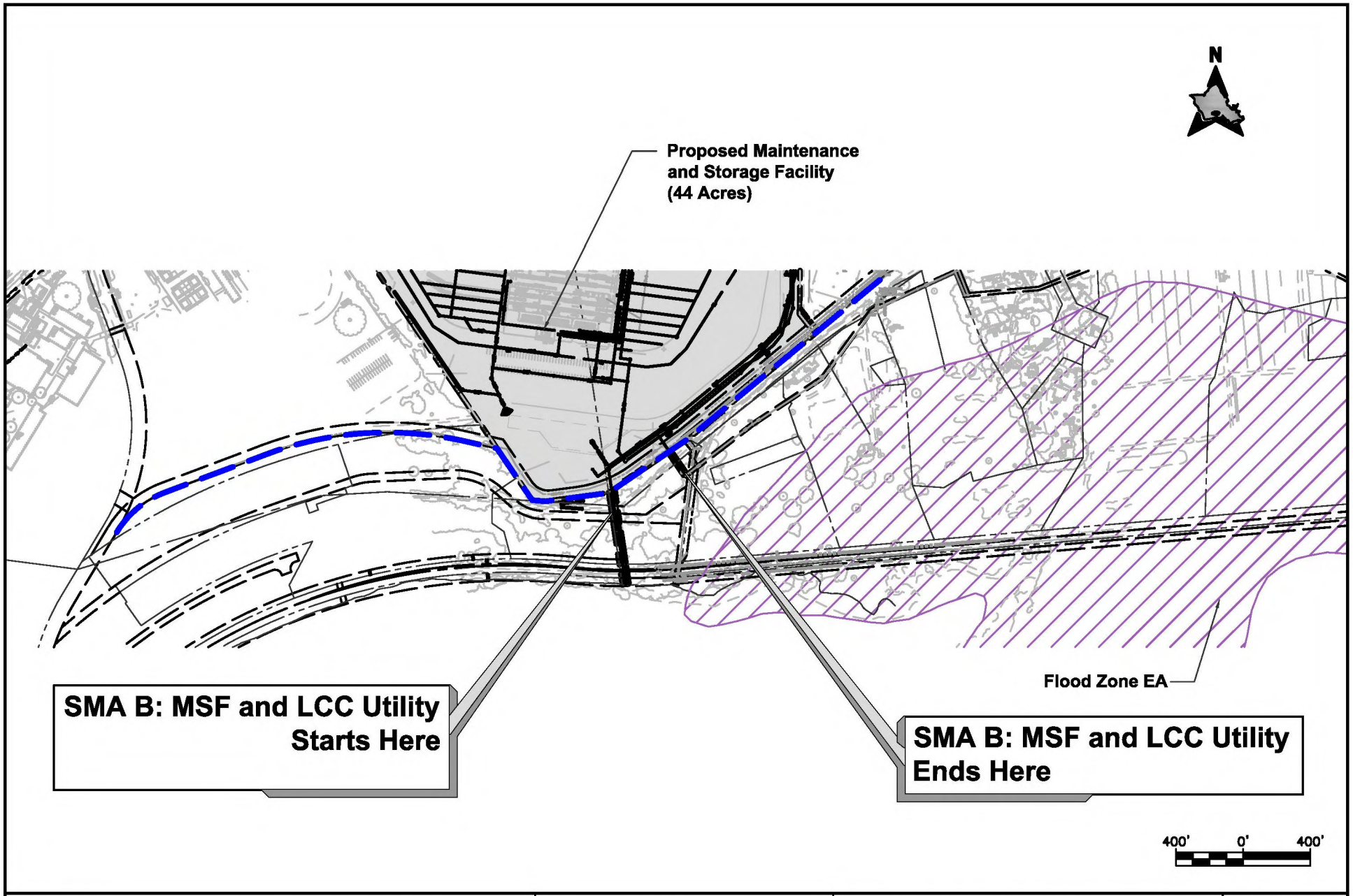
CITY & COUNTY OF HONOLULU
DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES
SMA AREA B
PLAN
LCC YARD

Drawing No: **B-HR**

Date: 11/06/2009



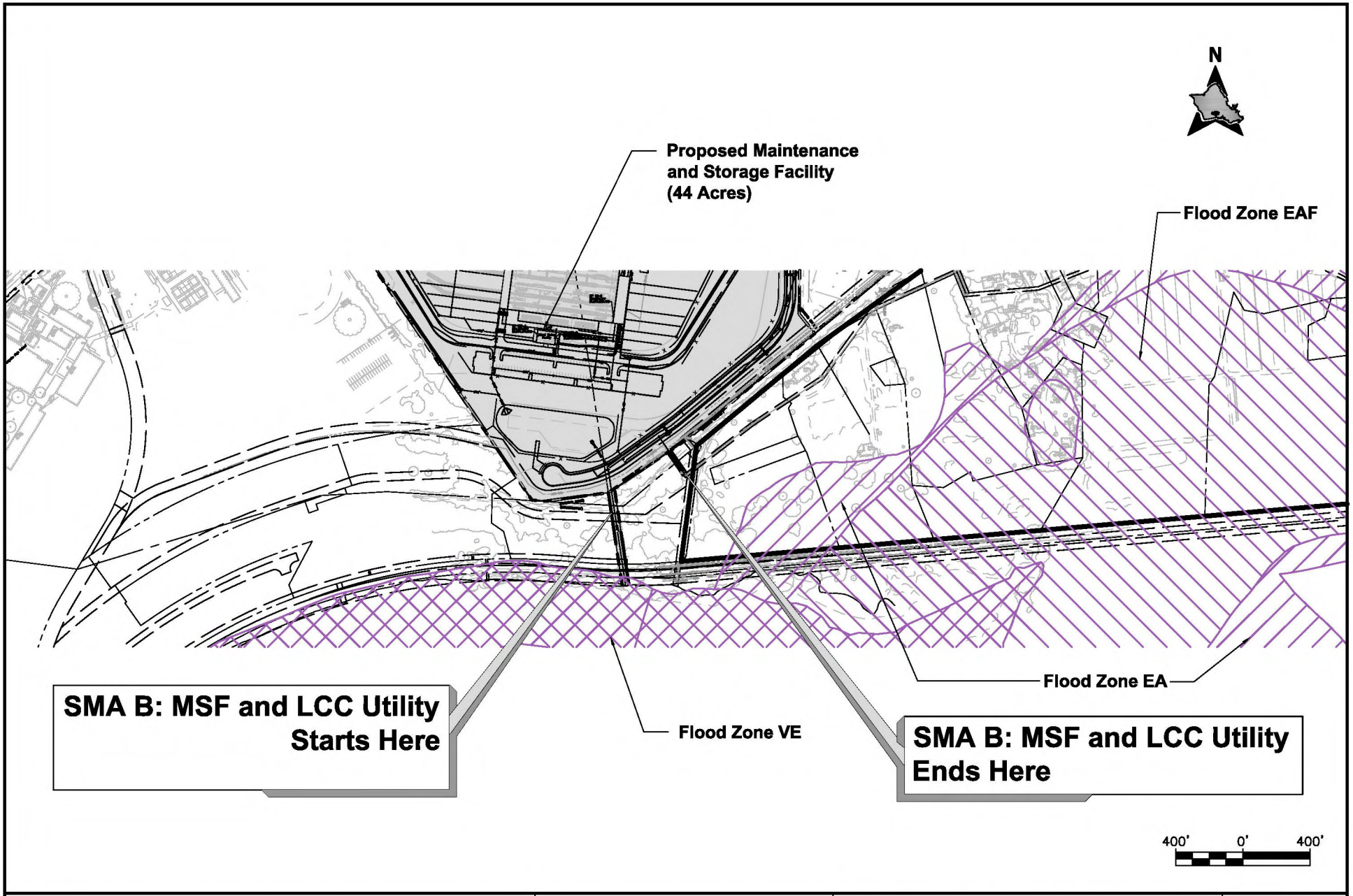
CITY & COUNTY OF HONOLULU
DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES
SMA AREA B
FLOOD ZONES
LCC YARD

Drawing No: **B-FZ**

Date: 12/07/10



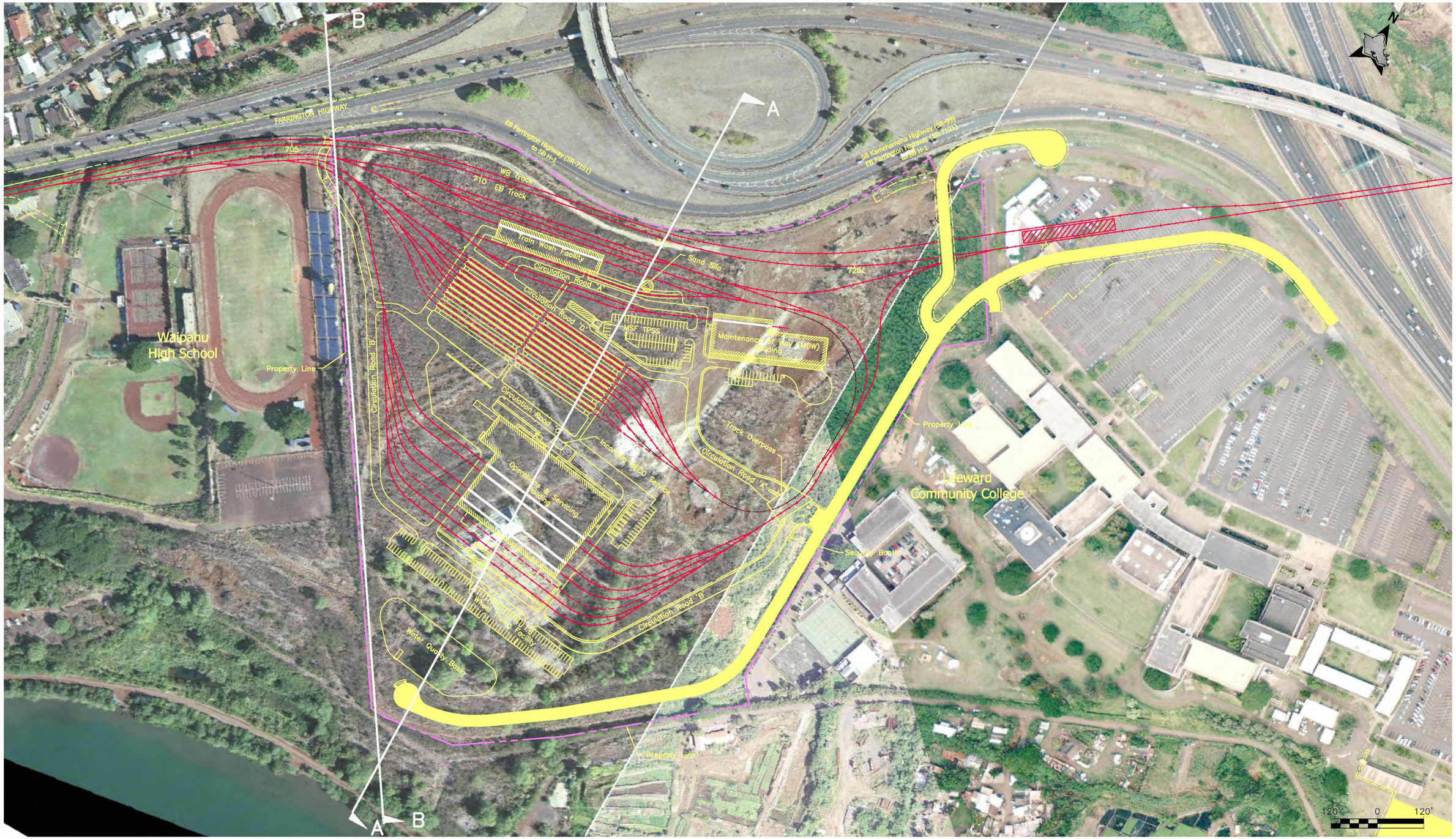
CITY & COUNTY OF HONOLULU
DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES
SMA AREA B
FLOOD ZONES 2011
LCC YARD

Drawing No: **FZ2**

Date: 10/04/10



Rev	By	Date	Description

Designed: J Davis
Drawn: J Derosier
Checked: J Davis
Approved: A Borst
Date: 05-13-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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SMA AREA B
CROSS SECTION PLAN

Contract No.: 9B-208
CADD File: SCY-A05-GN005 (2)
Drawing No: B-CS1
Rev.
Scale: 1"=120'
Page No. of

2010-03-22 2:26 PM K:\CADD\Working\Jeff D\MSF Graphics\Overall Site On Aerial.dwg

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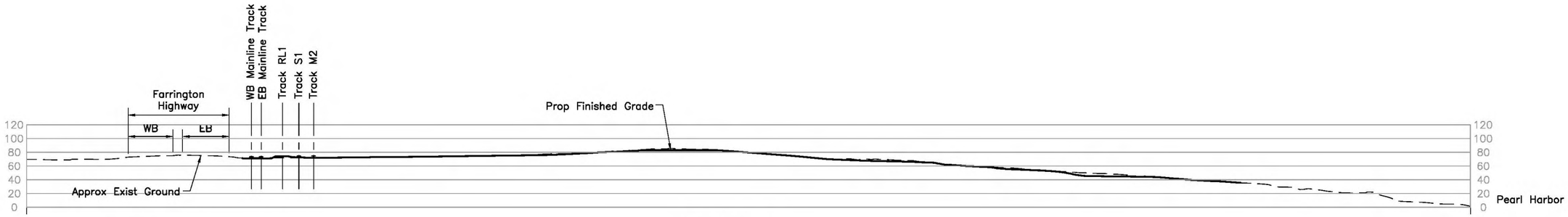
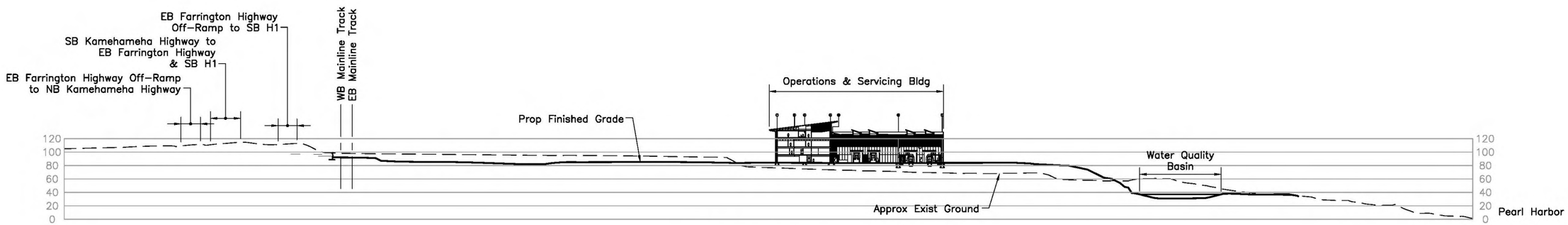


SECTION B–B



SECTION A–A

80' 0 80'

Rev	By	Date	Description

Designed: Designed
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Approved: Approved
Date: Date

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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Subconsultant:

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SMA AREA B
CROSS SECTIONS

Contract No.:
CADD File: SITE SECTIONS
Drawing No: B-CS2
Rev.
Scale: 1"=80'
Page No. of

2010–03–22 2:42 PM K:\CADD\Working\Jeff D\MSF Graphics\SITE SECTIONS.dwg

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Attachment E:

Preliminary Engineering Plan/Profile Sheets, SMA B: Waiau – Hālawa

These plan and profile sheets are excerpts from:

City and County of Honolulu
Department of Transportation Services
Rapid Transit Division (RTD)

Honolulu High-Capacity Transit Corridor Project
Kamehameha Highway Segment – Conformed March 19, 2010
Airport Segment – Conformed October 1, 2010

Prepared for: HHCTCP

Prepared by: Parsons Brinckerhoff, General Engineering Consultant (GEC)

AR00077715

City and County of Honolulu
Department of Transportation Services

Rapid Transit Division (RTD)

KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

CONTRACT DB-320

March 19, 2010

Prepared for:
HHCTCP

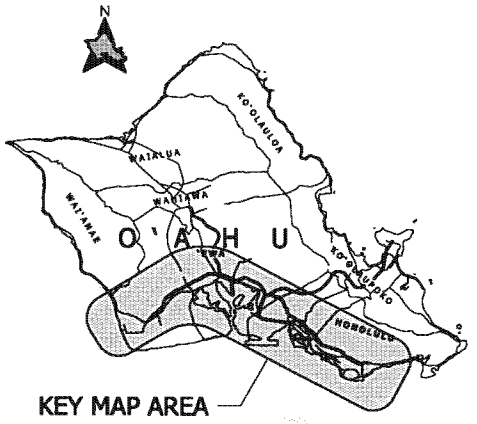
Prepared by:
Parsons Brinckerhoff
General Engineering Consultant (GEC)

AR00077716

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

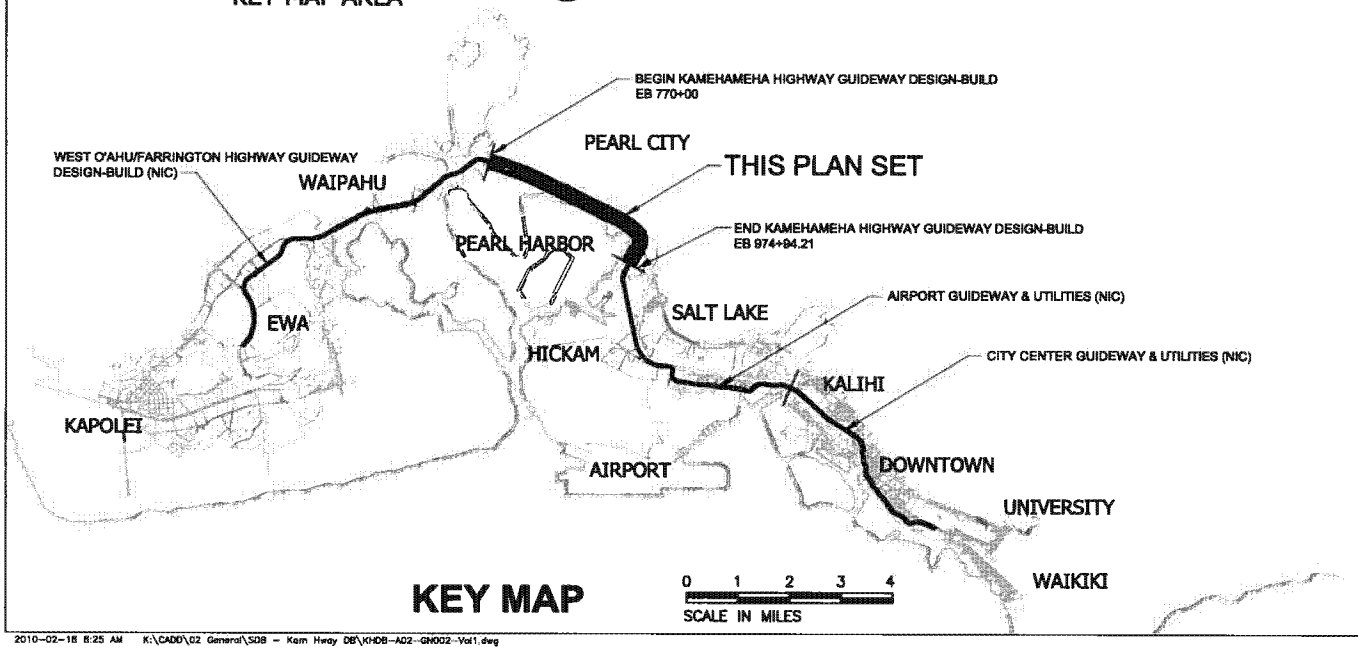
KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

VOLUME 1 - CIVIL AND TRAFFIC



City and County of Honolulu
Department of Transportation Services

Rapid Transit Division



KEY MAP

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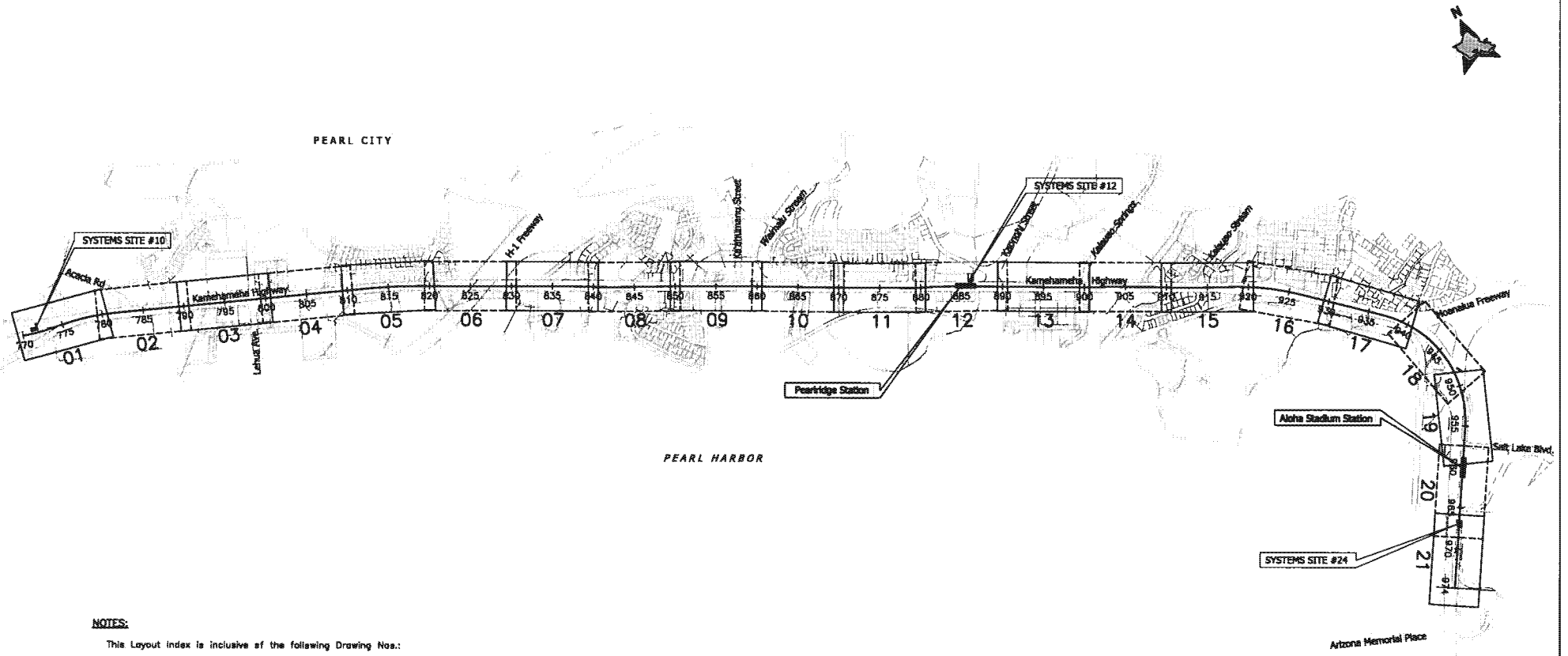

NOTES:

This Layout Index is inclusive of the following Drawing Nos.:

RW0**	RIGHT-OF-WAY PLANS
TA0**	TRACK ALIGNMENT PLANS
RP0**	ROADWAY CONSTRUCTION PLANS
GD0**	GUIDEWAY DRAINAGE LAYOUT PLANS
TR0**	SIGNING AND STRIPING PLANS
TR1**	MAINTENANCE OF TRAFFIC PLANS

LEGEND:

10 11 — Plan Sheet Location and Last Two Digits of DWG No.

840 845 850 — EB Track Alignment

600' 0 600'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: J Davis
Drawn: J Derosier
Checked: E Liberman
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

VOLUME 1
LAYOUT INDEX - 1"=40' PLANS

Contract No.: DB-320
CADD File: KHDB-A05-GN011-VOL1
Drawing No: GN011 Rev. A
Scale: 1"=600'
Page No. 10 of 265

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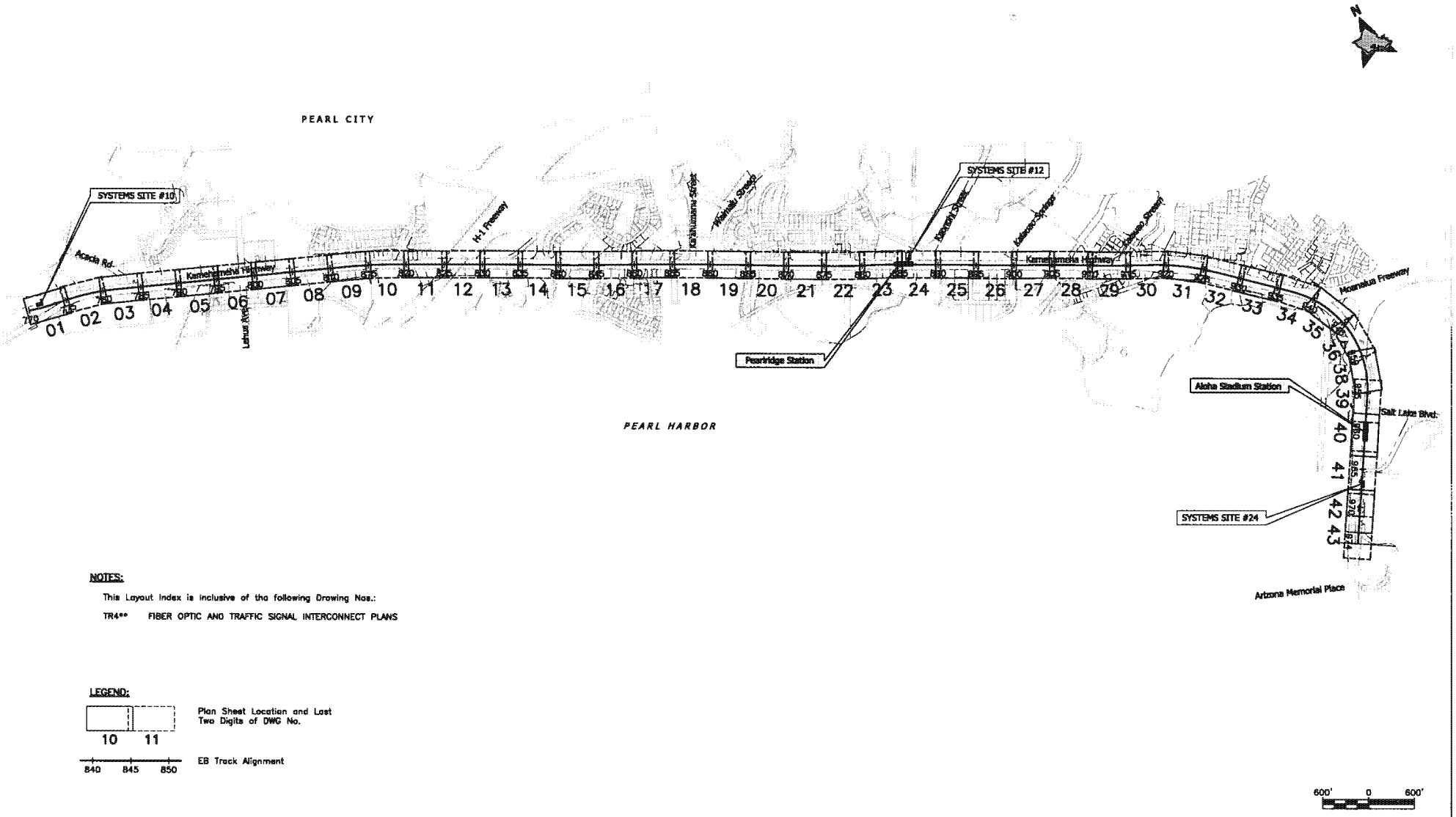

NOTES:

This Layout Index is inclusive of the following Drawing Nos.:

TR4** FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLANS

LEGEND:

10 11 — Plan Sheet Location and Last Two Digits of DWG No.

840 845 850 — EB Track Alignment

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

VOLUME 1
LAYOUT INDEX - 1"=20' PLANS

Contract No.: DB-320
CADD File: KHDB-A05-GN012-VOL1
Drawing No: GN012 Rev. A
Scale: 1"=600'
Page No. 11 of 265

2010-03-01 7:39 AM I:\CADD\02 General\SDB -- Kam Hwy DB\KHDB-A05-GN012.dwg

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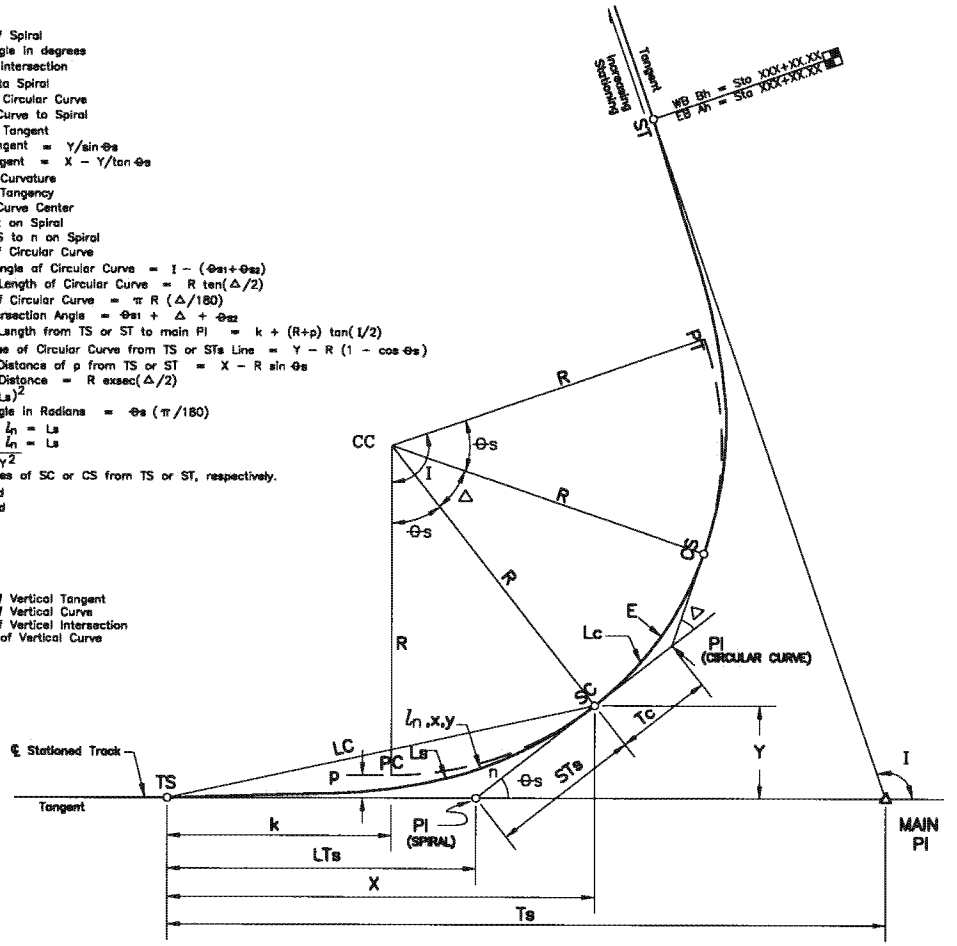
TRACK ALIGNMENT ABBREVIATIONS:

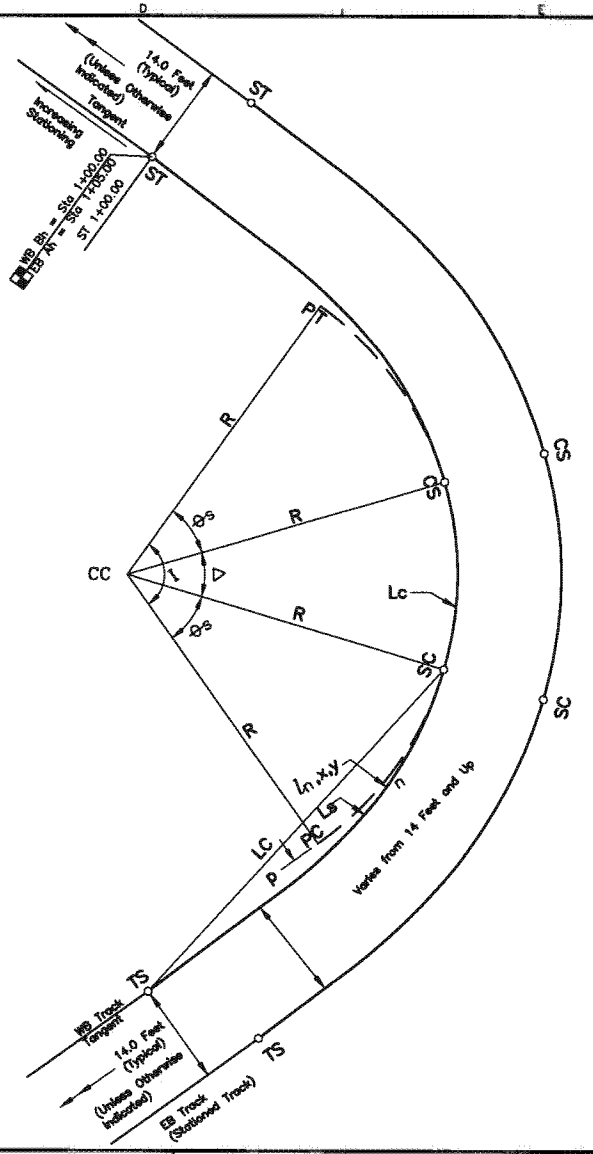
HORIZONTAL:

- L_s = Length of Spiral
- θ_s = Spiral Angle in degrees
- PI = Point of Intersection
- TS = Tangent to Spiral
- SC = Spiral to Circular Curve
- CS = Circular Curve to Spiral
- ST = Spiral to Tangent
- STs = Short Tangent = $Y/\sin\theta_s$
- LTs = Long Tangent = $X - Y/\tan\theta_s$
- PC = Point of Curvature
- PT = Point of Tangency
- CC = Circular Curve Center
- n = any Point on Spiral
- l_n = Length TS to n on Spiral
- R = Radius of Circular Curve
- Δ = Central Angle of Circular Curve = $I - (\theta_{s1} + \theta_{s2})$
- Tc = Tangent Length of Circular Curve = $R \tan(\Delta/2)$
- Lc = Length of Circular Curve = $\pi R (\Delta/180)$
- I = Total Intersection Angle = $\theta_{s1} + \Delta + \theta_{s2}$
- Ts = Tangent Length from TS or ST to main PI = $k + (R+p)\tan(I/2)$
- p = Shift Value of Circular Curve from TS or STs Line = $Y - R(1 - \cos\theta_s)$
- k = Tangent Distance of p from TS or ST = $X - R\sin\theta_s$
- E = External Distance = $R \operatorname{exsec}(\Delta/2)$
- δ_n = $\delta_s (l_n/L_s)^2$
- δ_s = Spiral Angle in Radians = $\theta_s (\pi/180)$
- X = x, where $l_n = L_s$
- Y = y, where $l_n = L_s$
- LC = $\sqrt{X^2 + Y^2}$
- X & Y = Coordinates of SC or CS from TS or ST, respectively.
- EB = Eastbound
- WB = Westbound

VERTICAL:

- PVT = Point of Vertical Tangent
- PVC = Point of Vertical Curve
- PVI = Point of Vertical Intersection
- LVC = Length of Vertical Curve





Rev	By	Date	Description

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: N/A
Drawn: R Nacion
Checked: E Liberman
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRACK ALIGNMENT ABBREVIATIONS

Contract No.: DB-320
CADD File: KHDB-801-CG002
Drawing No: CG002 Rev.
Scale: N/A
Page No. 17 of 265

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ROADWAY CONSTRUCTION NOTES:

1. Construct Concrete Curb.
2. Construct Concrete Curb and Gutter.
3. Construct Concrete Sidewalk.
4. Construct Concrete Curb Ramp.
5. Construct Reinforced Concrete Driveway.
6. Install Chain Link Fence.
7. Install Double Swing Chain Link Drive Gate.
8. Construct Concrete Half Barrier Rail.
9. Construct Concrete Barrier Rail.
10. Construct Concrete Median Island Paving.
11. Construct Plantmix Bituminous Surface Overlay.
12. Construct Plantmix Bituminous Pavement.
13. Construct Concrete Pavement.
14. Install Guardrail.
15. Construct Retaining Wall.
16. Install Impact Alternator.

ROADWAY CONSTRUCTION LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

GENERAL ROADWAY CONSTRUCTION NOTES:

1. See survey control plan sheets for references to horizontal and vertical control datums.
2. See structural plan and profile sheets for proposed guideway column details.
3. See landscaping plan sheets for proposed landscaping details.
4. See RDW plan sheets for proposed ROW details.
5. See utility plan sheets for proposed modifications and/or improvements to existing above and below ground utility systems.
6. See drainage plans sheets for proposed modifications and/or improvements to existing storm drainage facilities and piping.
7. See traffic signal plan sheets for proposed modifications and/or improvements to existing traffic signal systems.
8. See systems site plan sheets for proposed TPSS and GBS details.
9. See track alignment plan and profile sheets for proposed track alignment details.

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: L Francisco
Checked: E Libermen
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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ROADWAY CONSTRUCTION NOTES AND LEGEND

Contract No.: DB-320
CADD File: KHDB-B01-CG003
Drawing No: CG003 Rev. A
Scale: N/A
Page No. 18 of 265

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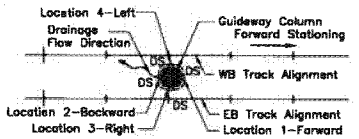
GENERAL DRAINAGE CONSTRUCTION NOTES:

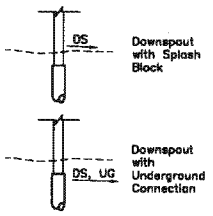
1. See Dwg No. CG001 for General Civil Notes, Symbols, and Abbreviations.
2. See Dwg No. GD104 for Downspout Locations and Discharge Conditions.
3. See Utility Relocation Plans for Proposed Drainage Structures Shown in Guideway Drainage Plans.
4. See Track Alignment Plan and Profile Sheets for Proposed Track Alignment Information.
5. See System Site Plans for System Site Information.
6. See Structural Plan and Profile Sheets for Proposed Guideway Details.
7. See Landscaping Plans for Proposed Landscaping Details.

DRAINAGE CONSTRUCTION LEGEND:

LEGEND:



DOWNSPOUT(DS) LOCATION OPTIONS



PROFILE

Rev	By	Date	Description
A	LH	03–19–10	Issued for Proposal

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PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: P Fujii
Drawn: J Derosier
Checked: K Wong
Approved: L Hesprich
Date: 03–19–10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
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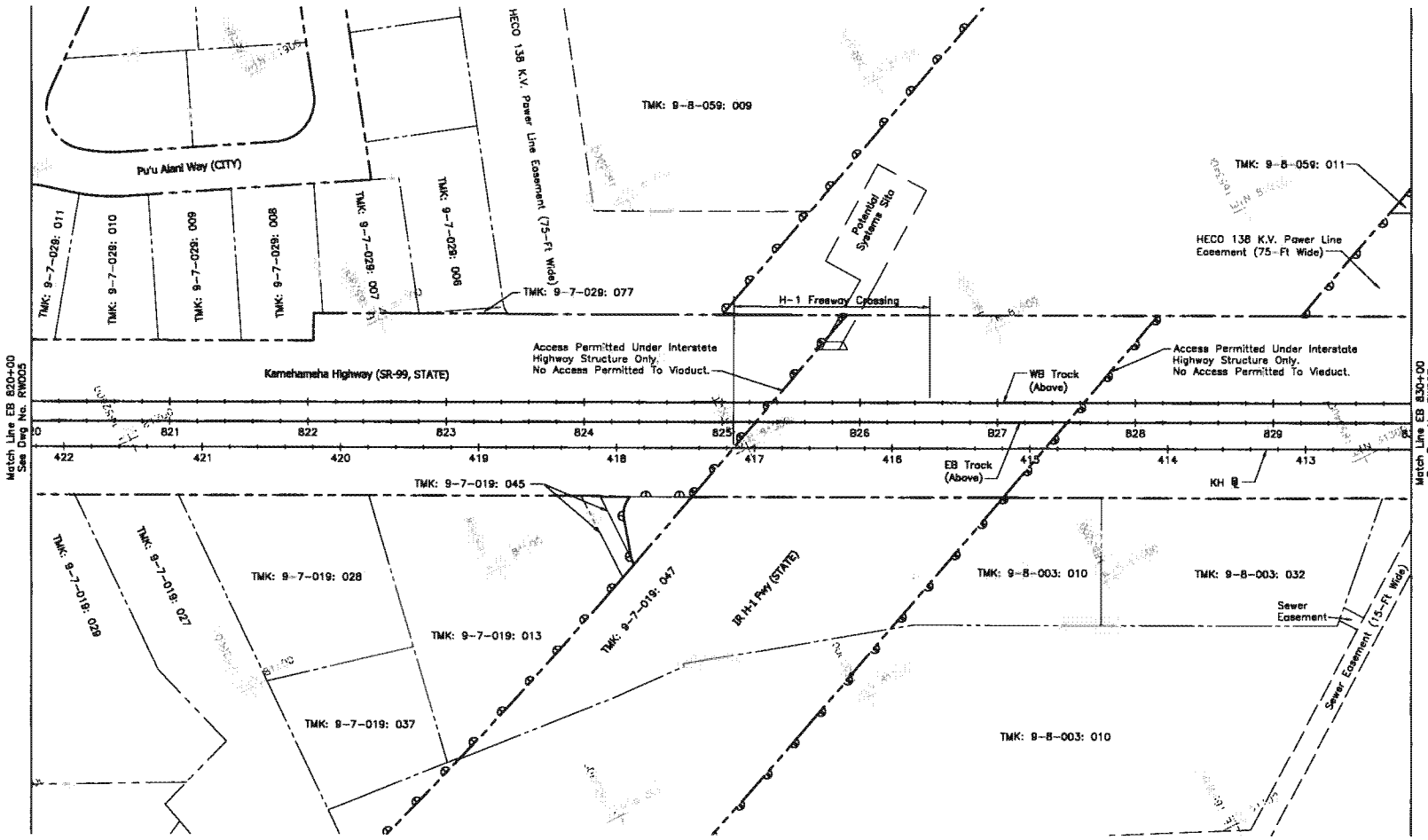
KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

DRAINAGE NOTES AND LEGEND

Contract No.: DB–320
CADD File: KHDB–801–CG004
Drawing No: CG004 Rev. A
Scale: N/A
Page No. 19 of 265



NOTES:

1. For Right-of-Way Legend, see Dwg No. RW001.
2. ROW acquisition may be in the form of an aerial easement; an easement allowing joint use; subdivision of property with transfer of title for the entire parcel; or some other form to be documented by Land Court registration.
3. Coordination with property owners will occur prior to ROW acquisition in accordance with regulatory requirements.
4. Construction easements are the responsibility of the Design-Build Contractor and should be defined during the final design phase and are not reflected on plans.
5. Limits of state jurisdiction are approximate and are the responsibility of the Design-Build Contractor and should be verified during the final design phase.
6. For General Utility Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.

Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: G Tom
Drawn: K Tanoka
Checked: H Andrews
Approved: J Yamamoto
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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Subconsultant: R. M. TOWILL CORPORATION

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EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 820+00 TO EB 830+00

Contract No.: DB-320
CADD File: KHDB-B04-RW006
Drawing No: RW006 Rev. A
Scale: 1"=40'
Page No. 25 of 265

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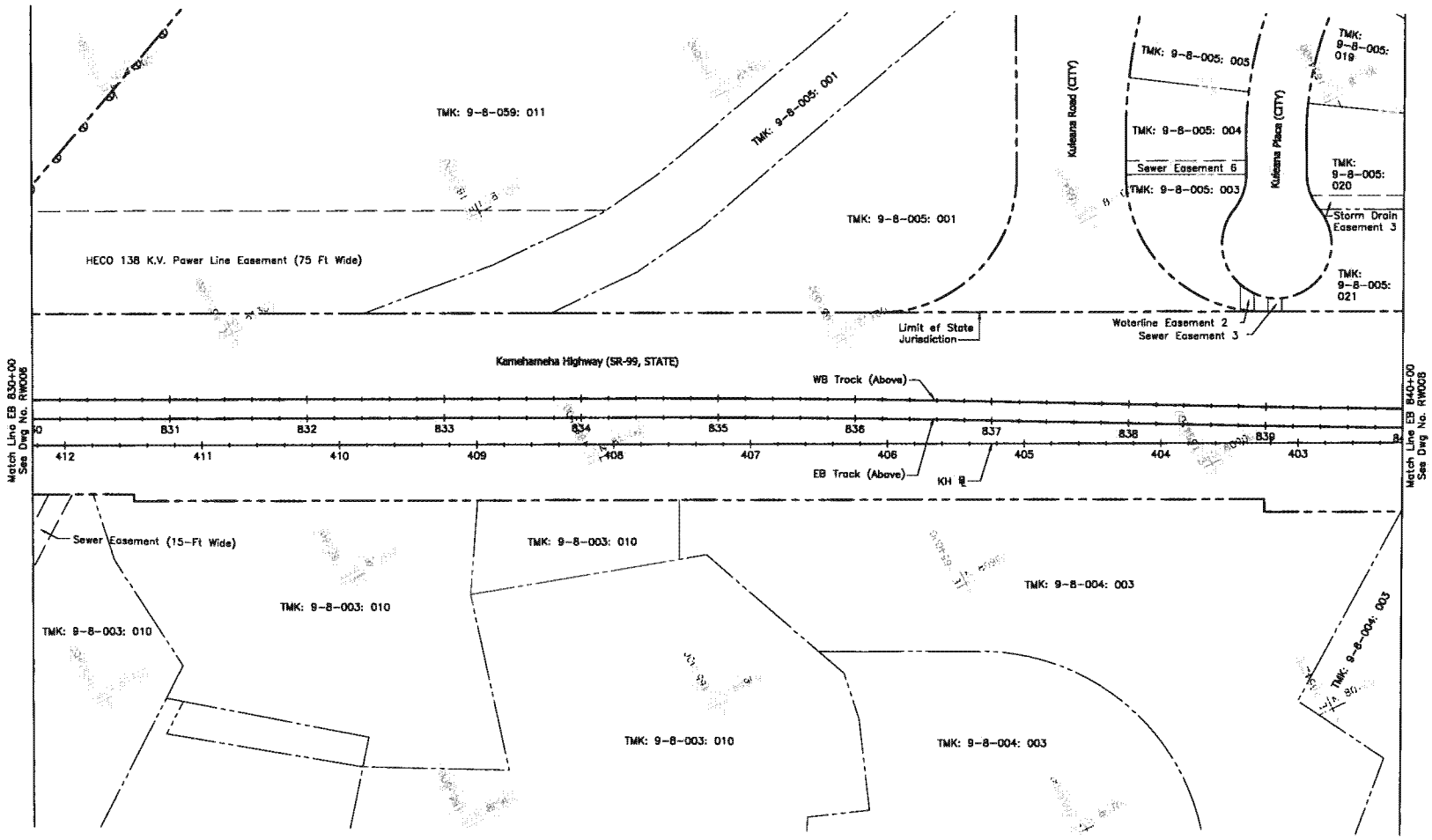

NOTES:

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40' 0' 40'

Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

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Designed: G Tom
Drawn: K Toneka
Checked: H Andrews
Approved: J Yamamoto
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 830+00 TO EB 840+00

Contract No.: DB-320
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Drawing No: RW007 Rev. A
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Page No. 26 of 265

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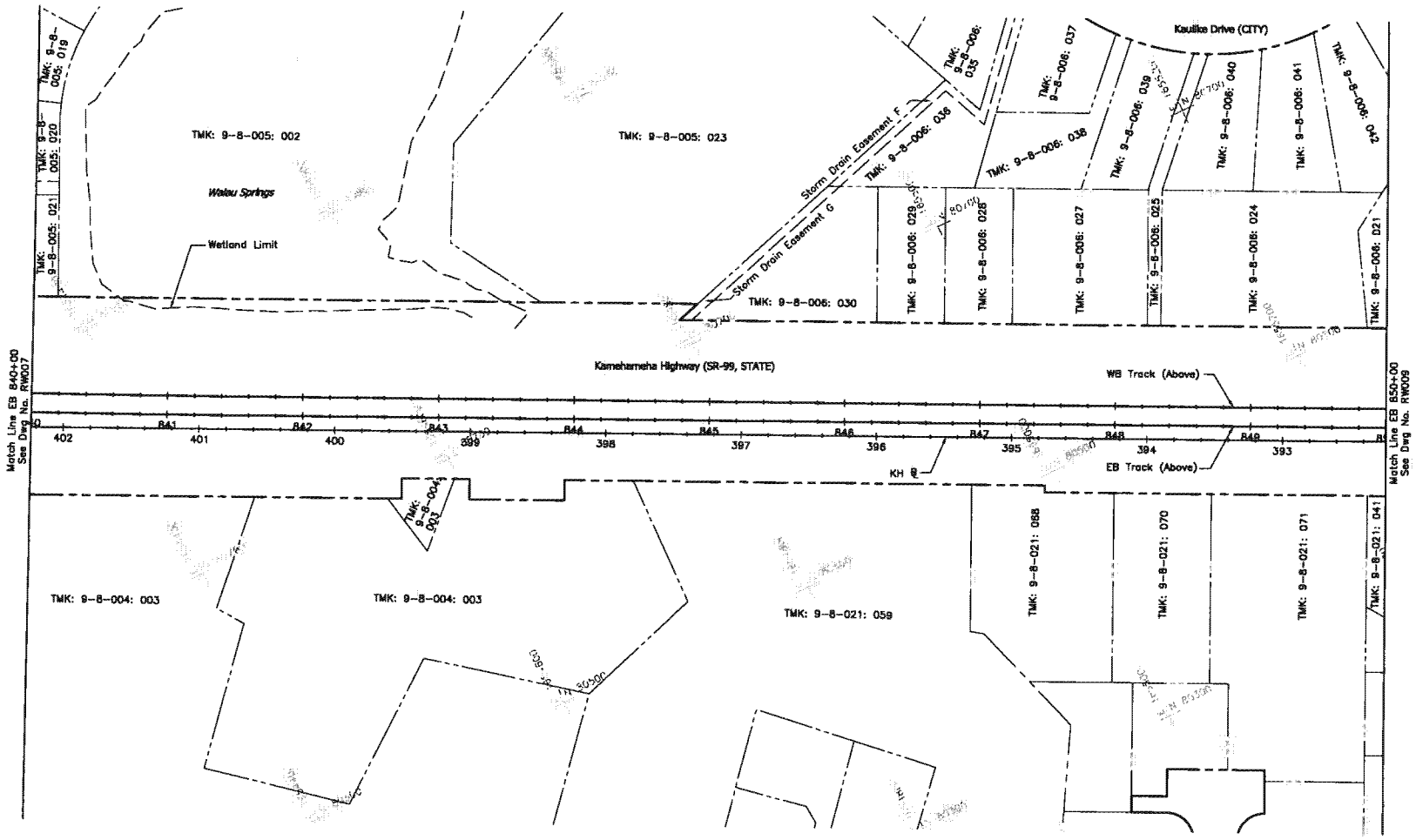

NOTES:

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Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

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Designed: G Tam
Drawn: K Tanaka
Checked: H Andrews
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Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 840+00 TO EB 850+00

Contract No.: DB-320
CADD File: KHDB-B04-RW008
Drawing No.: RW008 Rev. A
Scale: 1"=40'
Page No. 27 of 265

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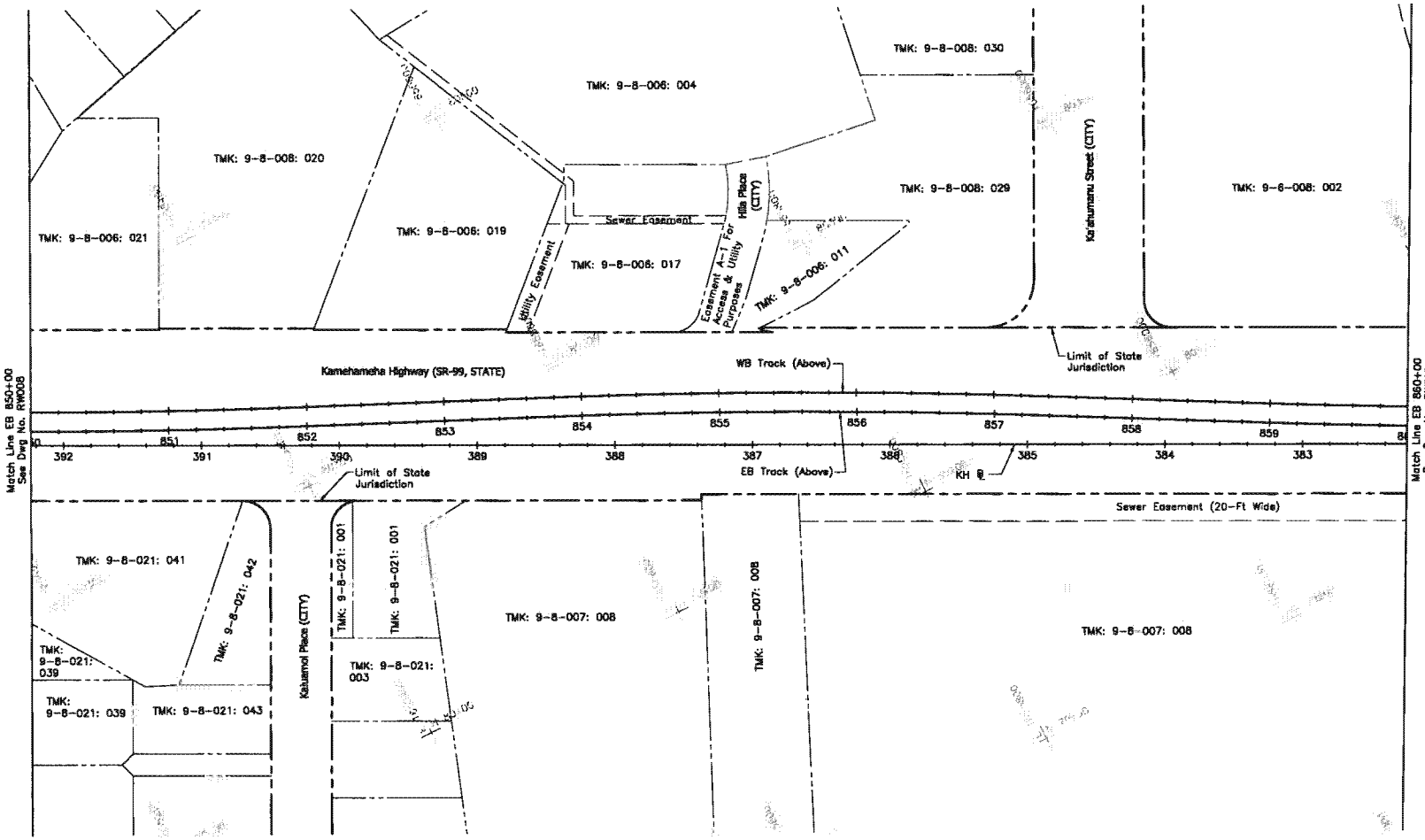

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40' 0' 40'

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Designed: G Tam
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Checked: H Andrews
Approved: J Yamamoto
Date: 03-19-10

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 850+00 TO EB 860+00

Contract No.: DB-320
CADD File: KHDB-B04-RW009
Drawing No: RW009 Rev. A
Scale: 1"=40'
Page No. 28 of 265

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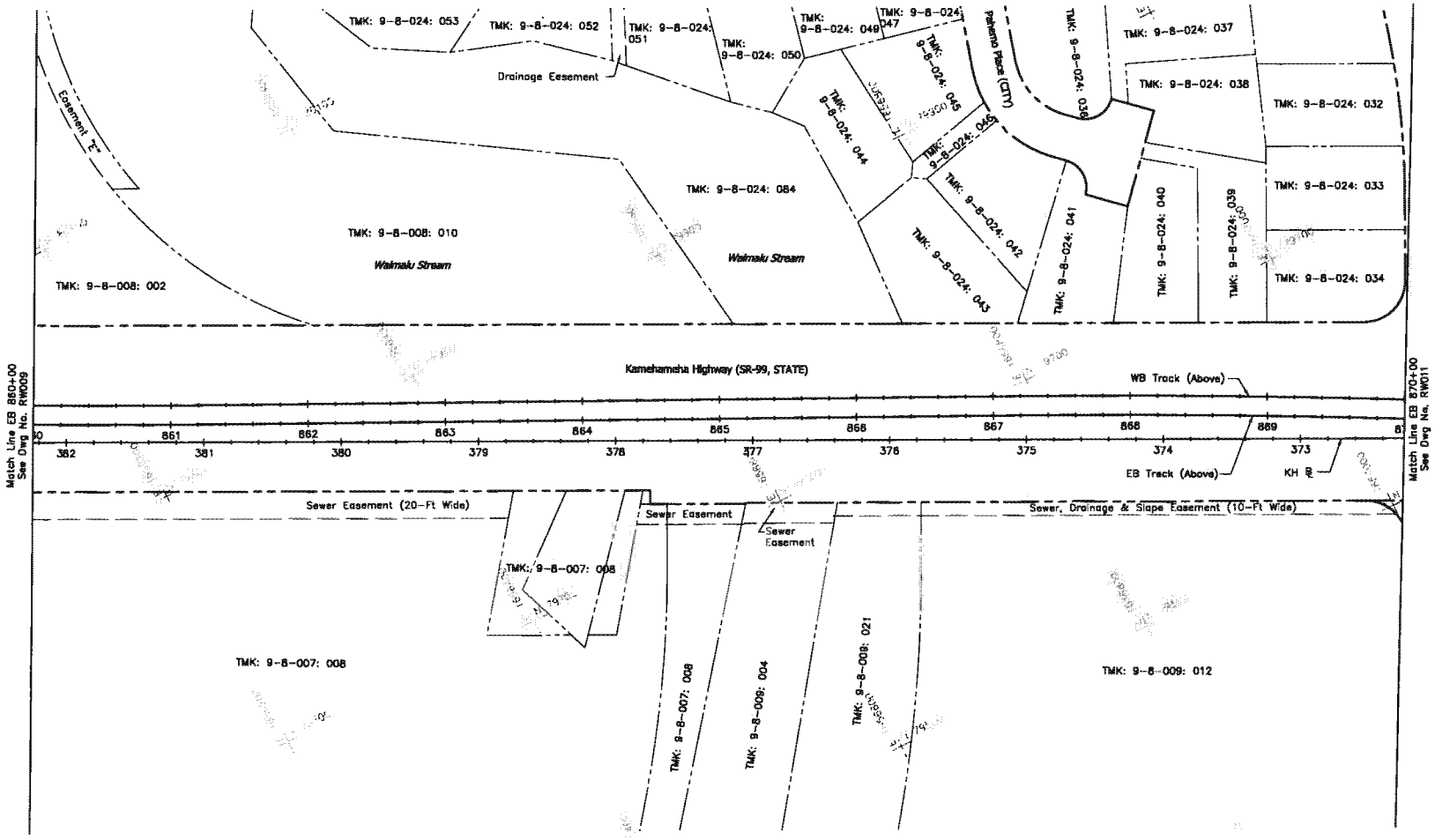

NOTES:

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6. For General Utility Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.

40' 0' 40'

Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: G Tom
Drawn: K Taneka
Checked: H Andrews
Approved: J Yamamoto
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 860+00 TO EB 870+00

Contract No.: DB-320
CADD File: KHDB-B04-RW010
Drawing No: RW010 Rev. A
Scale: 1"=40'
Page No. 29 of 265

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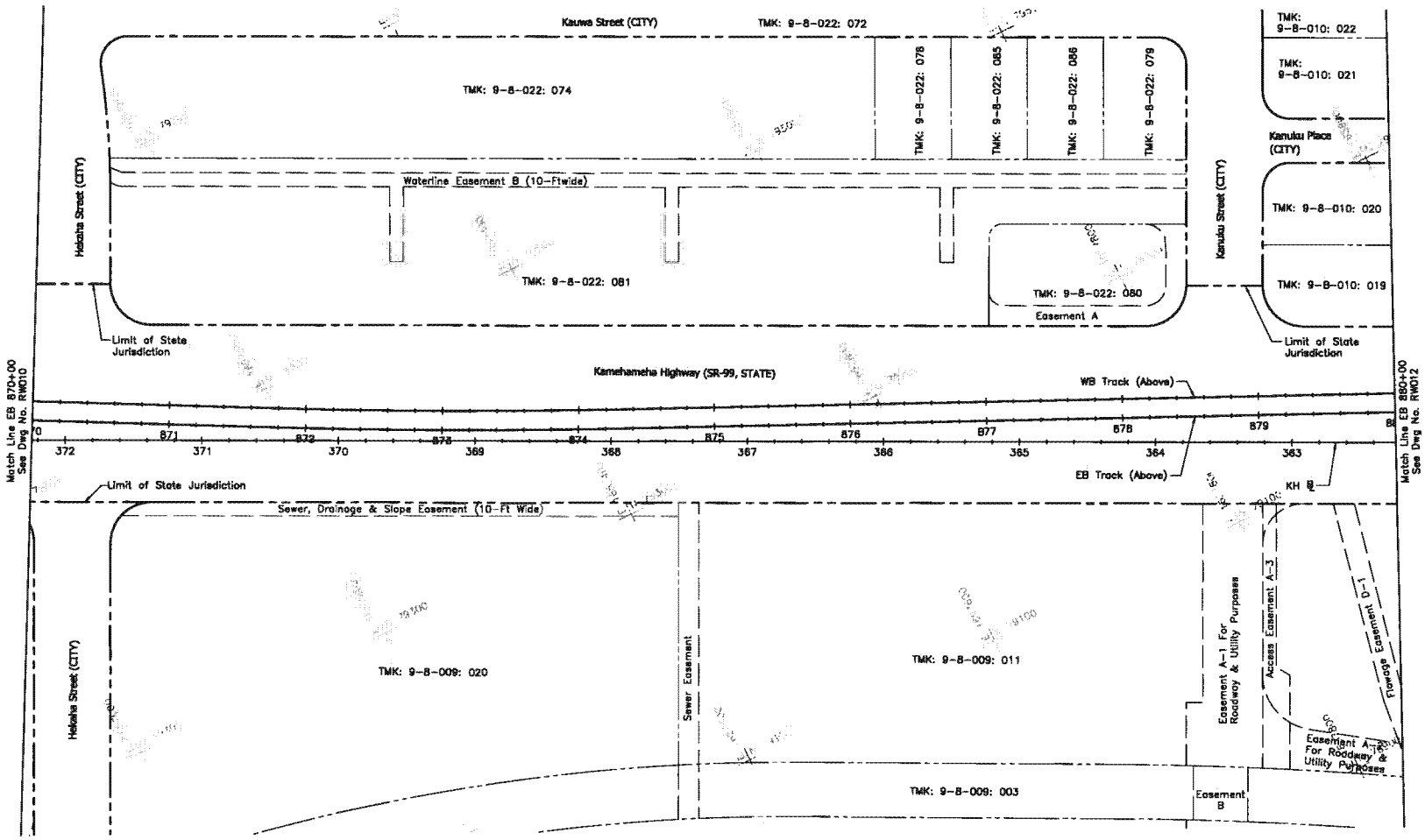

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Rev	By	Date	Description
A	JY	03-19-10	Issued for Preposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: G Tom
Drawn: K Teneka
Checked: H Andrews
Approved: J Yamamoto
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 870+00 TO EB 880+00

Contract No.: DB-320
CADD File: KHDB-B04-RW011
Drawing No: RW011 Rev. A
Scale: 1"=40'
Page No. 30 of 265

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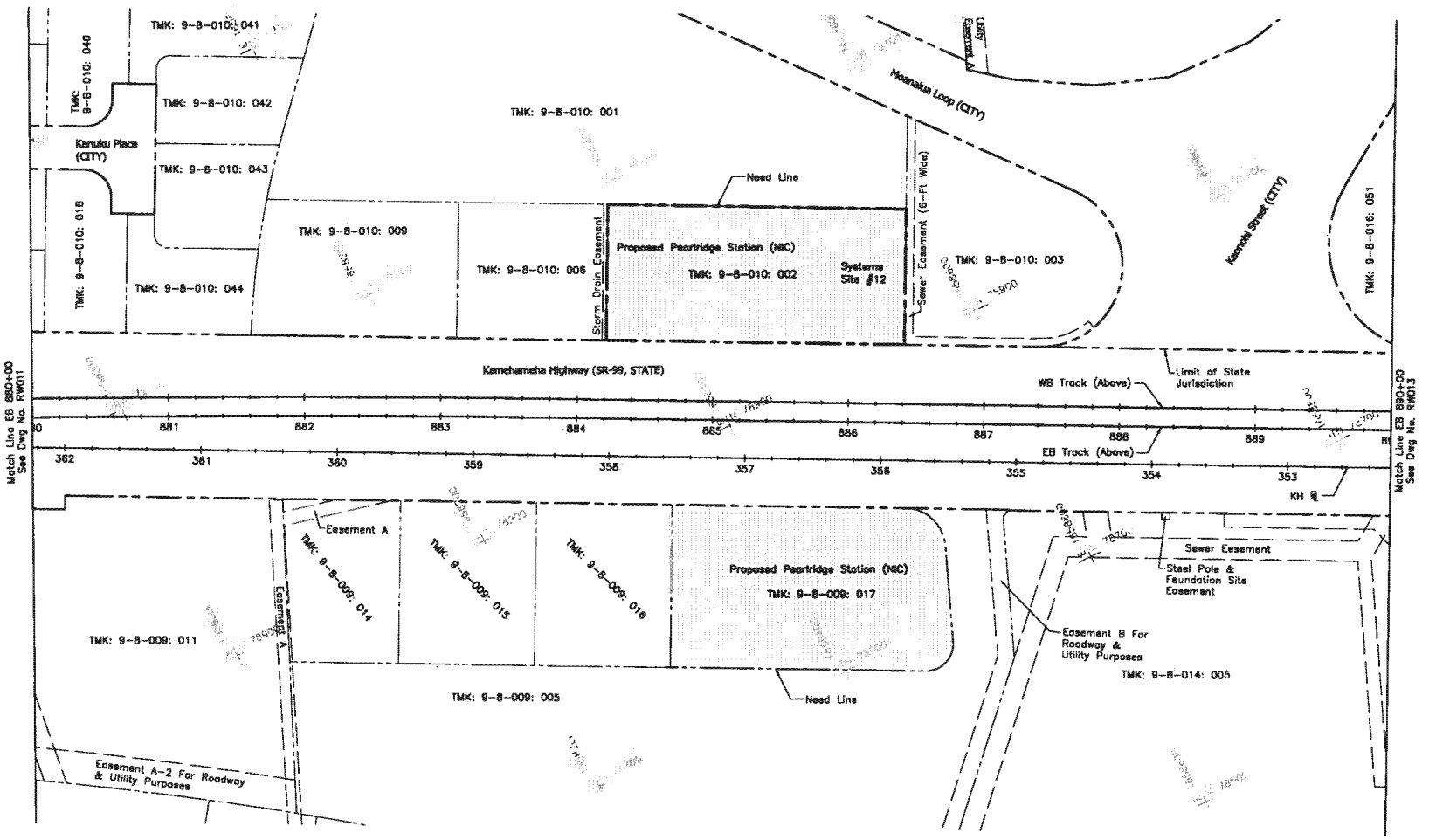

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Tax Map Key Number	Parcel Acquisitions	House Number	Street Name	Land Use
9-8-009:017	Full	98-77	Kamehameha Hwy	Commercial
9-6-010:002	Full	98-80	Kamehameha Hwy	Commercial

40' 0' 40'

Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: G Tam
Drawn: K Tanaka
Checked: H Andrews
Approved: J Yamamoto
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 880+00 TO EB 890+00

Contract No.: DB-320
CADD File: KHDB-B04-RW012
Drawing No: RW012 Rev. A
Scale: 1"=40'
Page No. 31 of 265

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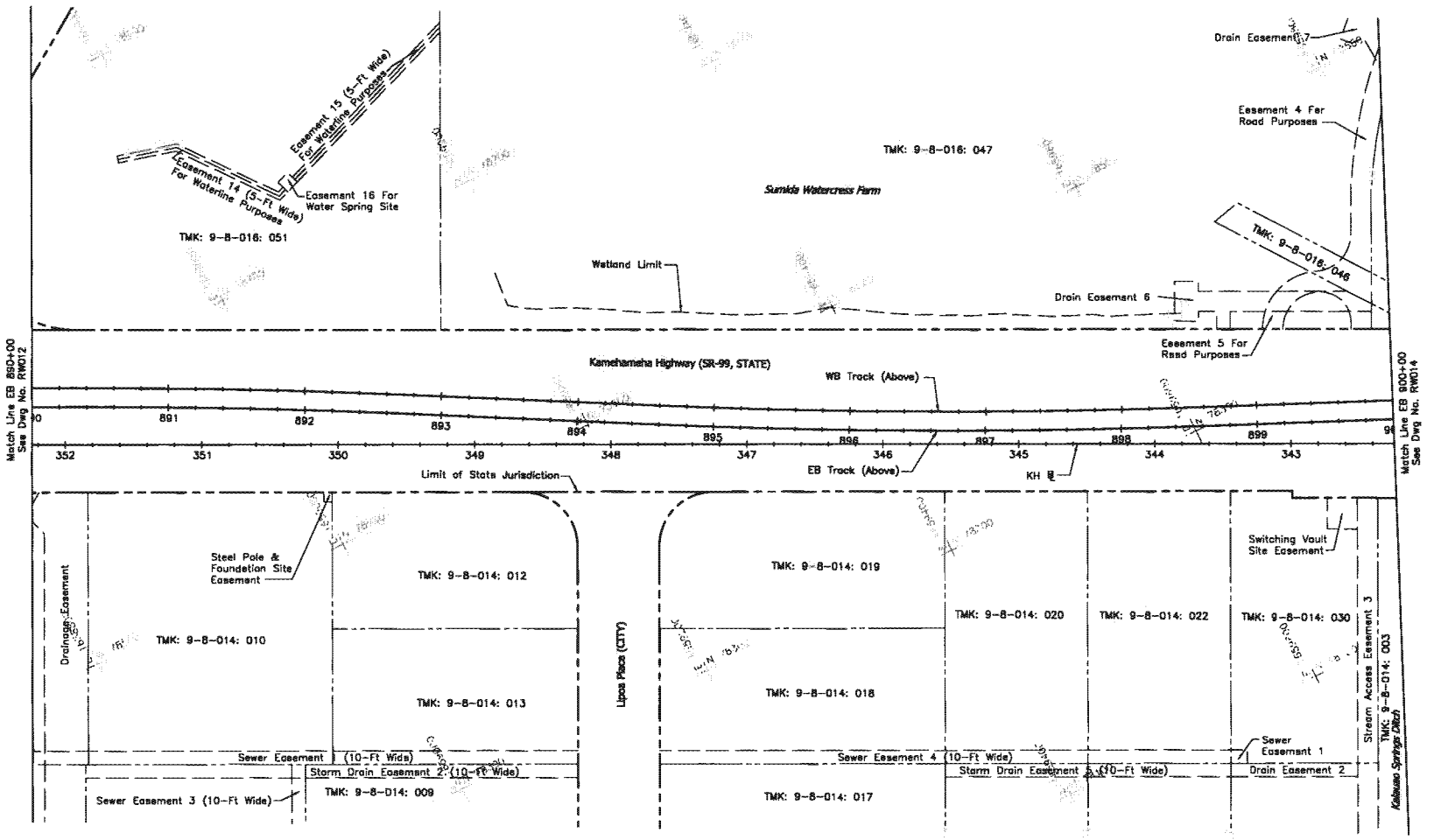

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Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: G Tom
Drawn: K Tanoke
Checked: H Andrews
Approved: J Yamemoto
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 890+00 TO EB 900+00

Contract No.: DB-320
CADD File: KHDB-B04-RW013
Drawing No: RW013 Rev. A
Scale: 1"=40'
Page No. 32 of 265

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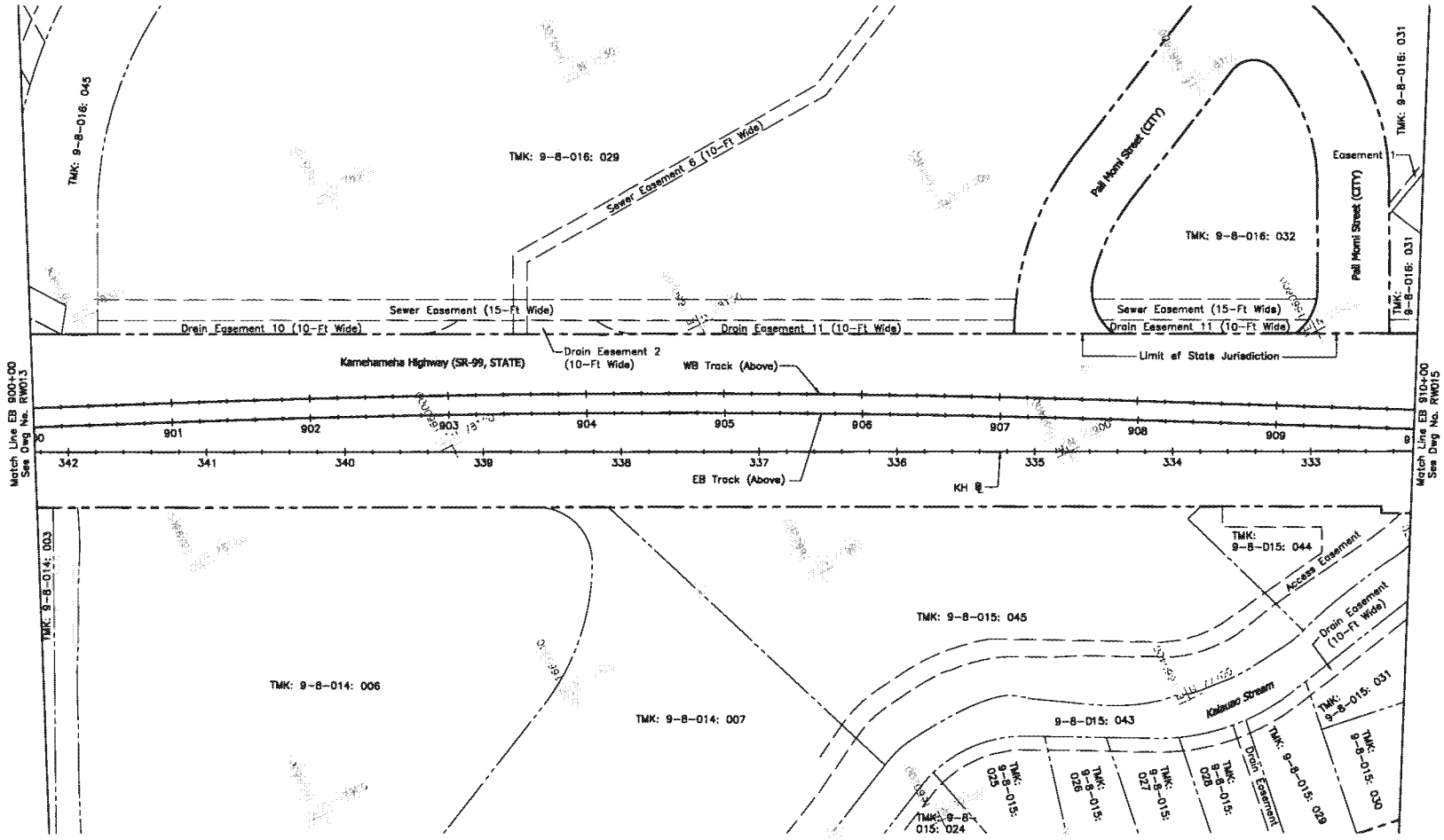

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A	JY	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: G Tam
Drawn: K Taneka
Checked: H Andrews
Approved: J Yamamoto
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 900+00 TO EB 910+00

Contract No.: DB-320
CADD File: KHDB-B04-RW014
Drawing No: RW014 Rev. A
Scale: 1"=40'
Page No. 33 of 265

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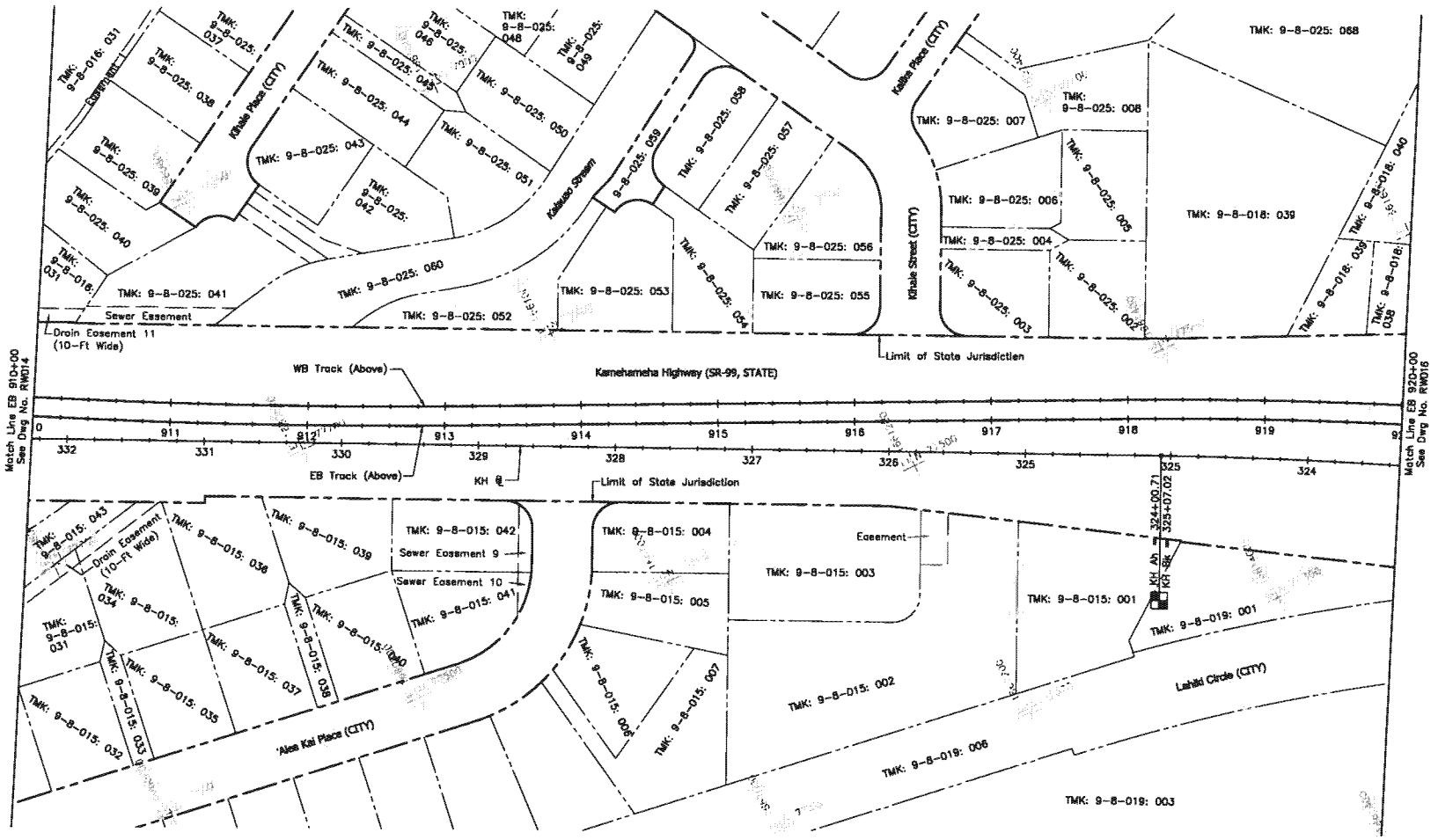

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Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: G Torn
Drawn: K Tanaka
Checked: H Andrews
Approved: J Yamamoto
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 910+00 TO EB 920+00

Contract No.: DB-320
CADD File: KHDB-B04-RW015
Drawing No: RW015 Rev. A
Scale: 1"=40'
Page No. 34 of 265

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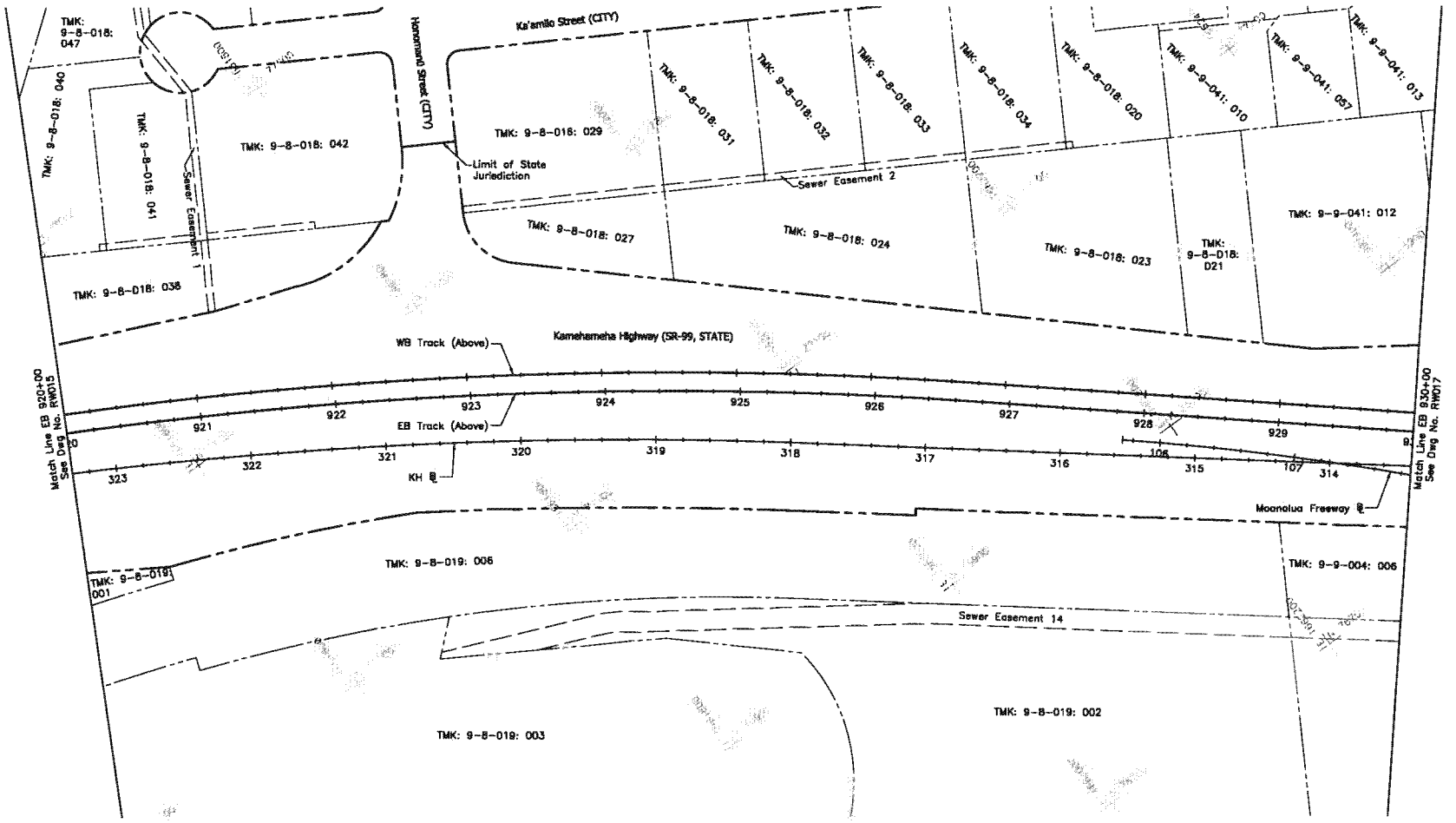

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40' 0' 40'

Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: G Tom
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Approved: J Yamamoto
Date: 03-19-10

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 920+00 TO EB 930+00

Contract No.: DB-320
CADD File: KHDB-B04-RW016
Drawing No: RW016 Rev. A
Scale: 1"=40'
Page No. 35 of 265

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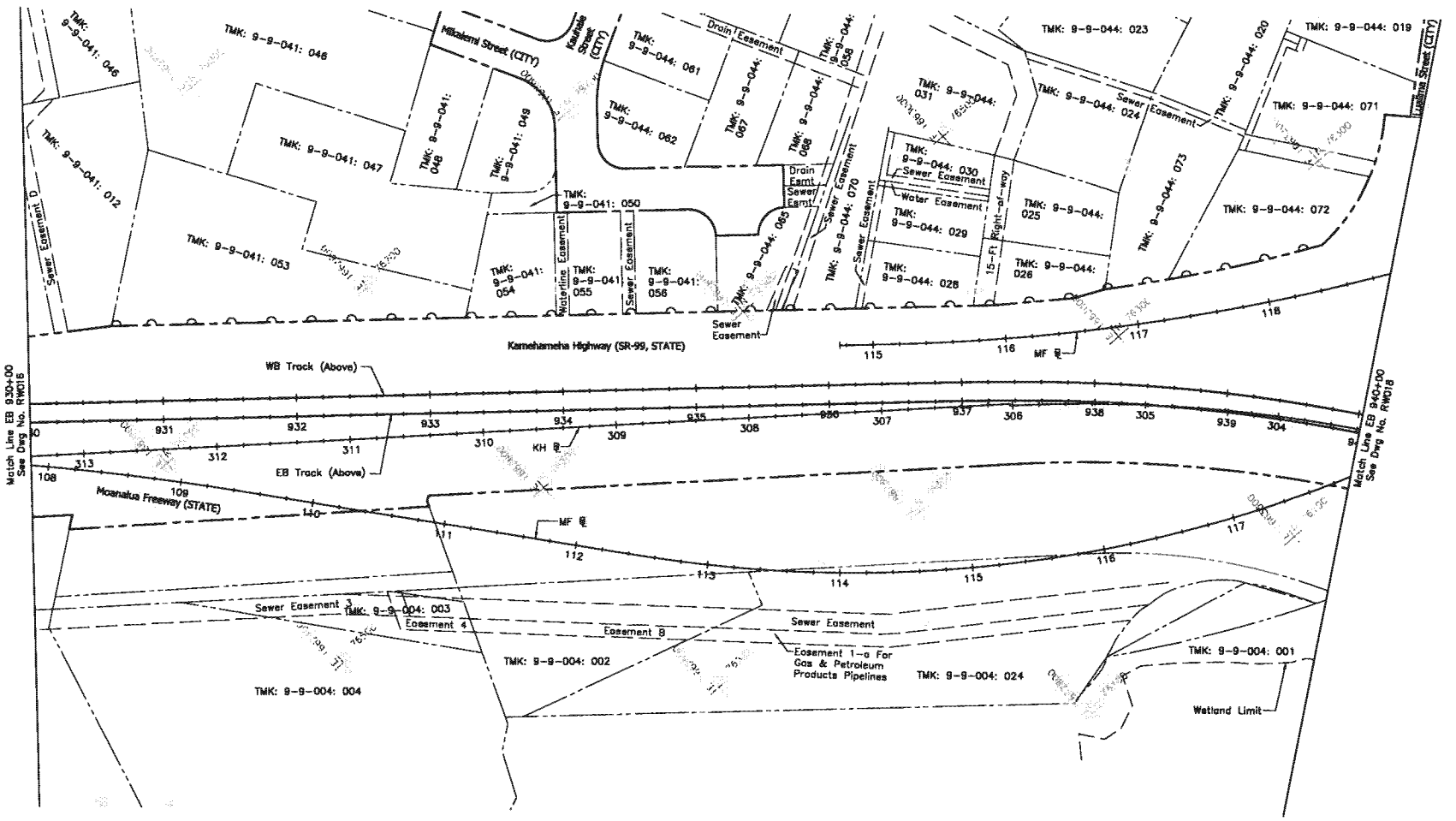

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40' 0' 40'

Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

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Designed: G Tom
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 930+00 TO EB 940+00

Contract No.: DB-320
CADD File: KHDB-B04-RW017
Drawing No: RW017 Rev. A
Scale: 1"=40'
Page No. 36 of 265

2010-03-12 1:53 PM K:\civil\21132 Honolulu Transit Corridor\Segment D\Sheet Files\KHDB-B04-RW001-RW021.dwg

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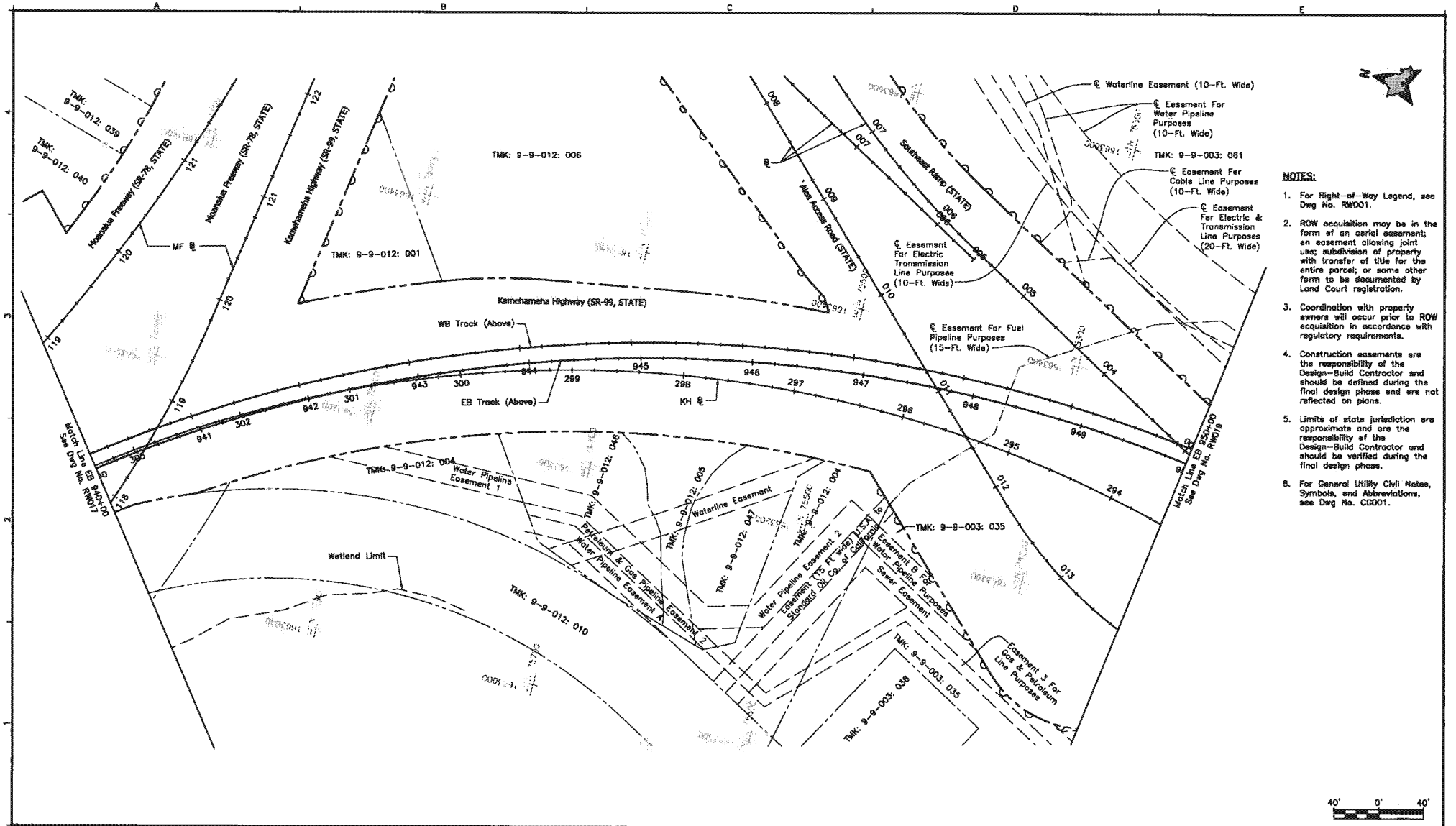

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Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: G Tam
Drawn: K Tanaka
Checked: H Andrews
Approved: J Yamemoto
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 940+00 TO EB 950+00

Contract No.: DB-320
CADD File: KHDB-B04-RW018
Drawing No: RW018 Rev. A
Scale: 1"=40'
Page No. 37 of 265

2010-03-12 1:53 PM K:\civil\21132 Honolulu Transit Corridor\Segment D\Sheet Files\KHDB-B04-RW001-RW021.dwg

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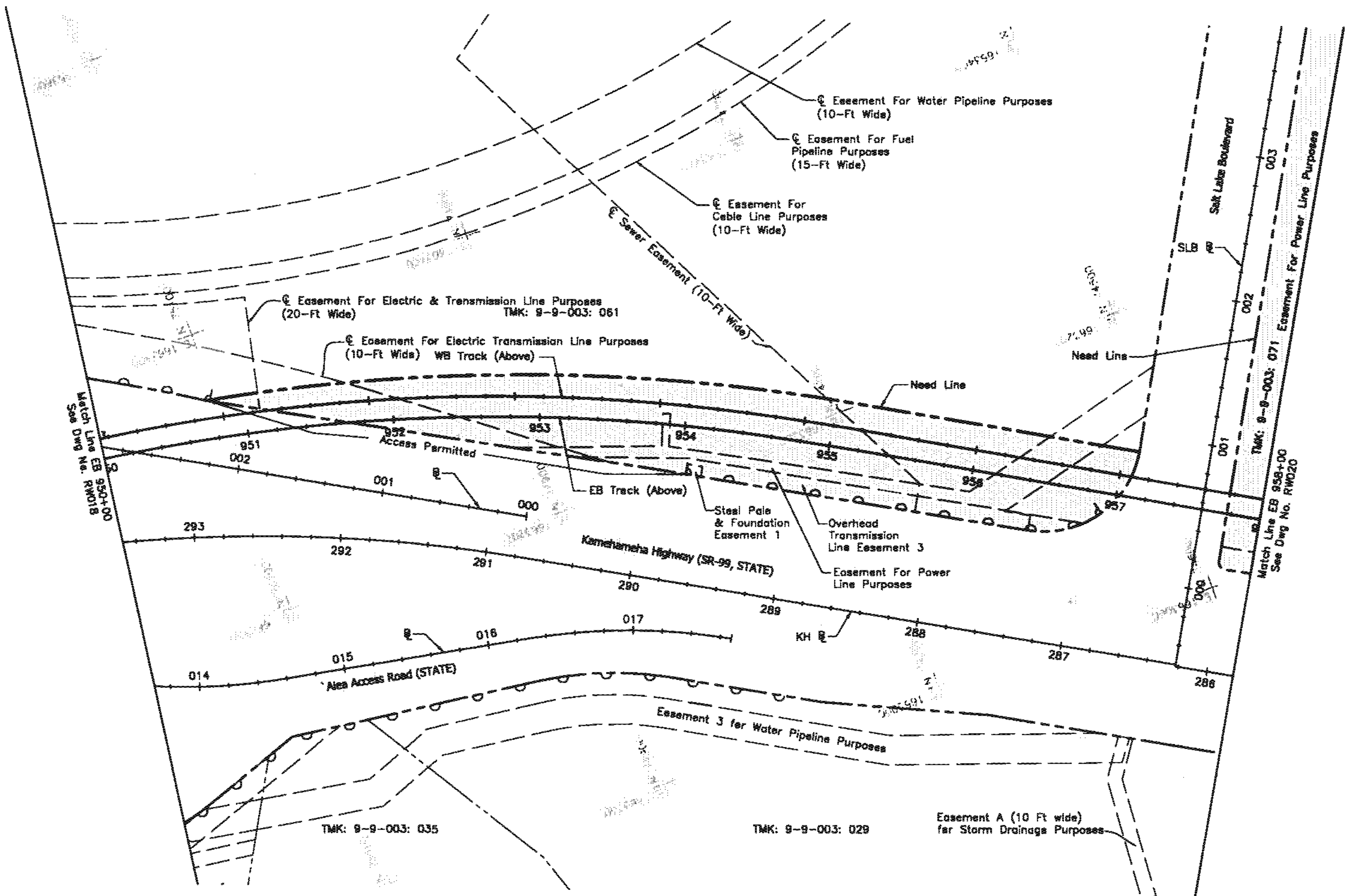

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Tax Map Key Number	Parcel Acquisitions	House Number	Street Name	Land Use
9-9-003:061	Partial	99-500	Salt Lake Blvd	Public
9-9-003:071	Full	–	–	Public

40' 0' 40'

Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT
NOT FOR CONSTRUCTION

Designed: G Tom
Drawn: K Tanaka
Checked: H Andrews
Approved: J Yamamoto
Date: 03-19-10

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

EXISTING RIGHT-OF-WAY &
PROPOSED ACQUISITION TABULATIONS

EB 950+00 TO EB 958+00

Contract No.: DB-320
CADD File: KHDB-B04-RW019
Drawing No: RW019
Rev. A
Scale: 1"=40'
Page No. 38 of 265

2010-03-12 1:53 PM K:\civil\21132 Honolulu Transit Corridor\Segment D\Sheet Files\KHDB-B04-RW001-RW021.dwg

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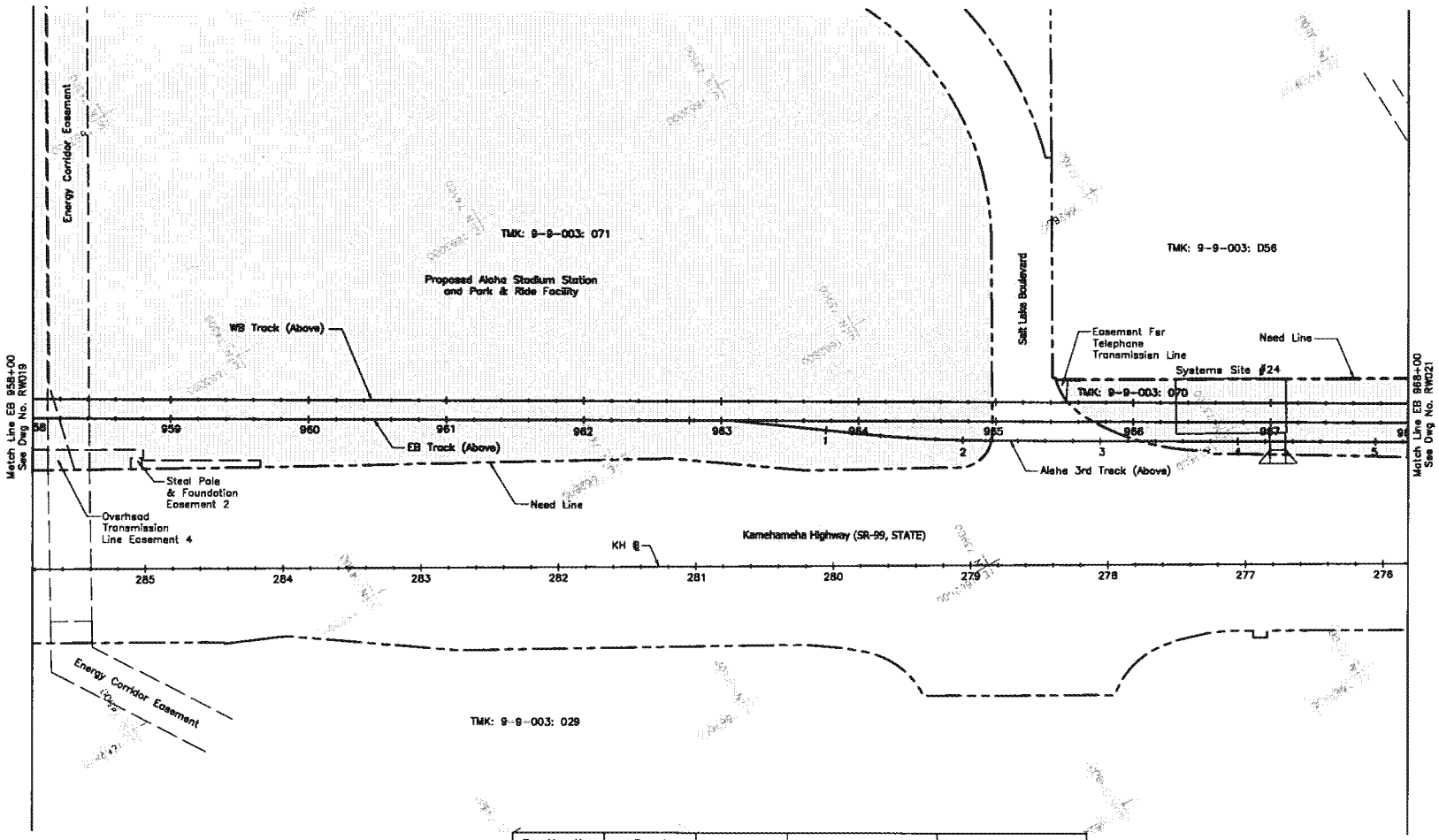

Tax Map Key Number	Parcel Acquisitions	House Number	Street Name	Land Use
9-9-003:070	Full	–	–	Public
9-9-003:071	Full	–	–	Public

NOTES:

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40' 0' 40'

Rev	By	Date	Description
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 958+00 TO EB 968+00

Contract No.: DB-320
CADD File: KHDB-B04-RW020
Drawing No: RW020 Rev. A
Scale: 1"=40'
Page No. 39 of 265

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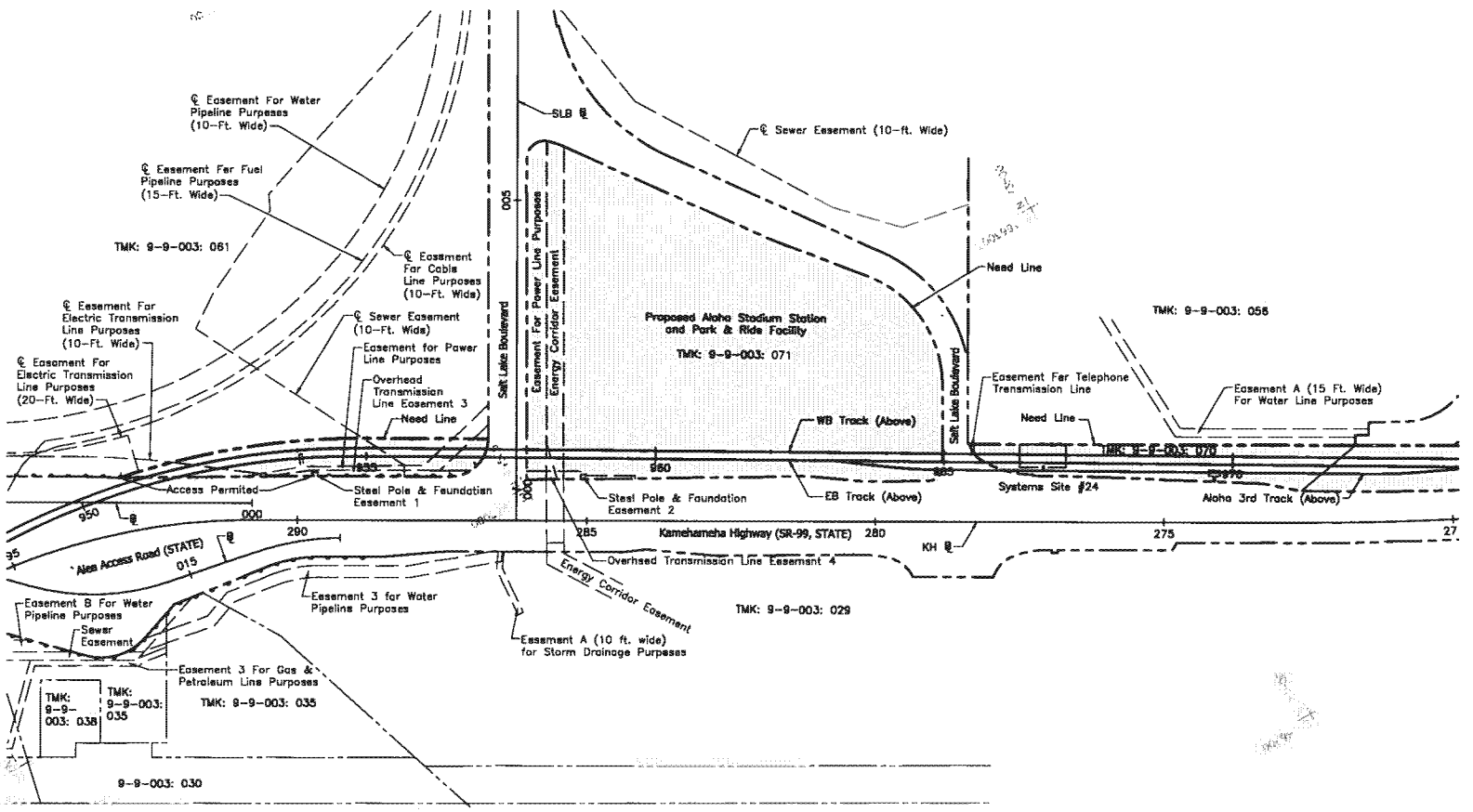

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6. For General Utility Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
7. For Systems Site information, refer to Systems Site Plans.

Tax Map Key Number	Parcel Acquisitions	House Number	Street Name	Land Use
9-9-003:061	Partial	99-500	Salt Lake Blvd	Public
9-9-003:070	Full	-	-	Public
9-9-003:071	Full	-	-	Public

100' 0' 100'

Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: G Tom
Drawn: K Toneke
Checked: H Andrews
Approved: J Yamomoto
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: R. M. TOWILL CORPORATION

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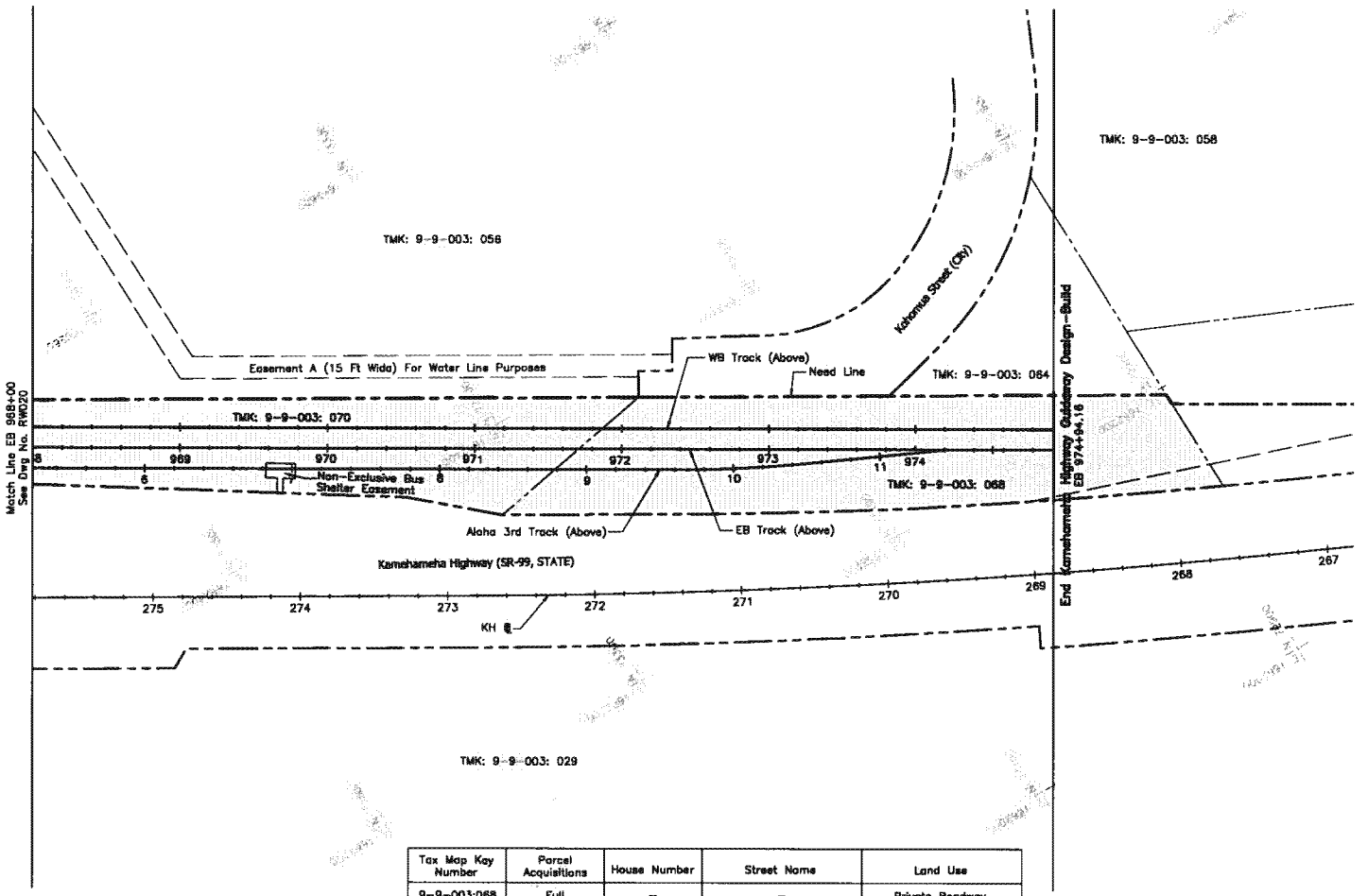
KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

ALOHA STADIUM STATION & PARK & RIDE FACILITY

Contract No.: DB-320
CADD File: KHDB-B04-RW020A
Drawing No: RW020A Rev. A
Scale: 1"=100'
Page No. 40 of 265



Tax Map Key Number	Parcel Acquisitions	House Number	Street Name	Land Use
9-9-003:068	Full	–	–	Private Roadway
9-9-003:070	Full	–	–	Public

NOTES:

1. For Right-of-Way Legend, see Dwg No. RW001.
2. ROW acquisition may be in the form of an aerial easement; an easement allowing joint use; subdivision of property with transfer of title for the entire parcel; or some other form to be documented by Land Court registration.
3. Coordination with property owners will occur prior to ROW acquisition in accordance with regulatory requirements.
4. Construction easements are the responsibility of the Design-Build Contractor and should be defined during the final design phase and are not reflected on plans.
5. Limits of state jurisdiction are approximate and are the responsibility of the Design-Build Contractor and should be verified during the final design phase.
6. For General Utility Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.

40' 0' 40'

Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: G Tam
Drawn: K Tanaka
Checked: H Andrews
Approved: J Yamamoto
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 968+00 TO END

Contract No.: DB-320
CADD File: KHDB-B04-RW021
Drawing No: RW021 Rev. A
Scale: 1"=40'
Page No. 41 of 265

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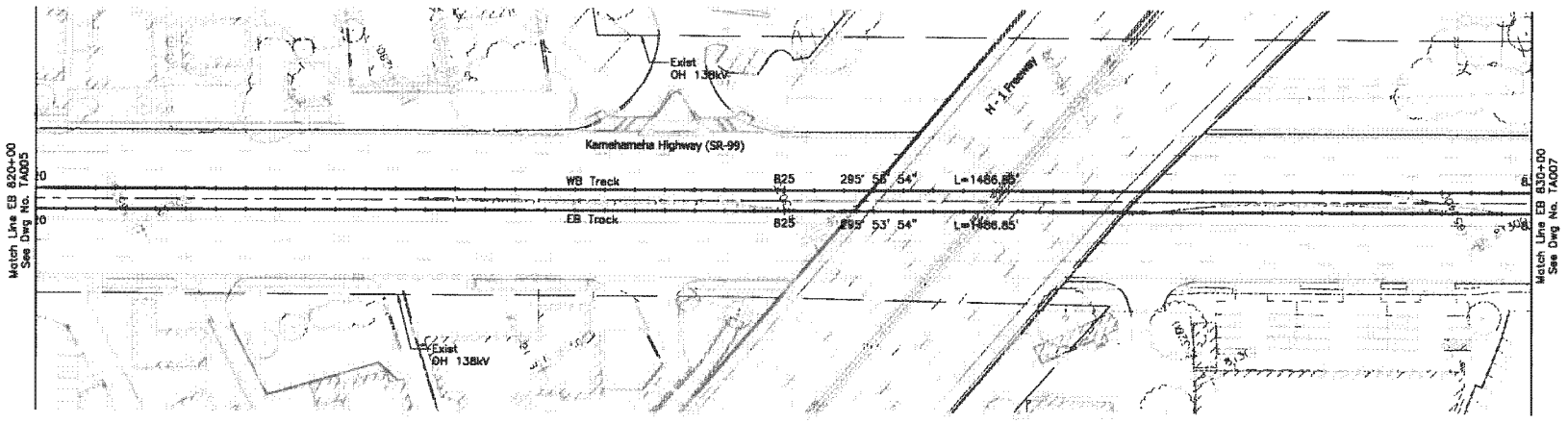

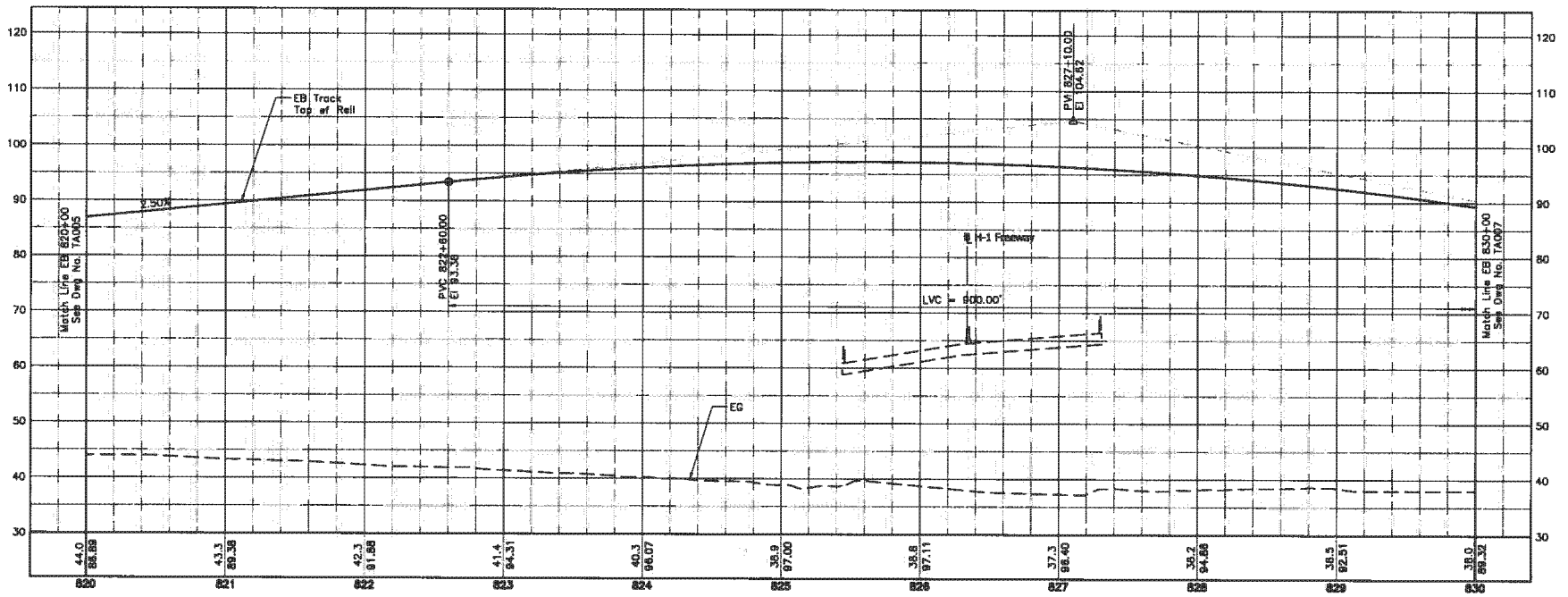

H 40' 0' 40'
V 10' 0' 10'

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Track Alignment Abbreviations, see Dwg No. CG002.
3. Existing Overhead electrical 138kV lines are shown for reference.

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: B Wardell
Drawn: R Nacion
Checked: E Liberman
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRACK ALIGNMENT PLAN & PROFILE

EB 820+00 TO EB 830+00

Contract No.: DB-320
CADD File: KHDB-B05-TA006
Drawing No: TA006 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 47 of 265

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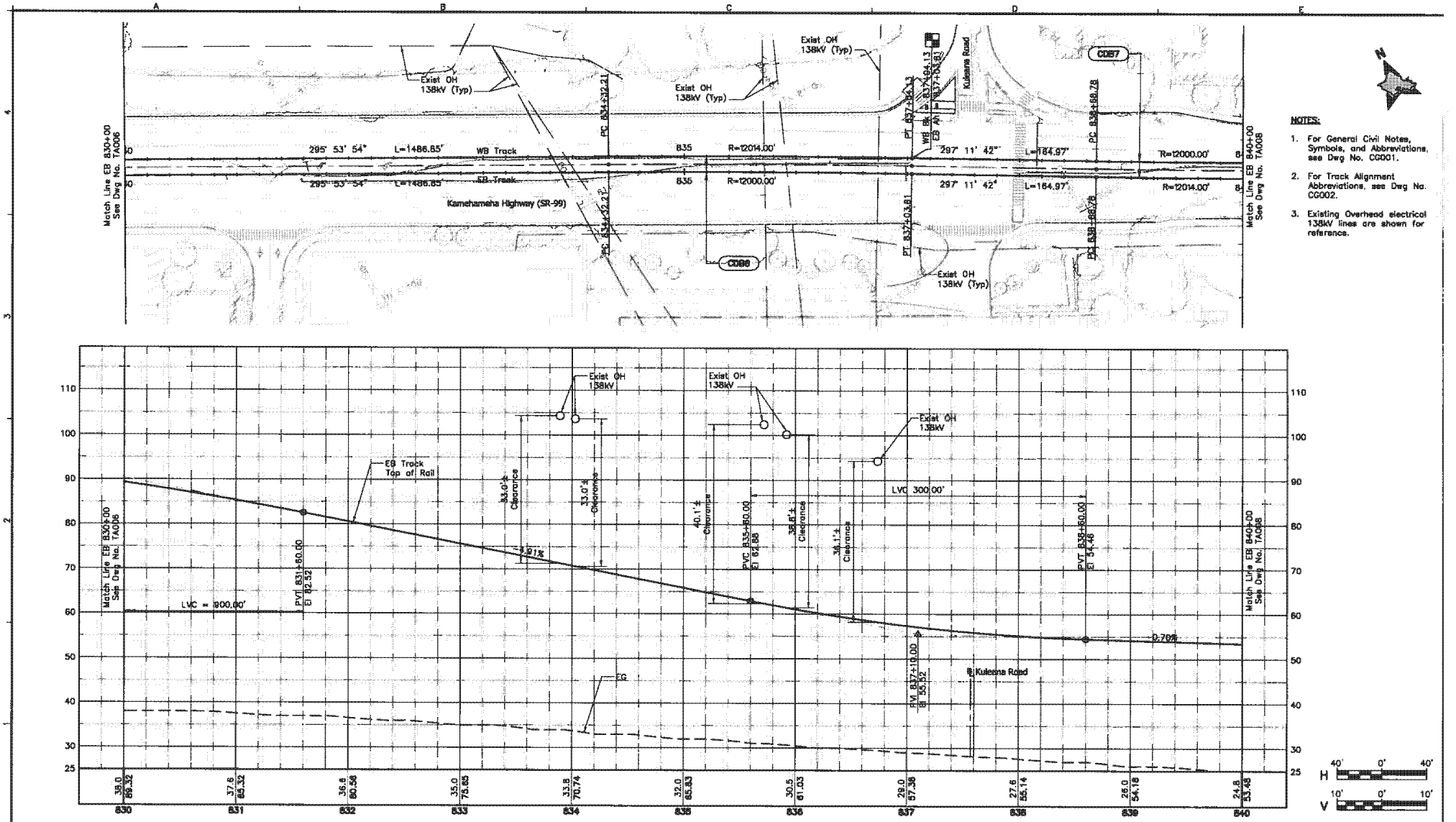

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: B Wardell
Drawn: R Nacion
Checked: E Liberman
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRACK ALIGNMENT PLAN & PROFILE

EB 830+00 TO EB 840+00

Contract No.: DB-320
CADD File: KHDB-B05-TA007
Drawing No: TA007 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 48 of 265

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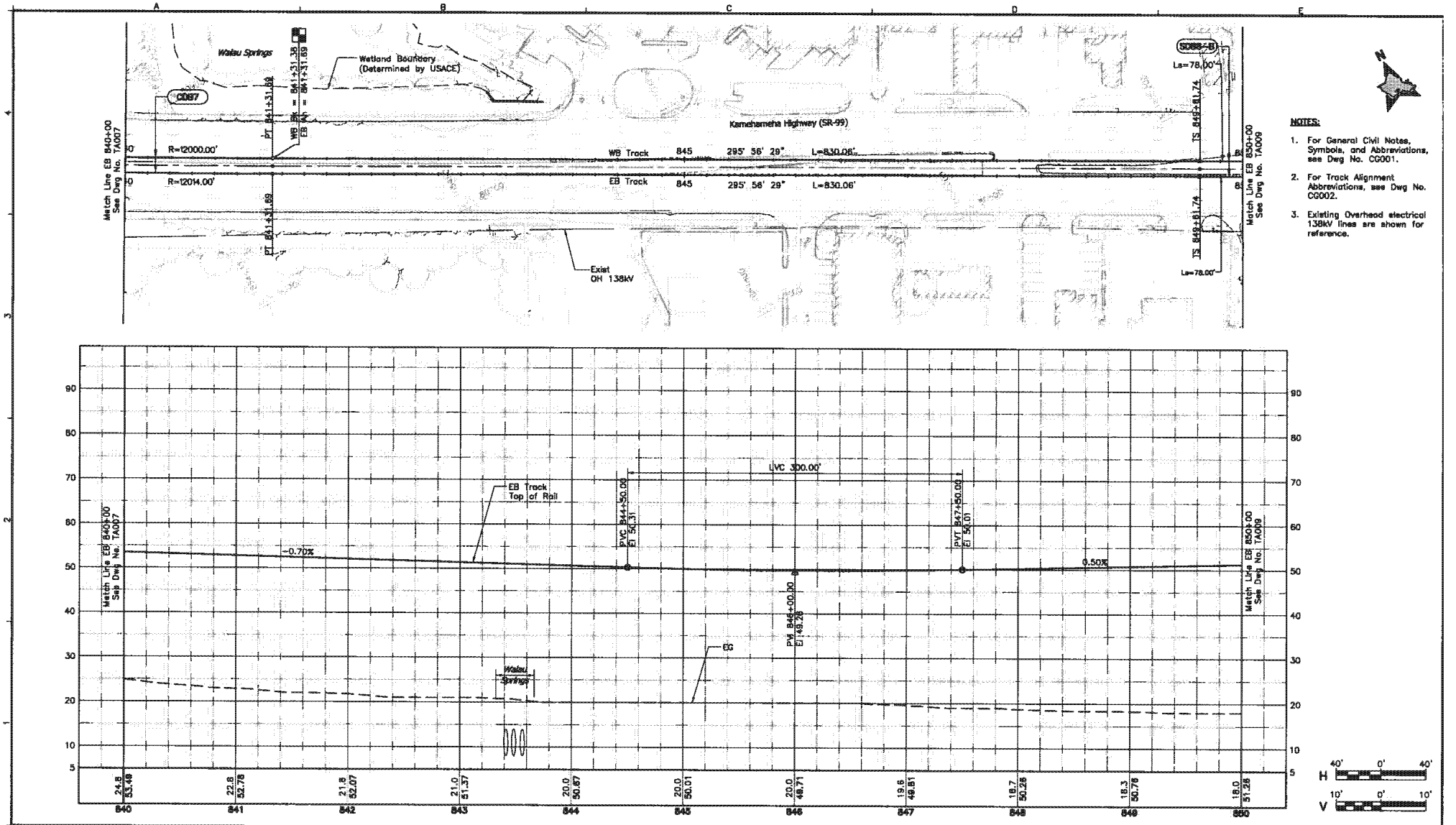

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Track Alignment Abbreviations, see Dwg No. CG002.
3. Existing Overhead electrical 138kV lines are shown for reference.

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

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Designed: B Wardell
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Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRACK ALIGNMENT PLAN & PROFILE

EB 840+00 TO EB 850+00

Contract No.: DB-320
CADD File: KHDB-B05-TA008
Drawing No.: TA008 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 49 of 265

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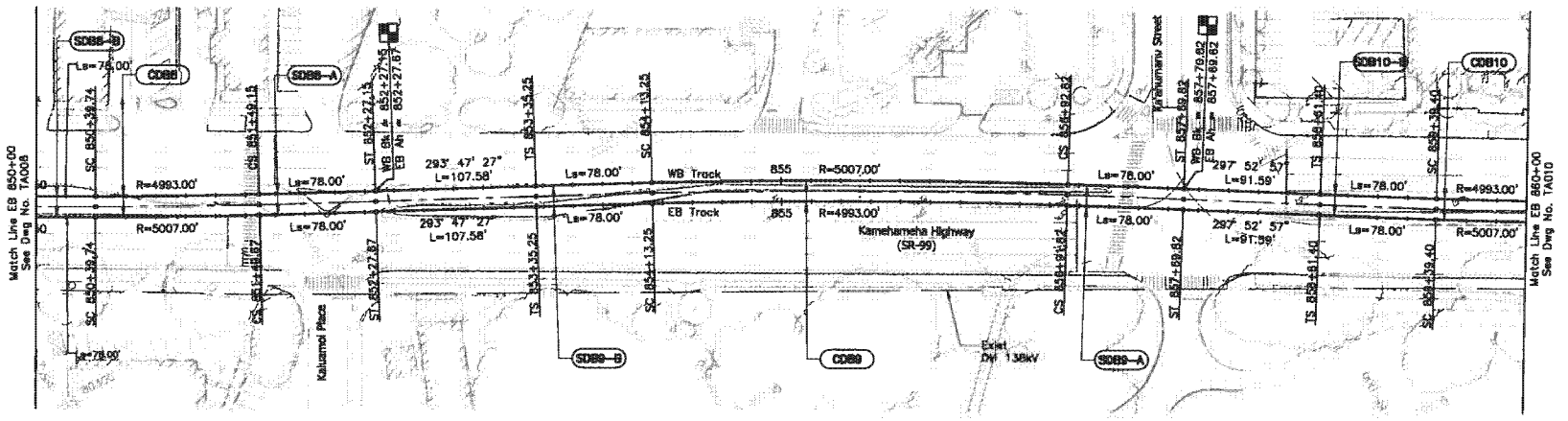

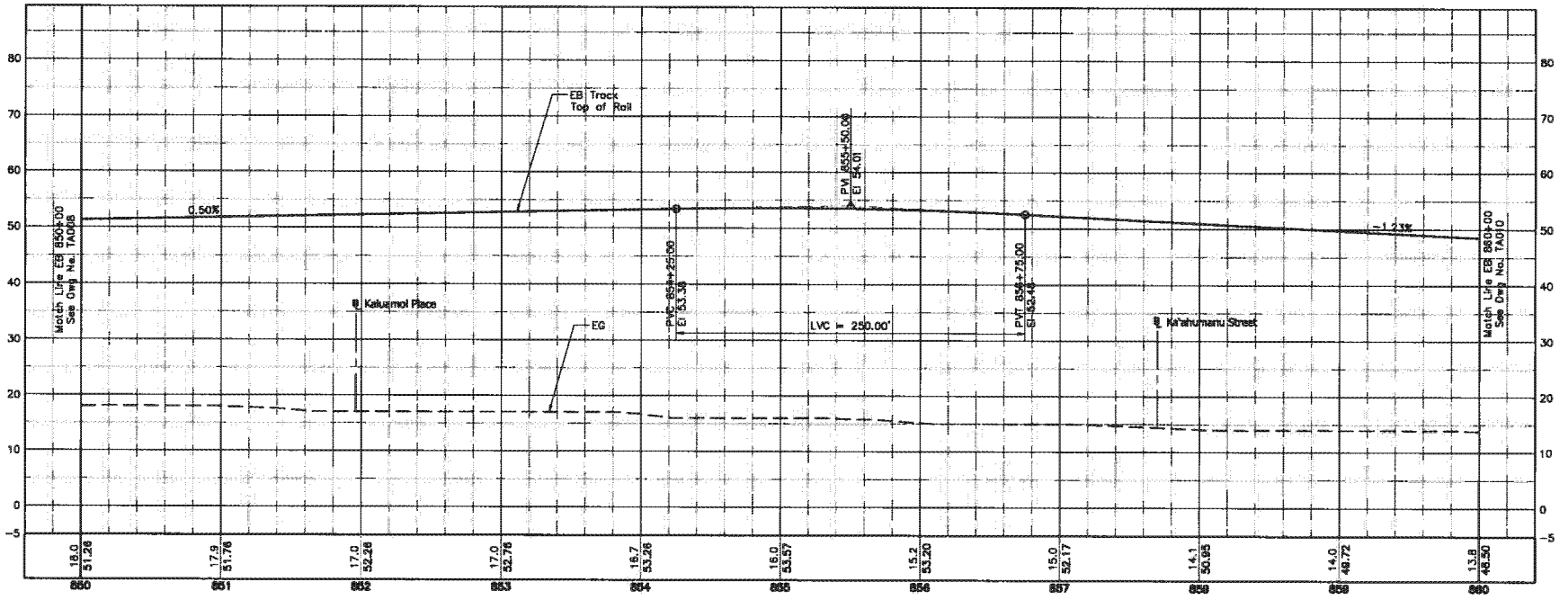

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Track Alignment Abbreviations, see Dwg No. CG002.
3. Existing Overhead electrical 138kV lines are shown for reference.

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

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Checked: E Liberman
Approved: L Hasprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRACK ALIGNMENT PLAN & PROFILE

EB 850+00 TO EB 860+00

Contract No.: DB-320
CADD File: KHDB-B05-TA009
Drawing No.: TA009 Rev. A
Scale: 1"=40' H, 1"=10' V
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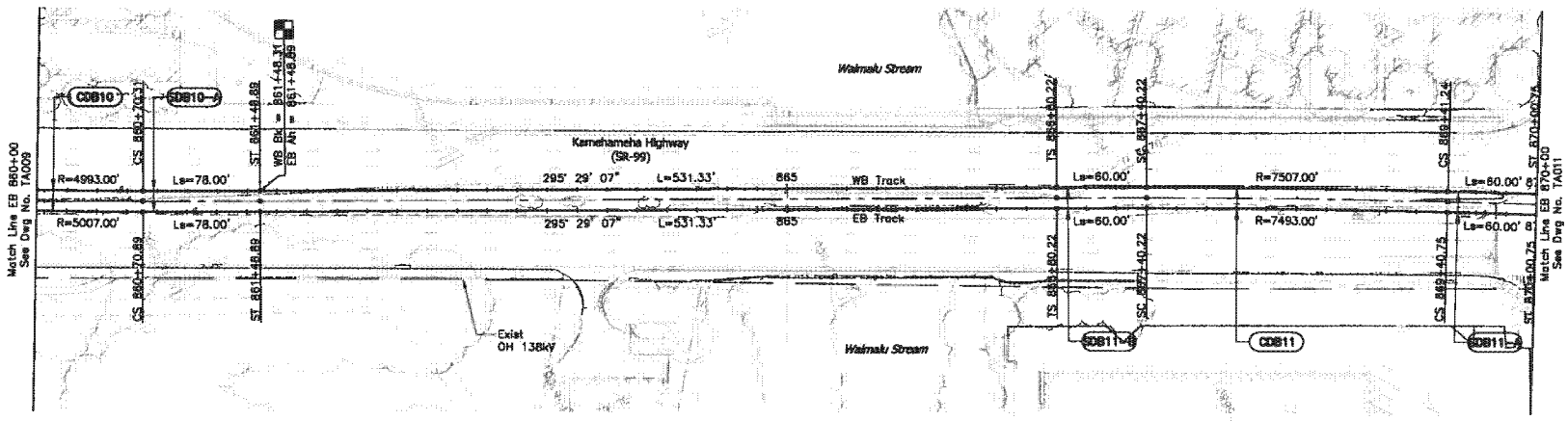

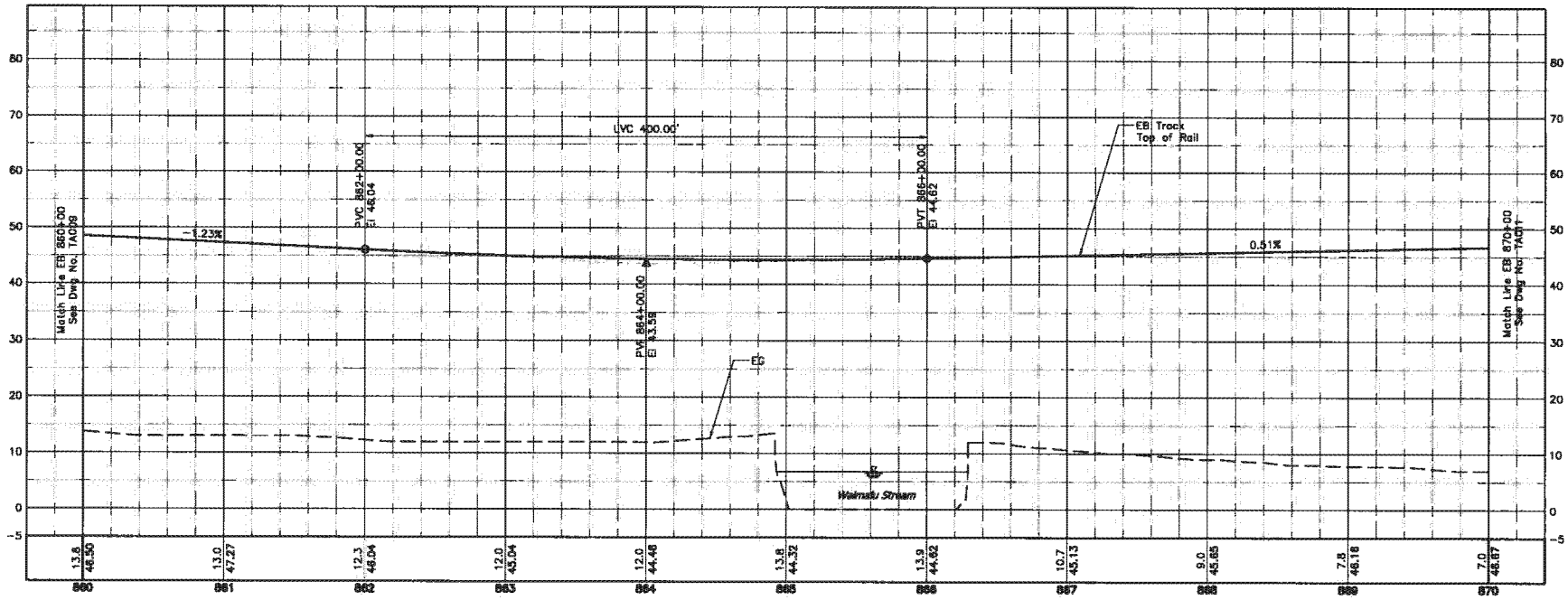

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Track Alignment Abbreviations, see Dwg No. CG002.
3. Existing Overhead electrical 138kV lines are shown for reference.

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: B Wardell
Drawn: R Nacion
Checked: E Libarmon
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 - Honolulu, HI 96813
Subconsultant:
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRACK ALIGNMENT
PLAN & PROFILE

EB 860+00 TO EB 870+00

Contract No.: DB-320
CADD File: KHDB-B05-TA010
Drawing No: TA010 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 51 of 265

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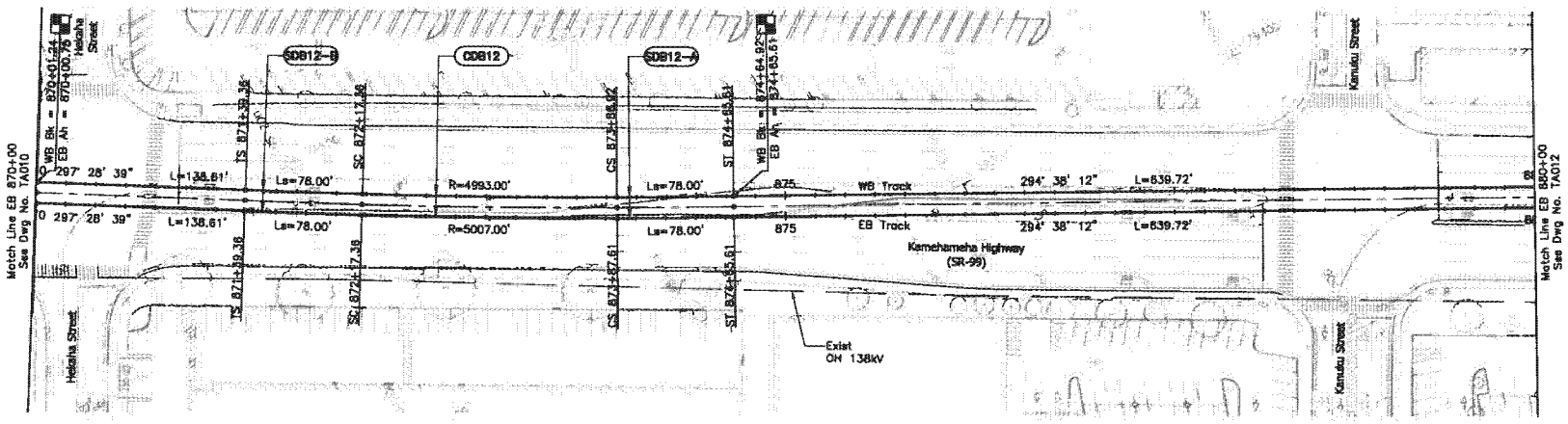
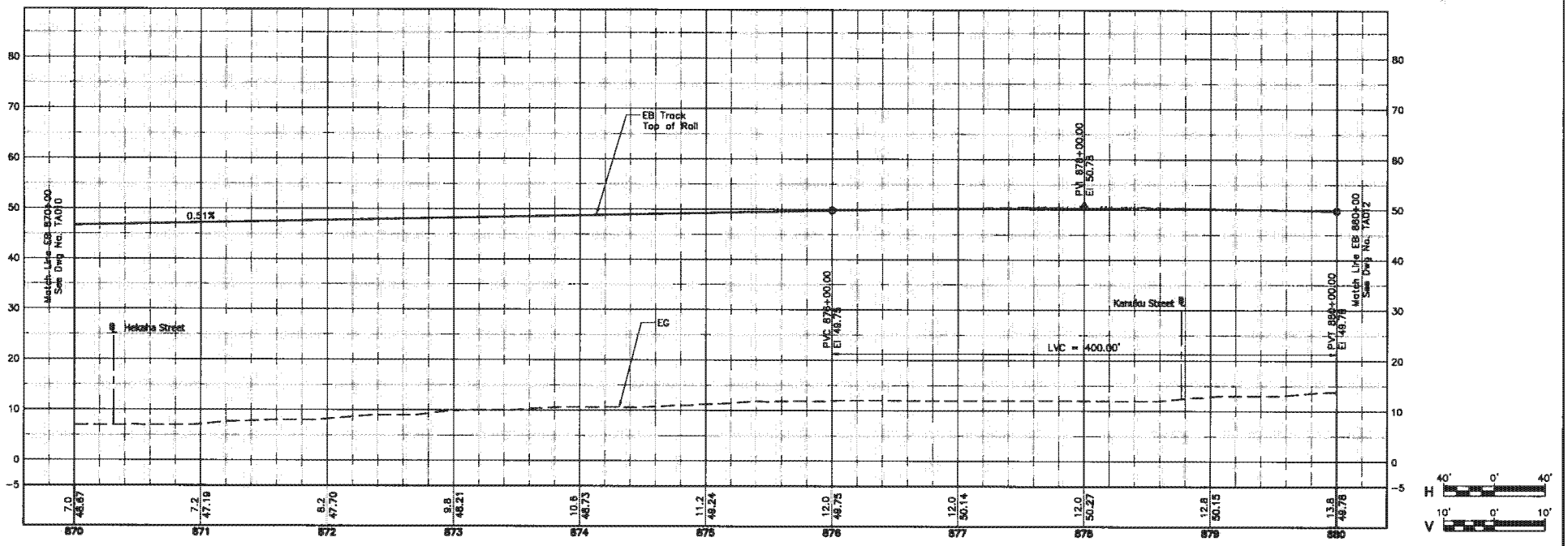


NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Track Alignment Abbreviations, see Dwg No. CG002.
3. Existing Overhead electrical 138kV lines are shown for reference.



Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: B Wardell
Drawn: R Nacion
Checked: E Liberman
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRACK ALIGNMENT PLAN & PROFILE

EB 870+00 TO EB 880+00

Contract No.: DB-320
CADD File: KHDB-B05-TA011
Drawing No: TA011 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 52 of 265

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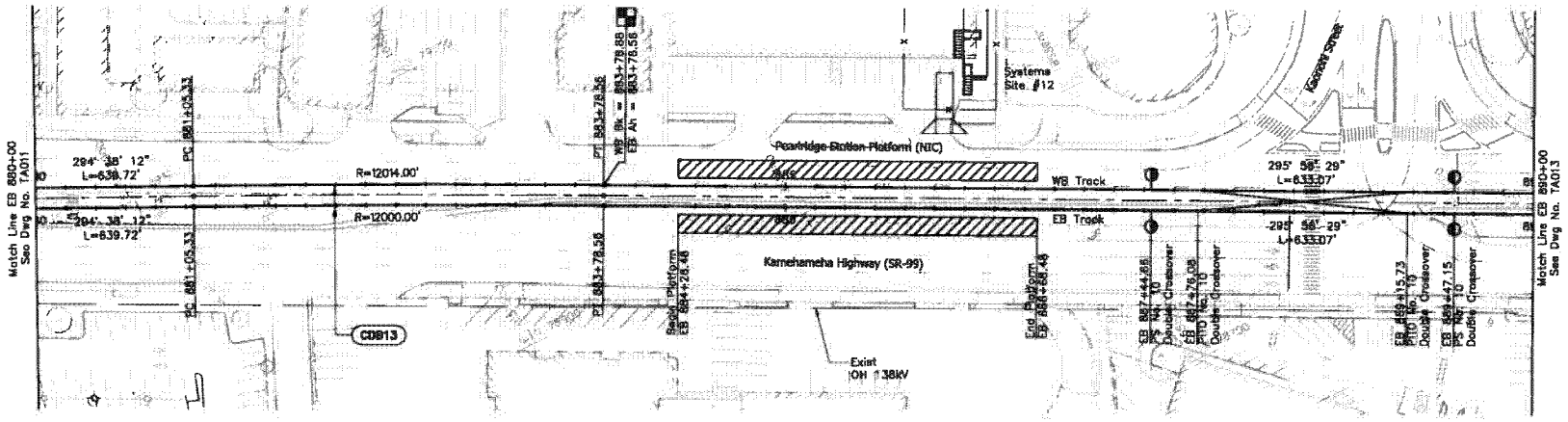

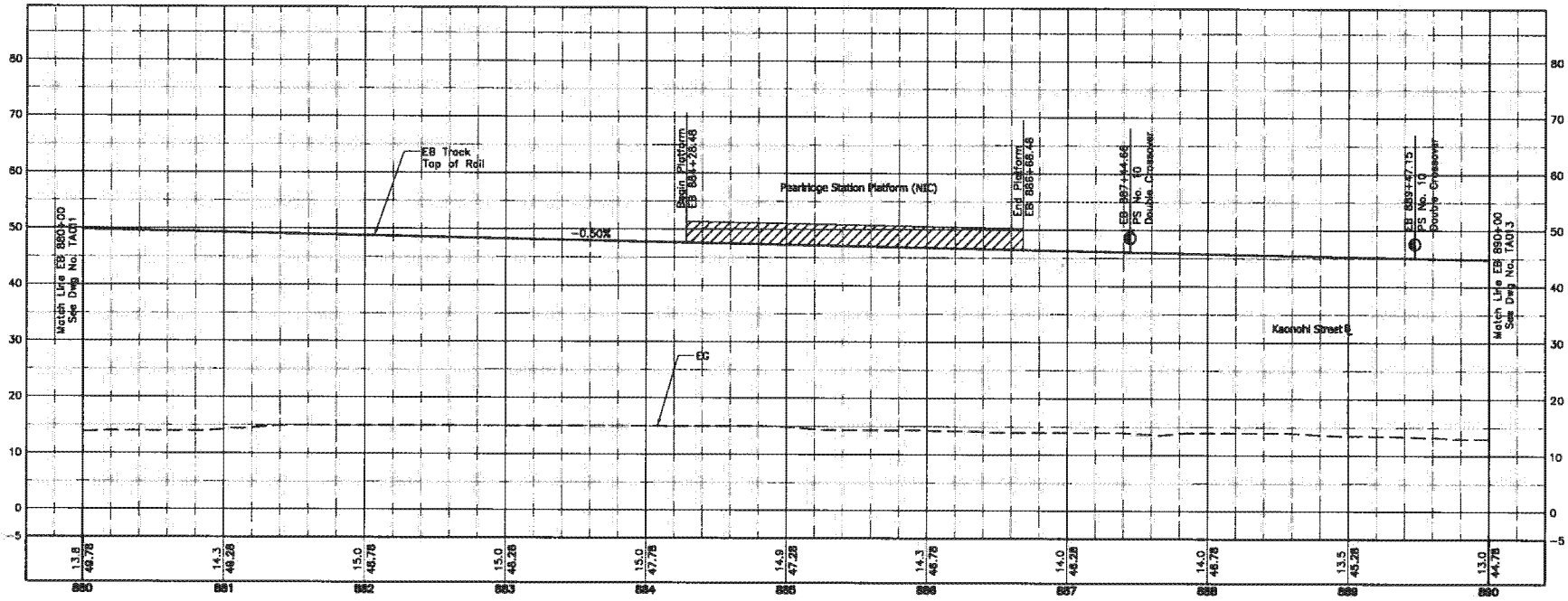

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Track Alignment Abbreviations, see Dwg No. CG002.
3. Existing Overhead electrical 138kV lines are shown for reference.
4. For Station information, refer to Structural Plans.
5. For Systems Site information, refer to Systems Site Plans.

H 40' 0' 40'
V 10' 0' 10'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

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Drawn: R Nacian
Checked: E Liberman
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRACK ALIGNMENT PLAN & PROFILE

EB 880+00 TO EB 890+00

Contract No.: DB-320
CADD File: KHDB-B05-TA012
Drawing No: TA012 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 53 of 265

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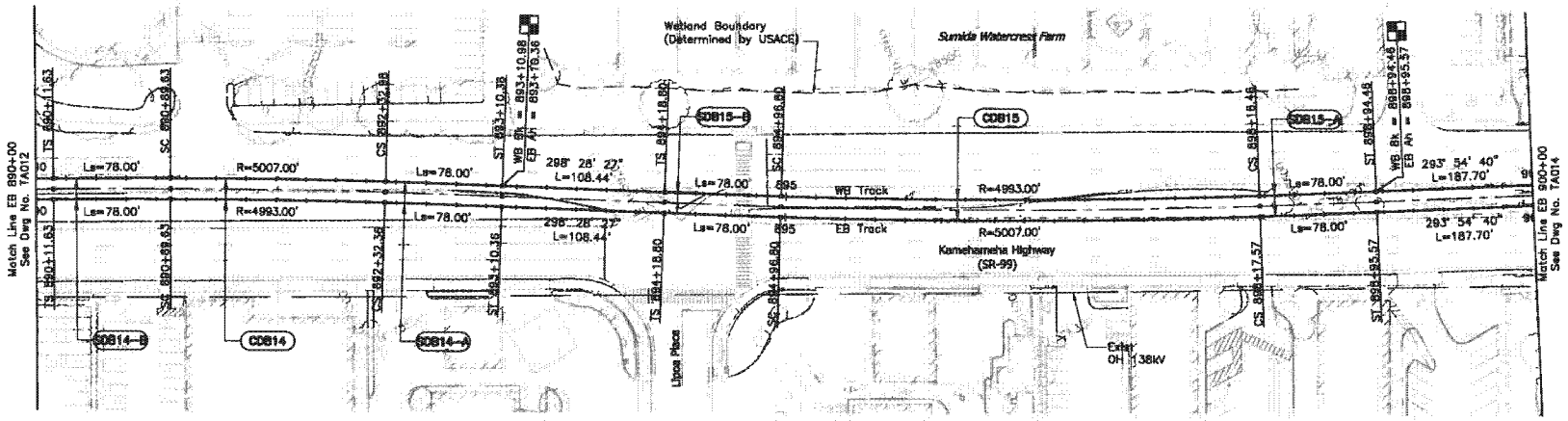
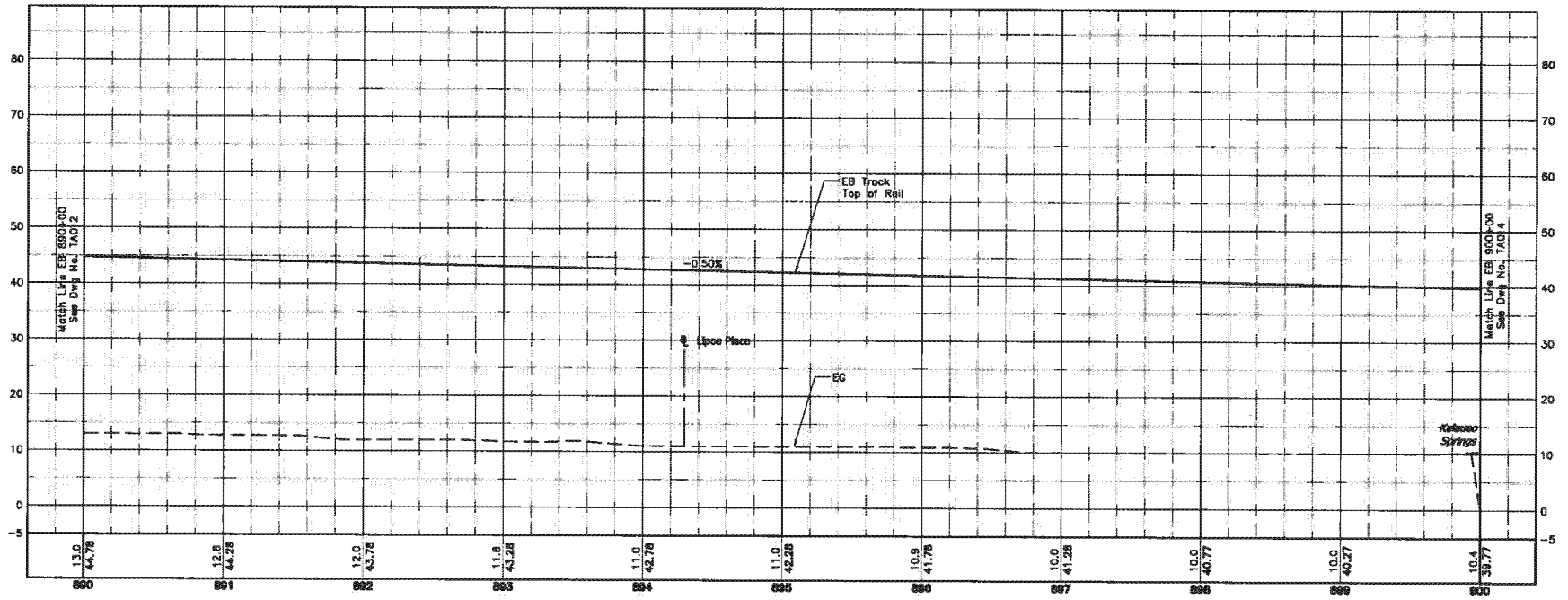


NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Track Alignment Abbreviations, see Dwg No. CG002.
3. Existing Overhead electrical 138kV lines are shown for reference.



H 40' 0' 40'
V 10' 0' 10'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: B Wardell
Drawn: R Necion
Checked: E Liberman
Approved: L Hasprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRACK ALIGNMENT PLAN & PROFILE

EB 890+00 TO EB 900+00

Contract No.: DB-320
CADD File: KHDB-B05-TA013
Drawing No: TA013 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 54 of 265

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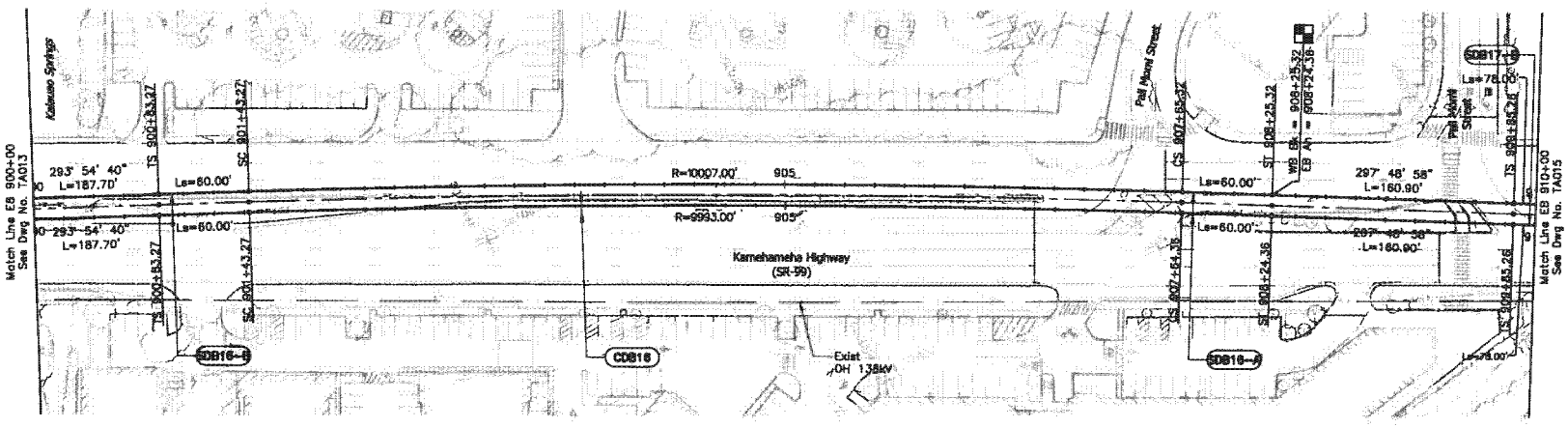

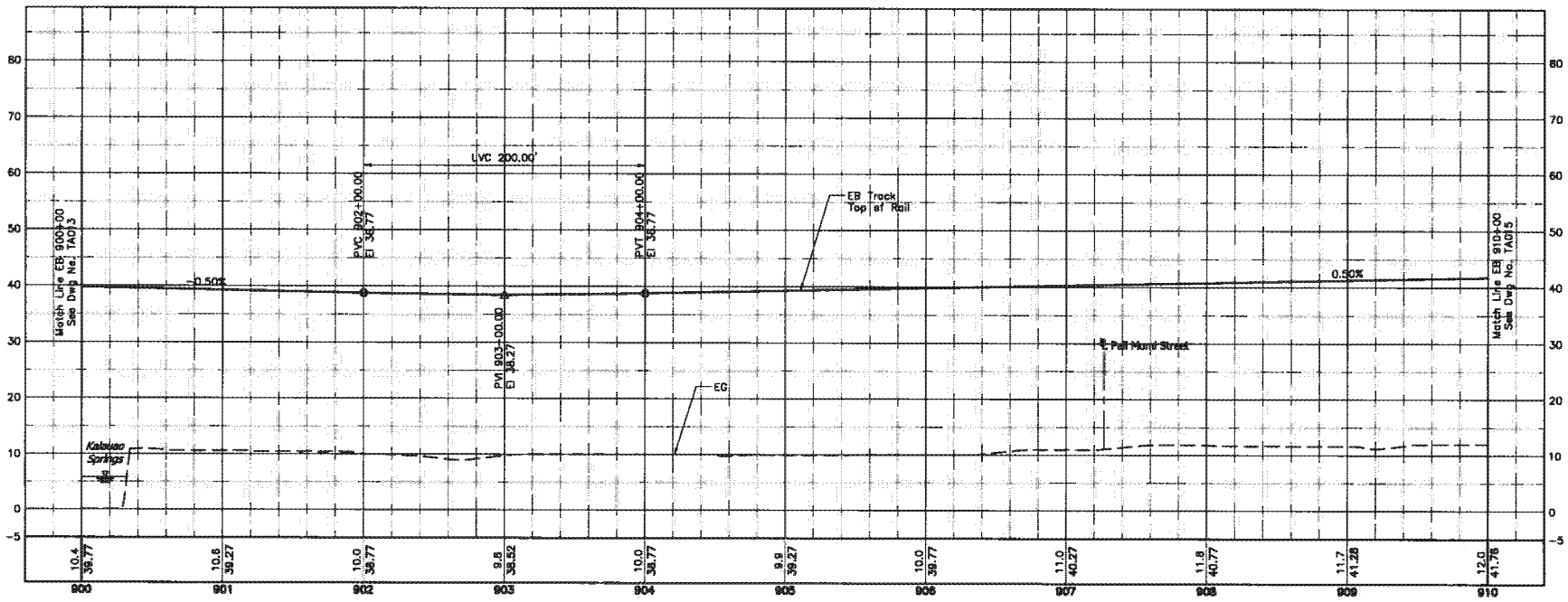

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Track Alignment Abbreviations, see Dwg No. CG002.
3. Existing Overhead electrical 138kV lines are shown for reference.

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: B Wardell
Drawn: R Nacion
Checked: E Liberman
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Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRACK ALIGNMENT PLAN & PROFILE

EB 900+00 TO EB 910+00

Contract No.: DB-320
CADD File: KHDB-B05-TA014
Drawing No: TA014 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 55 of 285

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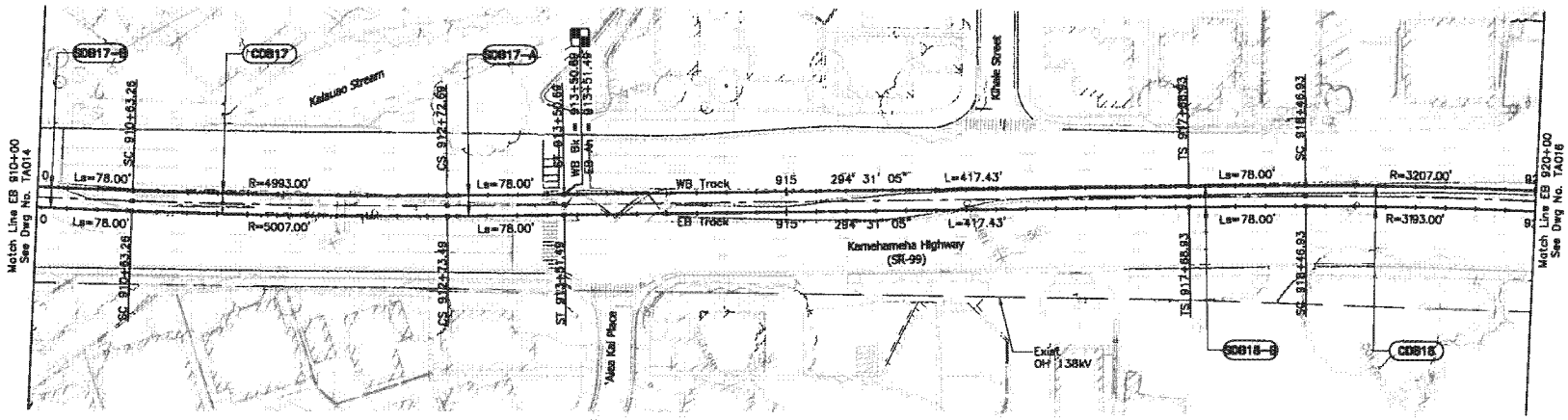
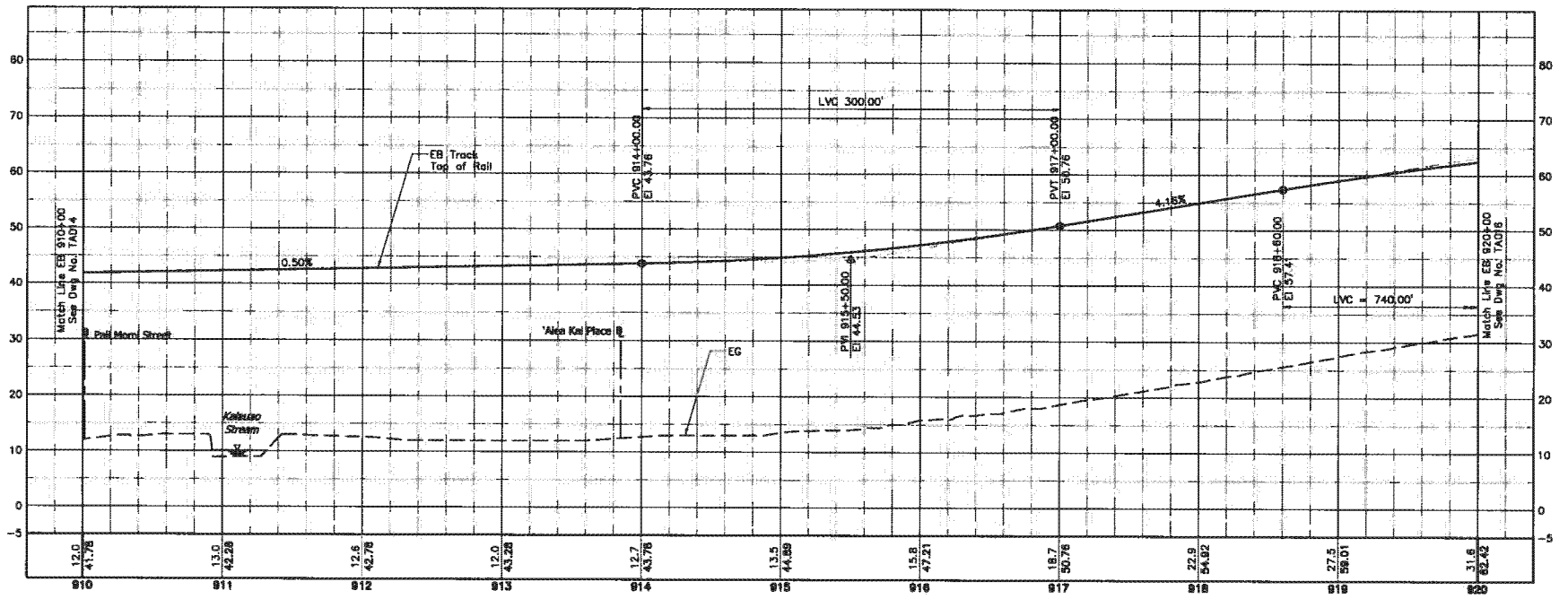


NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Track Alignment Abbreviations, see Dwg No. CG002.
3. Existing Overhead electrical 138kV lines are shown for reference.



Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: B Wardell
Drawn: R Nacian
Checked: E Liberman
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRACK ALIGNMENT PLAN & PROFILE

EB 910+00 TO EB 920+00

Contract No.: DB-320
CADD File: KHDB-B05-TA015
Drawing No.: TA015 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 56 of 265

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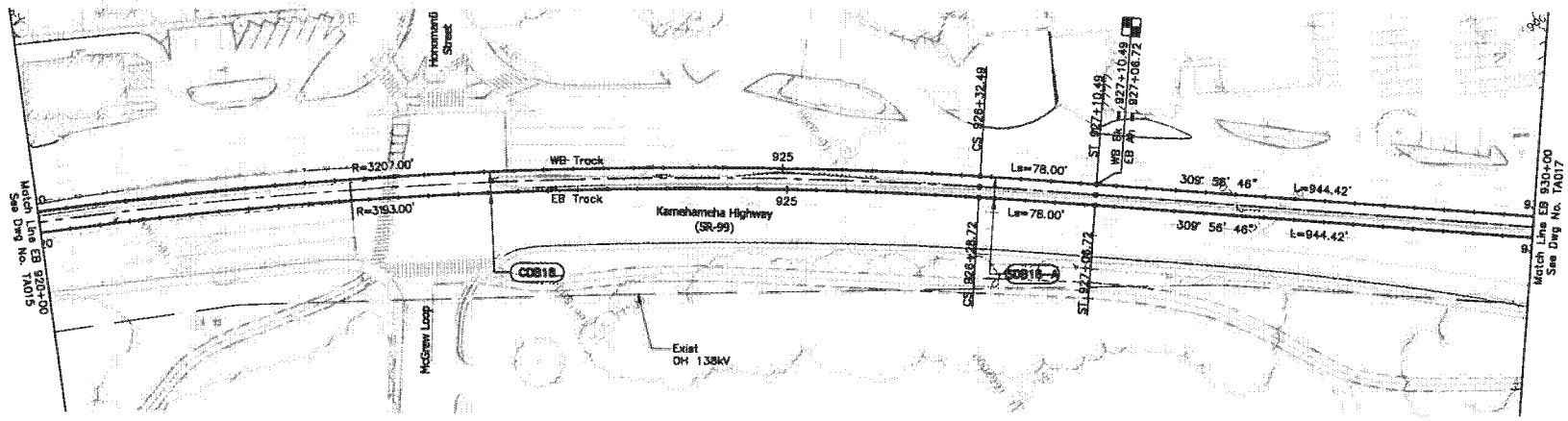
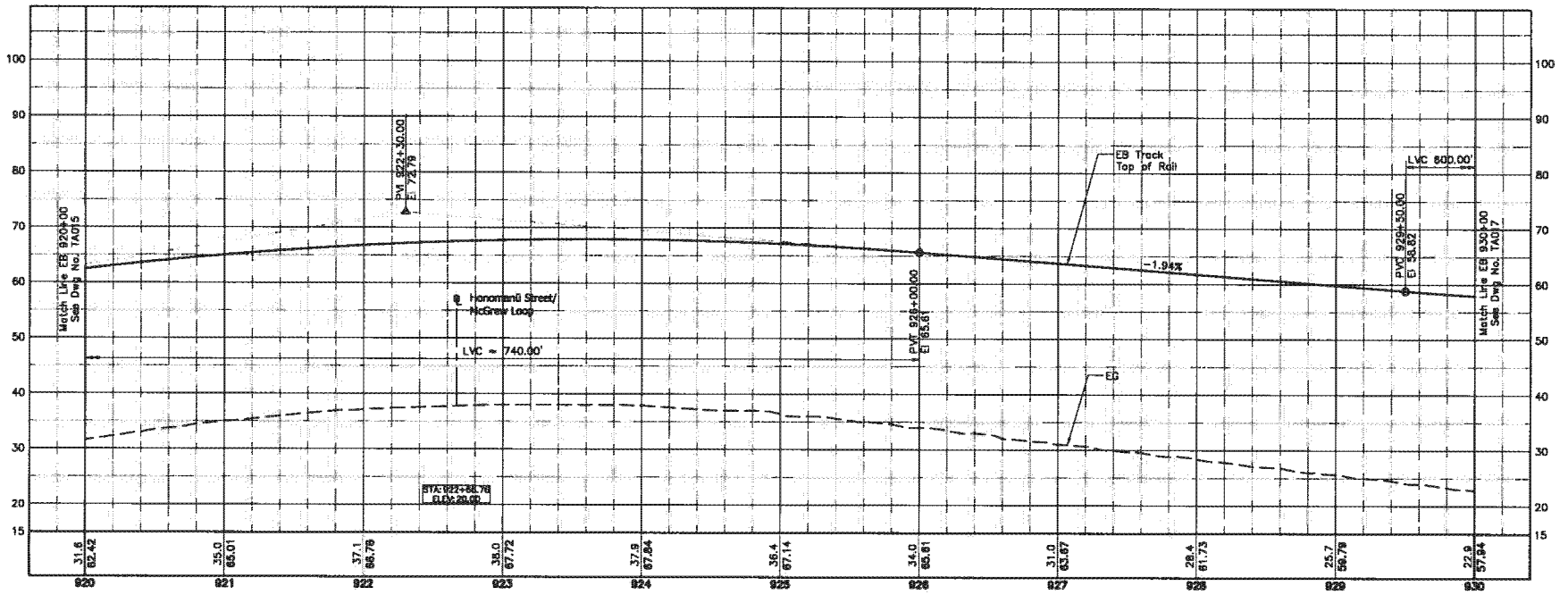


NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Track Alignment Abbreviations, see Dwg No. CG002.
3. Existing Overhead electrical 138kV lines are shown for reference.



H 40' 0' 40'
V 10' 0' 10'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT
NOT FOR CONSTRUCTION

Designed: B Wardell
Drawn: R Nacian
Checked: E Libarmon
Approved: L Hasprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRACK ALIGNMENT
PLAN & PROFILE

EB 920+00 TO EB 930+00

Contract No.: DB-320
CADD File: KHDB-B05-TA016
Drawing No: TA016 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 57 of 265

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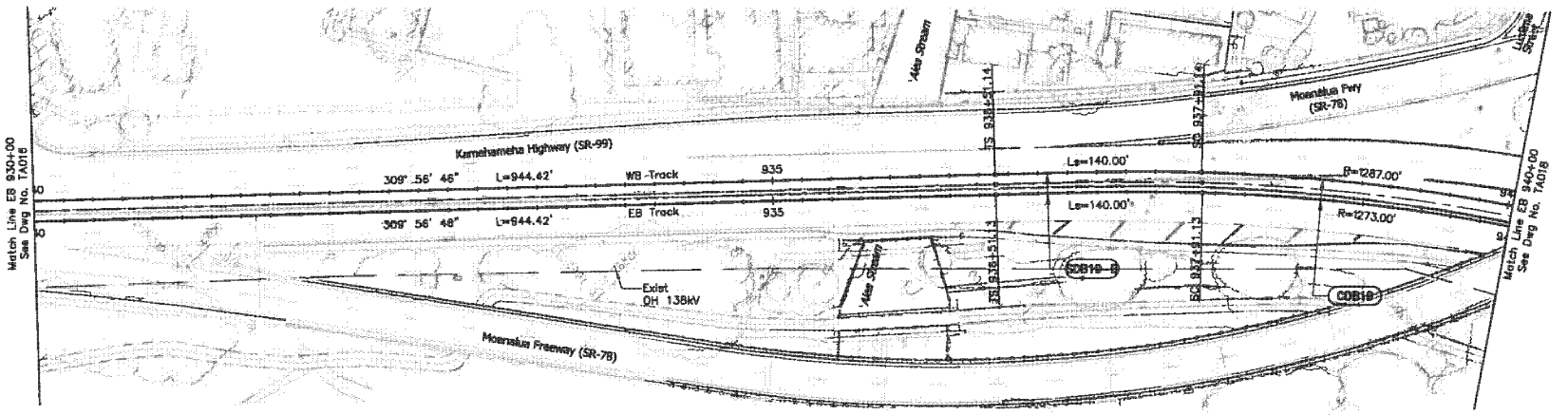
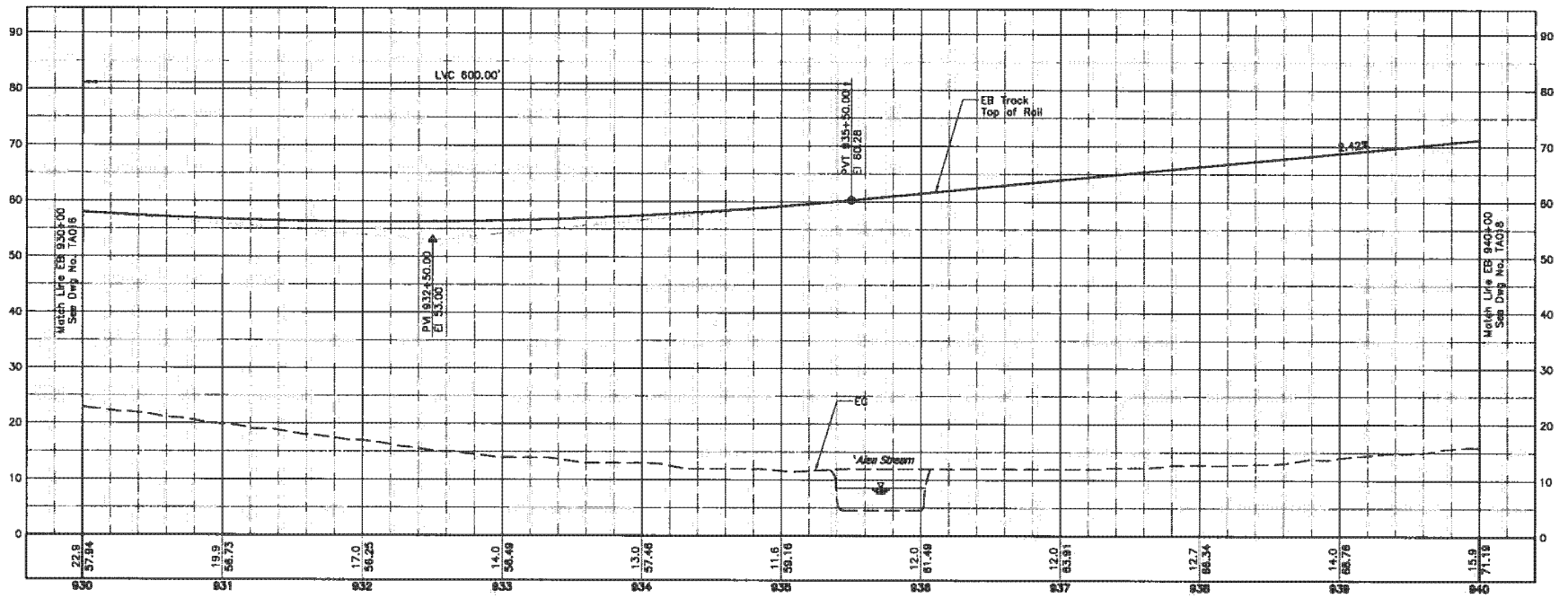


NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Track Alignment Abbreviations, see Dwg No. CG002.
3. Existing Overhead electrical 138kV lines are shown for reference.



Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: B Wardell
Drawn: R Nacion
Checked: E Liberman
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRACK ALIGNMENT PLAN & PROFILE

EB 930+00 TO EB 940+00

Contract No.: DB-320
CADD File: KHDB-B05-TA017
Drawing No: TA017 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 58 of 265

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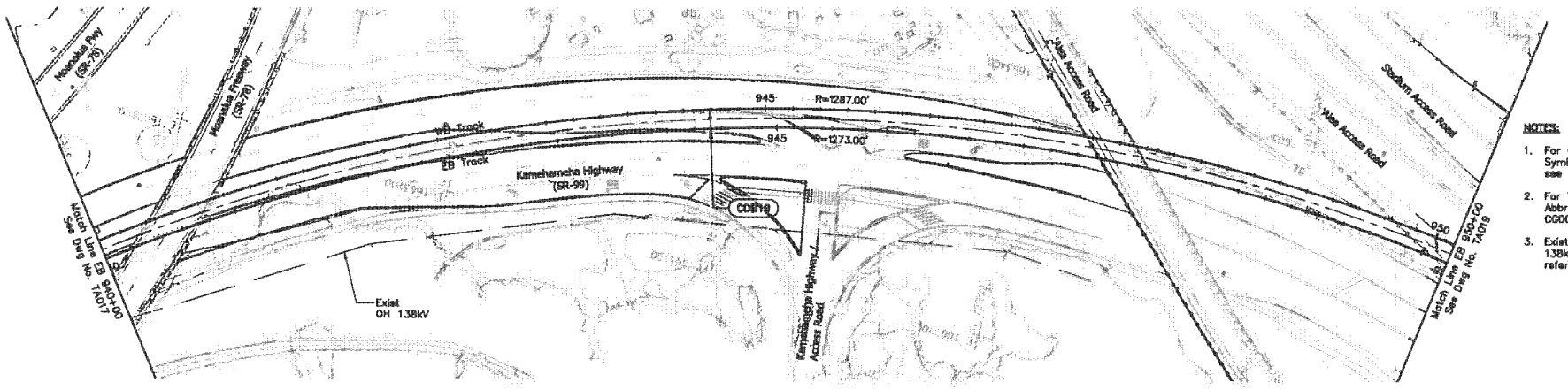
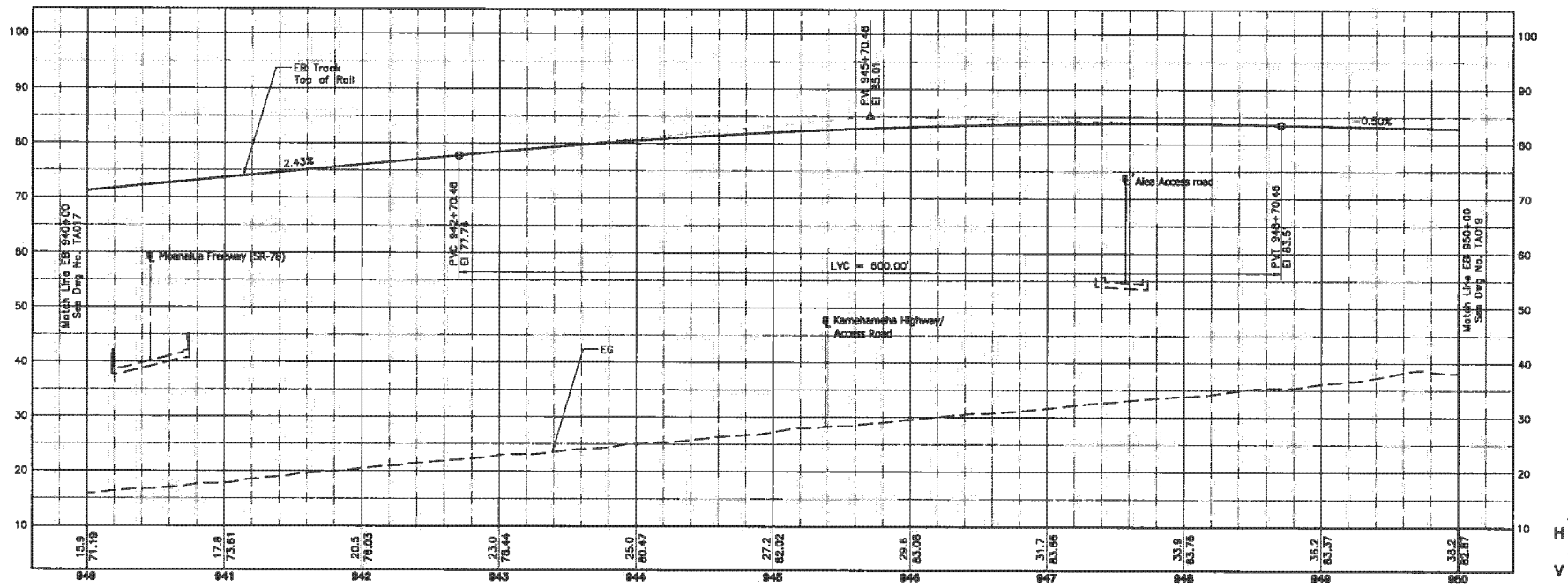


NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Track Alignment Abbreviations, see Dwg No. CG002.
3. Existing Overhead electrical 138kV lines are shown for reference.



Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

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PROPOSAL DOCUMENT
NOT FOR CONSTRUCTION

Designed: B Wardell
Drawn: R Nacion
Checked: E Liberman
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRACK ALIGNMENT
PLAN & PROFILE

EB 940+00 TO EB 950+00

Contract No.: DB-320
CADD File: KHDB-B05-TA018
Drawing No: TA018 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 59 of 265

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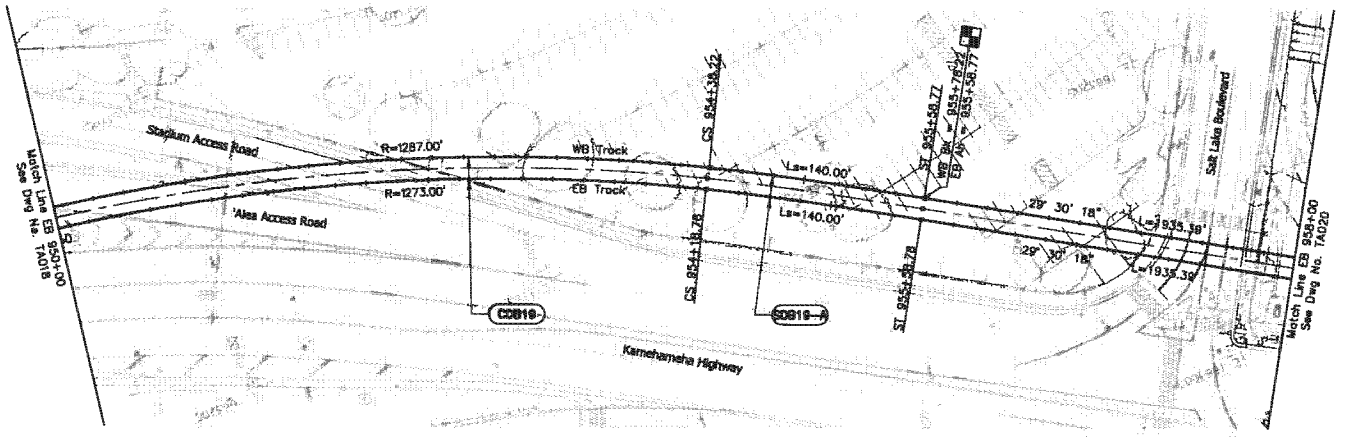
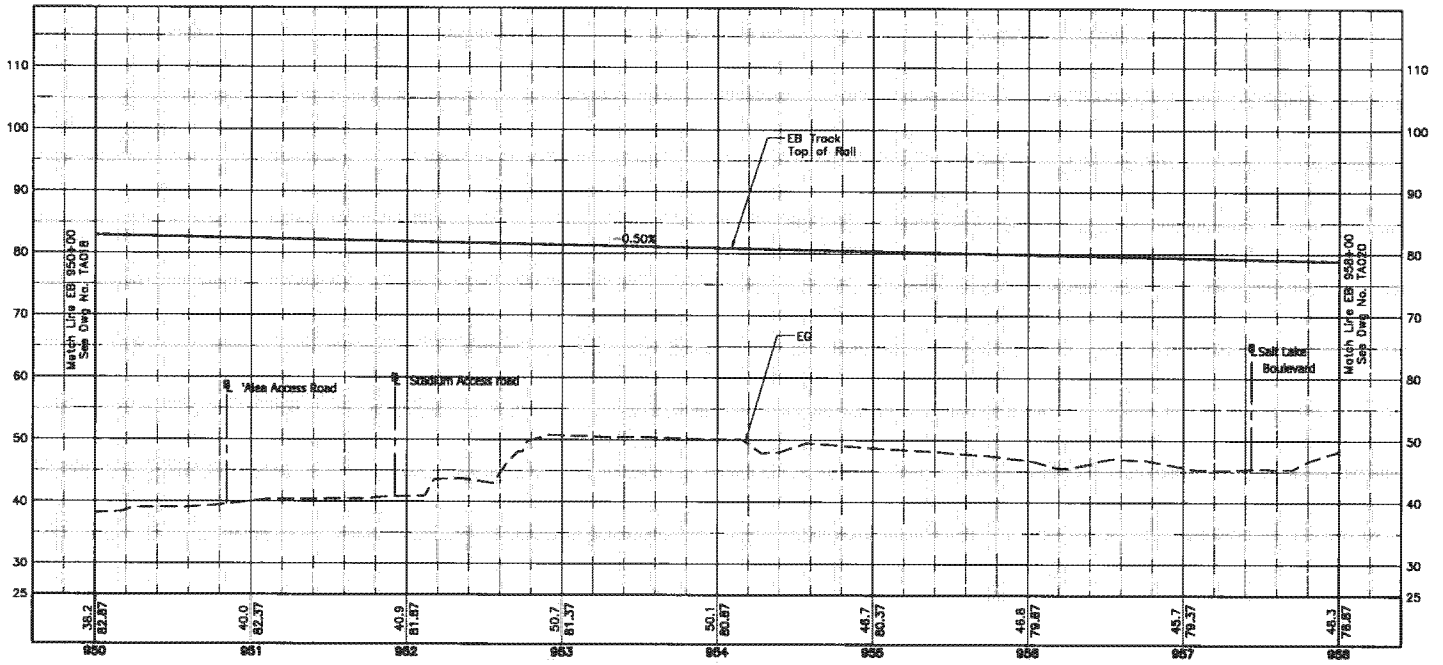


NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Track Alignment Abbreviations, see Dwg No. CG002.
3. Existing Overhead electrical 138kV lines are shown for reference.



H 40' 0' 40'
V 10' 0' 10'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: B Wordell
Drawn: R Nacion
Checked: E Liberman
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRACK ALIGNMENT PLAN & PROFILE

EB 950+00 TO EB 958+00

Contract No.: DB-320
CADD File: KHDB-B05-TA019
Drawing No: TA019 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 60 of 265

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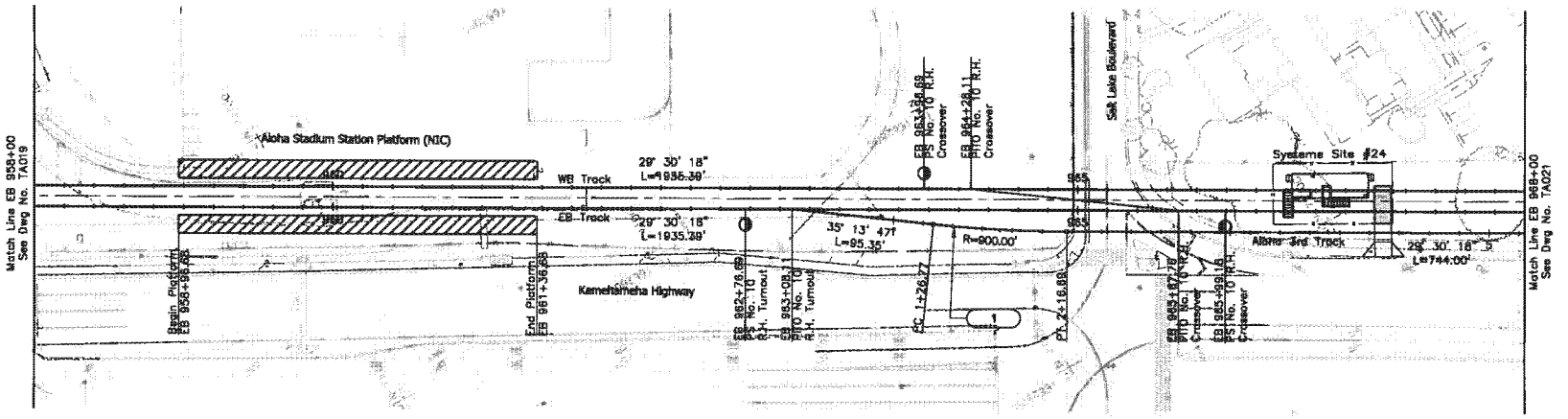

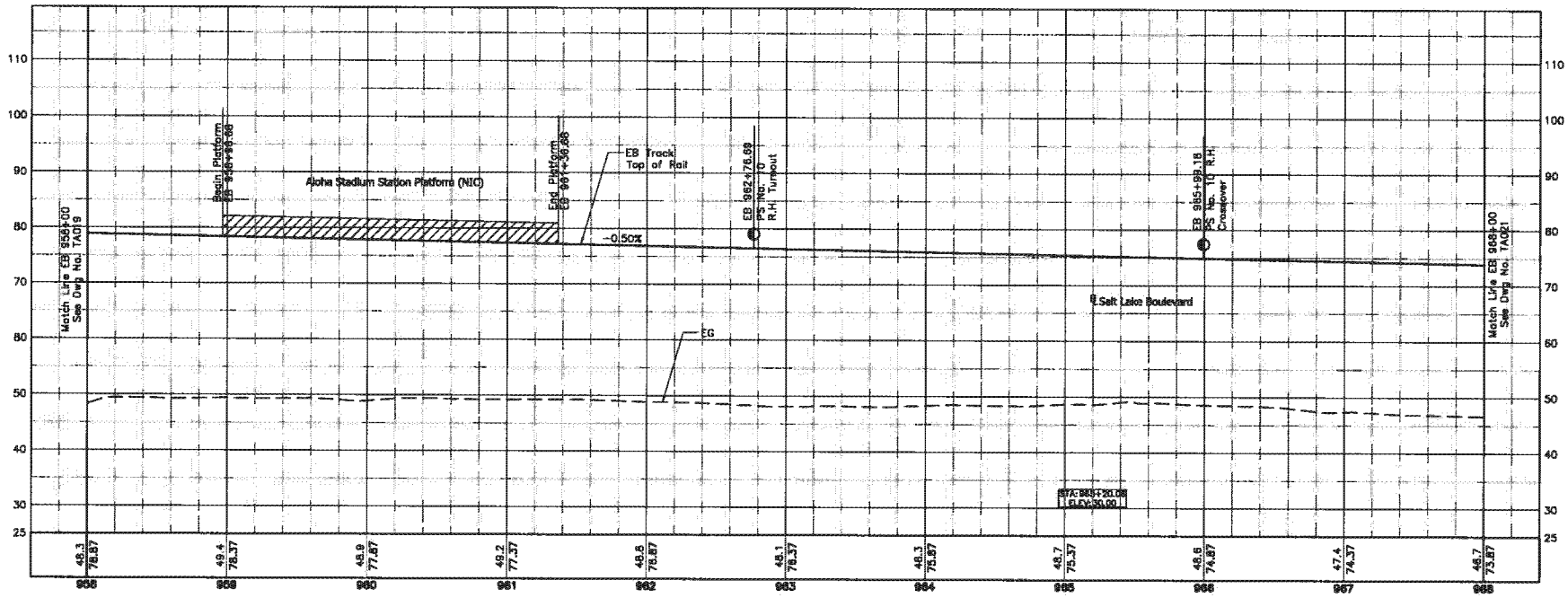

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Track Alignment Abbreviations, see Dwg No. CG002.
3. Existing Overhead electrical 138kV lines are shown for reference.
4. For Station Information, refer to Structural Plans.
5. For Systems Site Information, refer to Systems Site Plans.
6. Top of Rail elevations for Aloha 3rd Track equal Top of Rail elevations of EB Track, offset from EB Track.

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: B Wardell
Drawn: R Nacion
Checked: E Liberman
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRACK ALIGNMENT PLAN & PROFILE

EB 958 TO EB 968+00

Contract No.: DB-320
CADD File: KHDB-B05-TA020
Drawing No: TA020 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 61 of 265

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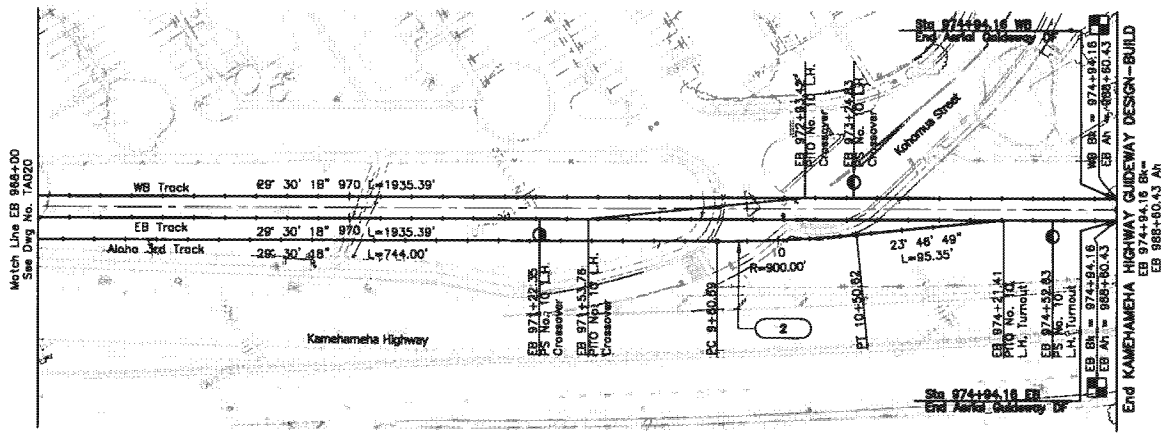

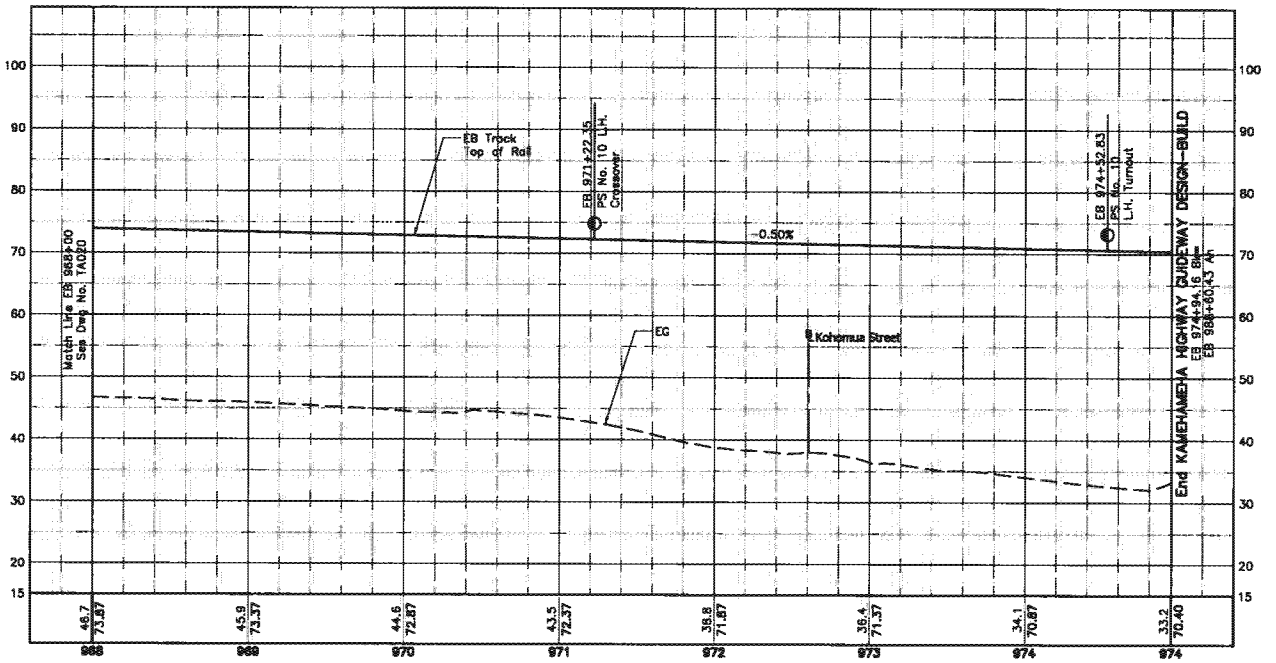

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Track Alignment Abbreviations, see Dwg No. CG002.
3. Existing Overhead electrical 138kV lines are shown for reference.
4. Top of Rail elevations for Aloha 3rd Track equal Top of Rail elevations of EB Track, offset from EB Track.

H 40' 0' 40'
V 10' 0' 10'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: B Wardell
Drawn: R Nacion
Checked: E Liberman
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRACK ALIGNMENT PLAN & PROFILE

EB 968+00 TO EB 974+94.16

Contract No.: DB-320
CADD File: KHDB-B05-TA021
Drawing No: TA021
Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 62 of 265

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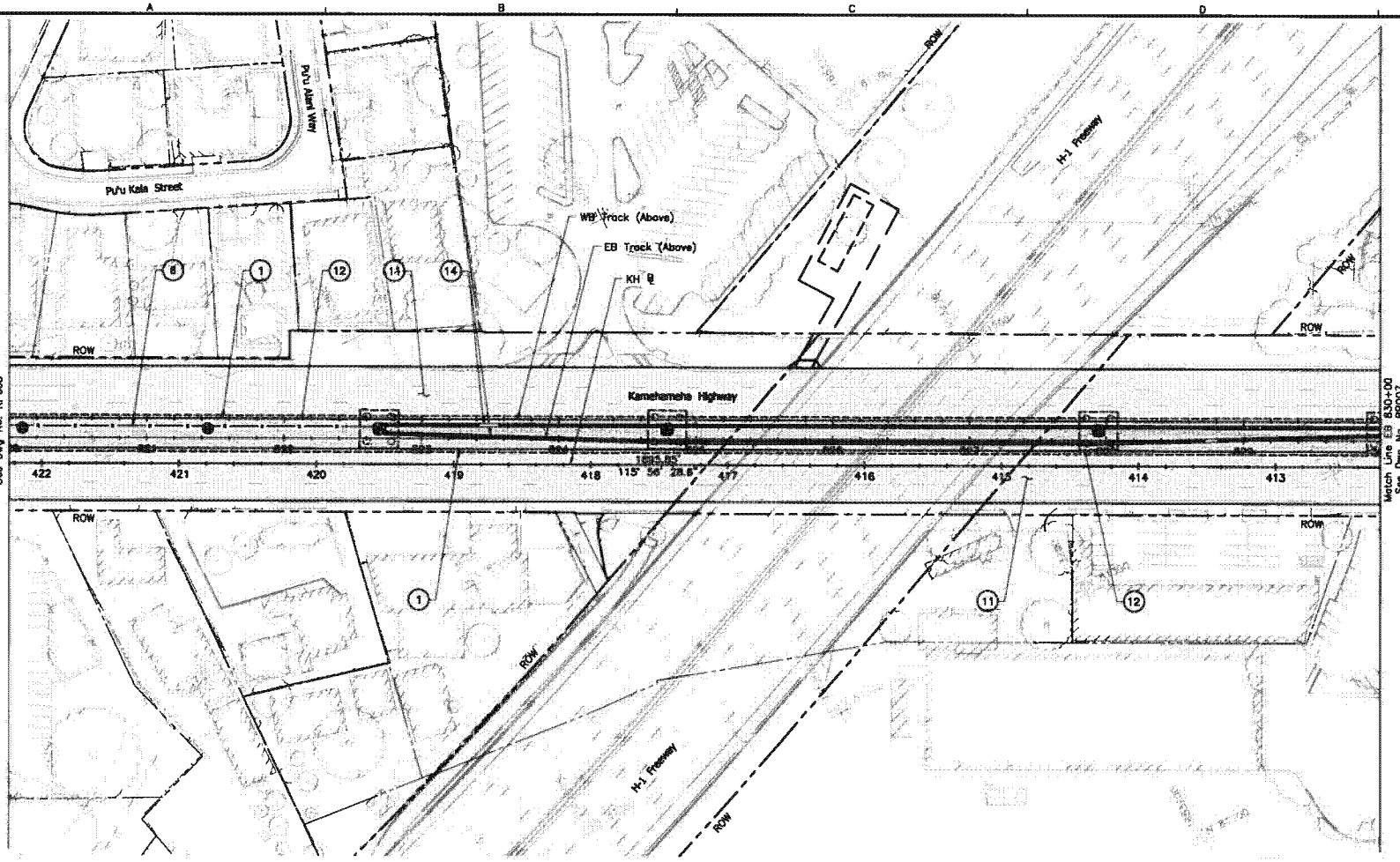

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

CONSTRUCTION NOTES:

1. Construct Concrete Curb.
8. Install Chain Link Fence.
11. Construct Plantmix Bituminous Surface Overlay.
12. Construct Plantmix Bituminous Pavement.
14. Install Guardrail.

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wendell
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

ROADWAY CONSTRUCTION PLAN

EB 820+00 TO EB 830+00

Contract No.: DB-320
CADD File: KHDB-B09-RP006
Drawing No: RP006 Rev. A
Scale: 1"=40'
Page No. 74 of 265

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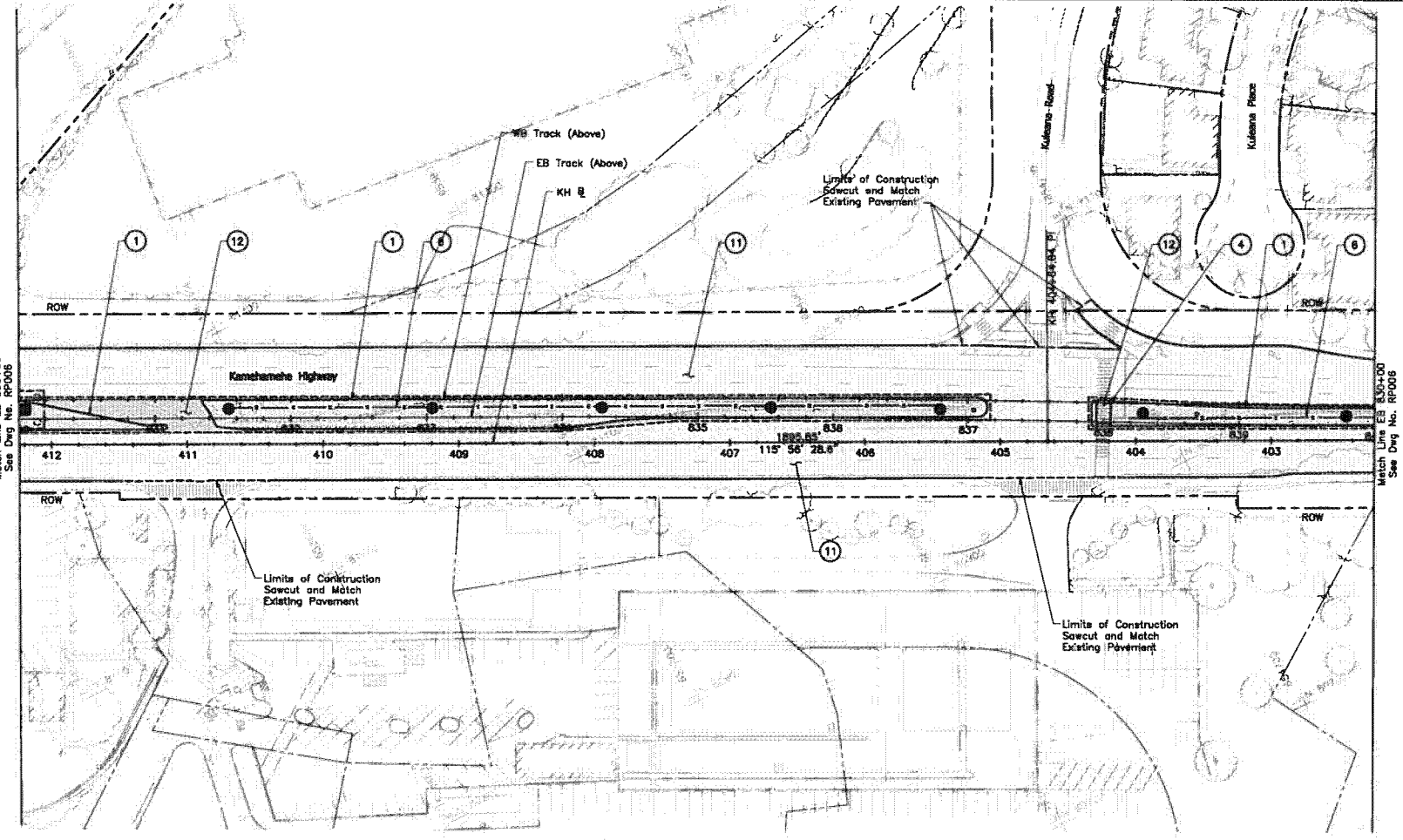

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

CONSTRUCTION NOTES:

1. Construct Concrete Curb.
4. Construct Concrete Curb Ramp.
6. Install Chain Link Fence.
11. Construct Plantmix Bituminous Surface Overlay.
12. Construct Plantmix Bituminous Pavement.

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

ROADWAY CONSTRUCTION PLAN

EB 830+00 TO EB 840+00

Contract No.: DB-320
CADD File: KHDB-B09-RP007
Drawing No: RP007 Rev. A
Scale: 1"=40'
Page No. 75 of 265

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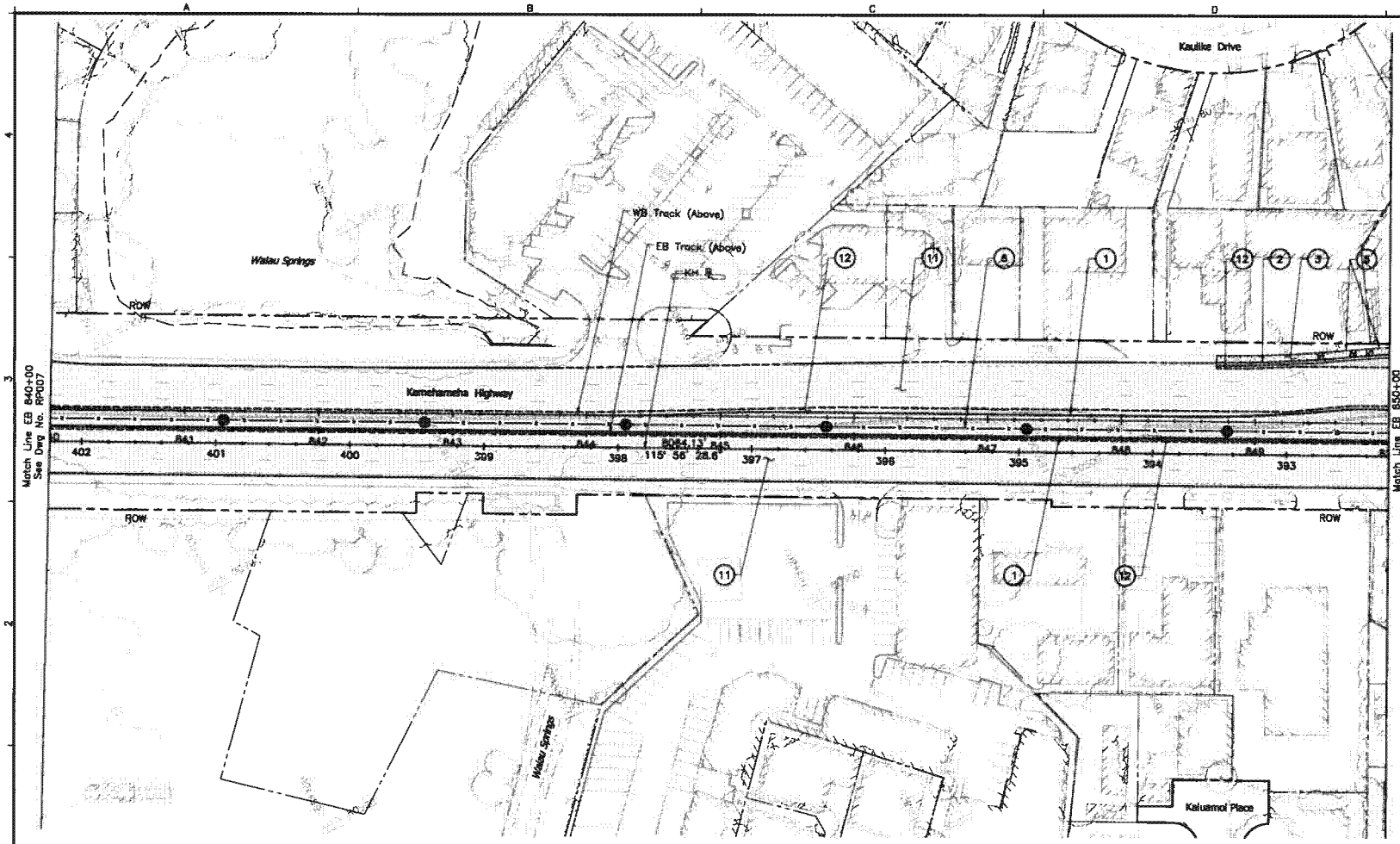

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

CONSTRUCTION NOTES:

1. Construct Concrete Curb.
2. Construct Concrete Curb and Gutter.
3. Construct Concrete Sidewalk.
5. Construct Reinforced Concrete Driveway.
6. Install Chain Link Fence.
11. Construct Plantmix Bituminous Surface Overlay.
12. Construct Plantmix Bituminous Pavement.

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

ROADWAY CONSTRUCTION PLAN

EB 840+00 TO EB 850+00

Contract No.: DB-320
CADD File: KHDB-B09-RP008
Drawing No: RP008 Rev. A
Scale: 1"=40'
Page No. 76 of 265

2010-03-15 9:07 AM K:\CADD\03 Civil\Segment D\Sheet Files\KHDB-B09-RP001-RP021.dwg

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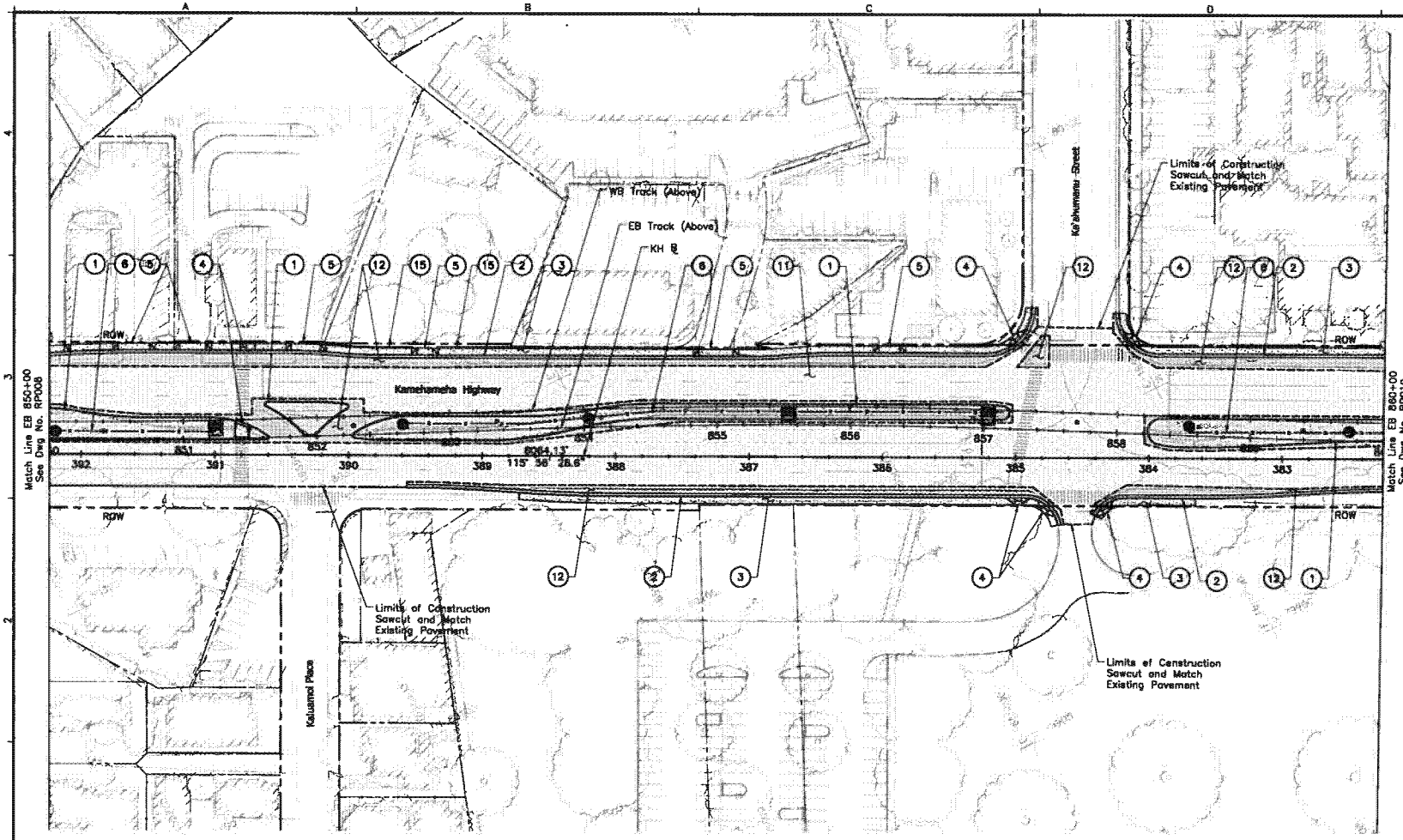

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

CONSTRUCTION NOTES:

1. Construct Concrete Curb.
2. Construct Concrete Curb and Gutter.
3. Construct Concrete Sidewalk.
4. Construct Concrete Curb Ramp.
5. Construct Reinforced Concrete Driveway.
6. Install Chain Link Fence.
11. Construct Plantmix Bituminous Surface Overlay.
12. Construct Plantmix Bituminous Pavement.
15. Construct Retaining Wall.

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

ROADWAY CONSTRUCTION PLAN

EB 850+00 TO EB 860+00

Contract No.: DB-320
CADD File: KHDB-B09-RP009
Drawing No: RP009 Rev. A
Scale: 1"=40'
Page No. 77 of 265

2010-03-15 9:07 AM K:\CADD\03 Civil\Segment D\Sheet Files\KHDB-B09-RP001-RP021.dwg

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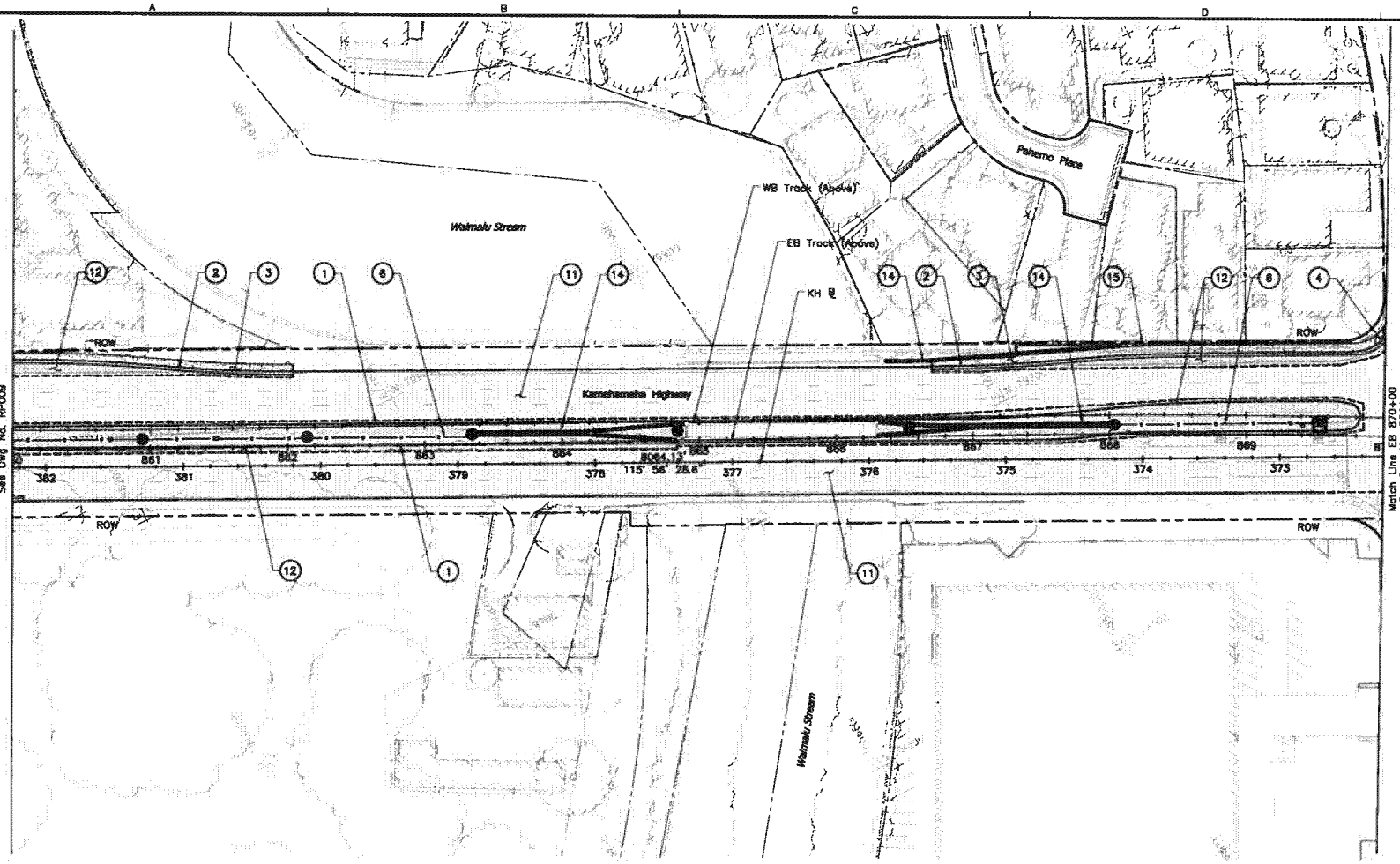

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

CONSTRUCTION NOTES:

1. Construct Concrete Curb.
2. Construct Concrete Curb and Gutter.
3. Construct Concrete Sidewalk.
4. Construct Concrete Curb Ramp.
6. Install Chain Link Fence.
11. Construct Plantmix Bituminous Surface Overlay.
12. Construct Plantmix Bituminous Pavement.
14. Install Guardrail.
15. Construct Retaining Wall.

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wordell
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
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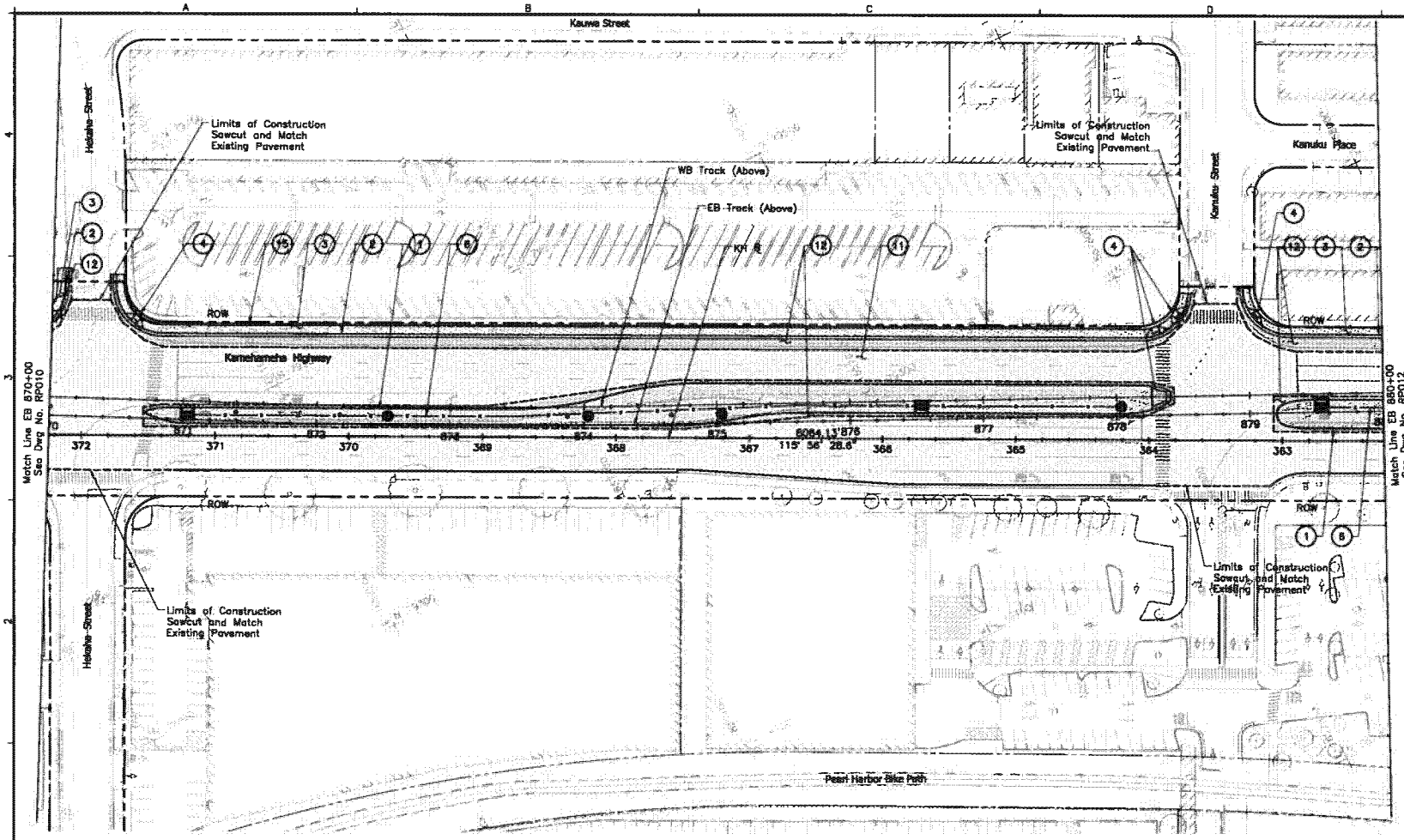
KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

ROADWAY CONSTRUCTION PLAN

EB 860+00 TO EB 870+00

Contract No.: DB-320
CADD File: KHDB-B09-RP010
Drawing No: RP010 Rev. A
Scale: 1"=40'
Page No. 78 of 265

2010-03-15 9:07 AM K:\CADD\03 Civil\Segment D\Sheet Files\KHDB-B09-RP001-RP021.dwg



NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

CONSTRUCTION NOTES:

1. Construct Concrete Curb.
2. Construct Concrete Curb and Gutter.
3. Construct Concrete Sidewalk.
4. Construct Concrete Curb Ramp.
6. Install Chain Link Fence.
11. Construct Plantmix Bituminous Surface Overlay.
12. Construct Plantmix Bituminous Pavement.
15. Construct Retaining Wall.

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Deressler
Checked: B Wardell
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

ROADWAY CONSTRUCTION PLAN

EB 870+00 TO EB 880+00

Contract No.: DB-320
CADD File: KHDB-B09-RP011
Drawing No: RP011 Rev. A
Scale: 1"=40'
Page No. 79 of 265

2010-03-19 9:07 AM K:\CADD\03 Civil\Segment D\Sheet Files\KHDB-B09-RP001-RP021.dwg

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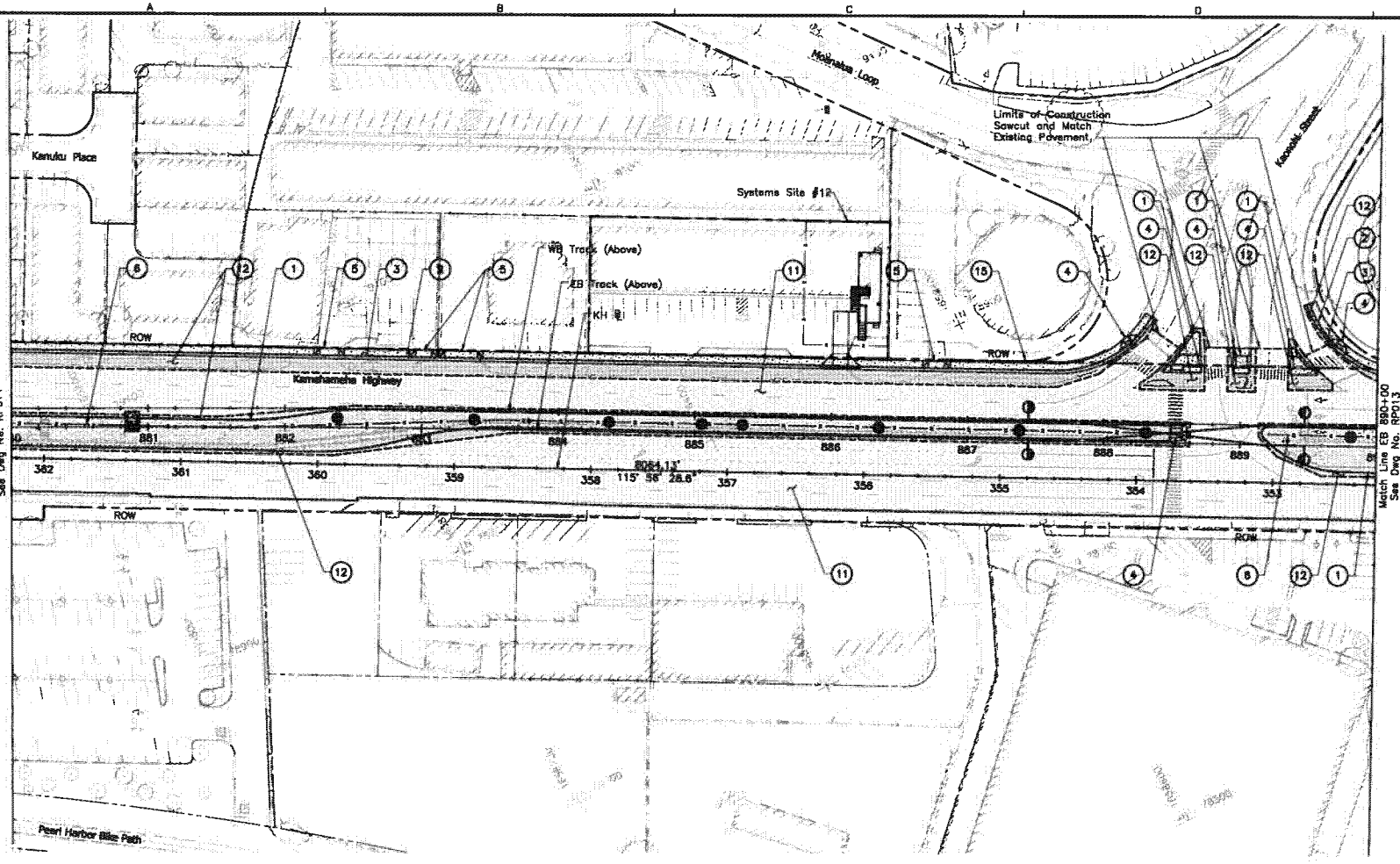

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

CONSTRUCTION NOTES:

1. Construct Concrete Curb.
2. Construct Concrete Curb and Gutter.
3. Construct Concrete Sidewalk.
4. Construct Concrete Curb Ramp.
5. Construct Reinforced Concrete Driveway.
6. Install Chain Link Fence.
11. Construct Plantmix Bituminous Surface Overlay.
12. Construct Plantmix Bituminous Pavement.
15. Construct Retaining Wall.

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

ROADWAY CONSTRUCTION PLAN

EB 880+00 TO EB 890+00

Contract No.: DB-320
CADD File: KHDB-B09-RP012
Drawing No: RP012 Rev. A
Scale: 1"=40'
Page No. 80 of 265

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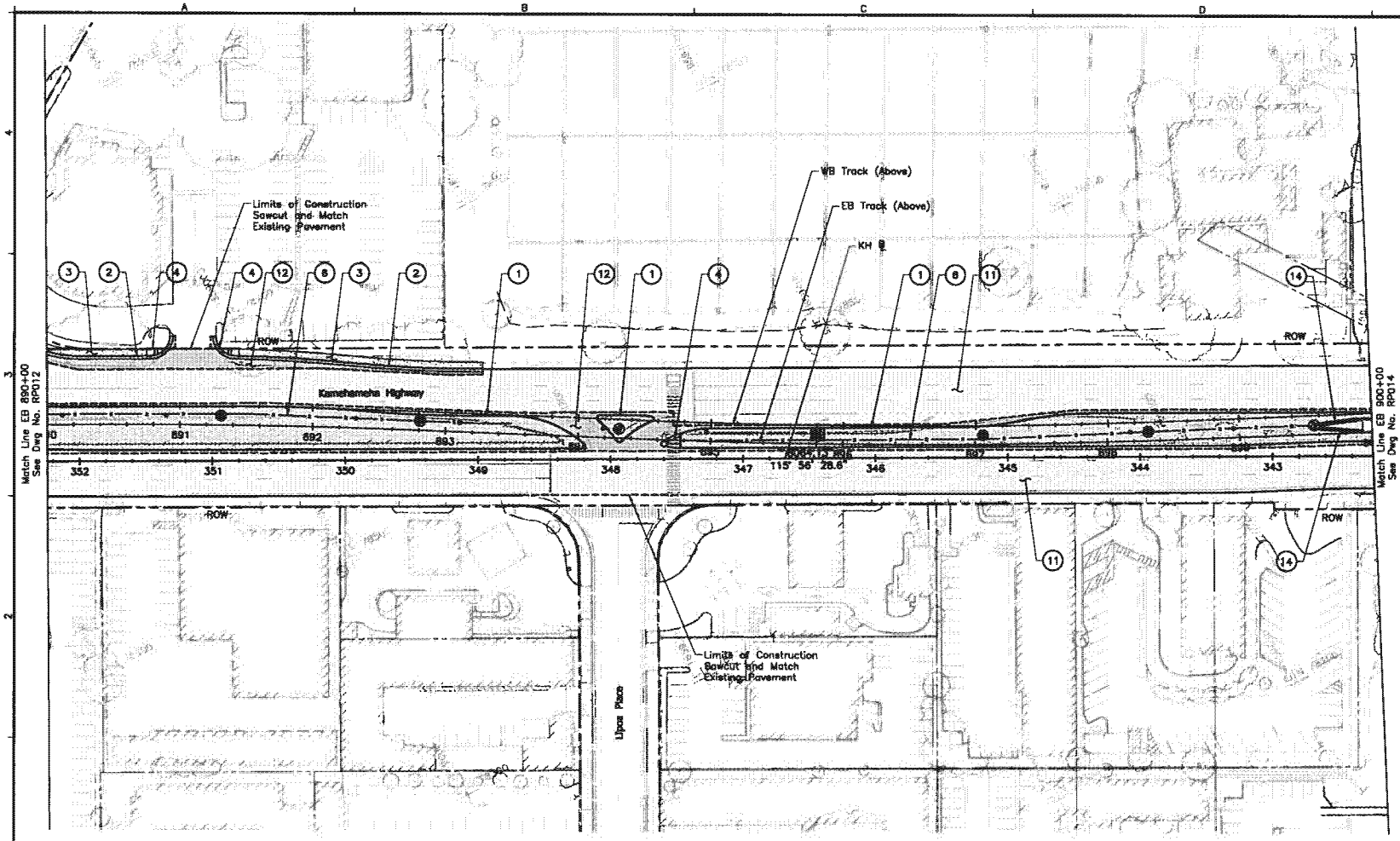

N

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

CONSTRUCTION NOTES:

1. Construct Concrete Curb.
2. Construct Concrete Curb and Gutter.
3. Construct Concrete Sidewalk.
4. Construct Concrete Curb Ramp.
6. Install Chain Link Fence.
11. Construct Plantmix Bituminous Surface Overlay.
12. Construct Plantmix Bituminous Surface Overlay.
14. Install Guardrail.

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Werdell
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
For reduced prints, original page size in inches: 0 1 2 3 4

KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

ROADWAY CONSTRUCTION PLAN

EB 890+00 TO EB 900+00

Contract No.: DB-320
CADD File: KHDB-809-RP013
Drawing No: RP013 Rev. A
Scale: 1"=40'
Page No. 81 of 265

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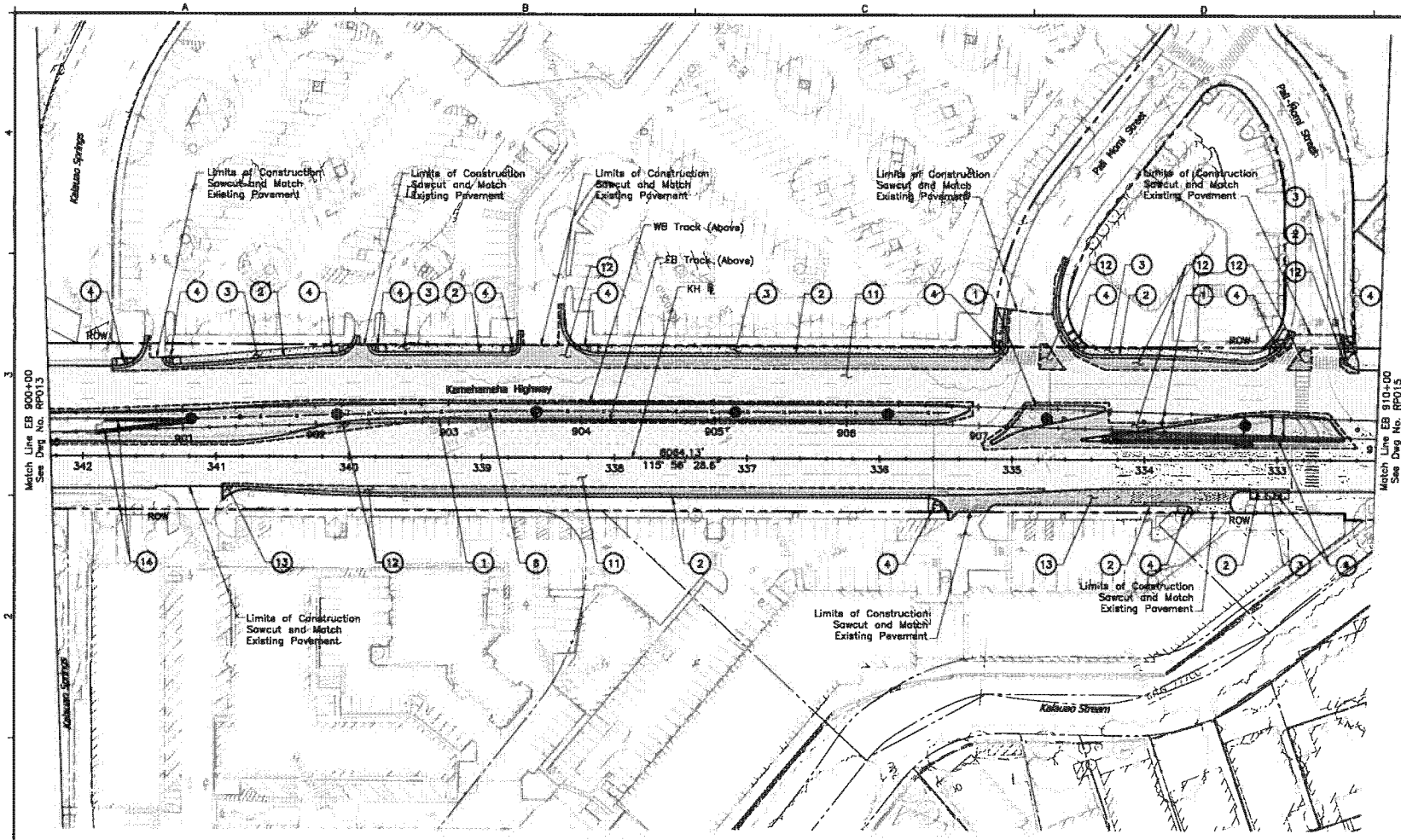

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

CONSTRUCTION NOTES:

1. Construct Concrete Curb.
2. Construct Concrete Curb and Gutter.
3. Construct Concrete Sidewalk.
4. Construct Concrete Curb Ramp.
6. Install Chain Link Fence.
11. Construct Plantmix Bituminous Surface Overlay.
12. Construct Plantmix Bituminous Pavement.
13. Construct Concrete Pavement.
14. Install Guardrail.

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: S Wordall
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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

KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

ROADWAY CONSTRUCTION PLAN

EB 900+00 TO EB 910+00

Contract No.: DB-320
CADD File: KHDB-B09-RP014
Drawing No: RP014 Rev. A
Scale: 1"=40'
Page No. 82 of 265

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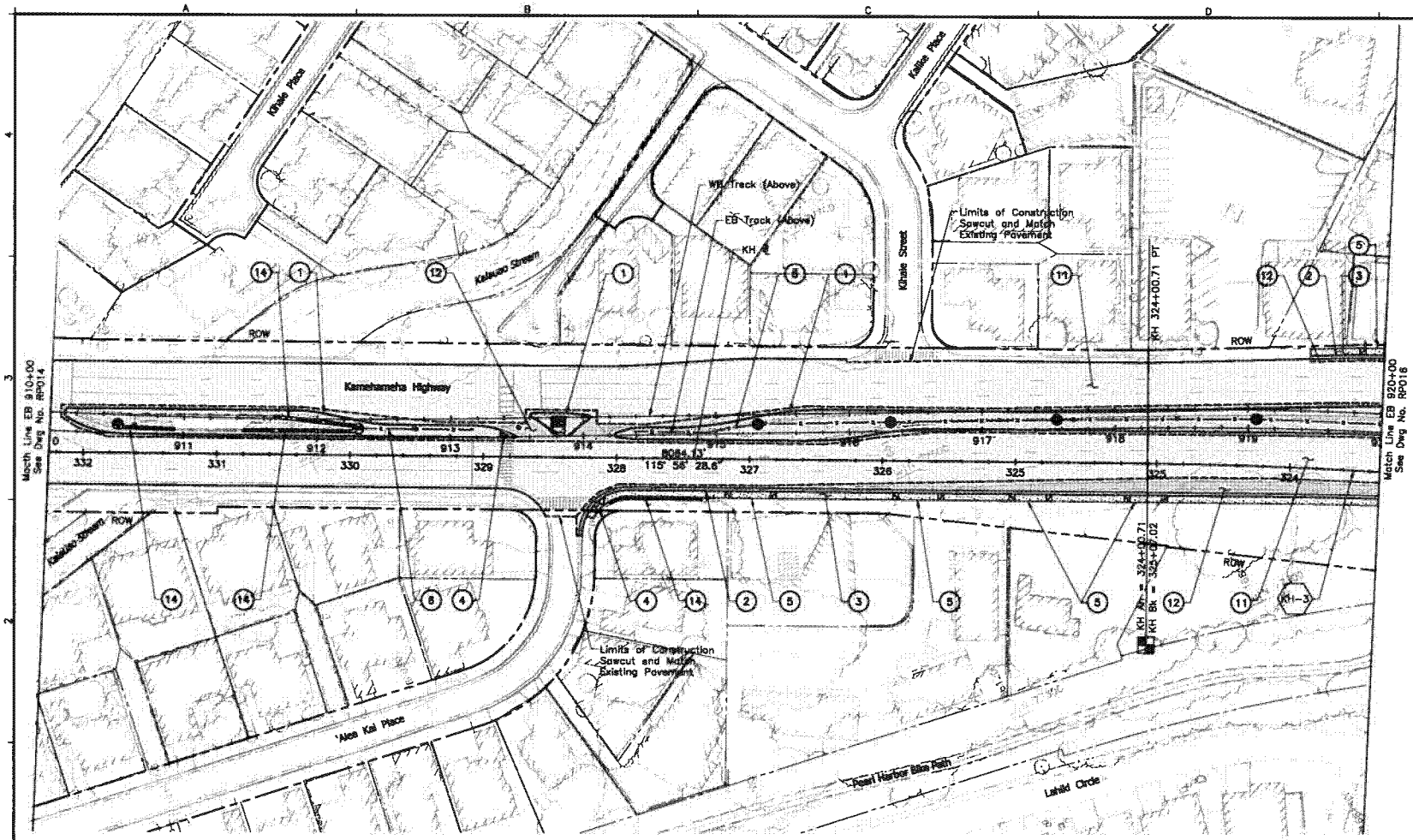

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

ROADWAY CURVE DATA	
	KH-3
Δ	12° 15' 30.9"
R	3330.50'
T	357.65'
C	711.21'
L_C	712.57'

CONSTRUCTION NOTES:

1. Construct Concrete Curb.
2. Construct Concrete Curb and Gutter.
3. Construct Concrete Sidewalk.
4. Construct Concrete Curb Ramp.
6. Install Chain Link Fence.
11. Construct Plantmix Bituminous Surface Overlay.
12. Construct Plantmix Bituminous Pavement.
14. Install Guardrail.

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

ROADWAY CONSTRUCTION PLAN

EB 910+00 TO EB 920+00

Contract No.: DB-320
CADD File: KHDB-B09-RP015
Drawing No: RP015 Rev. A
Scale: 1"=40'
Page No. 83 of 265

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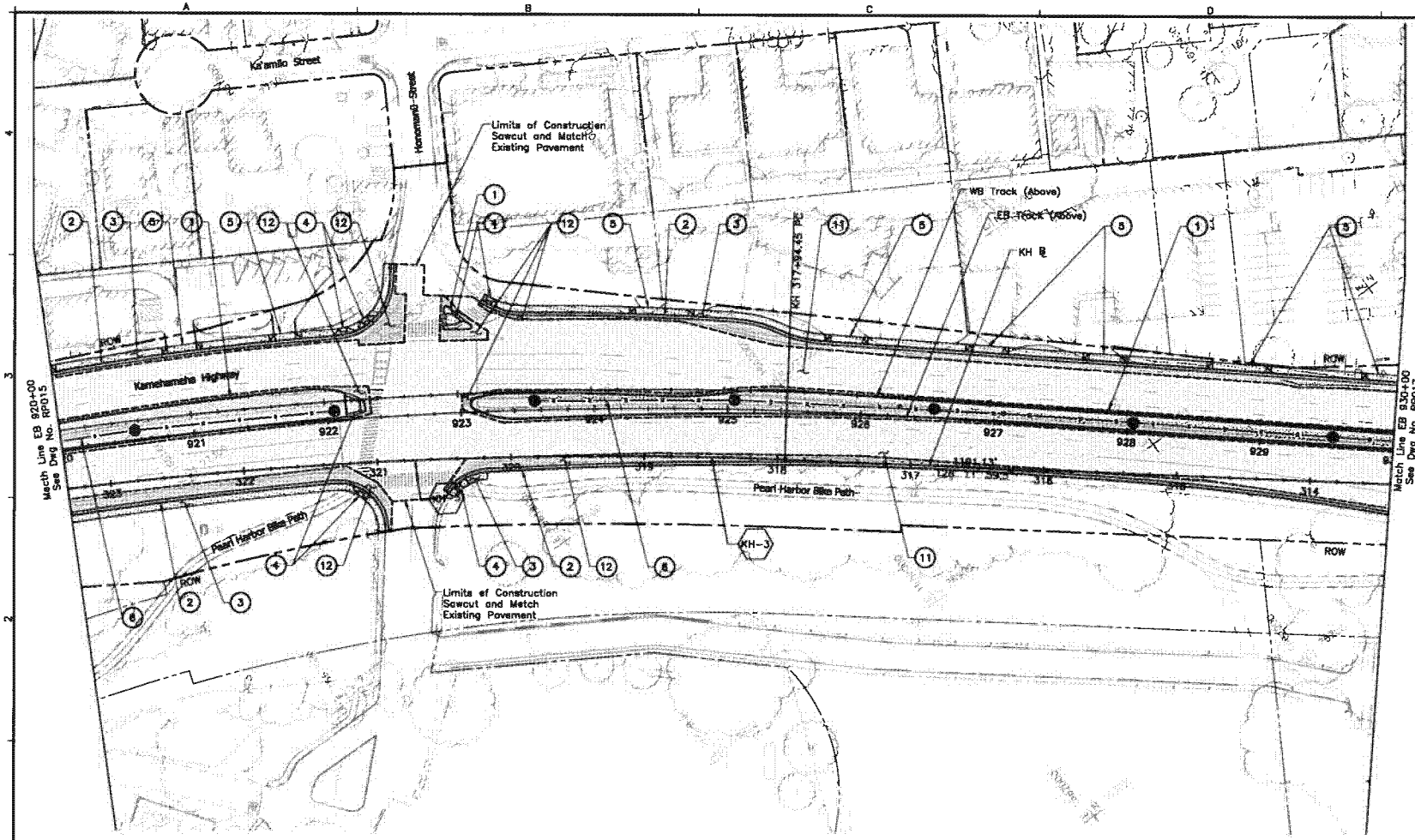

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

ROADWAY CURVE DATA	
	KH-3
Δ	12° 15' 30.8"
R	3330.50'
T	357.65'
C	711.21'
L_c	712.57'

CONSTRUCTION NOTES:

1. Construct Concrete Curb.
2. Construct Concrete Curb and Gutter.
3. Construct Concrete Sidewalk.
4. Construct Concrete Curb Ramp.
5. Construct Reinforced Concrete Driveway.
6. Install Chain Link Fence.
11. Construct Plantmix Bituminous Surface Overlay.
12. Construct Plantmix Bituminous Pavement.

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wordell
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

ROADWAY CONSTRUCTION PLAN

EB 920+00 TO EB 930+00

Contract No.: DB-320
CADD File: KHDB-B09-RP016
Drawing No: RP016 Rev. A
Scale: 1"=40'
Page No. 84 of 265

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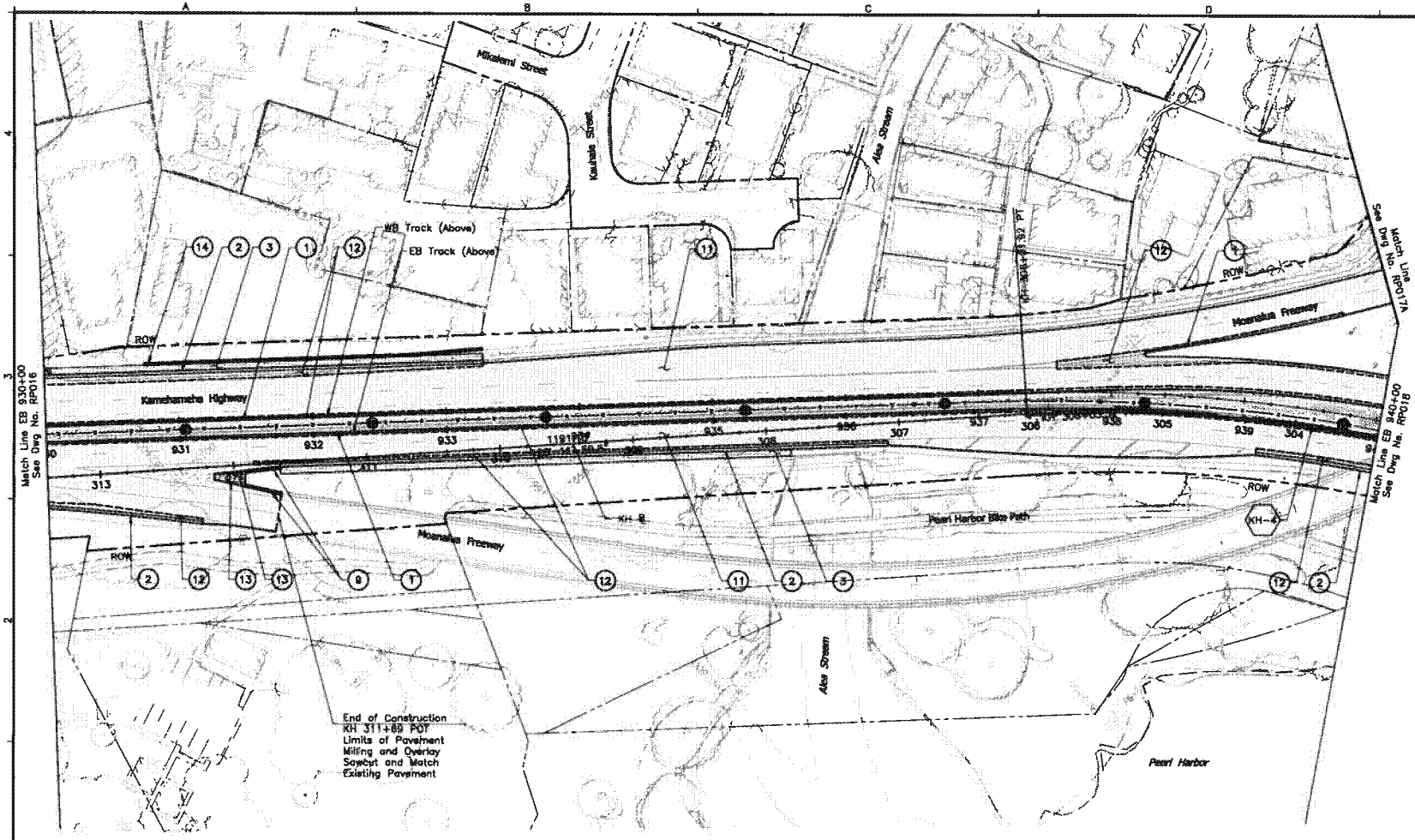

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

ROADWAY CURVE DATA	
	KH-4
Δ	80° 53' 30.0"
R	1080.48'
T	921.05'
C	1401.88'
L_c	1525.45'

CONSTRUCTION NOTES:

1. Construct Concrete Curb.
2. Construct Concrete Curb and Gutter.
3. Construct Concrete Sidewalk.
9. Construct Concrete Barrier Rail.
11. Construct Plantmix Bituminous Surface Overlay.
12. Construct Plantmix Bituminous Pavement.
13. Construct Concrete Pavement.
14. Install Guardrail.
16. Install Impact Alternator.

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardoll
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

ROADWAY CONSTRUCTION PLAN

EB 930+00 TO EB 940+00

Contract No.: DB-320
CADD File: KHDB-B09-RP017
Drawing No: RP017 Rev. A
Scale: 1"=40'
Page No. 85 of 265

2010-03-15 9:33 AM K:\CADD\03 Civil\Segment D\Sheet Files\KHDB-B09-RP001-RP021.dwg

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NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

CONSTRUCTION NOTES:

(11) Construct Plantmix Bituminous Surface Overlay.

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: L Heaprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

ROADWAY CONSTRUCTION PLAN

MOANALUA FREEWAY

Contract No.: DB-320
CADD File: KHDB-B09-RP017A
Drawing No: RP017A Rev. A
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Page No. 86 of 265

2010-03-19 9:33 AM K:\CADD\03 Civil\Segment 0\Sheet Files\KHDB-B09-RP001-RP021.dwg

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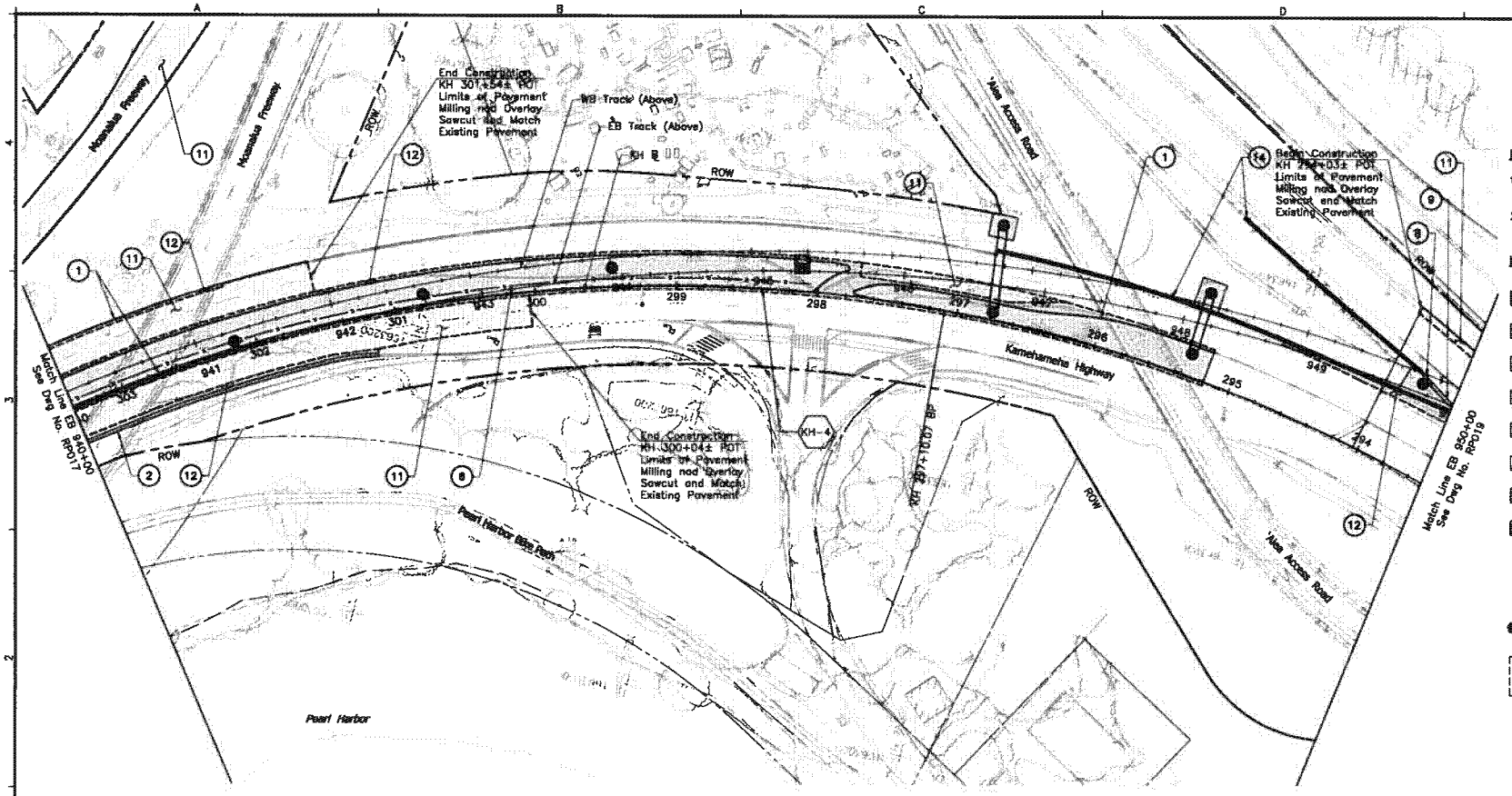

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

ROADWAY CURVE DATA	
	KH-4
Δ	80° 53' 30.0"
R	1080.48'
T	921.05'
C	1401.88'
L_c	1525.45'

CONSTRUCTION NOTES:

1. Construct Concrete Curb.
2. Construct Concrete Curb and Gutter.
6. Install Chain Link Fence.
8. Construct Concrete Half Barrier Rail.
9. Construct Concrete Barrier Rail.
11. Construct Plantmix Bituminous Surface Overlay.
12. Construct Plantmix Bituminous Pavement.
14. Install Guardrail.

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

ROADWAY CONSTRUCTION PLAN

EB 940+00 TO EB 950+00

Contract No.: DB-320
CADD File: KHDB-B09-RP018
Drawing No: RP018 Rev. A
Scale: 1"=40'
Page No. 87 of 265

2010-03-19 9:33 AM K:\CADD\03 Civil\Segment D\Sheet Files\KHDB-B09-RP001-RP021.dwg

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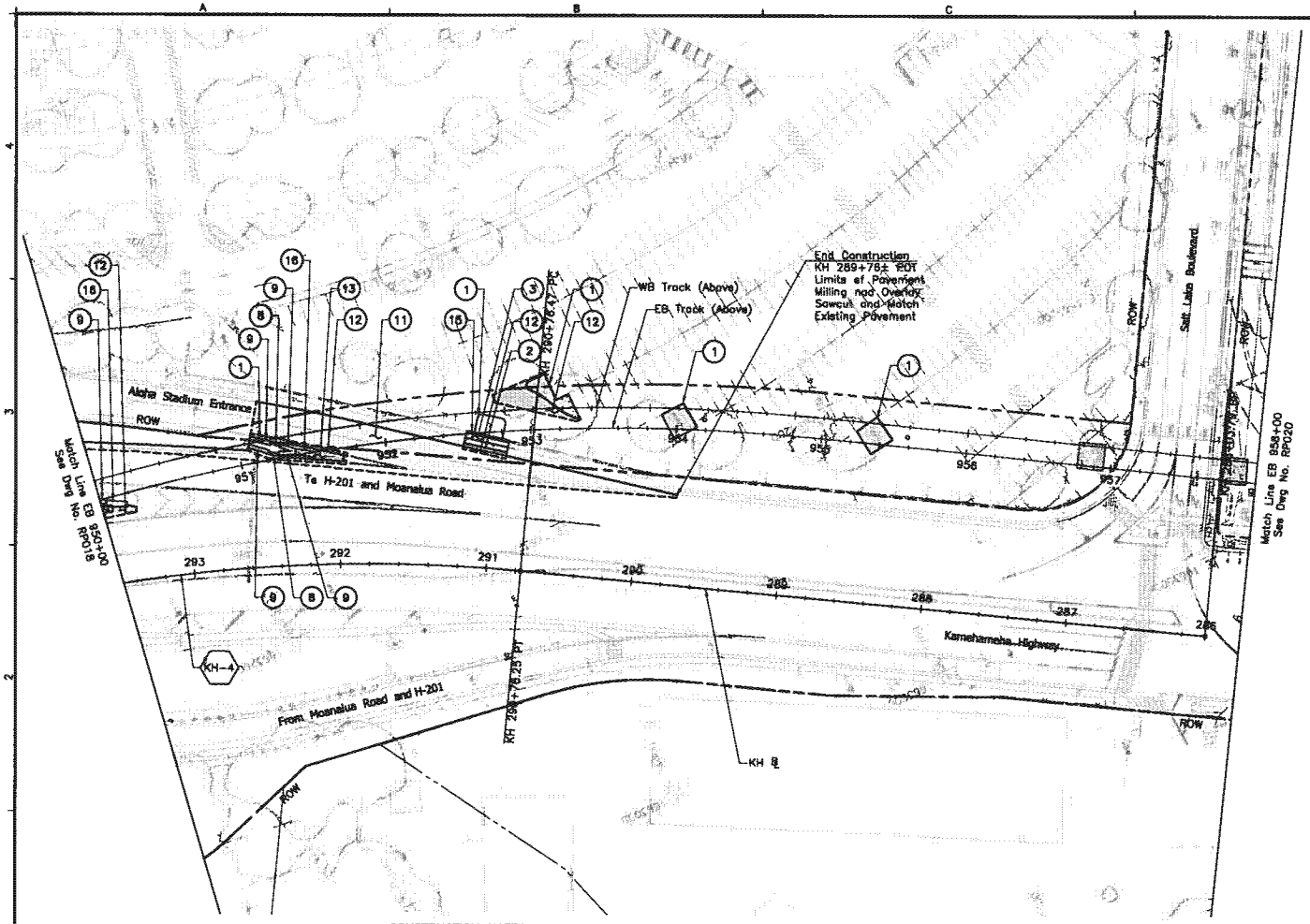

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

ROADWAY CURVE DATA	
	KH-4
Δ	80° 53' 30.0"
R	1080.48'
T	921.05'
C	1401.88'
L_c	1525.45'

CONSTRUCTION NOTES:

1. Construct Concrete Curb.
2. Construct Concrete Curb and Gutter.
3. Construct Concrete Sidewalk.
8. Construct Concrete Half Barrier.
9. Construct Concrete Barrier.
11. Construct Plantmix Bituminous Surface Overlay.
12. Construct Plantmix Bituminous Pavement.
13. Construct Concrete Pavement.
15. Construct Retaining Wall.
16. Install Impact Alternator.

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

ROADWAY CONSTRUCTION PLAN

EB 950+00 TO EB 958+00

Contract No.: DB-320
CADD File: KHDB-B09-RP019
Drawing No: RP019 Rev. A
Scale: 1"=40'
Page No. 88 of 265

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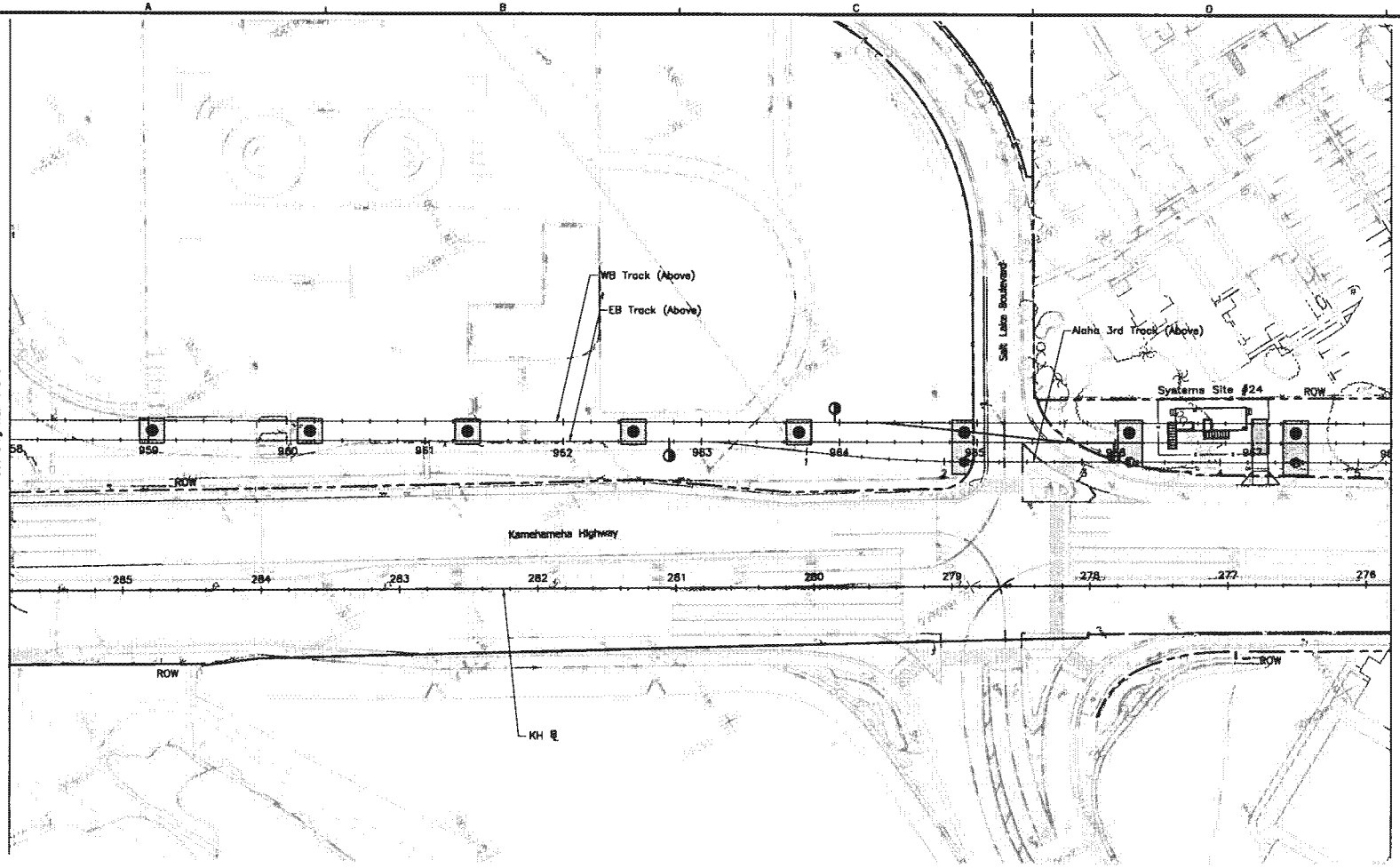

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: L Heaprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

ROADWAY CONSTRUCTION PLAN

EB 958+00 TO EB 968+00

Contract No.: DB-320
CADD File: KHDB-B09-RP020
Drawing No: RP020 Rev. A
Scale: 1"=40'
Page No. 89 of 265

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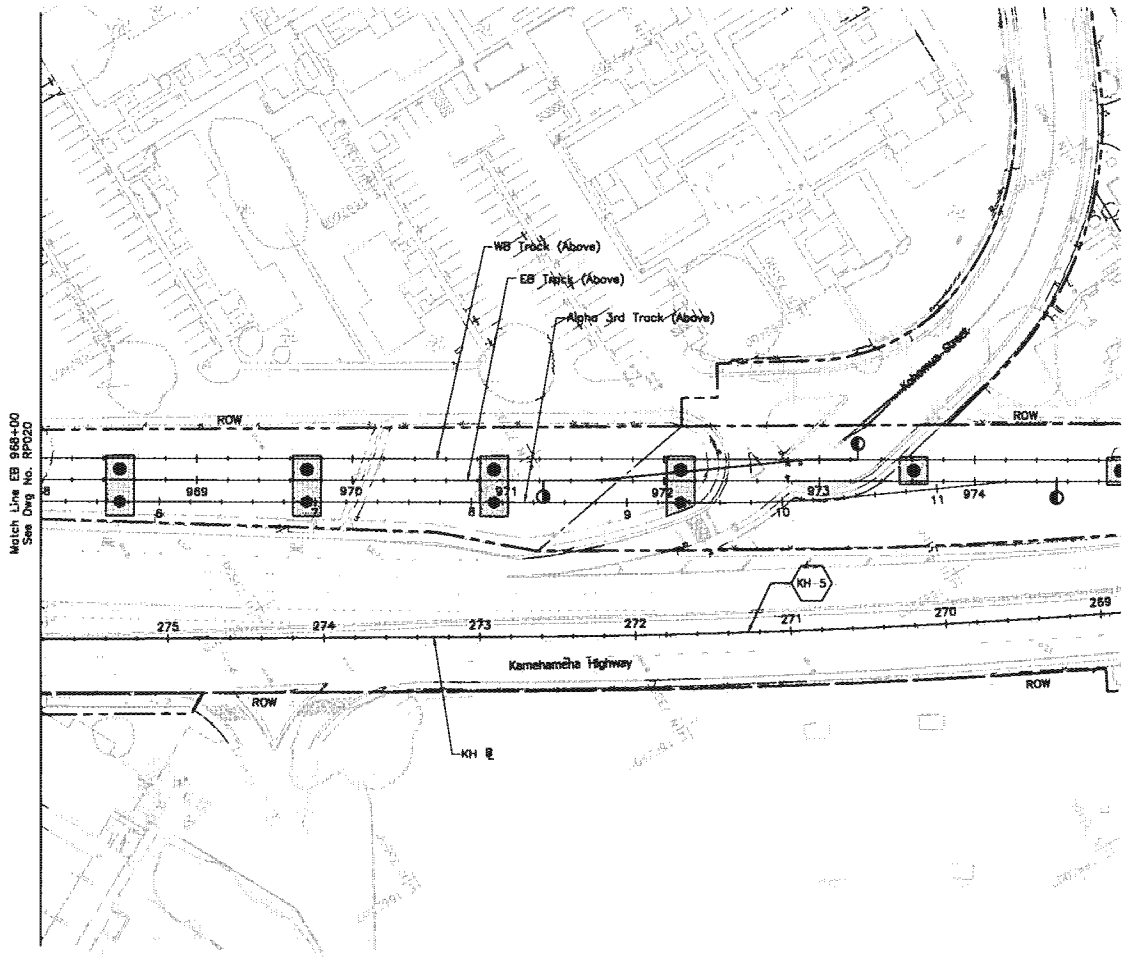

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

ROADWAY CURVE DATA	
	KH-5
Δ	5° 35' 30.0"
R	5729.65'
T	279.81'
C	558.95'
L_c	559.17'

40' 0 40'

Rev	By	Date	Description

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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

KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

ROADWAY CONSTRUCTION PLAN

EB 968+00 TO END

Contract No.: DB-320
CADD File: KHDB-B09-RP021
Drawing No: RP021 Rev.
Scale: 1"=40'
Page No. 90 of 265

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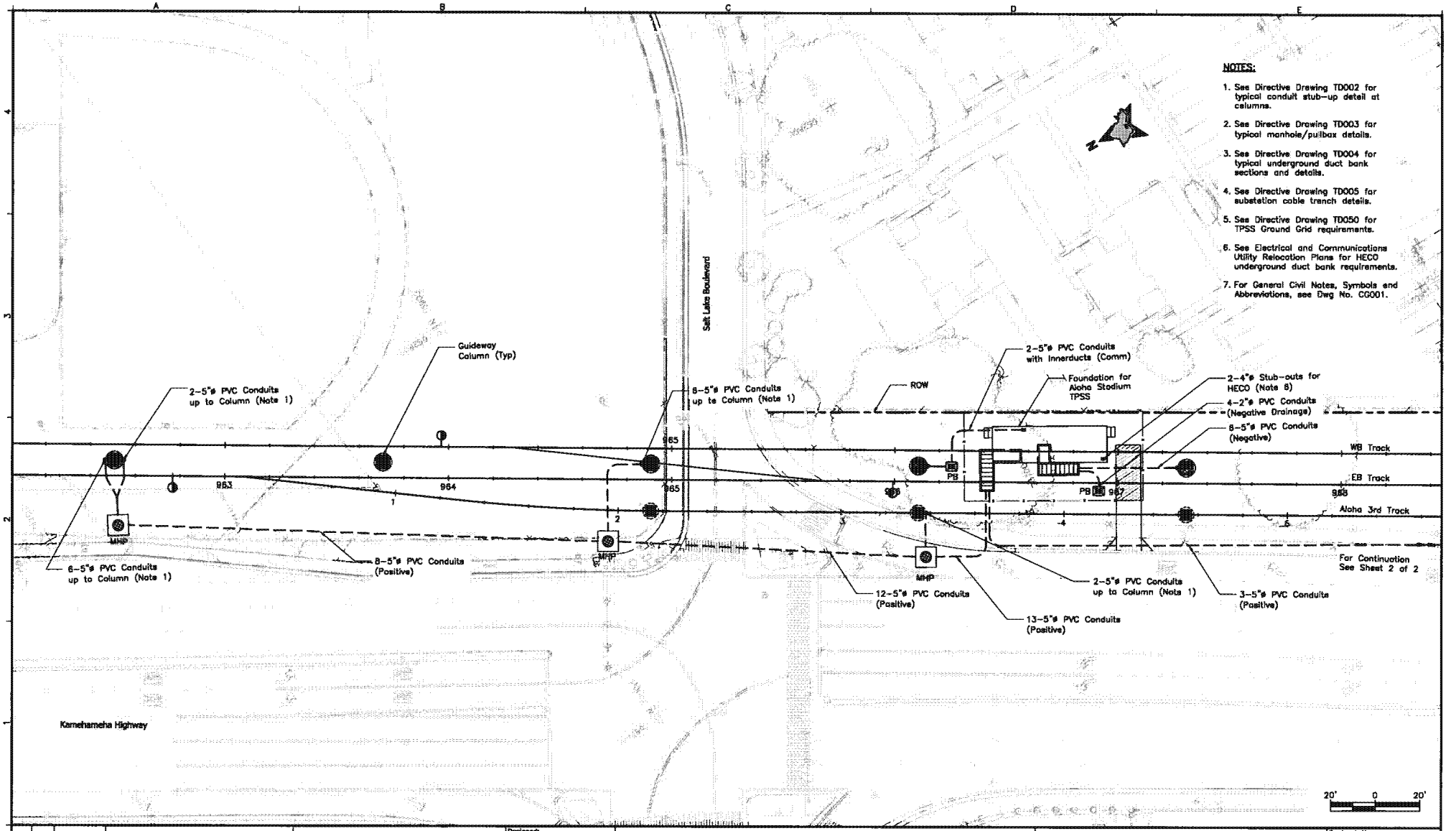

Rev	By	Date	Description
A	AB	03-19-10	Issued For Proposal

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PROPOSAL DOCUMENT
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Designed: D Gobelle
Drawn: C Jamison
Checked: L Mayola
Approved: A Borst
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

SYSTEMS SITE PLAN
SITE # 24

SHEET 1 OF 2

Contract No.: DB-320
CADD File: KHDB-B10-RP105
Drawing No: RP105 Rev. A
Scale: 1"=20"
Page No. 93 of 265

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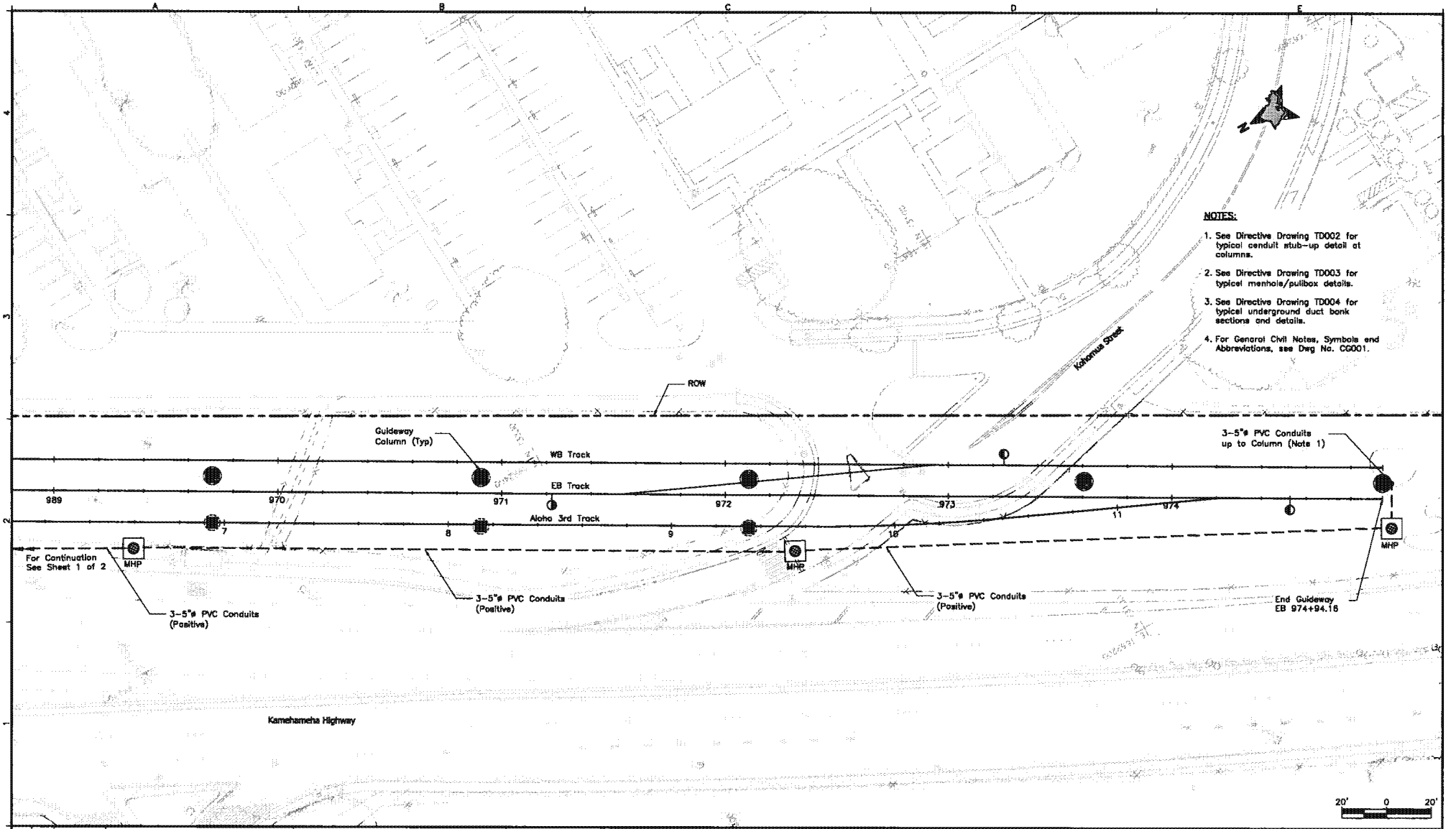

NOTES:

1. See Directive Drawing TD002 for typical conduit stub-up detail at columns.
2. See Directive Drawing TD003 for typical manhole/pullbox details.
3. See Directive Drawing TD004 for typical underground duct bank sections and details.
4. For General Civil Notes, Symbols and Abbreviations, see Dwg No. CG001.

Rev	By	Date	Description
A	AB	03-19-10	Issued For Proposal

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Drawn: C Jamison
Checked: L Mayolo
Approved: A Borst
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIG-BUILD

SYSTEMS SITE PLAN
SITE # 24

SHEET 2 OF 2

Contract No.: DB-320
CADD File: KHDB-B10-RP106
Drawing No: RP106 Rev. A
Scale: 1"=20"
Page No. 94 of 265

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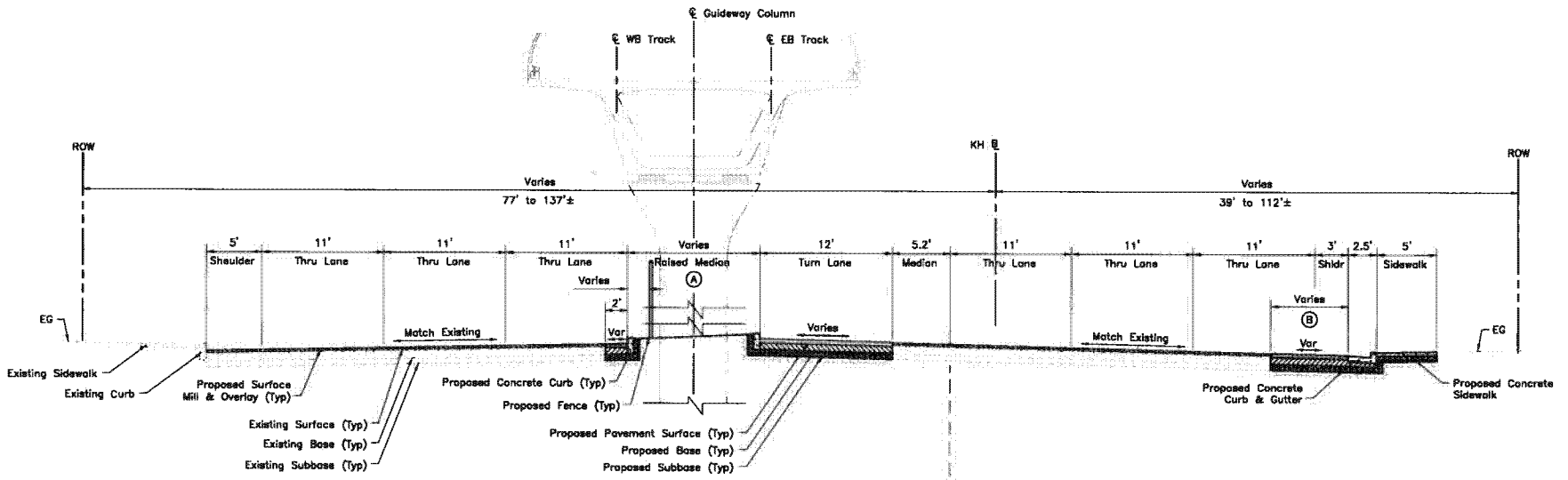
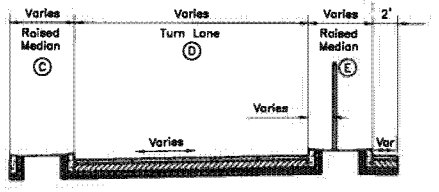
Ⓐ "KH" 443+50 to "KH" 441+50 12'

Ⓑ "KH" 443+40 to "KH" 442+75 2'–7'
"KH" 442+75 to "KH" 441+00 7'
"KH" 441+00 to "KH" 439+30 7'–2'





"KH" 441+50 to "KH" 439+30

Ⓒ "KH" 441+50 to "KH" 441+30 12.0'

Ⓓ "KH" 441+50 to "KH" 441+10 17.2'
"KH" 441+40 to "KH" 441+30 12.0'
"KH" 441+30 to "KH" 441+10 24.0'
"KH" 441+10 to "KH" 439+55 24.0'–0.0'

Ⓔ "KH" 441+40 to "KH" 441+10 5.2'
"KH" 441+10 to "KH" 439+55 5.2'–22.5'
"KH" 439+55 to "KH" 439+30 22.5'–22.2'

NOTES:

1. For General Civil Notes, Symbols and Abbreviations, See Dwg No. CG001.
2. Station ranges not listed have 0' width dimension.
3. Maintain a 16.5' clearance above inside travel lane for all Guideway columns.

"KH" 443+80 to "KH" 439+30

5' 0 5'

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A	CS	03-19-10	Issued for Proposal

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Designed: R Ching
Drawn: J Derosier
Checked: M Jewell
Approved: C Shimizu
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TYPICAL SECTIONS
KAMEHAMEHA HIGHWAY

SHEET 3 OF 8

Contract No.: DB-320
CADD File: KHDB-B13-RX003
Drawing No: RX003 Rev. A
Scale: 1"=5'
Page No. 98 of 265

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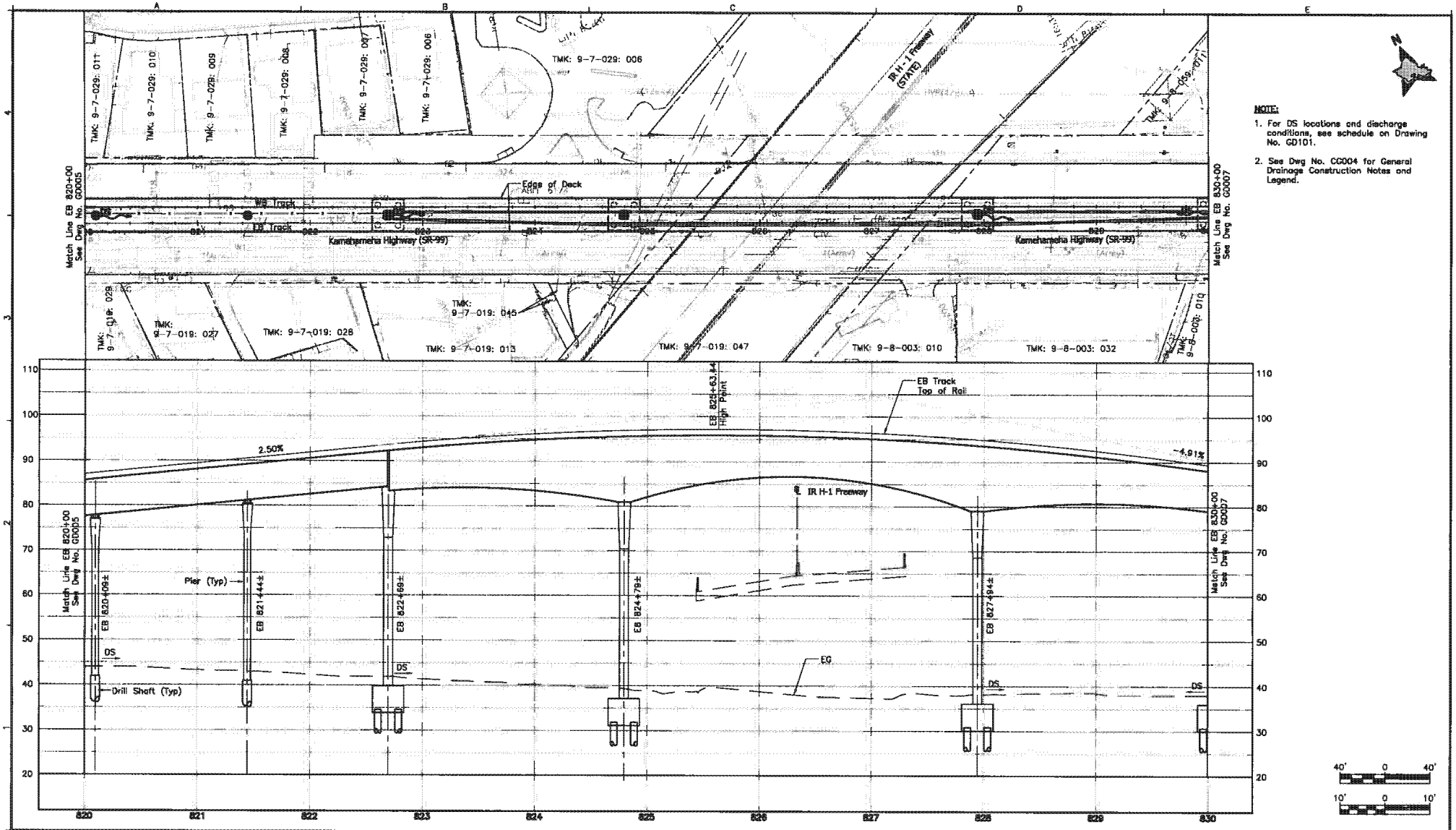

NOTE:

1. For DS locations and discharge conditions, see schedule on Drawing No. GD101.
2. See Dwg No. CG004 for General Drainage Construction Notes and Legend.

40' 0 40'

10' 0 10'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

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Designed: P Fujii
Drawn: T Cochran
Checked: K Wong
Approved: L Hasprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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1003 Bishop Street, Suite 2250 - Honolulu, HI 96813

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

GUIDEWAY DRAINAGE LAYOUT PLAN

EB 820+00 TO EB 830+00

Contract No.: DB-320
CADD File: KHDB-B16-GD006
Drawing No: GD006 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 109 of 265

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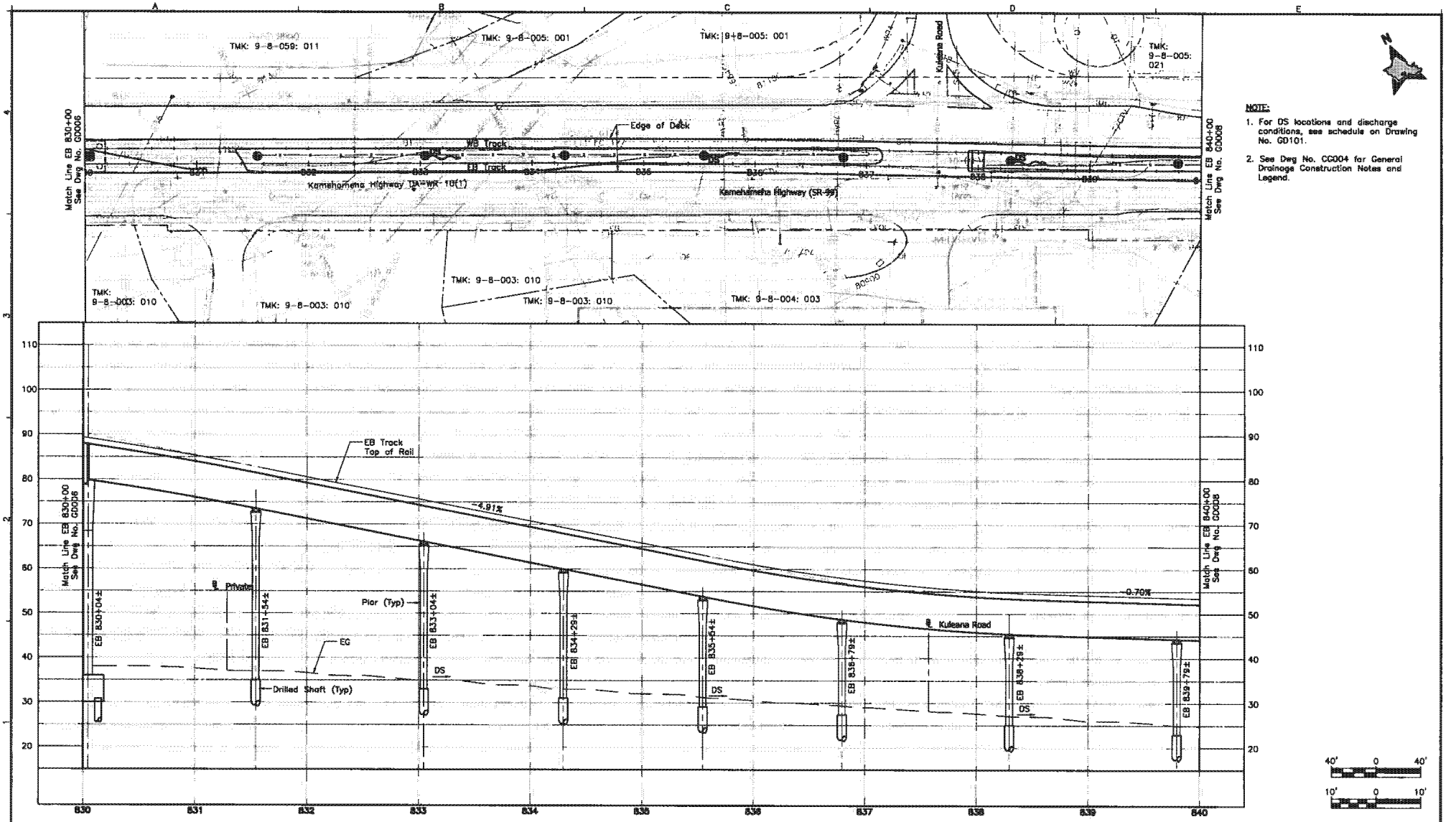

NOTE:

1. For DS locations and discharge conditions, see schedule on Drawing No. GD101.
2. See Dwg No. CC004 for General Drainage Construction Notes and Legend.

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

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Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

GUIDEWAY DRAINAGE LAYOUT PLAN

EB 830+00 TO EB 840+00

Contract No.: DB-320
CADD File: KHDB-B16-GD007
Drawing No.: GD007 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 110 of 265

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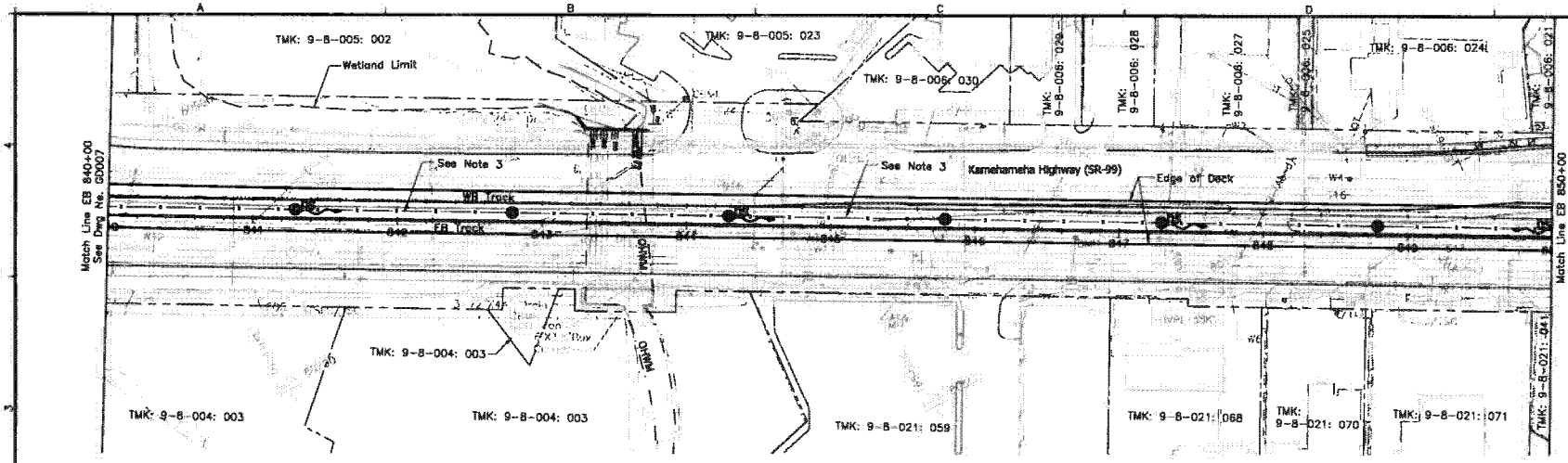
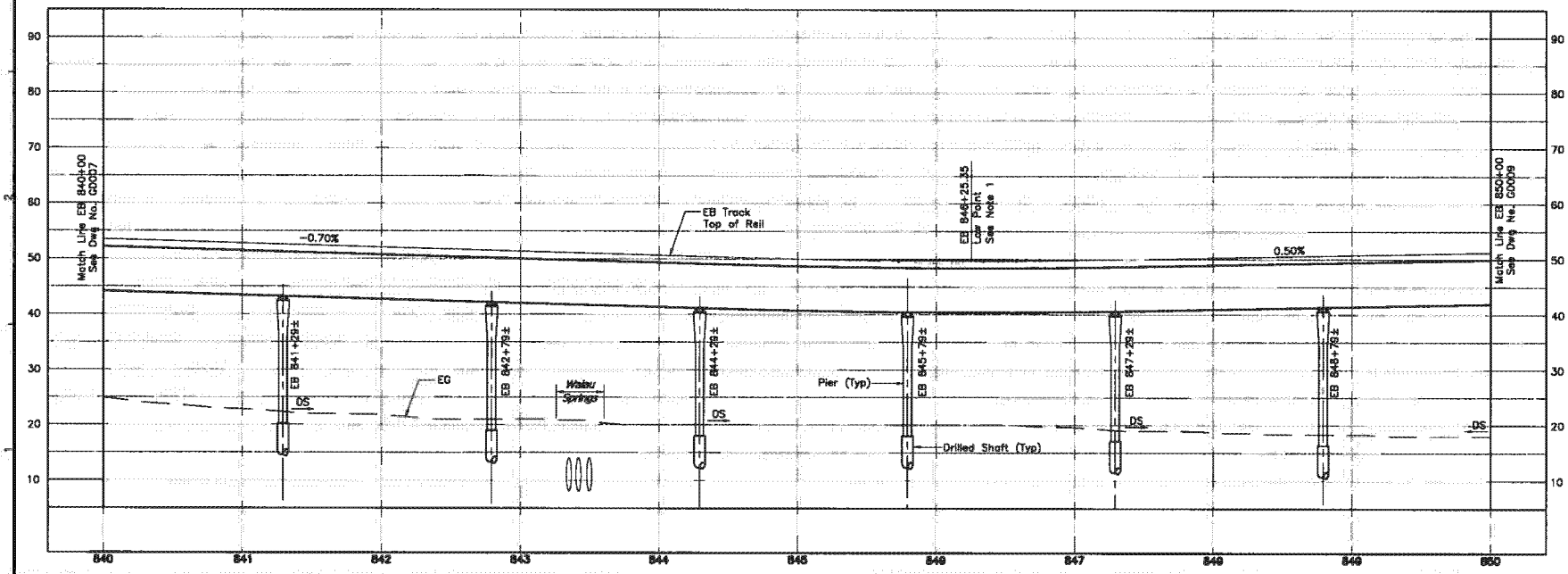


NOTES:

1. Drain inlets at low point (sump) shall be connected to the nearest column DS at Sta 845+79 per Section B on Drawing No. GD102.
2. For DS locations and discharge conditions, see schedule on Drawing No. GD101.
3. Downspouts at locations noted shall be provided with a bio-infiltration area per Landscape Drawing No. LA201.
4. See Dwg No. CG004 for General Drainage Construction Notes and Legend.



40' 0 40'

10' 0 10'

Rev	By	Date	Description
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PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

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HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

GUIDEWAY DRAINAGE LAYOUT PLAN

EB 840+00 TO EB 850+00

Contract No.: DB-320
CADD File: KHDB-B16-GD008
Drawing No.: GD008 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 111 of 265

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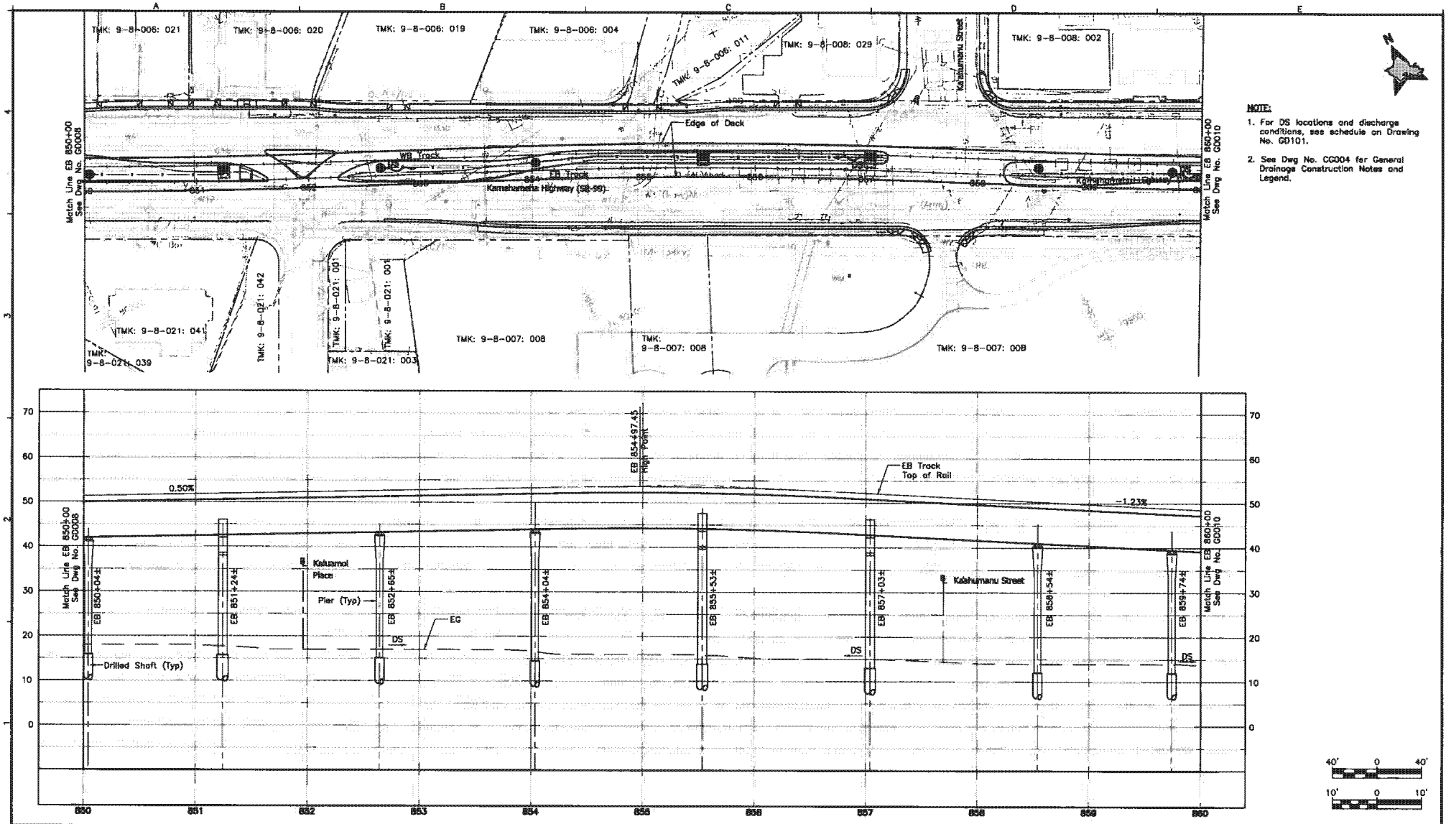

NOTE:

1. For DS locations and discharge conditions, see schedule on Drawing No. GD101.
2. See Dwg No. CG004 for General Drainage Construction Notes and Legend.

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

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Designed: P. Fujii
Drawn: T. Cochran
Checked: K. Wong
Approved: L. Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

GUIDEWAY DRAINAGE LAYOUT PLAN

EB 850+00 TO EB 860+00

Contract No.: DB-320
CADD File: KHDB-B16-GD009
Drawing No.: GD009 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 112 of 265

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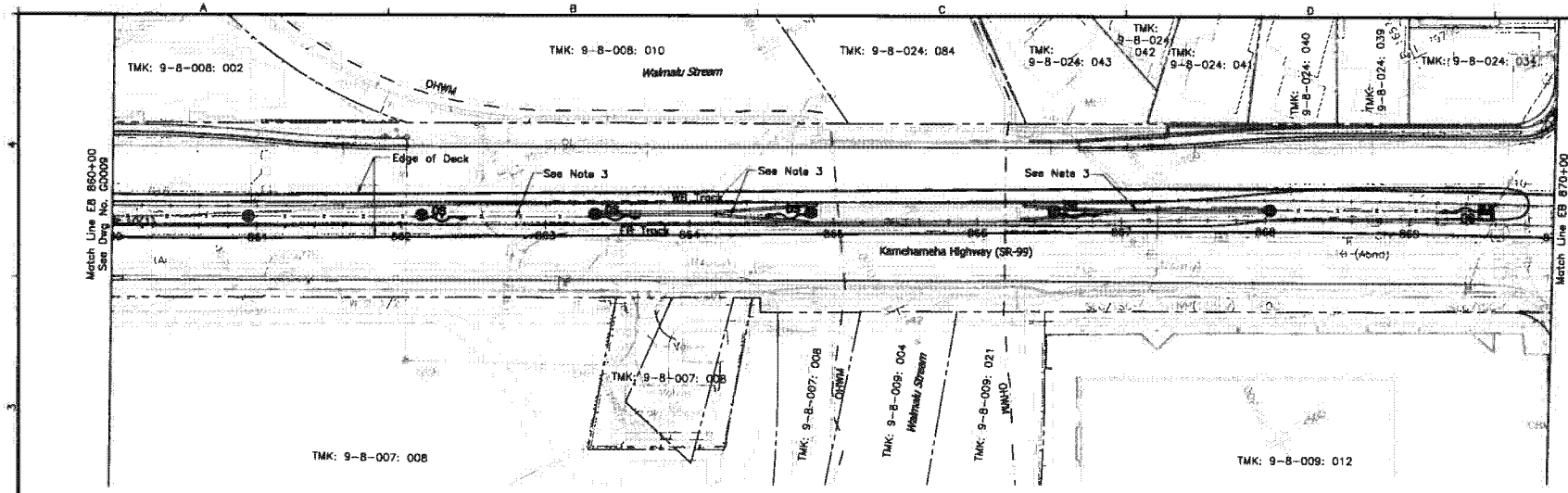

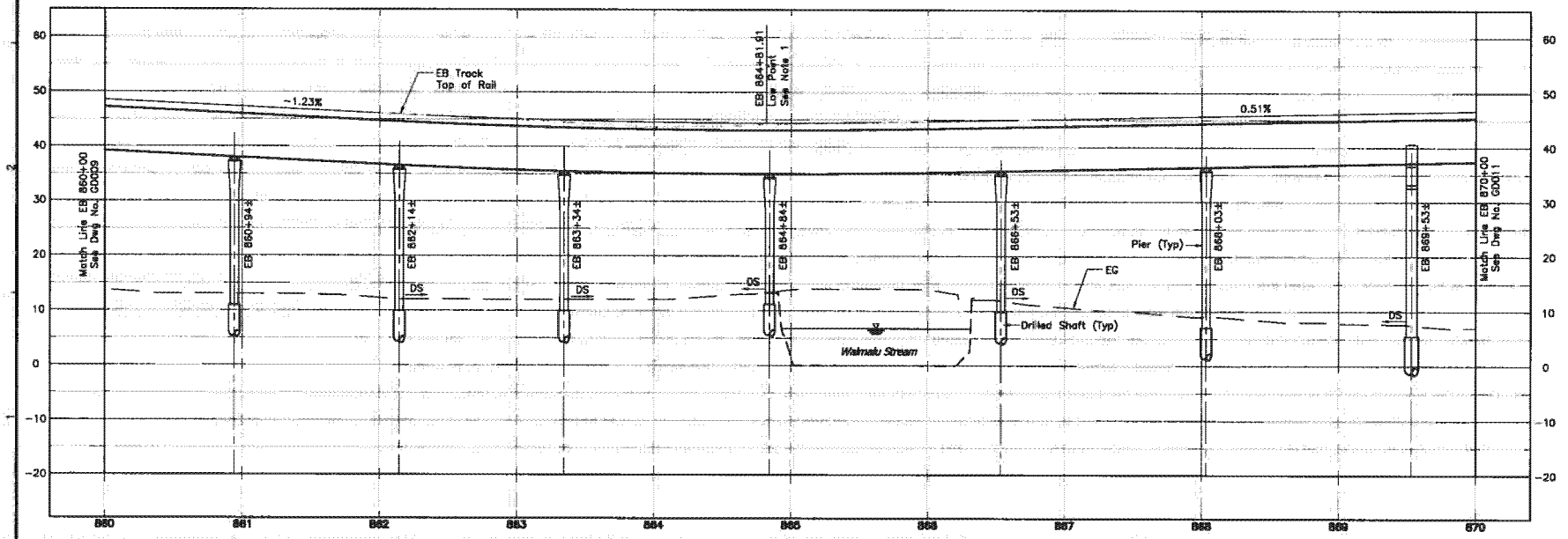

NOTES:

1. Drain inlets at low point (sump) shall be connected to the nearest column DS at Sta 884+84 per Section B on Drawing No. GD102.
2. For DS locations and discharge conditions, see schedule on Drawing No. GD101.
3. Downspouts at locations noted shall be provided with a bio-infiltration area per Landscape Drawing No. LA201.
4. See Dwg No. CG004 for General Drainage Construction Notes and Legend.

40' 0 40'

10' 0 10'

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A	LH	03-19-10	Issued for Proposal

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Designed: P Fujii
Drawn: T Cochran
Checked: K Wong
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 - Honolulu, HI 96813
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

GUIDEWAY DRAINAGE LAYOUT PLAN

EB 860+00 TO EB 870+00

Contract No.: DB-320
CADD File: KHDB-B16-GD010
Drawing No: GD010 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 113 of 265

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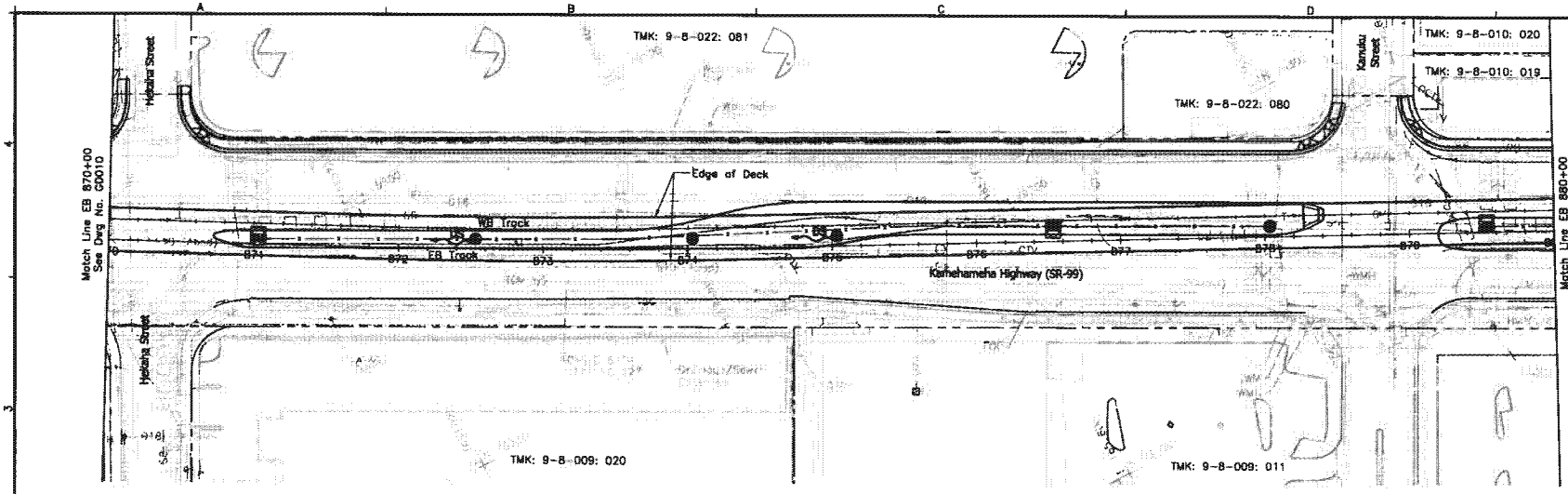
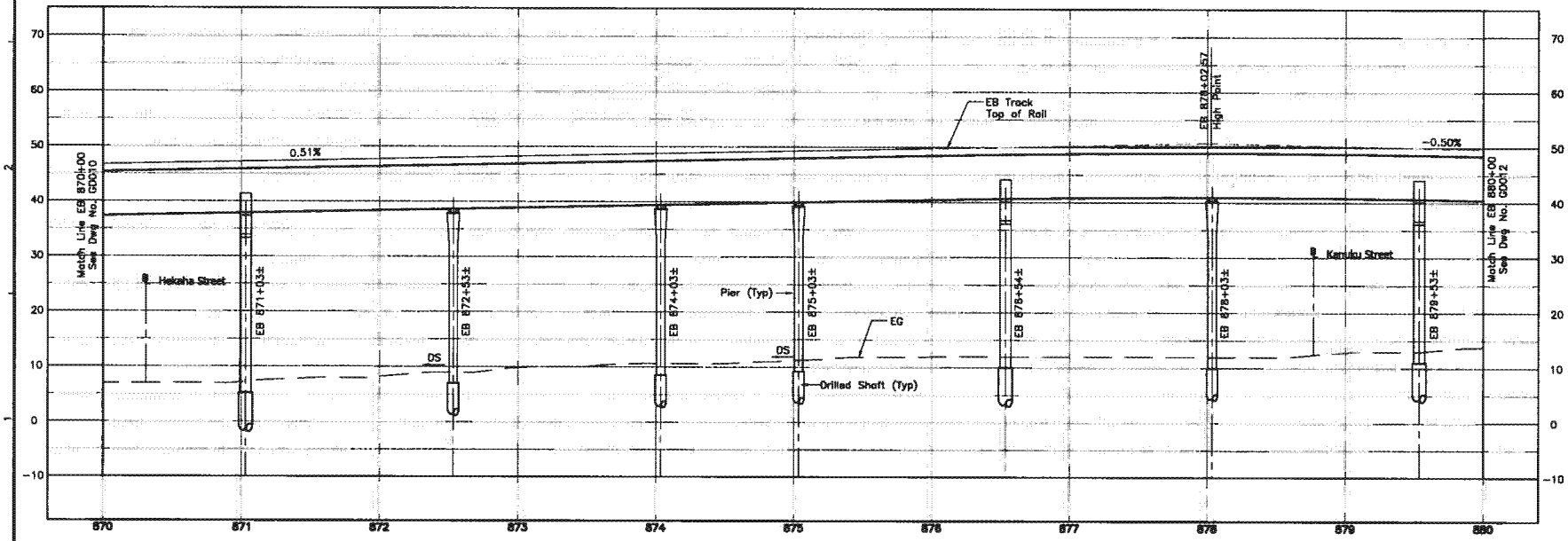


NOTE:

1. For DS locations and discharge conditions, see schedule on Drawing No. GD101.
2. See Dwg No. CG004 for General Drainage Construction Notes and Legend.



40' 0 40'

10' 0 10'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

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Designed: P Fujii
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HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF

1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

GUIDEWAY DRAINAGE LAYOUT PLAN

EB 870+00 TO EB 880+00

Contract No.: DB-320
CADD File: KHDB-B16-GD011
Drawing No.: GD011 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 114 of 265

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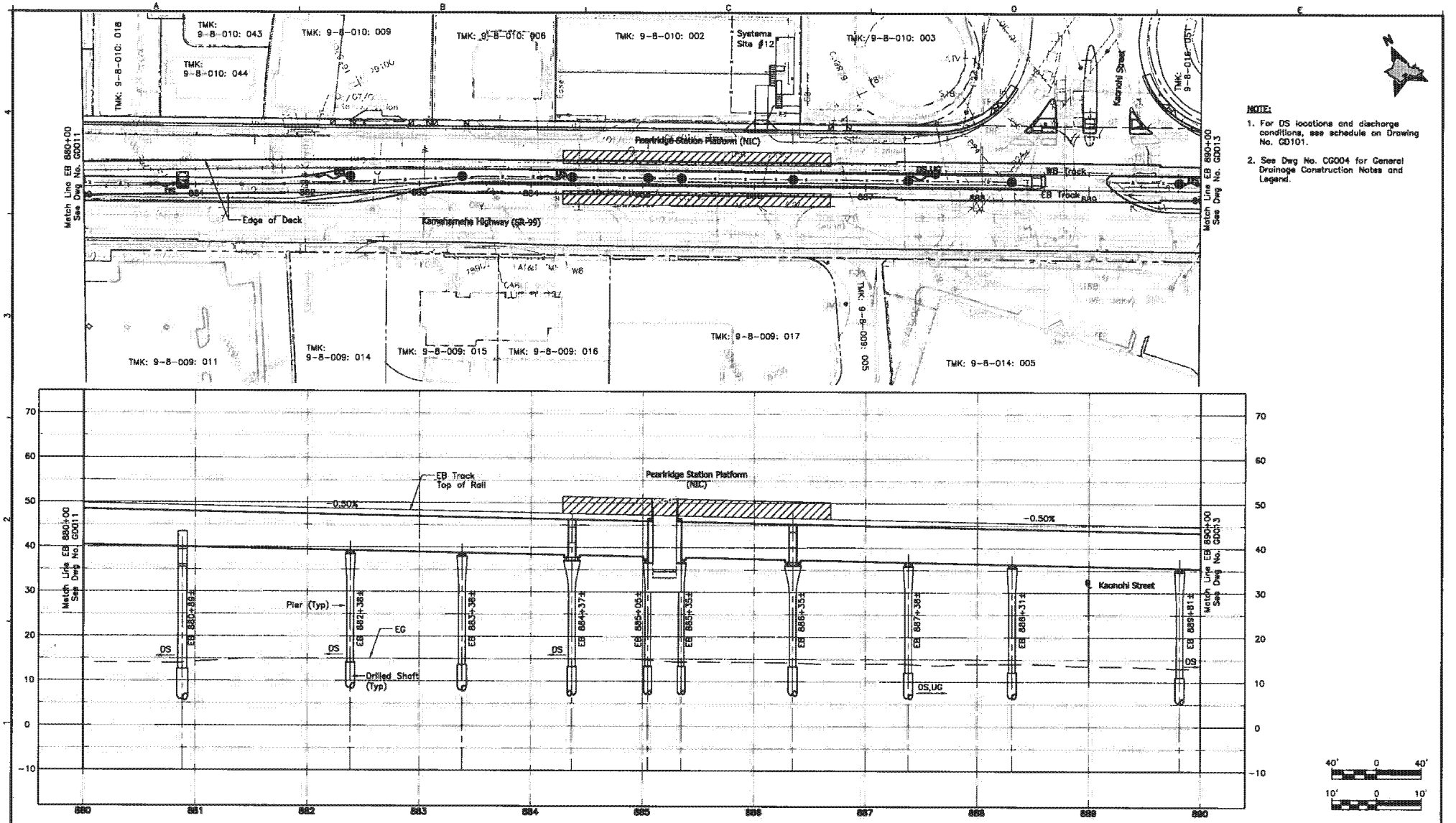

NOTE:

1. For DS locations and discharge conditions, see schedule on Drawing No. GD101.
2. See Dwg No. CG004 for General Drainage Construction Notes and Legend.

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

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Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

GUIDEWAY DRAINAGE LAYOUT PLAN

EB 880+00 TO EB 890+00

Contract No.: DB-320
CADD File: KHDB-B16-GD012
Drawing No.: GD012 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 115 of 265

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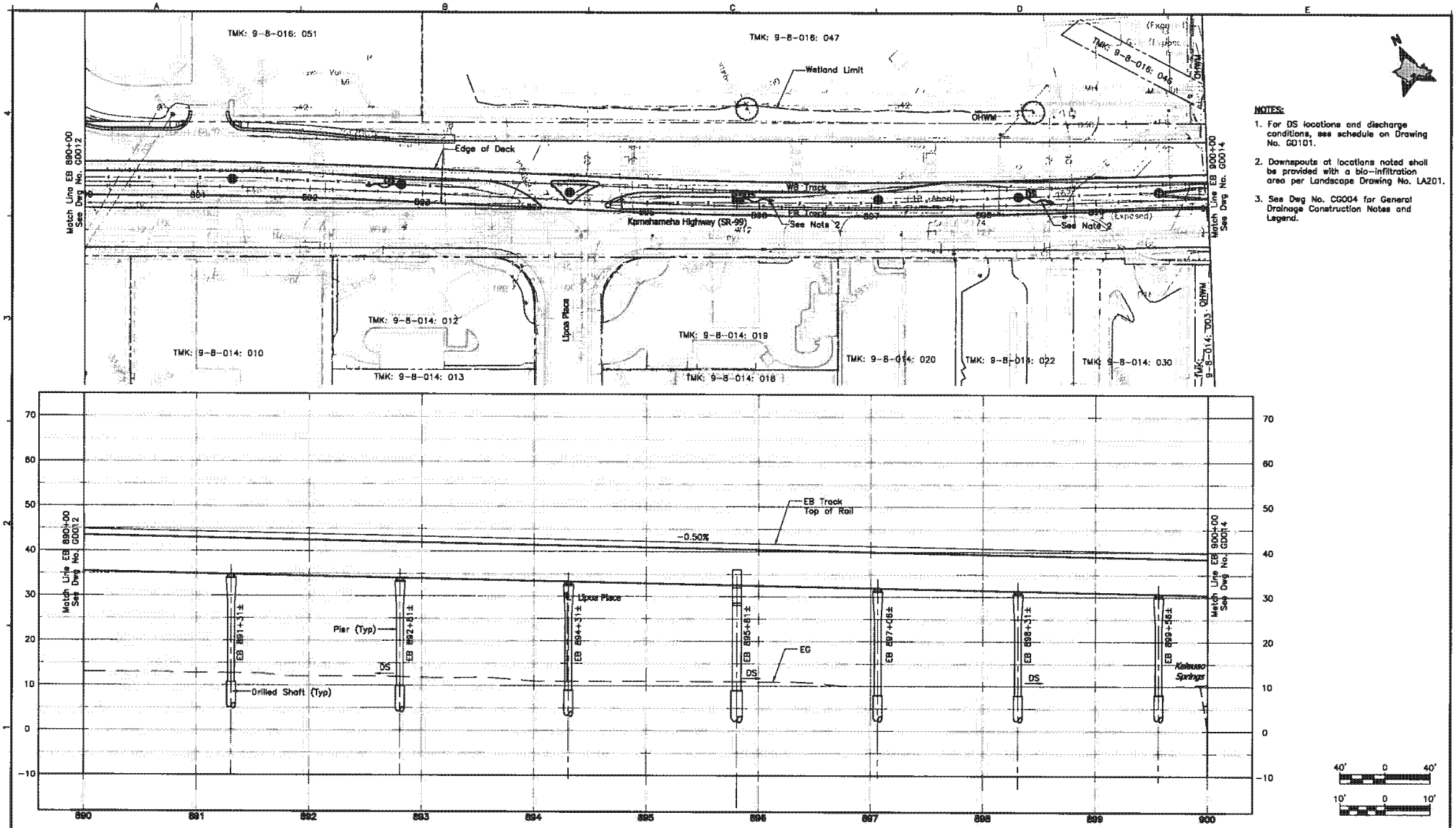

NOTES:

1. For DS locations and discharge conditions, see schedule on Drawing No. GD101.
2. Downspouts at locations noted shall be provided with a bio-infiltration area per Landscape Drawing No. LA201.
3. See Dwg No. CG004 for General Drainage Construction Notes and Legend.

Rev	By	Date	Description
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Checked: K Wong
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

GUIDEWAY DRAINAGE LAYOUT PLAN

EB 890+00 TO EB 900+00

Contract No.: DB-320
CADD File: KHDB-B18-GD013
Drawing No: GD013 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 116 of 265

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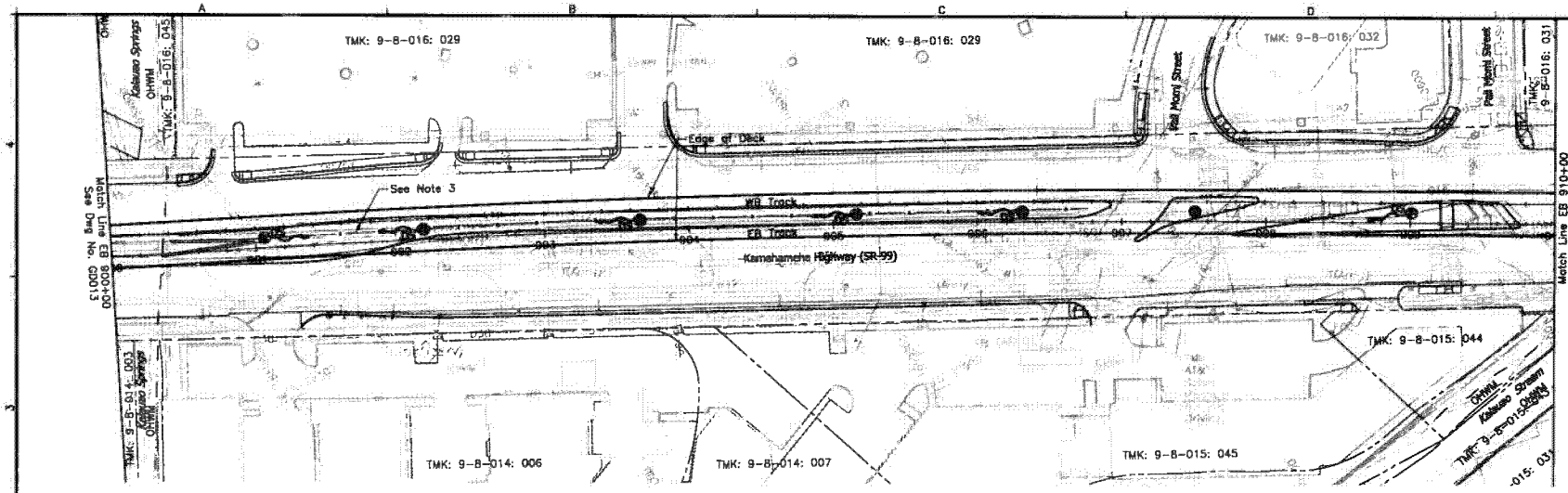
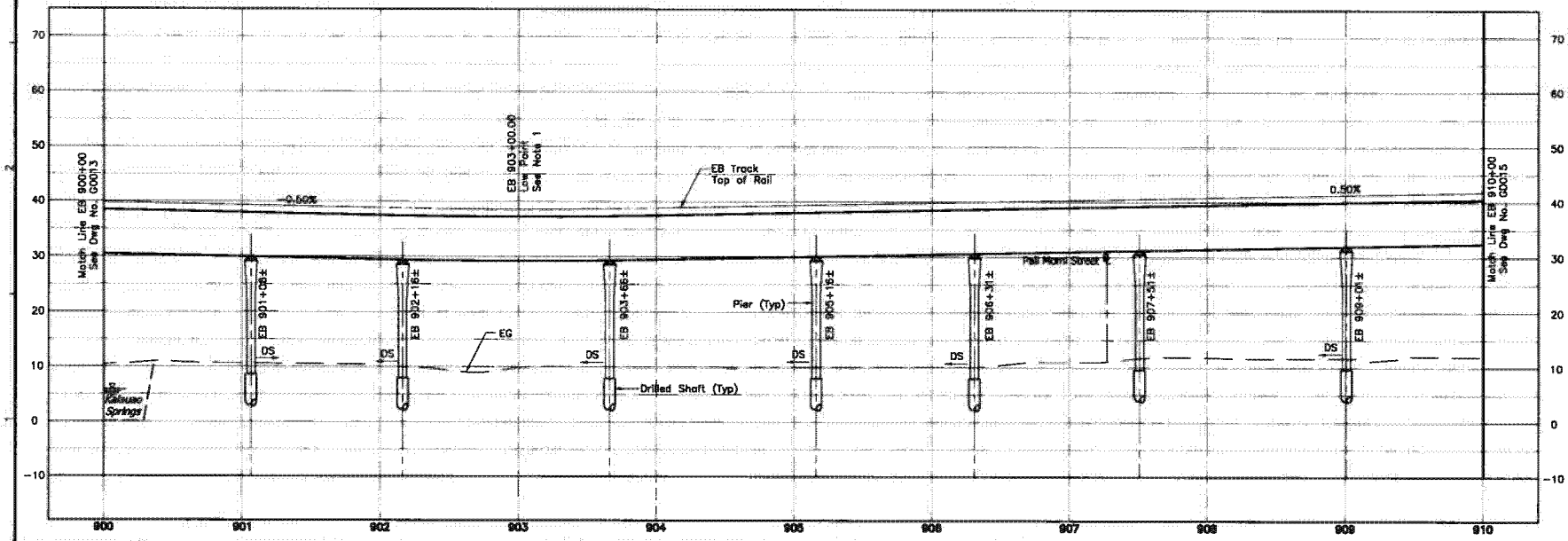


NOTES:

1. Drain inlets at low point (sump) shall be connected to the nearest column DS at Sta 903+56 per Section B on Drawing No. GD102.
2. For DS locations and discharge conditions, see schedule on Drawing No. GD101.
3. Downspouts at locations noted shall be provided with a bio-infiltration area per Landscape Drawing No. LA201.
4. See Dwg No. CG004 for General Drainage Construction Notes and Legend.



Rev	By	Date	Description
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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 - Honolulu, HI 96813
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

GUIDEWAY DRAINAGE LAYOUT PLAN

EB 900+00 TO EB 910+00

Contract No.: DB-320
CADD File: KHDB-B16-GD014
Drawing No.: GD014 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 117 of 265

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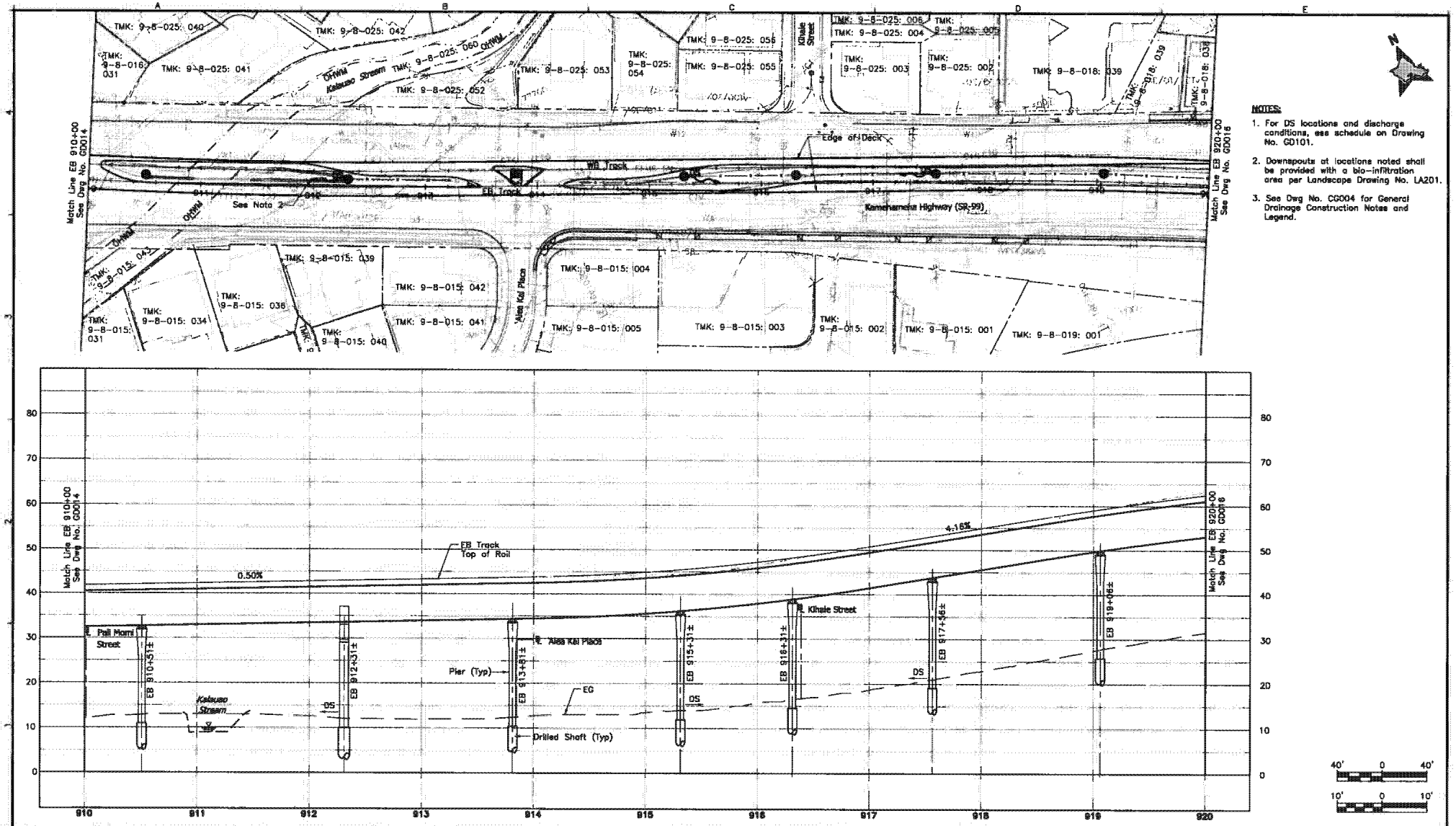

NOTES:

1. For DS locations and discharge conditions, ess schedule on Drawing No. GD101.
2. Downspouts at locations noted shall be provided with a bio-infiltration area per Landscape Drawing No. LA201.
3. See Dwg No. CG004 for General Drainage Construction Notes and Legend.

Rev	By	Date	Description
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Drawn: T. Cochran
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Approved: L. Hasprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

GUIDEWAY DRAINAGE LAYOUT PLAN

EB 910+00 TO EB 920+00

Contract No.: DB-320
CADD File: KHDB-B16-GD015
Drawing No.: GD015 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 116 of 265

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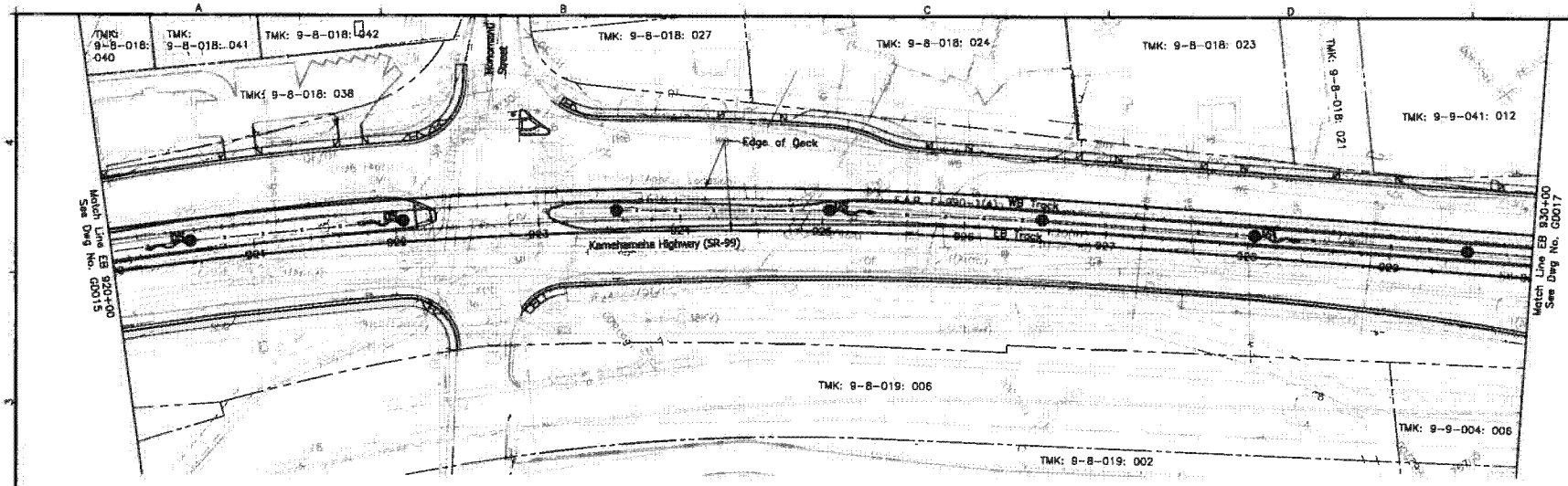

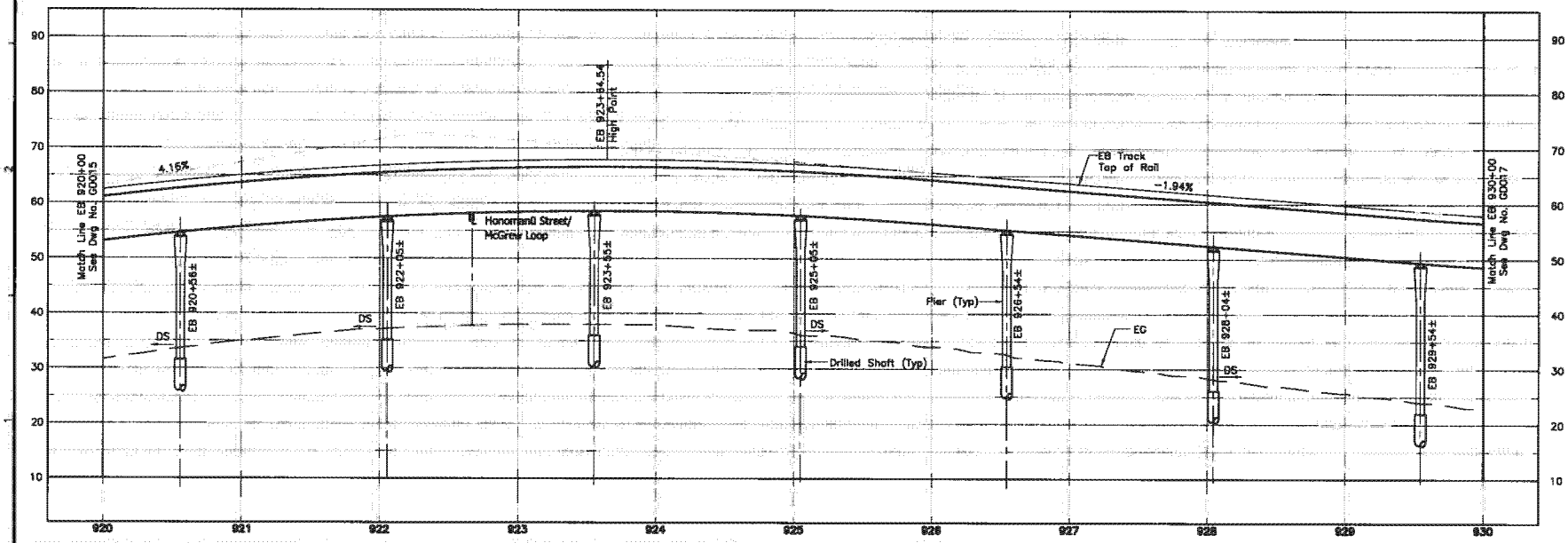

NOTE:

1. For DS locations and discharge conditions, see schedule on Drawing No. GD101.
2. See Dwg No. CG004 for General Drainage Construction Notes and Legend.

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: P Fujii
Drawn: T Cochran
Checked: K Wong
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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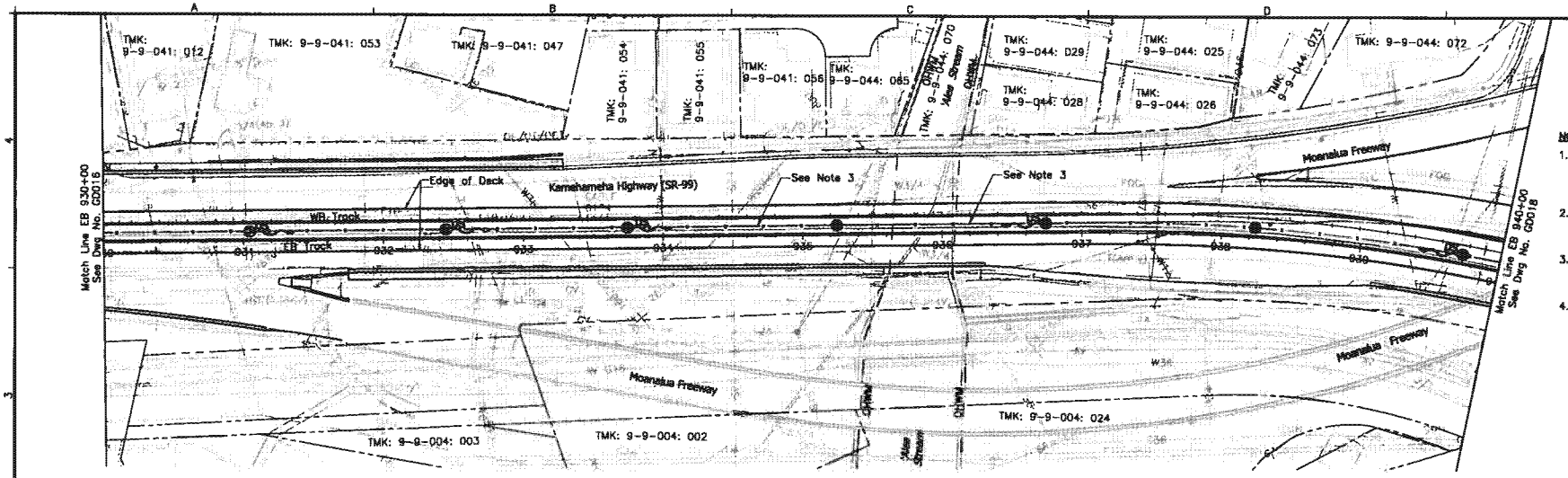
KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

GUIDEWAY DRAINAGE LAYOUT PLAN

EB 920+00 TO EB 930+00

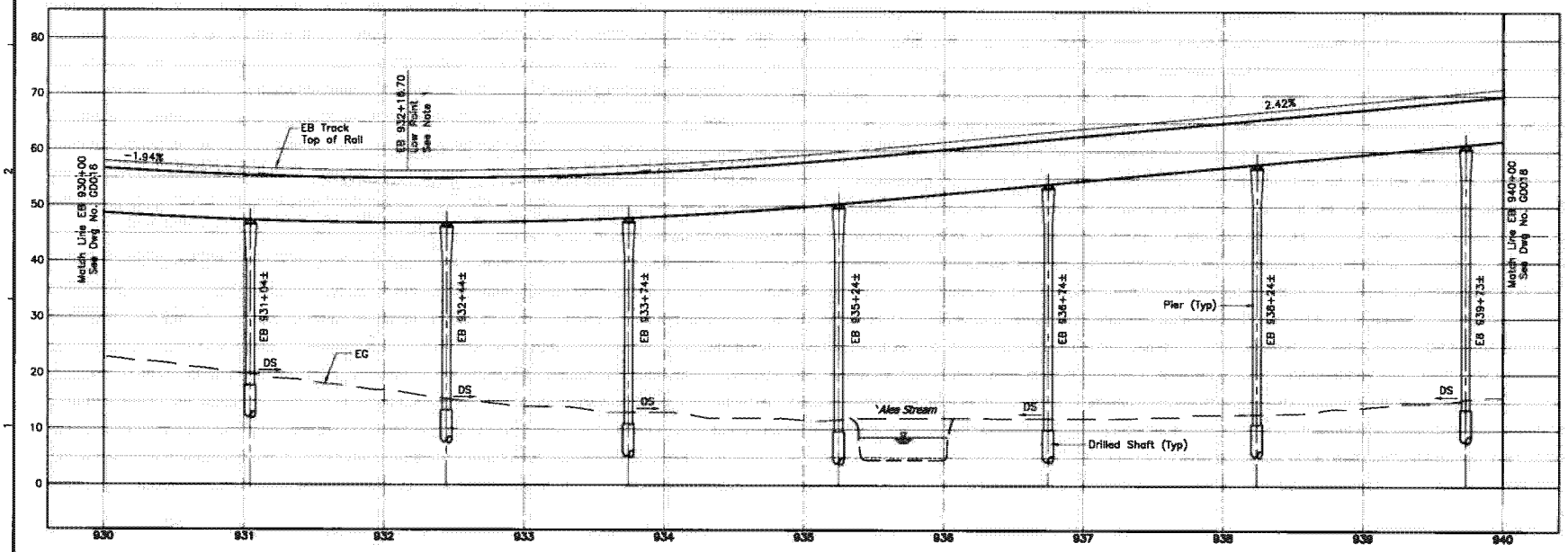
Contract No.: DB-320
CADD File: KHDB-B16-GD016
Drawing No.: GD016 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 119 of 265

2010-03-08 4:26 PM K:\CADD\03 Civil\Segment D\Sheet Files\KHDB-B16-GD001-GD021.dwg



NOTES:

1. Drain inlets at low point (sump) shall be connected to the nearest column DS at Sta 932+44 per Section B on Drawing No. GD102.
2. For DS locations and discharge conditions, see schedule on Drawing No. GD101.
3. Downspouts at locations noted shall be provided with a bio-infiltration area per Landscape Drawing No. LA201.
4. See Dwg No. CG004 for General Drainage Construction Notes and Legend.



Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: P Fujii
Drawn: T Cochran
Checked: K Wong
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Date: 03-19-10

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Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

GUIDEWAY DRAINAGE LAYOUT PLAN

EB 930+00 TO EB 940+00

Contract No.: DB-320
CADD File: KHDB-B16-GD017
Drawing No.: GD017 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 120 of 265

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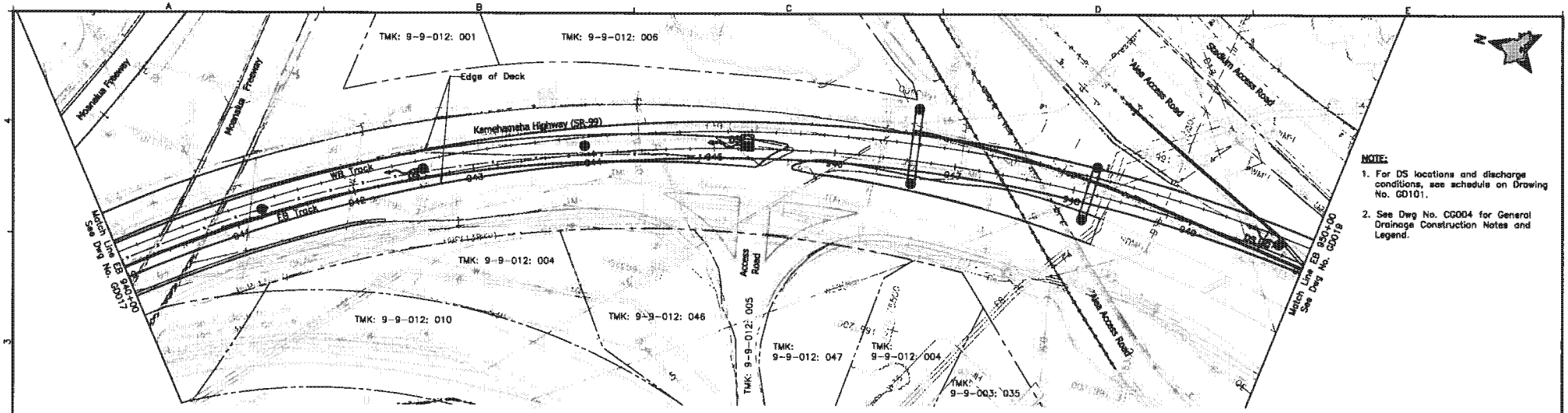
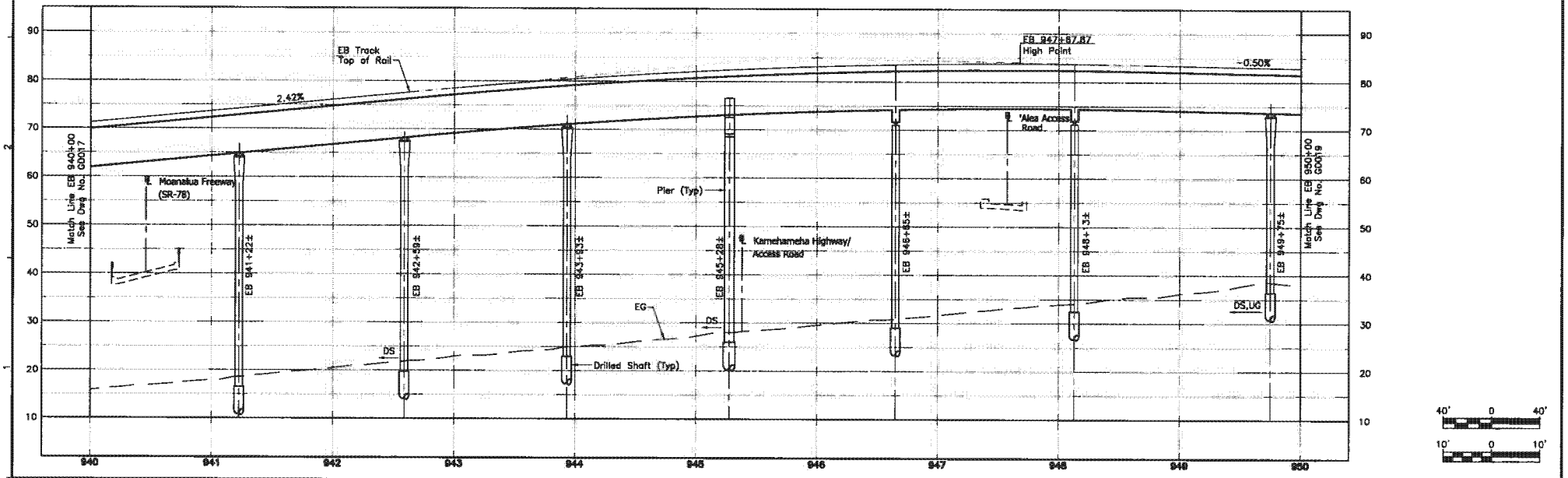


NOTE:

1. For DS locations and discharge conditions, see schedule on Drawing No. GD101.
2. See Dwg No. CG004 for General Drainage Construction Notes and Legend.



Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

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Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
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Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

GUIDEWAY DRAINAGE LAYOUT PLAN

EB 940+00 TO EB 950+00

Contract No.: DB-320
CADD File: KHDB-B16-GD018
Drawing No: GD018 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 121 of 265

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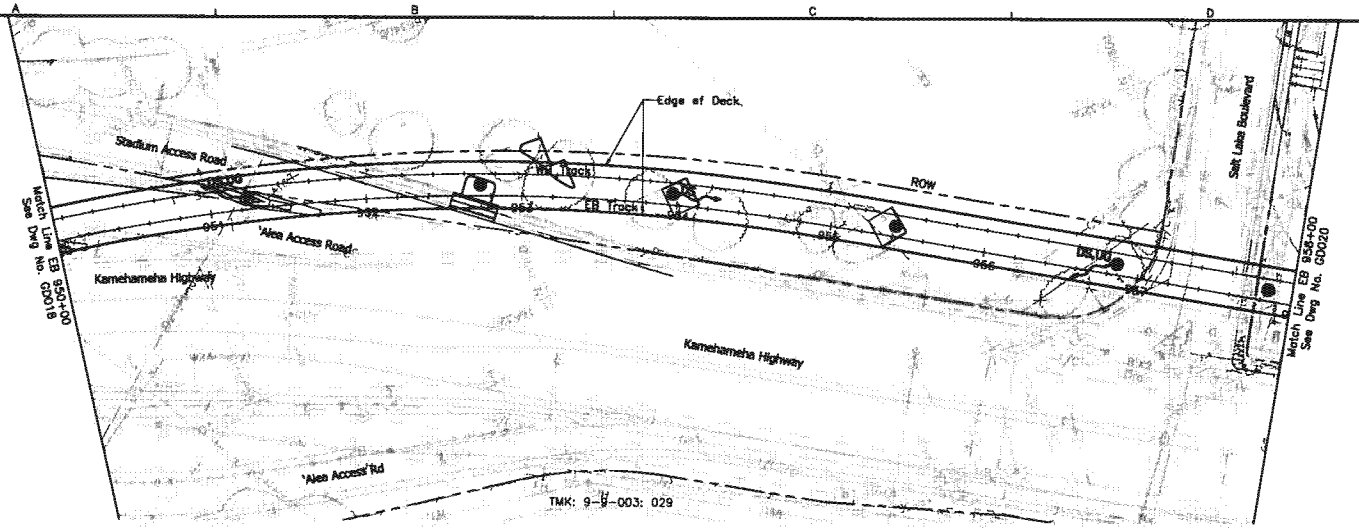
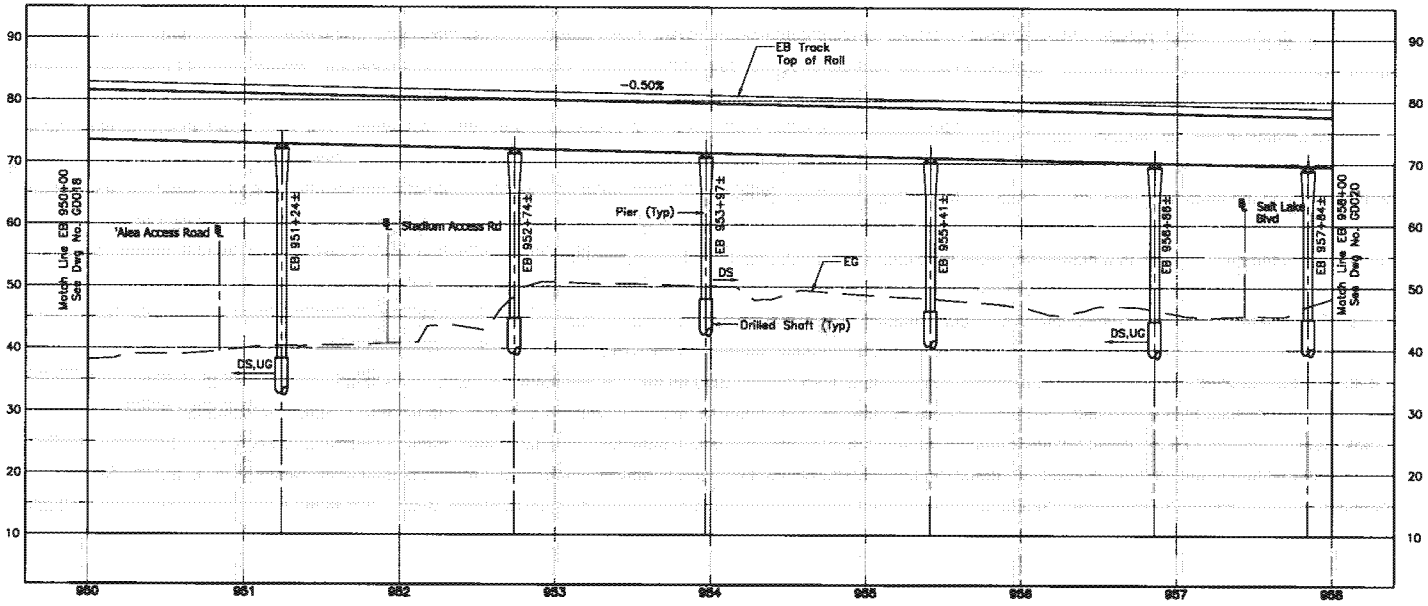


NOTE:

1. For DS locations and discharge conditions, see schedule on Drawing No. GD101.
2. See Dwg No. CG004 for General Drainage Construction Notes and Legend.



40' 0 40'

10' 0 10'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: P Fujii
Drawn: T Cochran
Checked: K Wong
Approved: L Hasprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

GUIDEWAY DRAINAGE LAYOUT PLAN

EB 950+00 TO EB 958+00

Contract No.: DB-320
CADD File: KHDB-B16-GD019
Drawing No: GD019 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 122 of 265

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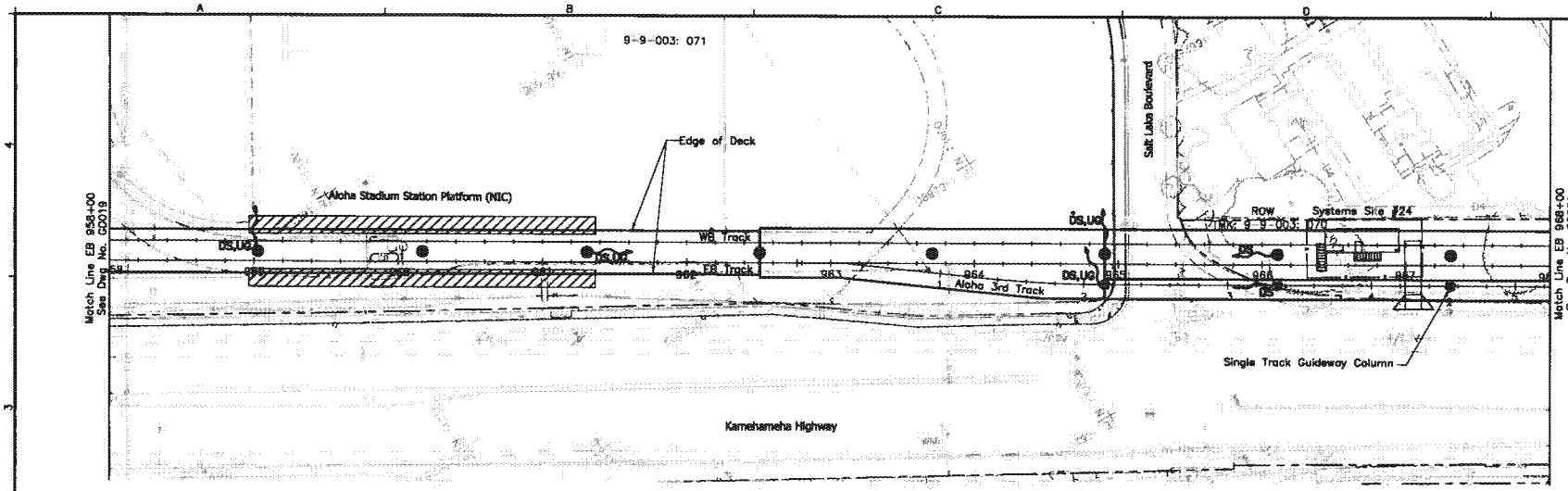
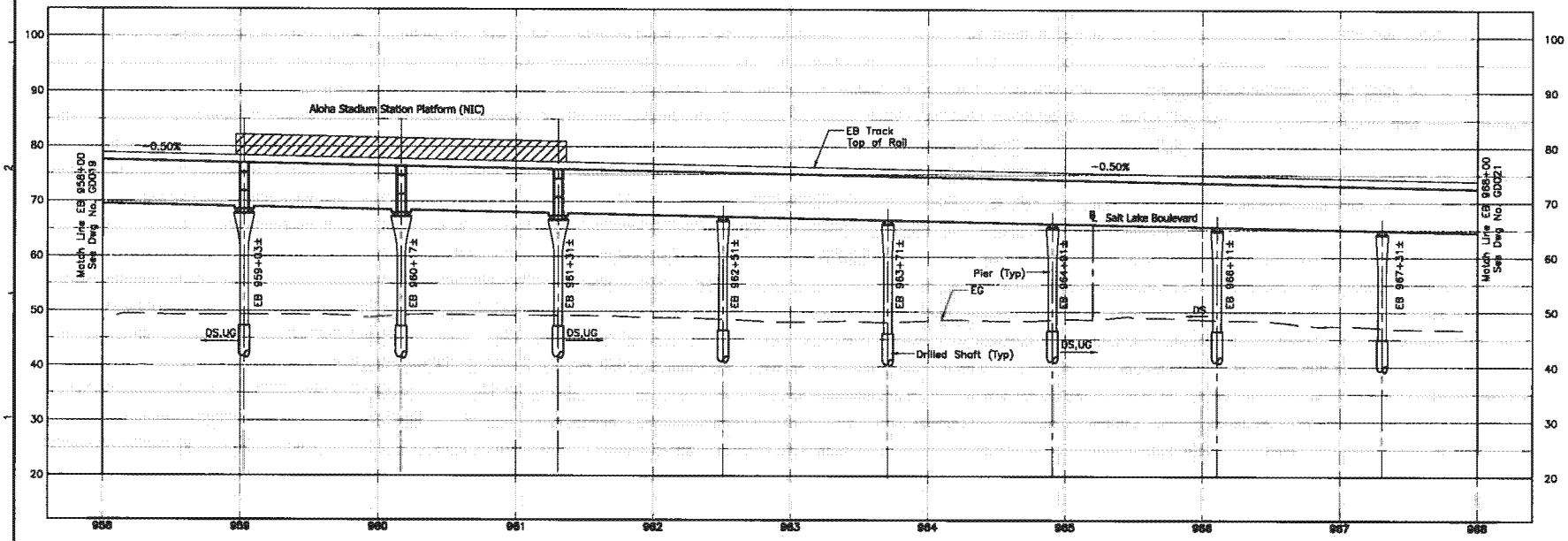


NOTE:

1. For DS locations and discharge conditions, see schedule on Drawing No. GD101.
2. See Dwg No. CG004 for General Drainage Construction Notes and Legend.



40' 0 40'

10' 0 10'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: P. Fujii
Drawn: T. Cochran
Checked: K. Wong
Approved: L. Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

GUIDEWAY DRAINAGE LAYOUT PLAN

EB 958+00 TO EB 968+00

Contract No.: DB-320
CADD File: KHDB-B16-GD020
Drawing No.: GD020 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 123 of 265

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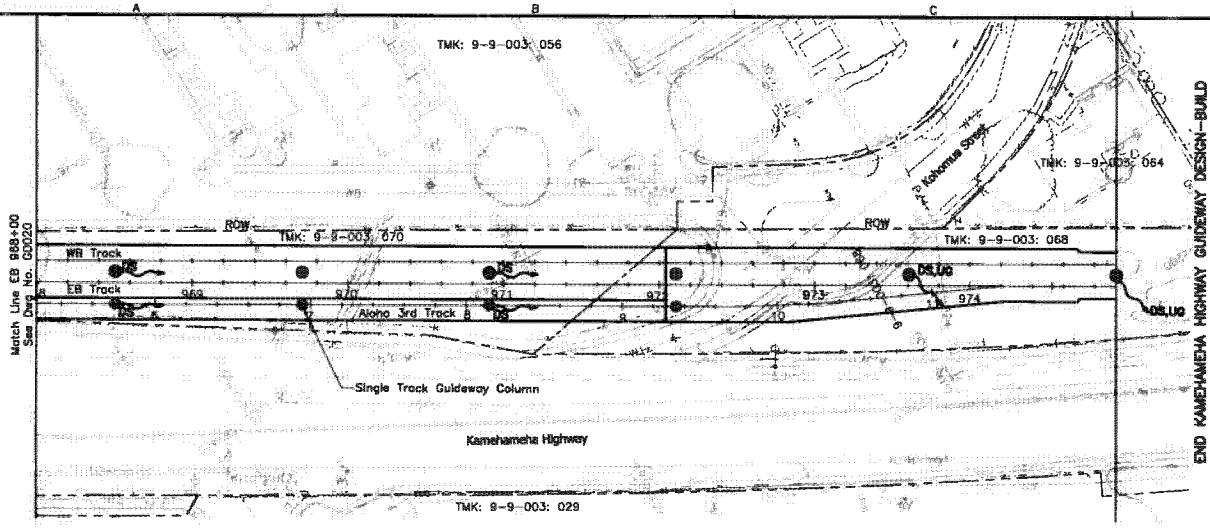

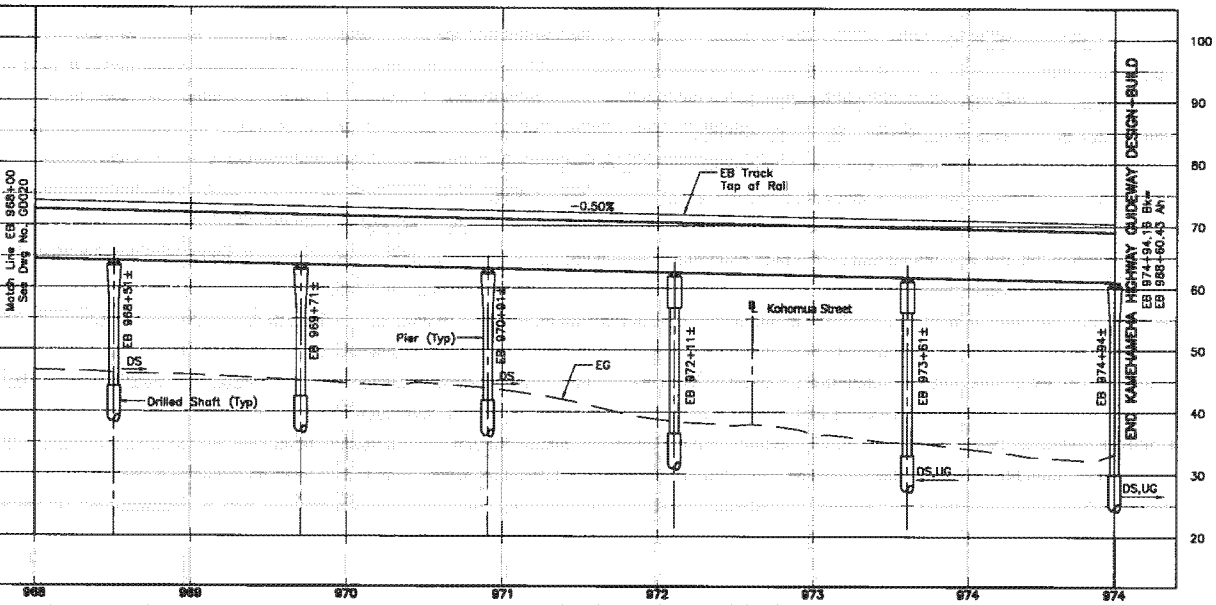

NOTE:

1. For DS locations and discharge conditions, see schedule on Drawing No. GD101.
2. See Dwg No. CG004 for General Drainage Construction Notes and Legend.

40' 0 40'

10' 0 10'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: P Fujii
Drawn: T Cochran
Checked: K Wong
Approved: L Hesprich
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF

1003 Bishop Street, Suite 2250 - Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

GUIDEWAY DRAINAGE LAYOUT PLAN

EB 968+00 TO EB 974+94.16

Contract No.: DB-320
CADD File: KHDB-B16-GD021
Drawing No: GD021 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 124 of 265

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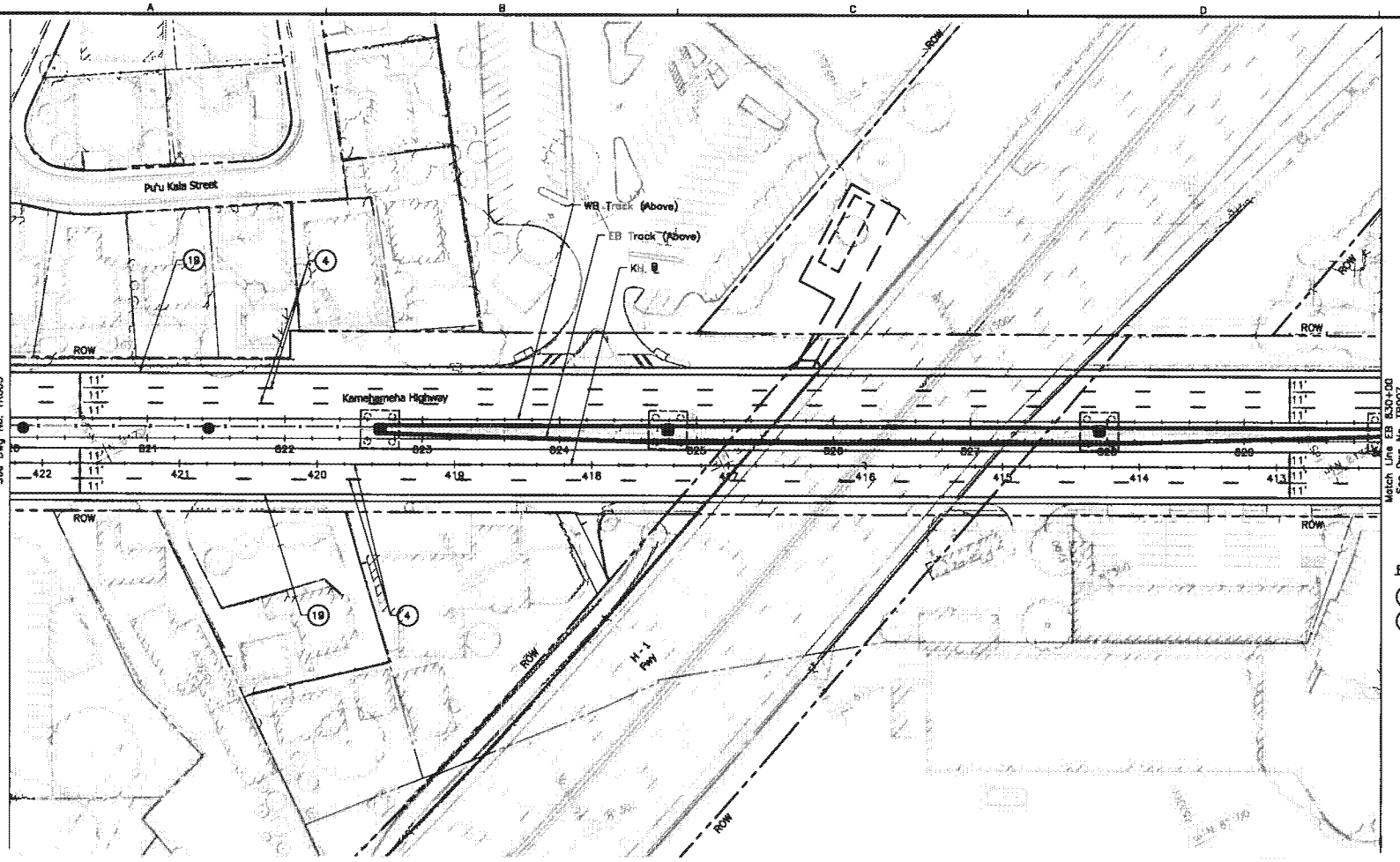

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Signing and Typical Pavement Marking Notes and Legend, see Dwg No. TG002 to TG005.

LEGEND:

- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

PAVEMENT MARKING NOTES:

4 Laneline – RPM

19 Transverse Markings – Single Solid 6" White Stripe

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Werdell
Approved: C Shimizu
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

SIGNING AND STRIPING PLAN

EB 820+00 TO EB 830+00

Contract No.: DB-320
CADD File: KHDB-C02-TR006
Drawing No.: TR006 Rev. A
Scale: 1"=40'
Page No. 144 of 265

2010-03-12 5:20 PM K:\CADD\03 Civil\Segment D\Sheet Files\KHDB-C02-TR001-TR021.dwg

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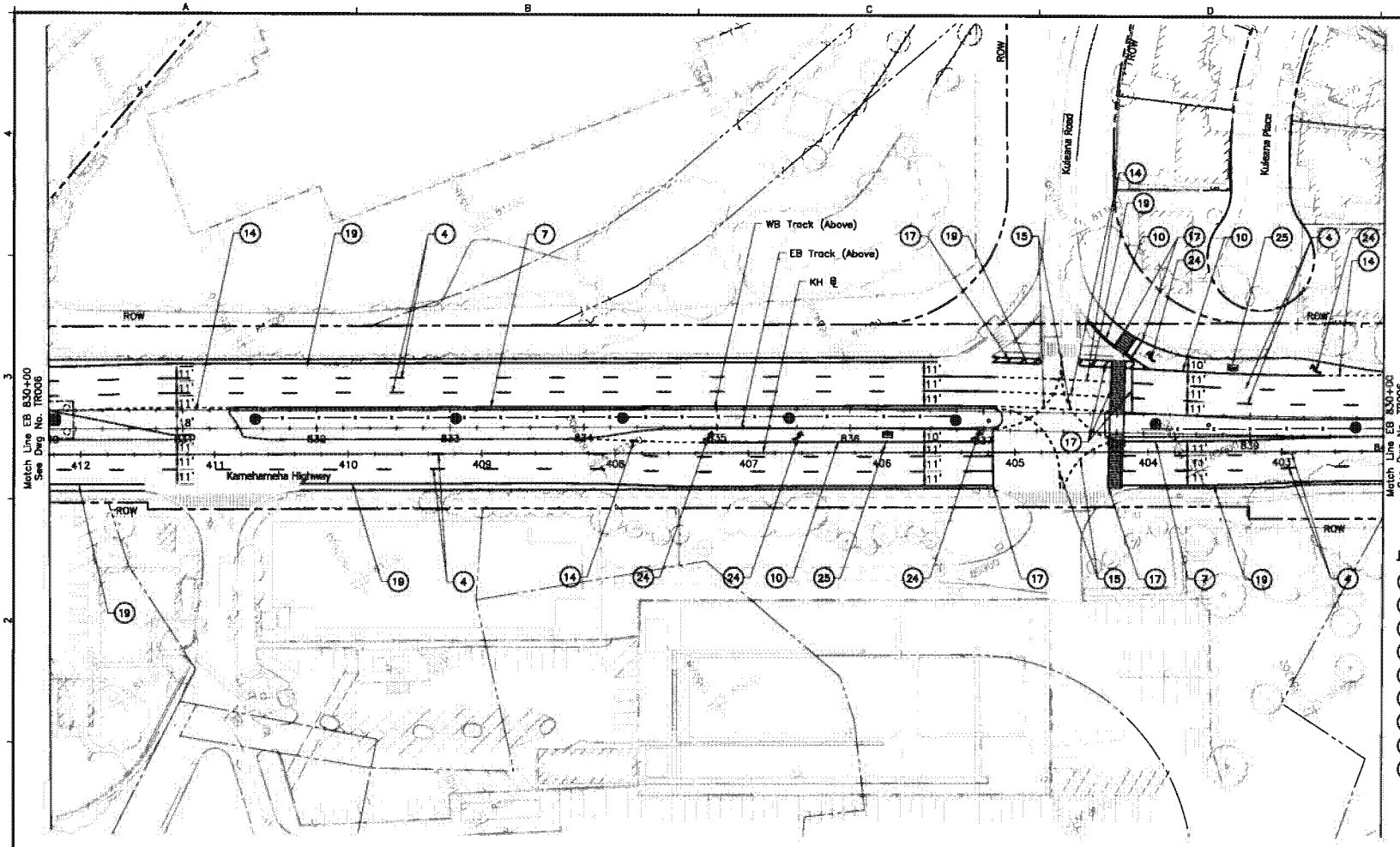

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Signing and Typical Pavement Marking Notes and Legend, see Dwg No. TG002 to TG005.

LEGEND:

- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

PAVEMENT MARKING NOTES:

- (4) Laneline – RPM
- (7) Edgeline – Single Solid 4" Yellow Stripe with RPM
- (10) Laneline – Single Solid 8" White Stripe with RPM
- (14) Laneline – Single Dashed 4" White Stripe
- (15) Laneline – Single Dashed 4" Yellow Stripe
- (17) Transverse Markings – Single Solid 12" White Stripe
- (19) Transverse Markings – Single Solid 6" White Stripe
- (24) Pavement Markings – Arrows
- (25) Pavement Markings – Text

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: C Shimizu
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

SIGNING AND STRIPING PLAN

EB 830+00 TO EB 840+00

Contract No.: DB-320
CADD File: KHDB-C02-TR007
Drawing No: TR007 Rev. A
Scale: 1"=40'
Page No. 145 of 265

2010-03-12 5:20 PM K:\CADD\03 Civil\Segment D\Sheet Files\KHDB-C02-TR001-TR021.dwg

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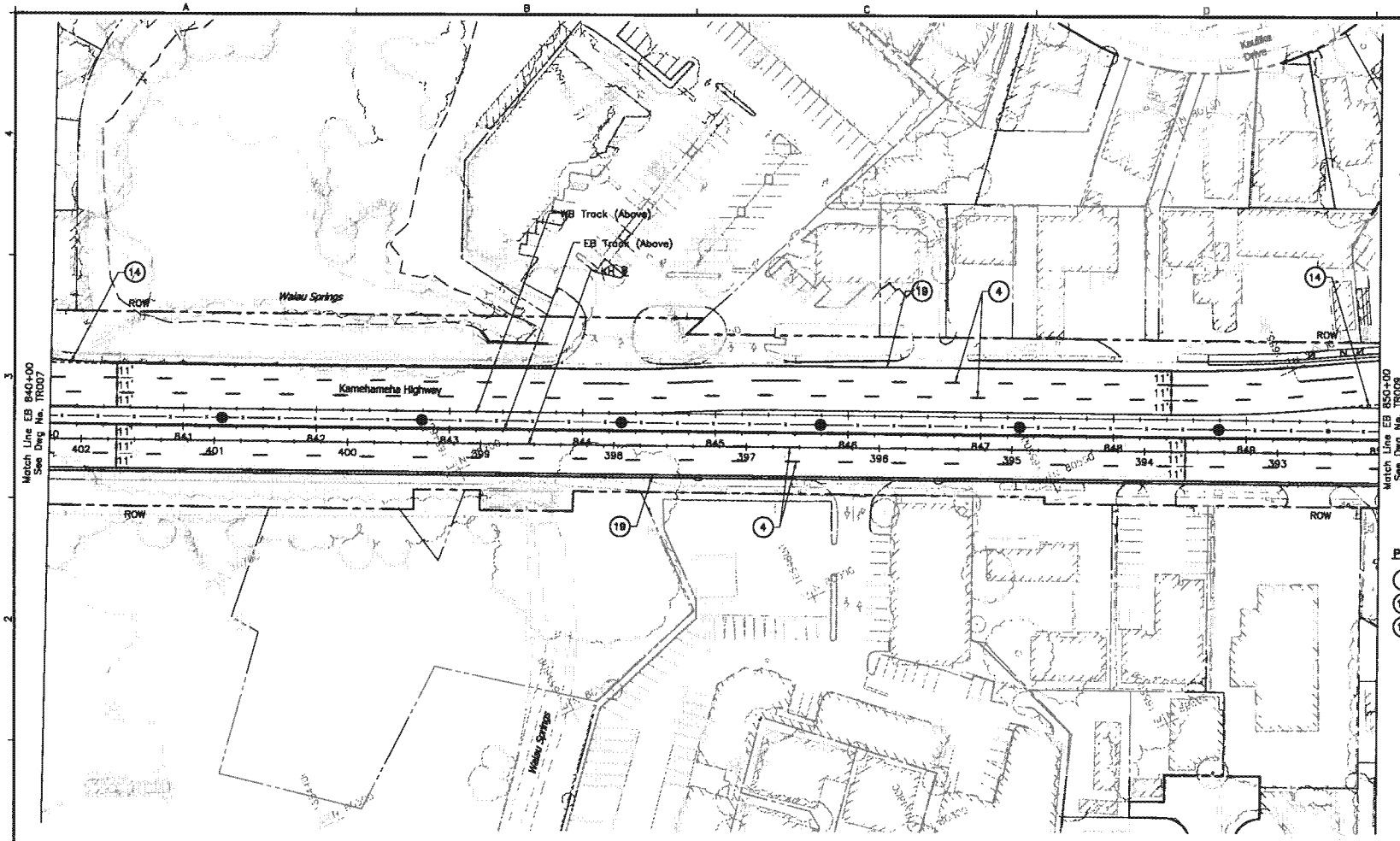

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Signing and Typical Pavement Marking Notes and Legend, see Dwg No. TG002 to TG005.

LEGEND:

- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

PAVEMENT MARKING NOTES:

4. Laneline – RPM
14. Laneline – Single Dashed 4" White Stripe
19. Transverse Markings – Single Solid 6" White Stripe

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: C Shimizu
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

SIGNING AND STRIPING PLAN

EB 840+00 TO EB 850+00

Contract No.: DB-320
CADD File: KHDB-C02-TR008
Drawing No: TR008 Rev. A
Scale: 1"=40'
Page No. 146 of 265

2010-03-15 1:39 PM K:\CADD\03 Civil\Segment D\Sheet Files\KHDB-C02-TR001-TR021.dwg

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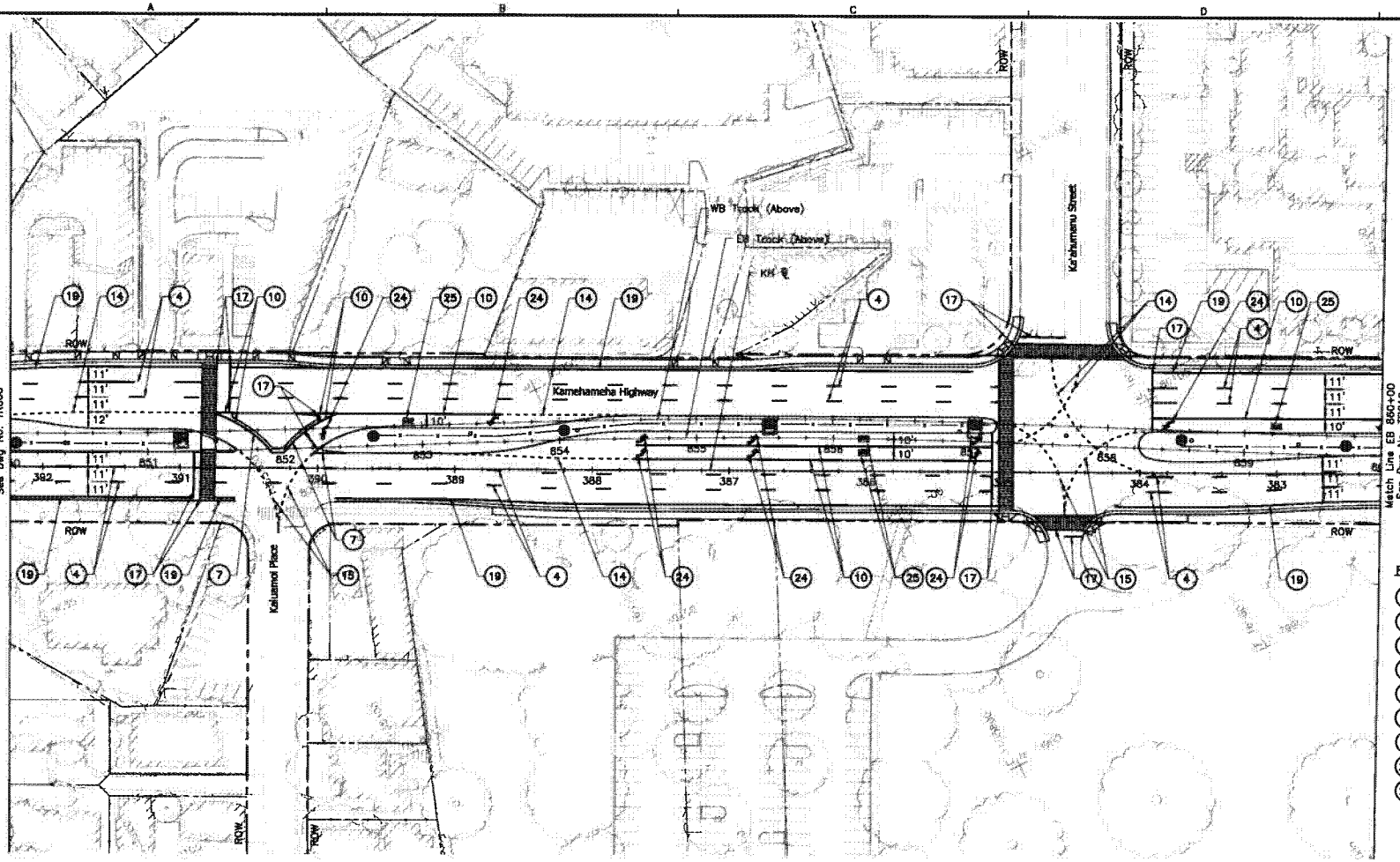

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Signing and Typical Pavement Marking Notes and Legend, see Dwg No. TG002 to TG005.

LEGEND:

- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

PAVEMENT MARKING NOTES:

4. Laneline – RPM
7. Edgeline – Single Solid 4" Yellow Stripe with RPM
10. Laneline – Single Solid 8" White Stripe with RPM
14. Laneline – Single Dashed 4" White Stripe
15. Laneline – Single Dashed 4" Yellow Stripe
17. Transverse Markings – Single Solid 12" White Stripe
19. Transverse Markings – Single Solid 6" White Stripe
24. Pavement Markings – Arrows
25. Pavement Markings – Text

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: C Shimizu
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

SIGNING AND STRIPING PLAN

EB 850+00 TO EB 860+00

Contract No.: DB-320
CADD File: KHDB-C02-TR009
Drawing No: TR009 Rev. A
Scale: 1"=40'
Page No. 147 of 265

2010-03-15 1:39 PM K:\CADD\03 Civil\Segment D\Sheet Files\KHDB-C02-TR001-TR021.dwg

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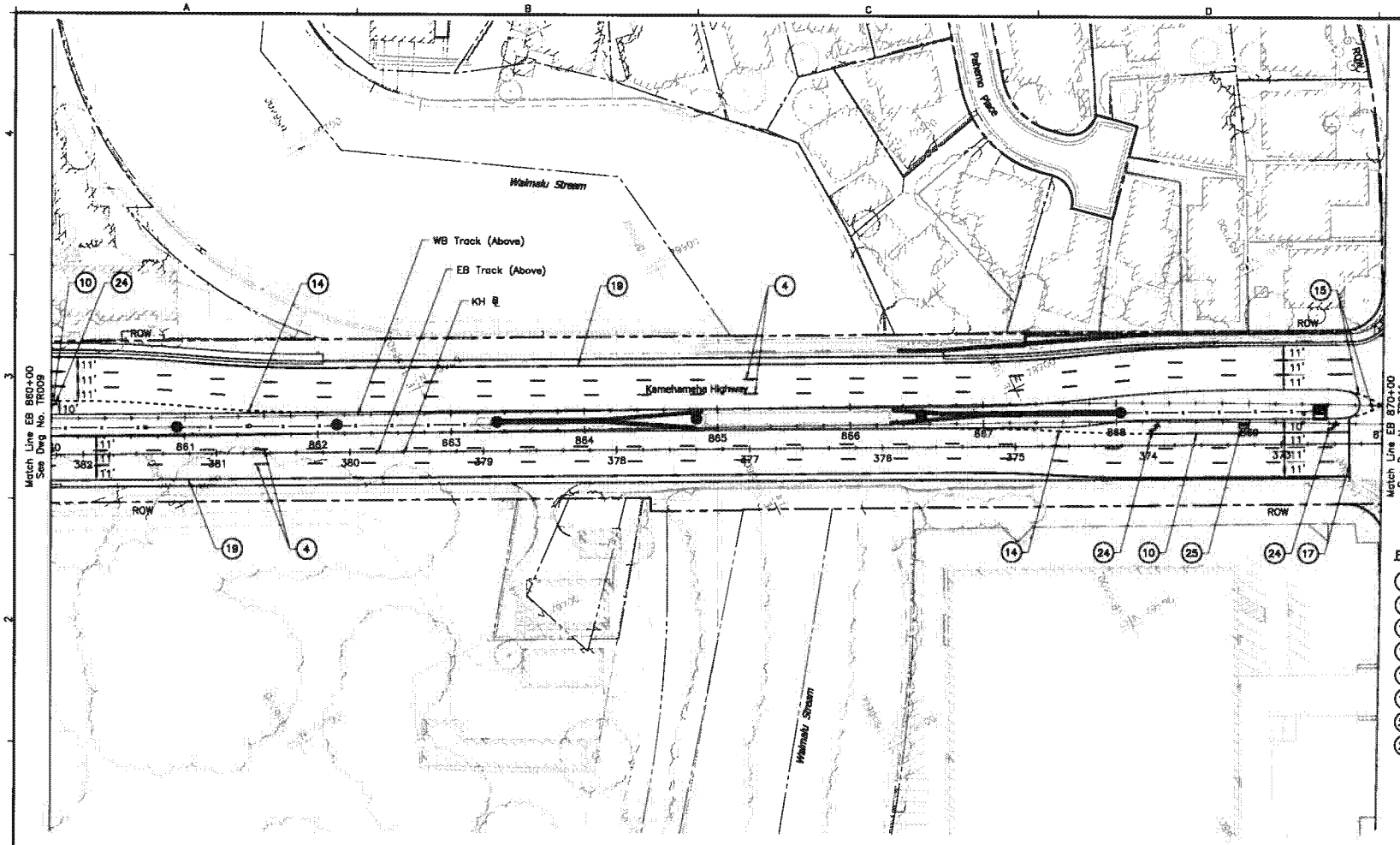

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Signing and Typical Pavement Marking Notes and Legend, see Dwg No. TG002 to TG005.

LEGEND:

- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

PAVEMENT MARKING NOTES:

4. Laneline – RPM
10. Laneline – Single Solid 8" White Stripe with RPM
14. Laneline – Single Dashed 4" White Stripe
15. Laneline – Single Dashed 4" Yellow Stripe
17. Transverse Markings – Single Solid 12" White Stripe
19. Transverse Markings – Single Solid 6" White Stripe
24. Pavement Markings – Arrows
25. Pavement Markings – Text

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

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Drawn: J Deragier
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Approved: C Shimizu
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

SIGNING AND STRIPING PLAN

EB 860+00 TO EB 870+00

Contract No.: DB-320
CADD File: KHDB-C02-TR010
Drawing No: TR010 Rev. A
Scale: 1"=40'
Page No. 148 of 265

2010-03-15 1:39 PM K:\CADD\03 Civil\Segment D\Sheet Files\KHDB-C02-TR001-TR021.dwg

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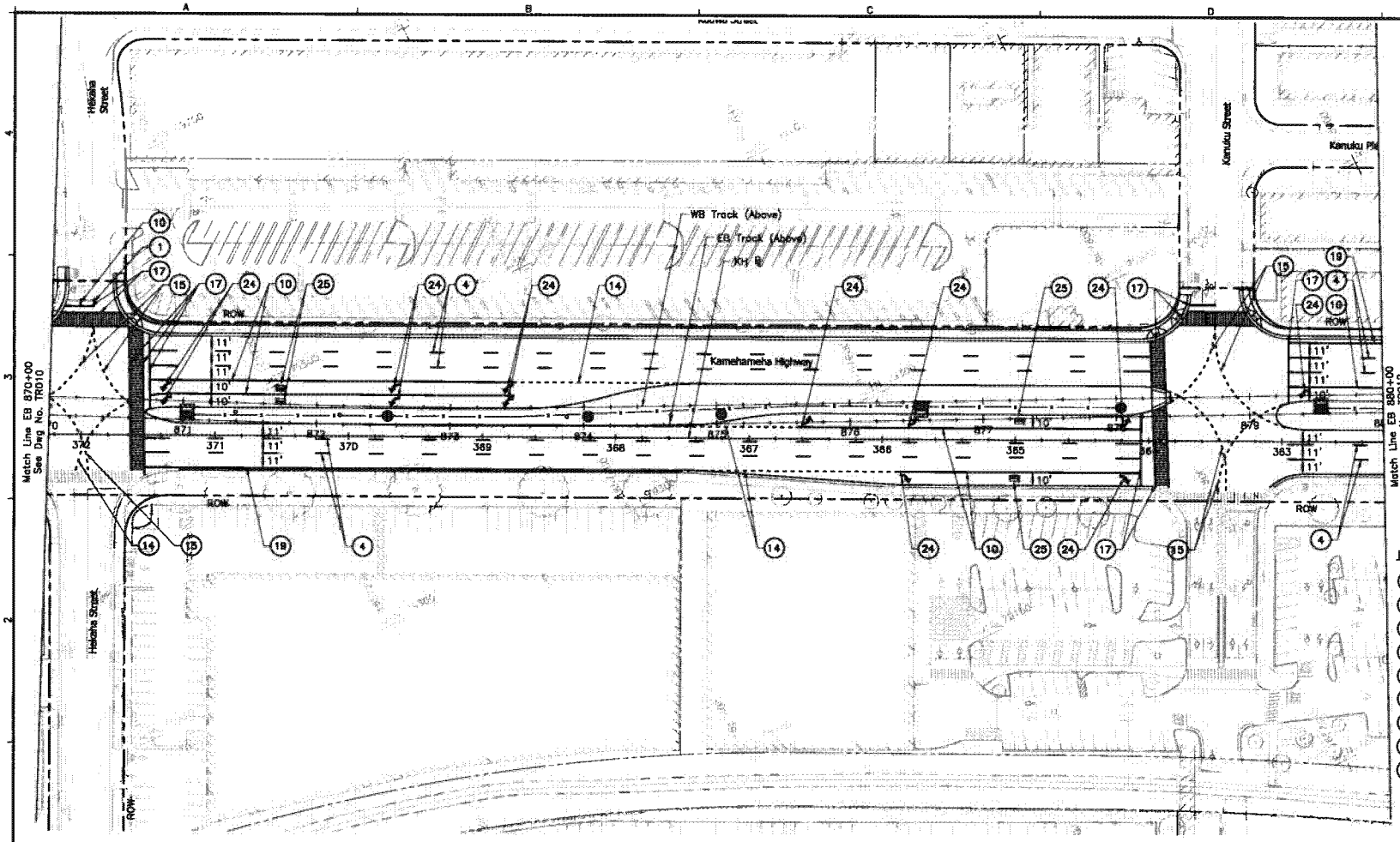

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Signing and Typical Pavement Marking Notes and Legend, see Dwg No. TG002 to TG005.

LEGEND:

- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

PAVEMENT MARKING NOTES:

1. Centerline – Double Solid 4" Yellow Stripe with RPM
4. Laneline – RPM
10. Laneline – Single Solid 8" White Stripe with RPM
14. Laneline – Single Dashed 4" White Stripe
15. Laneline – Single Dashed 4" Yellow Stripe
17. Transverse Markings – Single Solid 12" White Stripe
19. Transverse Markings – Single Solid 8" White Stripe
24. Pavement Markings – Arrows
25. Pavement Markings – Text

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

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PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

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Drawn: J Derosier
Checked: B Werdell
Approved: C Shimizu
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

SIGNING AND STRIPING PLAN

EB 870+00 TO EB 880+00

Contract No.: DB-320
CADD File: KHDB-C02-TR011
Drawing No: TR011 Rev. A
Scale: 1"=40'
Page No. 149 of 265

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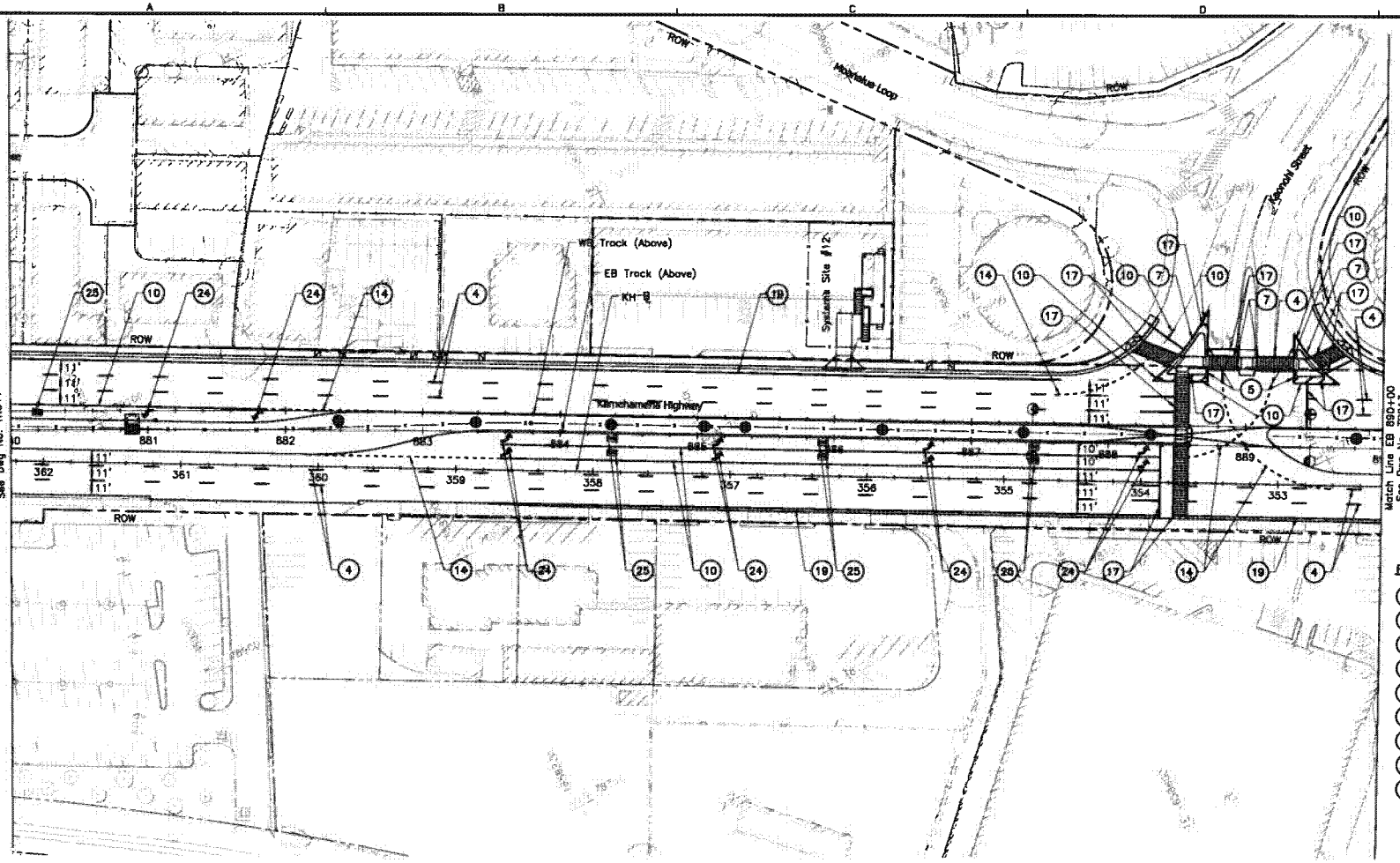

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Signing and Typical Pavement Marking Notes and Legend, see Dwg No. TG002 to TG005.

LEGEND:

- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

PAVEMENT MARKING NOTES:

4. Laneline – RPM
5. Edgeline – Single Solid 4" White Stripe with RPM
7. Edgeline – Single Solid 4" Yellow Stripe with RPM
10. Laneline – Single Solid 8" White Stripe with RPM
14. Laneline – Single Dashed 4" White Stripe
17. Transverse Markings – Single Solid 12" White Stripe
19. Transverse Markings – Single Solid 6" White Stripe
24. Pavement Markings – Arrows
25. Pavement Markings – Text

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: C Shimizu
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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

KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

SIGNING AND STRIPING PLAN

EB 880+00 TO EB 890+00

Contract No.: DB-320
CADD File: KHDB-C02-TR012
Drawing No: TR012 Rev. A
Scale: 1"=40'
Page No. 150 of 265

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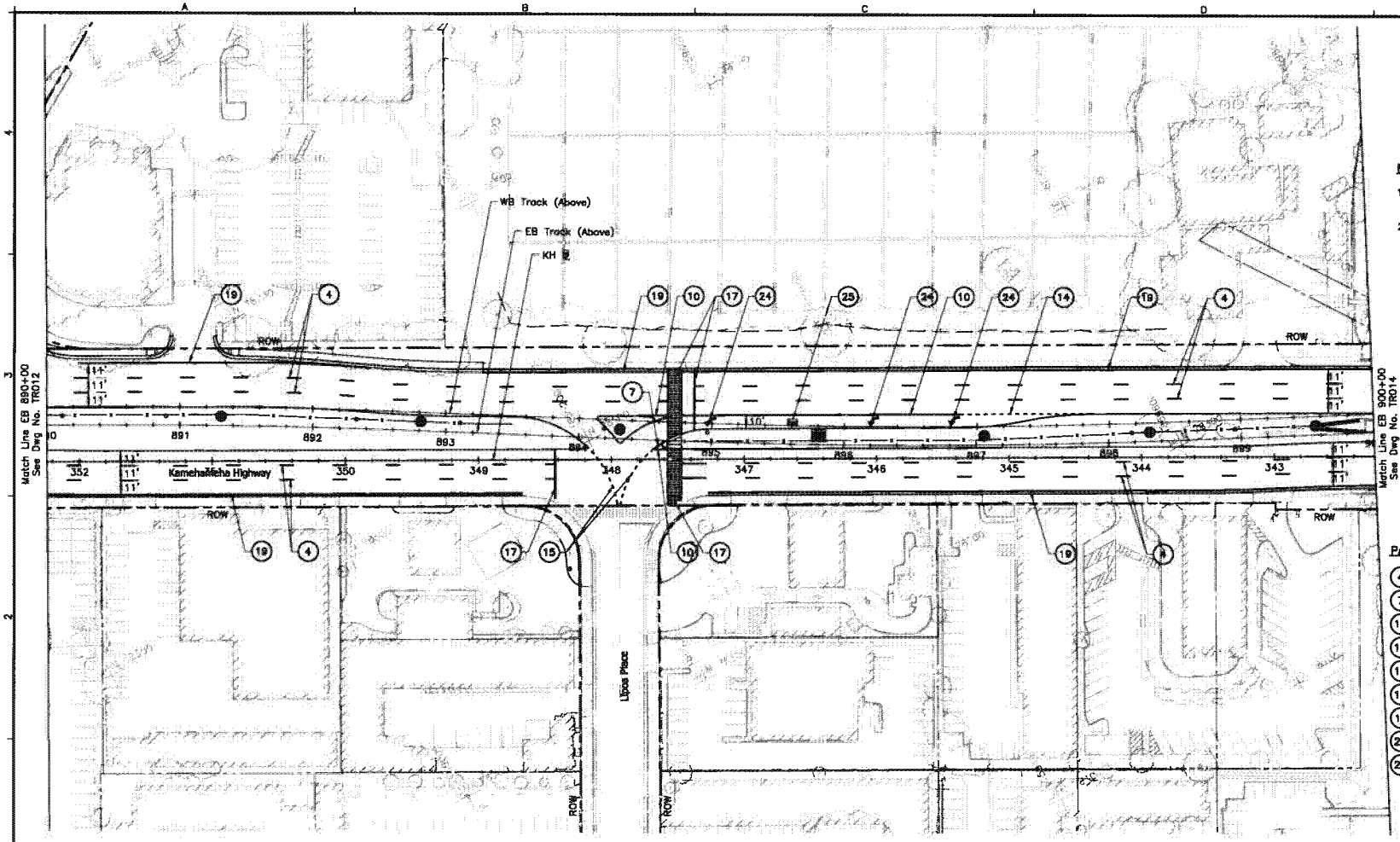

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Signing and Typical Pavement Marking Notes and Legend, see Dwg No. TG002 to TG005.

LEGEND:

- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

PAVEMENT MARKING NOTES:

- (4) Laneline – RPM
- (7) Edgeline – Single Solid 4" Yellow Stripe with RPM
- (10) Laneline – Single Solid 8" White Stripe with RPM
- (14) Laneline – Single Dashed 4" White Stripe
- (15) Laneline – Single Dashed 4" Yellow Stripe
- (17) Transverse Markings – Single Solid 12" White Stripe
- (18) Transverse Markings – Single Solid 6" White Stripe
- (24) Pavement Markings – Arrows
- (25) Pavement Markings – Text

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

2010-03-15 1:39 PM K:\CADD\03 Civil\Segment D\Sheet Files\KHDB-C02-TR001-TR021.dwg

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wordell
Approved: C Shimizu
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

SIGNING AND STRIPING PLAN

EB 890+00 TO EB 900+00

Contract No.: DB-320
CADD File: KHDB-C02-TR013
Drawing No: TR013 Rev. A
Scale: 1"=40'
Page No. 151 of 265

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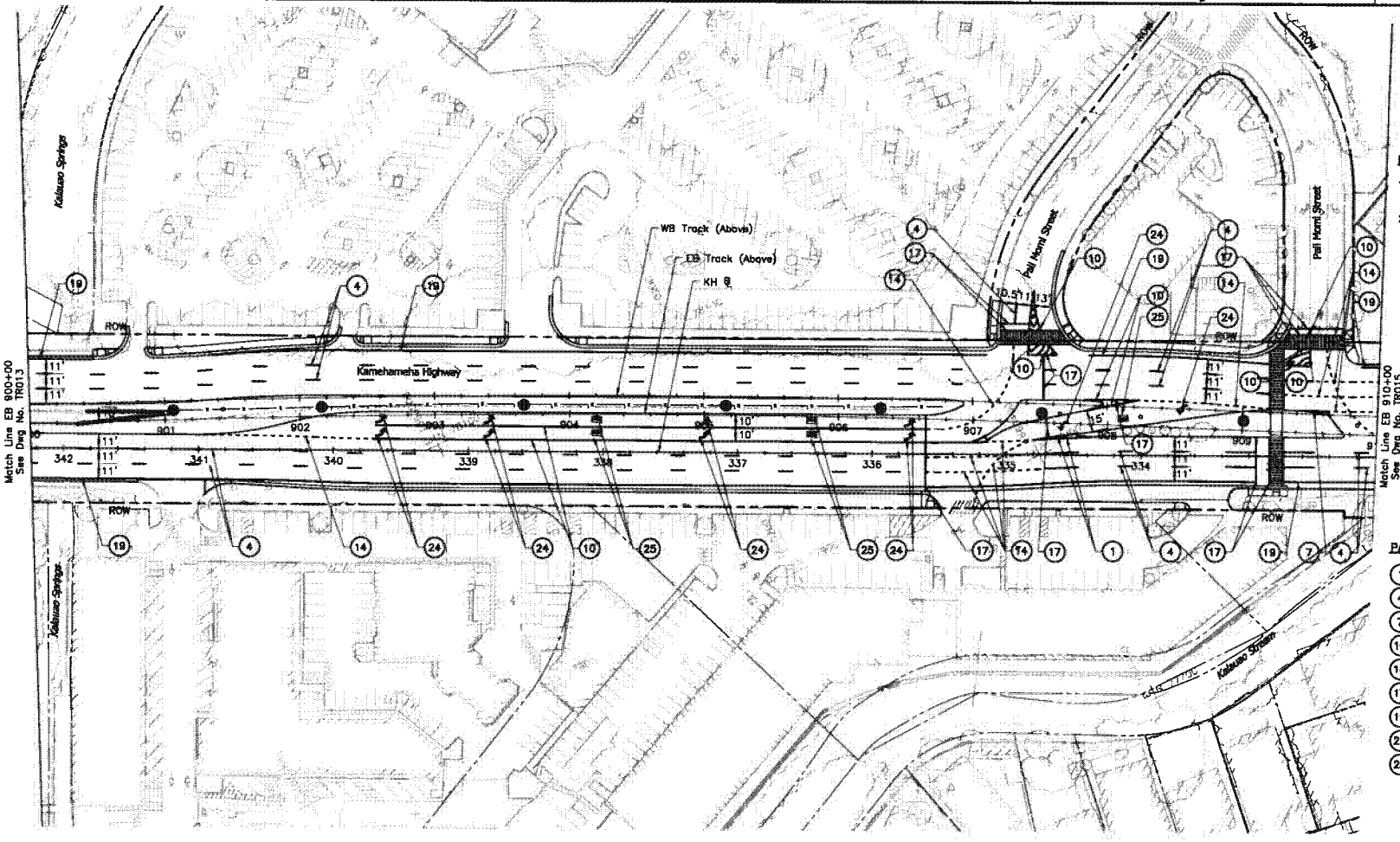


NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Signing and Typical Pavement Marking Notes and Legend, see Dwg No. TG002 to TG005.

LEGEND:

- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

PAVEMENT MARKING NOTES:

1. Centerline – Double Solid 4" Yellow Stripe with RPM
4. Laneline – RPM
7. Edgeline – Single Solid 4" Yellow Stripe with RPM
10. Laneline – Single Solid 8" White Stripe with RPM
14. Laneline – Single Dashed 4" White Stripe
17. Transverse Markings – Single Solid 12" White Stripe
19. Transverse Markings – Single Solid 6" White Stripe
24. Pavement Markings – Arrows
25. Pavement Markings – Text

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: C Shimizu
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
For reduced prints, original page size in inches: 0 1 2 3 4

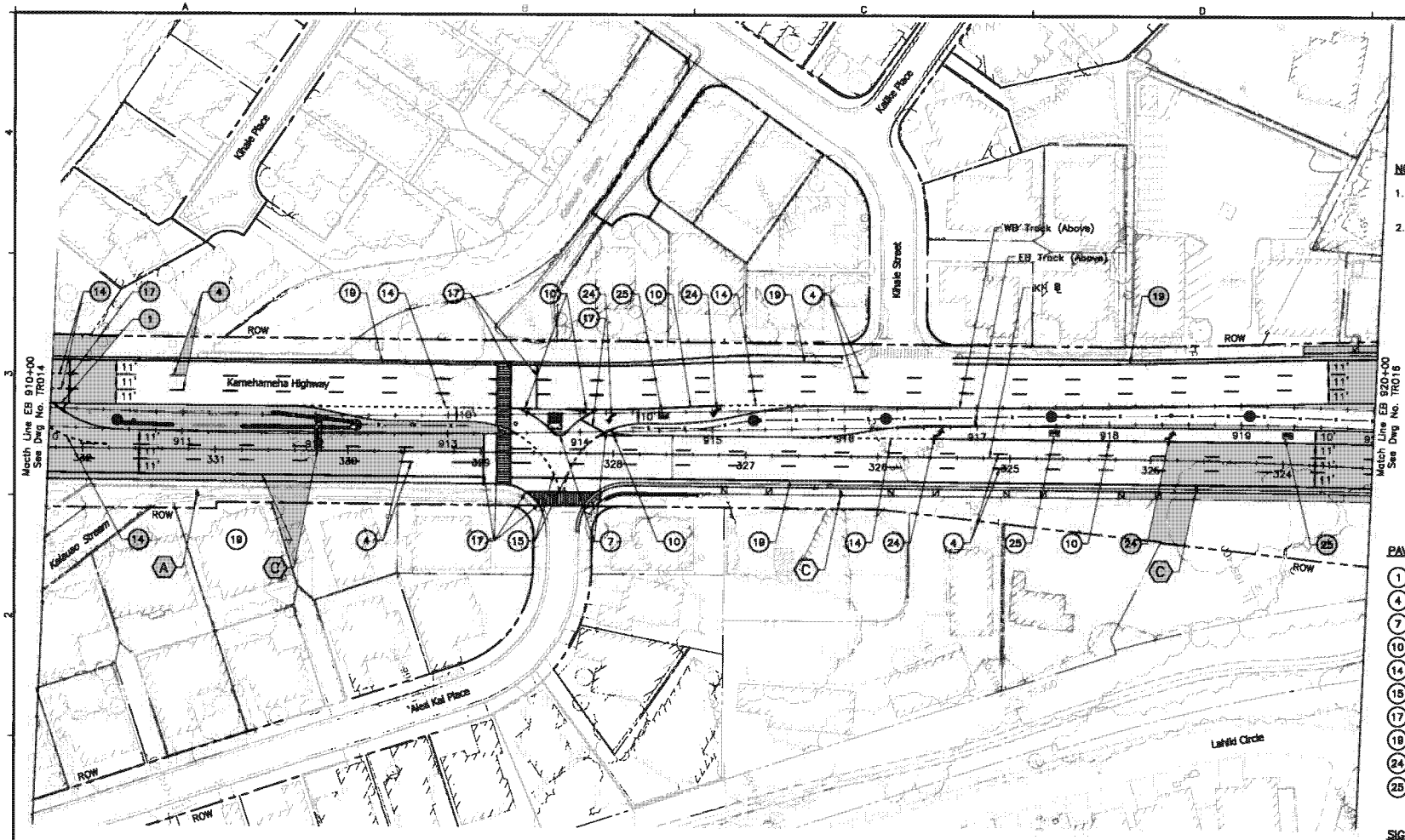
KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

SIGNING AND STRIPING PLAN

EB 900+00 TO EB 910+00

Contract No.: DB-320
CADD File: KHDB-C02-TR014
Drawing No: TR014 Rev. A
Scale: 1"=40'
Page No. 152 of 265

2010-03-15 1:39 PM K:\CADD\03 Civil\Segment D\Sheet Files\KHDB-C02-TR001-TR021.dwg



NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Signing and Typical Pavement Marking Notes and Legend, see Dwg No. TG002 to TG005.

LEGEND:

- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

PAVEMENT MARKING NOTES:

1. Centerline – Double Solid 4" Yellow Stripe with RPM
4. Laneline – RPM
7. Edgeline – Single Solid 4" Yellow Stripe with RPM
10. Laneline – Single Solid 8" White Stripe with RPM
14. Laneline – Single Dashed 4" White Stripe
15. Laneline – Single Dashed 4" Yellow Stripe
17. Transverse Markings – Single Solid 12" White Stripe
19. Transverse Markings – Single Solid 6" White Stripe
24. Pavement Markings – Arrows
25. Pavement Markings – Text

SIGNING NOTES:

A. Existing sign(s) to remain
C. Relocate existing sign(s) on new post(s)

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

2010-03-12 5:20 PM K:\CADD\03 Civil\Segment D\Sheet Files\KHDB-C02-TR001-TR021.dwg

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: C Shimizu
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2230 – Honolulu, HI 96813

Subconsultant:

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

KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

SIGNING AND STRIPING PLAN

EB 910+00 TO EB 920+00

Contract No.: DB-320
CADD File: KHDB-C02-TR015
Drawing No: TR015 Rev. A
Scale: 1"=40'
Page No. 153 of 265

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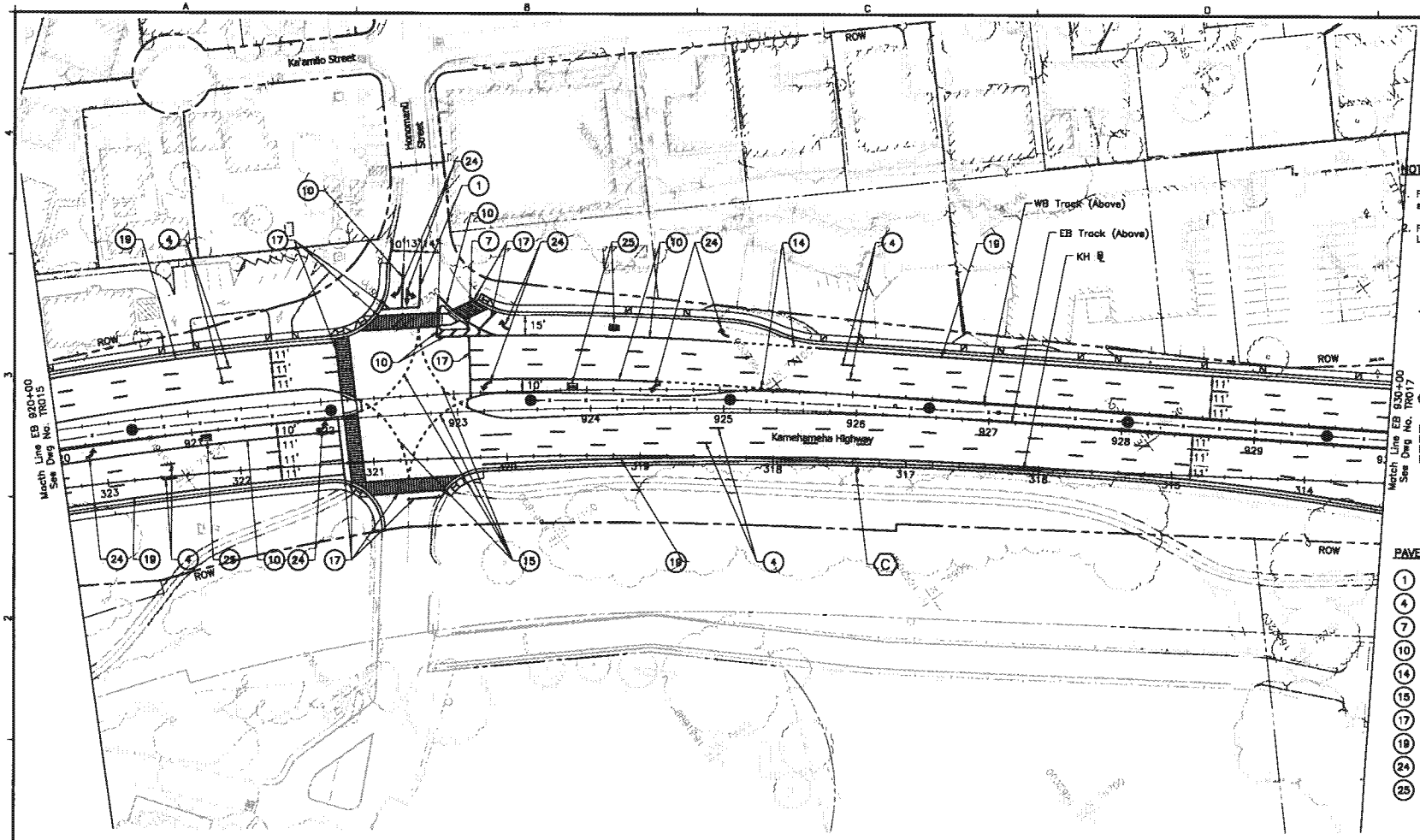


NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Signing and Typical Pavement Marking Notes and Legend, see Dwg No. TG002 to TG005.

LEGEND:

- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

PAVEMENT MARKING NOTES:

1. Centerline – Double Solid 4" Yellow Stripe with RPM
4. Laneline – RPM
7. Edgeline – Single Solid 4" Yellow Stripe with RPM
10. Laneline – Single Solid 8" White Stripe with RPM
14. Laneline – Single Dashed 4" White Stripe
15. Laneline – Single Dashed 4" Yellow Stripe
17. Transverse Markings – Single Solid 12" White Stripe
19. Transverse Markings – Single Solid 6" White Stripe
24. Pavement Markings – Arrows
25. Pavement Markings – Text

SIGNING NOTES:

C. Relocate existing sign(s) on new post(s)

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

2010-03-12 5:20 PM K:\CADD\03 CMT\Segment D\Sheet Files\KHDB-C02-TR001-TR021.dwg

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: C Shimizu
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

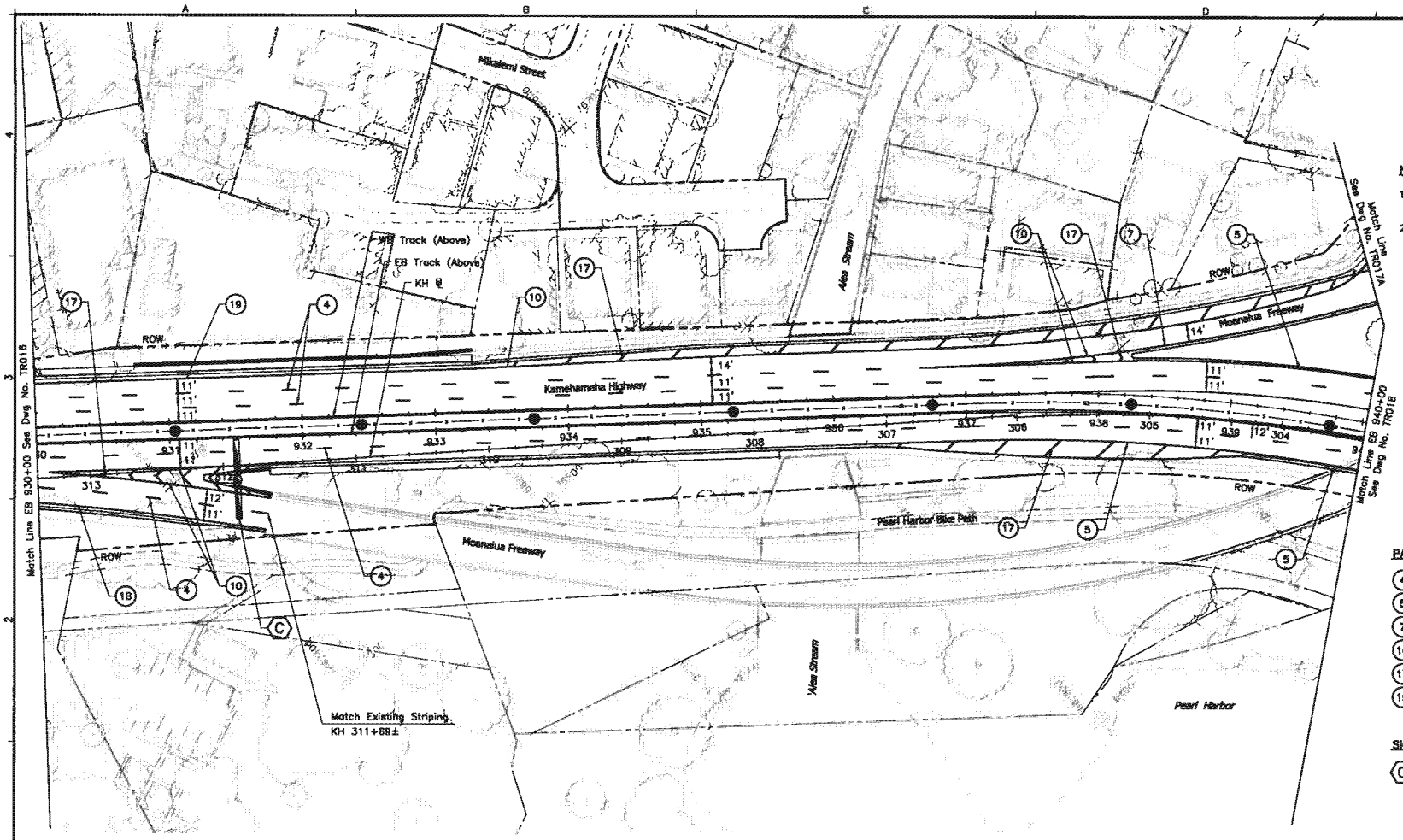
Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
For reduced prints, original page size in inches: 0 1 2 3 4

KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

SIGNING AND STRIPING PLAN

EB 920+00 TO EB 930+00

Contract No.: DB-320
CADD File: KHDB-C02-TR016
Drawing No: TR016 Rev. A
Scale: 1"=40'
Page No. 154 of 265



NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Signing and Typical Pavement Marking Notes and Legend, see Dwg No. TG002 to TG005.

LEGEND:

- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

PAVEMENT MARKING NOTES:

- (4) Laneline – RPM
- (5) Edgeline – Single Solid 4" White Stripe with RPM
- (7) Edgeline – Single Solid 4" Yellow Stripe with RPM
- (10) Laneline – Single Solid 8" White Stripe with RPM
- (17) Transverse Markings – Single Solid 12" White Stripe
- (19) Transverse Markings – Single Solid 6" White Stripe

SIGNING NOTES:

- (C) Relocate existing sign(s) on new post(s)

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

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PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: C Shimizu
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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

KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

SIGNING AND STRIPING PLAN

EB 930+00 TO EB 940+00

Contract No.: DB-320
CADD File: KHDB-C02-TR017
Drawing No: TR017 Rev. A
Scale: 1"=40'
Page No. 155 of 265

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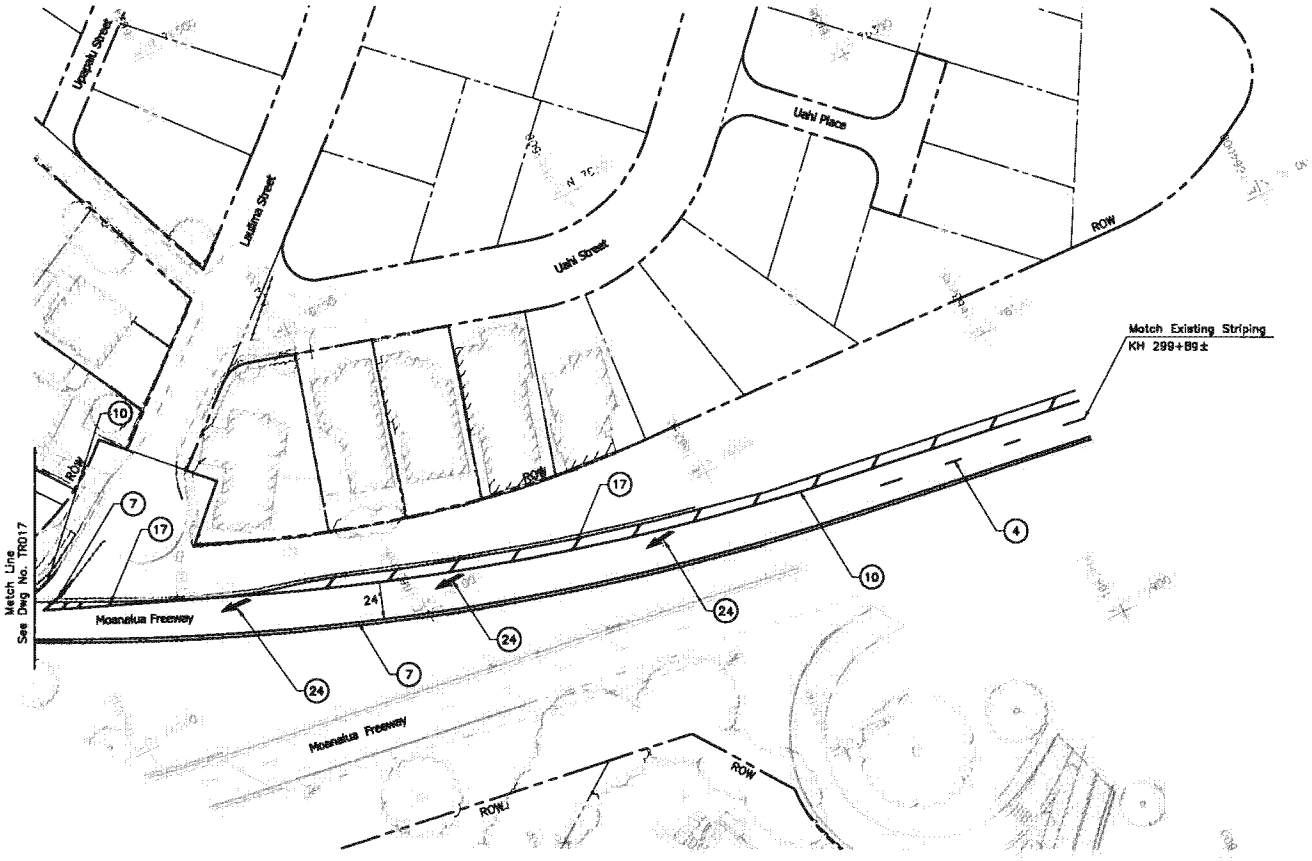

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Signing and Typical Pavement Marking Notes and Legend, see Dwg No. TG002 to TG005.

LEGEND:

- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

PAVEMENT MARKING NOTES:

4. Laneline – RPM
7. Edgeline – Single Solid 4" White Stripe with RPM
10. Laneline – Single Solid 8" White Stripe with RPM
17. Transverse Markings – Single Solid 12" White Stripe
24. Pavement Markings – Arrows

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: C Shimizu
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

SIGNING AND STRIPING PLAN

MOANALUA FREEWAY

Contract No.: DB-320
CADD File: KHDB-C02-TR017A
Drawing No: TR017A
Rev. A
Scale: 1"=40'
Page No. 156 of 265

2010-03-12 5:11 PM K:\CADD\03 Civil\Segment D\Sheet Files\KHDB-C02-TR001-TR021.dwg

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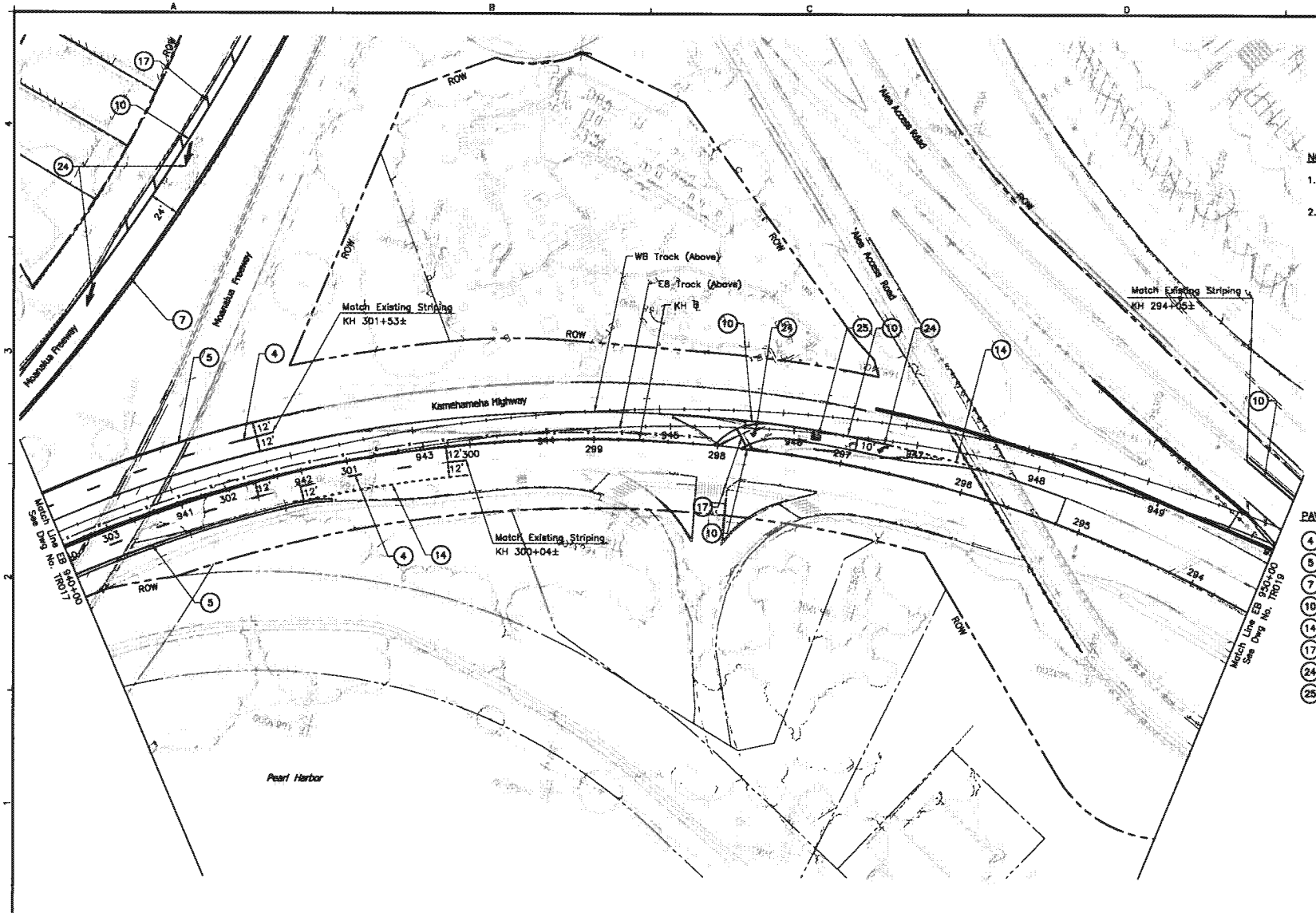

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NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Signing and Typical Pavement Marking Notes and Legend, see Dwg No. TG002 to TG005.

LEGEND:

- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

PAVEMENT MARKING NOTES:

- (4) Laneline – RPM
- (5) Edgeline – Single Solid 4" White Stripe with RPM
- (7) Edgeline – Single Solid 4" Yellow Stripe with RPM
- (10) Laneline – Single Solid 8" White Stripe with RPM
- (14) Laneline – Single Dashed 4" White Stripe
- (17) Transverse Markings – Single Solid 12" White Stipe
- (24) Pavement Markings – Arrows
- (25) Pavement Markings – Text

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wordell
Approved: C Shimizu
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
For reduced prints, original page size in inches: 0 1 2 3 4

KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

SIGNING AND STRIPING PLAN

EB 940+00 TO EB 950+00

Contract No.: DB-320
CADD File: KHD8-C02-TR018
Drawing No: TR018 Rev. A
Scale: 1"=40'
Page No. 157 of 265

2010-03-12 5:11 PM K:\CADD\03 Civil\Segment D\Sheet Files\KHD8-C02-TR001-TR021.dwg

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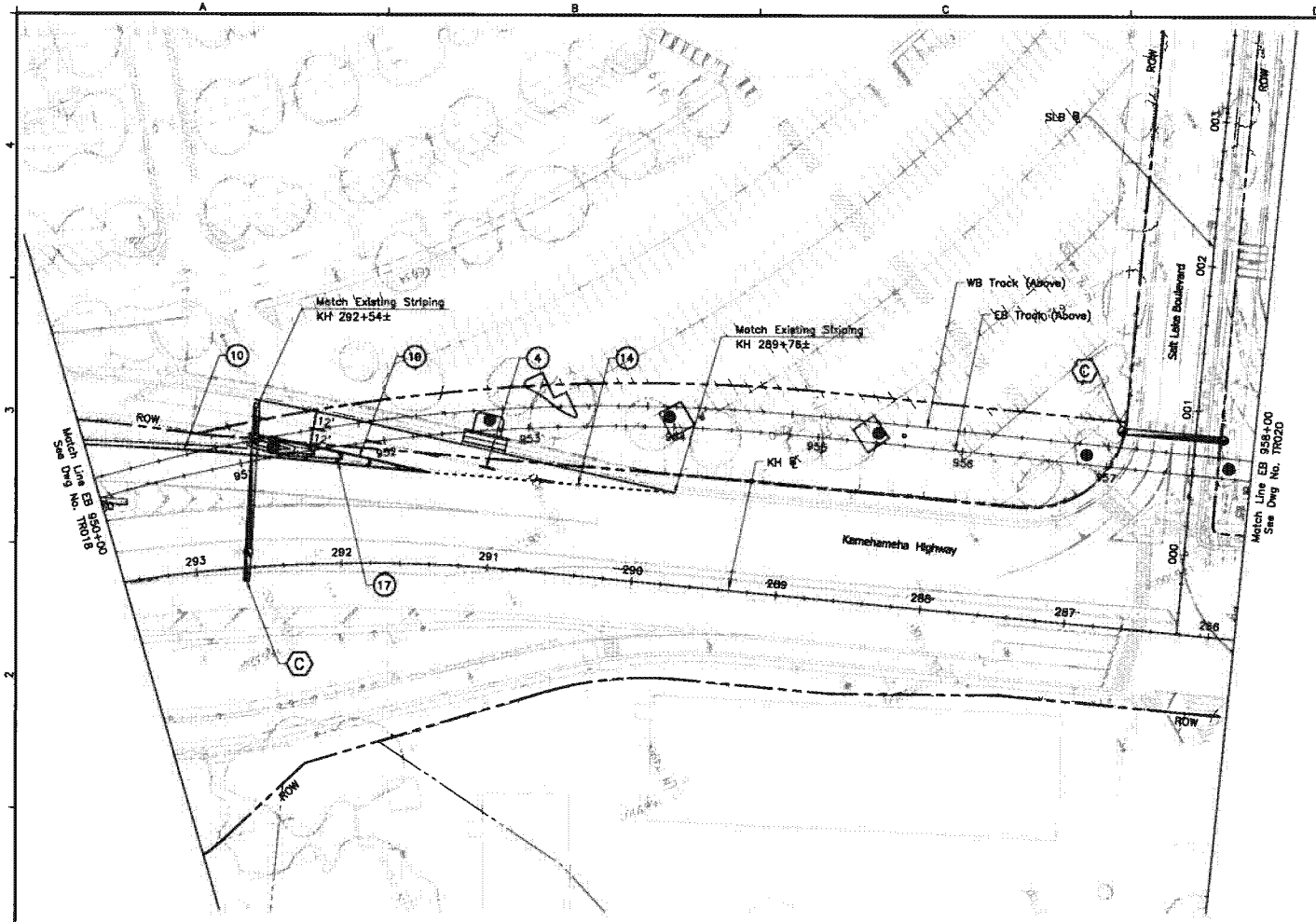

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Signing and Typical Pavement Marking Notes and Legend, see Dwg No. TG002 to TG005.

LEGEND:

- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

PAVEMENT MARKING NOTES:

4. Laneline – RPM
10. Laneline – Single Solid 8" White Stripe with RPM
14. Laneline – Single Dashed 4" White Stripe
17. Transverse Markings – Single Solid 12" White Stripe

SIGNING NOTES:

C. Relocate existing sign(s) on new post(s)

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jawali
Drawn: J Derosier
Checked: B Wardell
Approved: C Shimizu
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

SIGNING AND STRIPING PLAN

EB 950+00 TO EB 958+00

Contract No.: DB-320
CADD File: KHDB-C02-TR019
Drawing No: TR019 Rev. A
Scale: 1"=40'
Page No. 158 of 265

2010-03-12 5:01 PM K:\CADD\03 Civil\Segment D\Sheet Files\KHDB-C02-TR001-TR021.dwg

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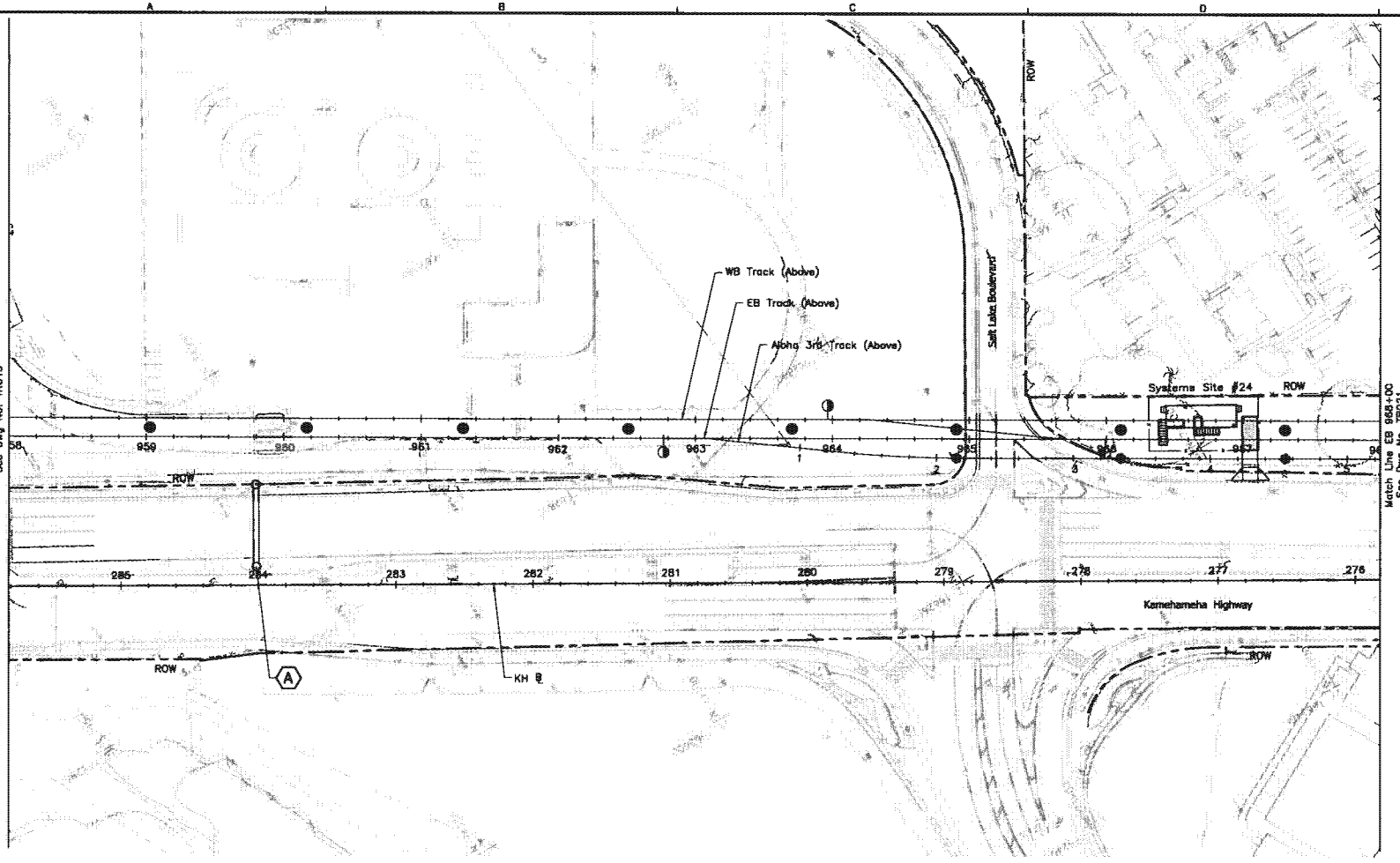

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Signing and Typical Pavement Marking Notes and Legend, see Dwg No. TG002 to TG005.

LEGEND:

- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

SIGNING NOTES:

(A) Existing sign(s) to remain

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosiar
Checked: B Wardell
Approved: C Shimizu
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

SIGNING AND STRIPING PLAN

EB 958+00 TO EB 968+00

Contract No.: DB-320
CADD File: KHDB-C02-TR020
Drawing No: TR020 Rev. A
Scale: 1"=40'
Page No. 159 of 265

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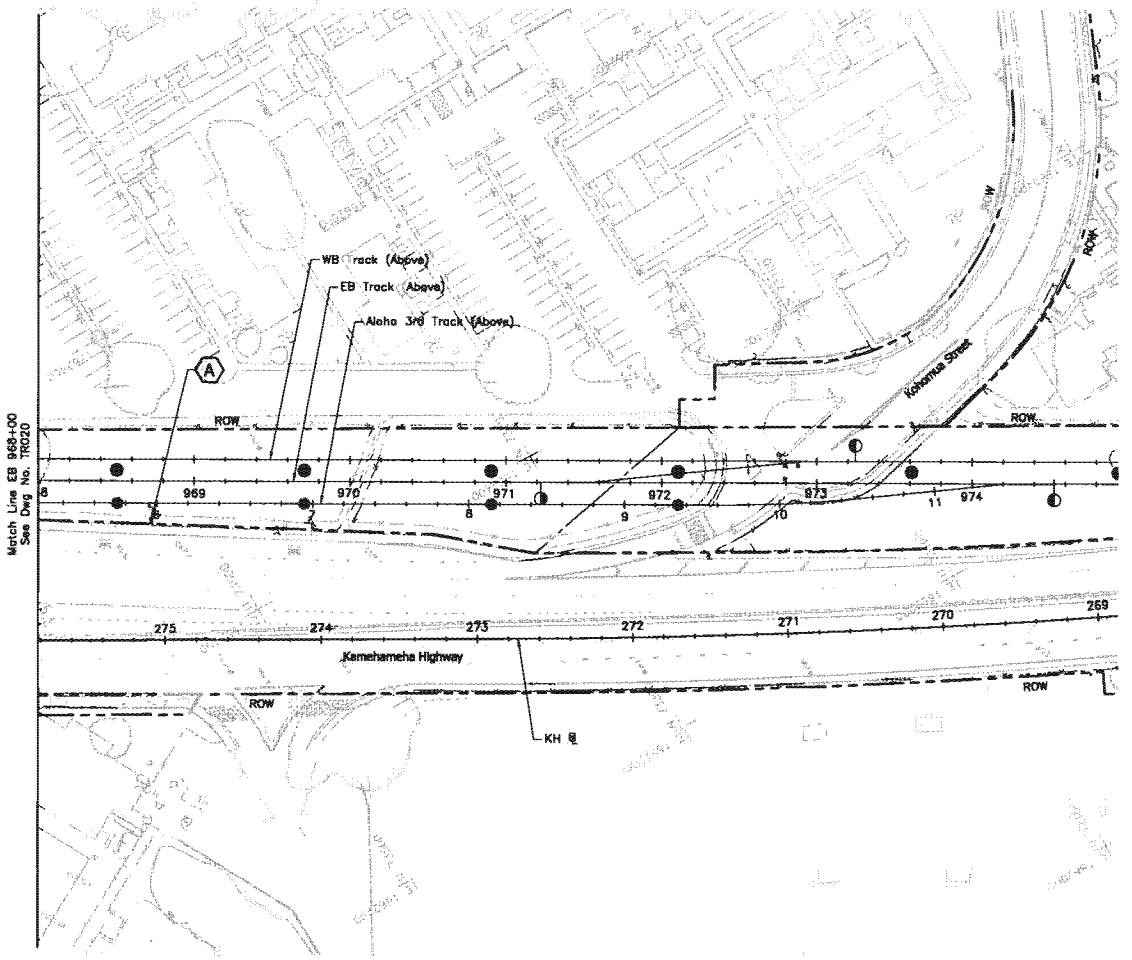

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Signing and Typical Pavement Marking Notes and Legend, see Dwg No. TG002 to TG005.

LEGEND:

- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

SIGNING NOTES:

(A) Existing sign(s) to remain

40' 0 40'

Rev	By	Date	Description
A	LH	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wordell
Approved: C Shimizu
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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

KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

SIGNING AND STRIPING PLAN

EB 968+00 TO END

Contract No.: DB-320
CADD File: KHDB-C02-TR021
Drawing No: TR021 Rev. A
Scale: 1"=40'
Page No. 160 of 265

2010-03-12 5:38 PM K:\CADD\03 Civil\Segment D\Sheet Files\KHDB-C02-TR001-TR021.dwg

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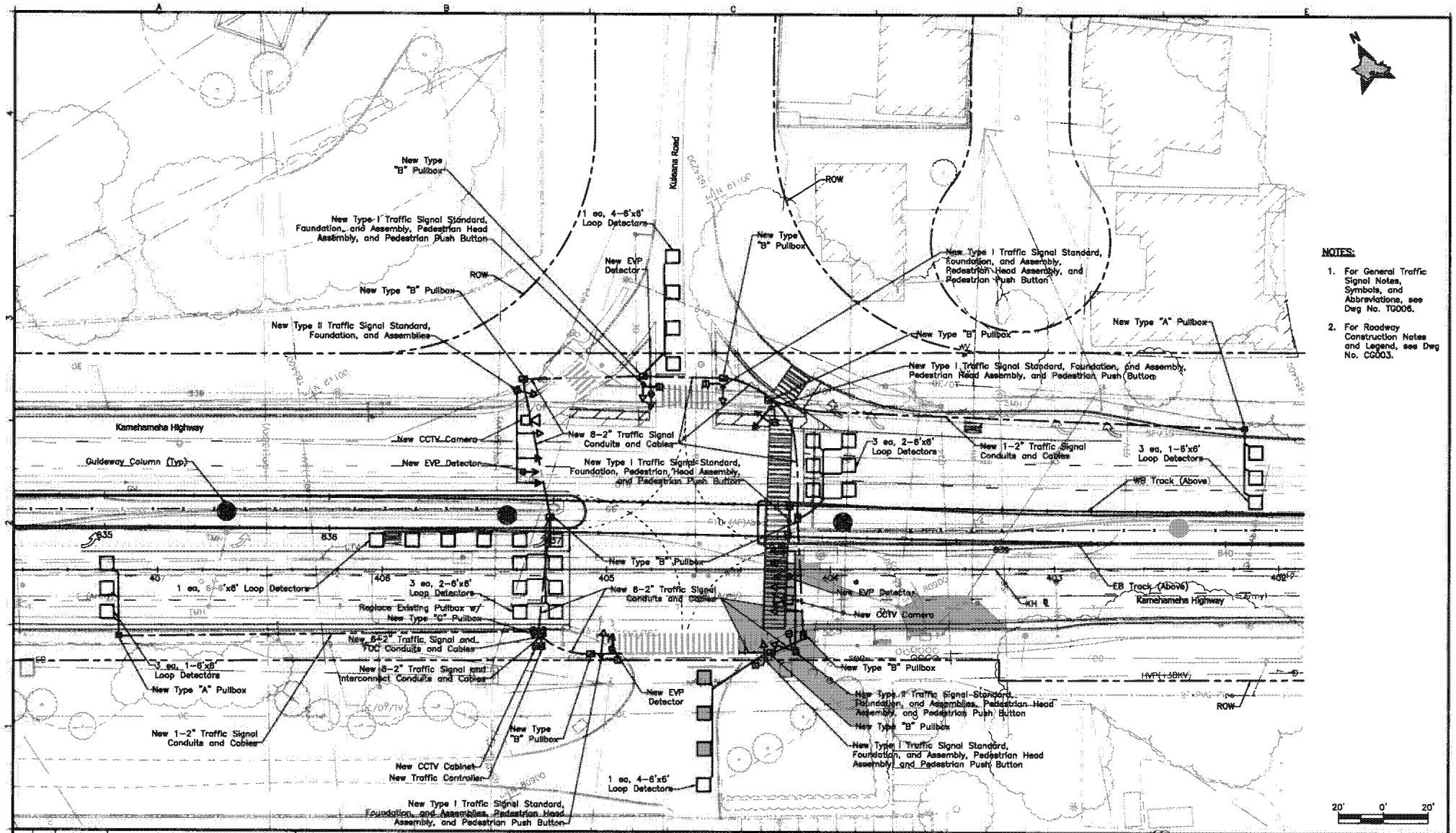

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

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PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: Z Tong
Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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

KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRAFFIC SIGNAL PLAN
KAMEHAMEHA HWY AT KULEANA RD

Contract No.: DB-320
CADD File: KHDB-C04-TR305
Drawing No: TR305 Rev. A
Scale: 1"=20'
Page No. 202 of 265

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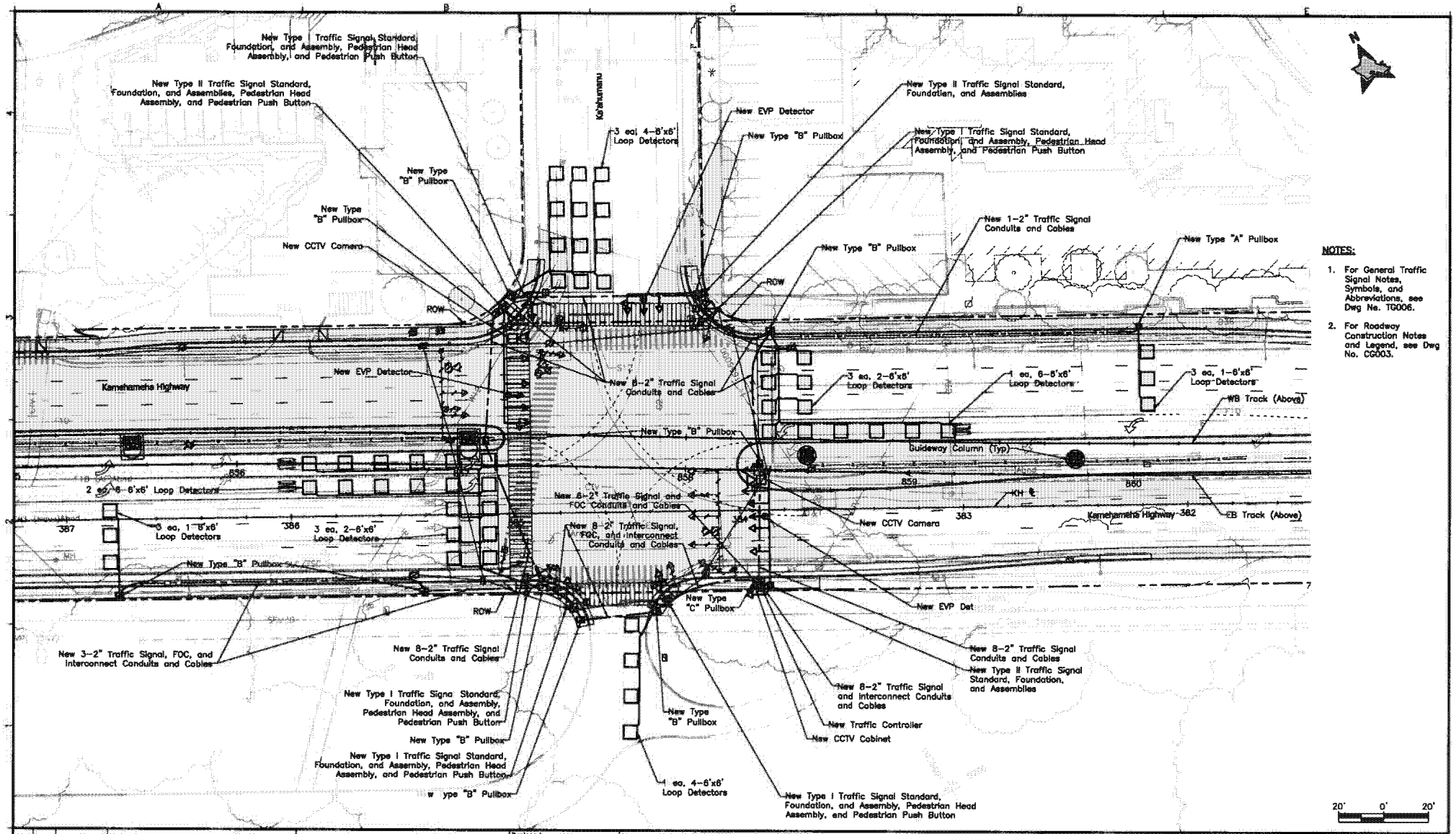

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: Z Tang
Drawn: Z Tang
Checked: L Yokomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

For reduced prints, original page size in inches:

KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRAFFIC SIGNAL PLAN
KAMEHAMEHA HWY AT KA'AHUMANU ST

Contract No.: DB-320
CADD File: KHDB-C04-TR306
Drawing No: TR306 Rev. A
Scale: 1"=20'
Page No. 203 of 265

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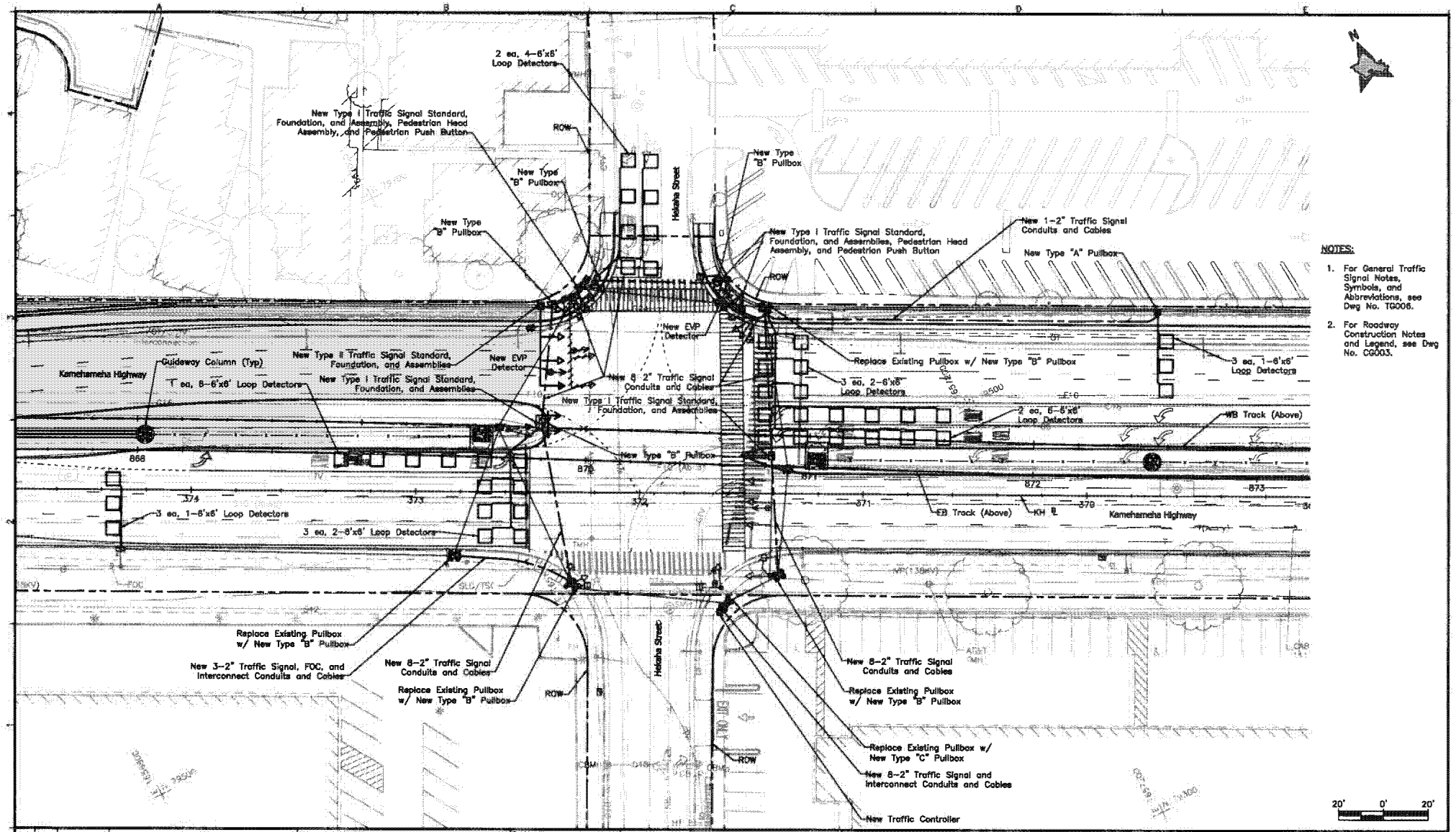

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

2010-03-10 10:11 AM X:\2007\07-099\Segment D-B\DWG\KHDB-CD4-TR307.dwg

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: Z Tong
Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: AATA AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRAFFIC SIGNAL PLAN
KAMEHAMEHA HWY AT HEKAHA ST

Contract No.: DB-320
CADD File: KHDB-CD4-TR307
Drawing No: TR307 Rev. A
Scale: 1"=20'
Page No. 204 of 265

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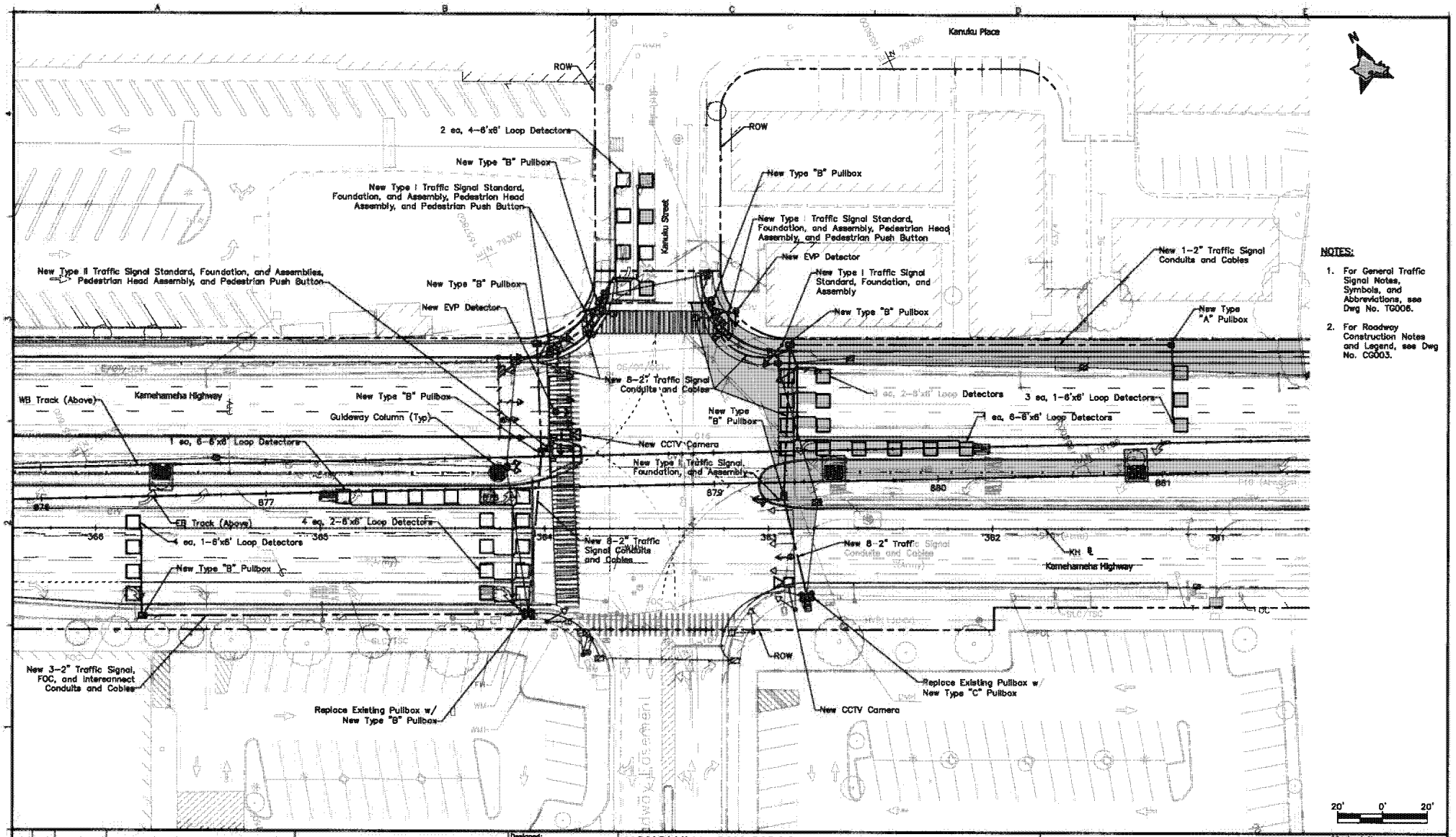

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

2010-03-10 10:16 AM X:\2007\07-099\Segment D-B\DWG\KHDB-C04-TR308.dwg

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: Z Tong
Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: ATA AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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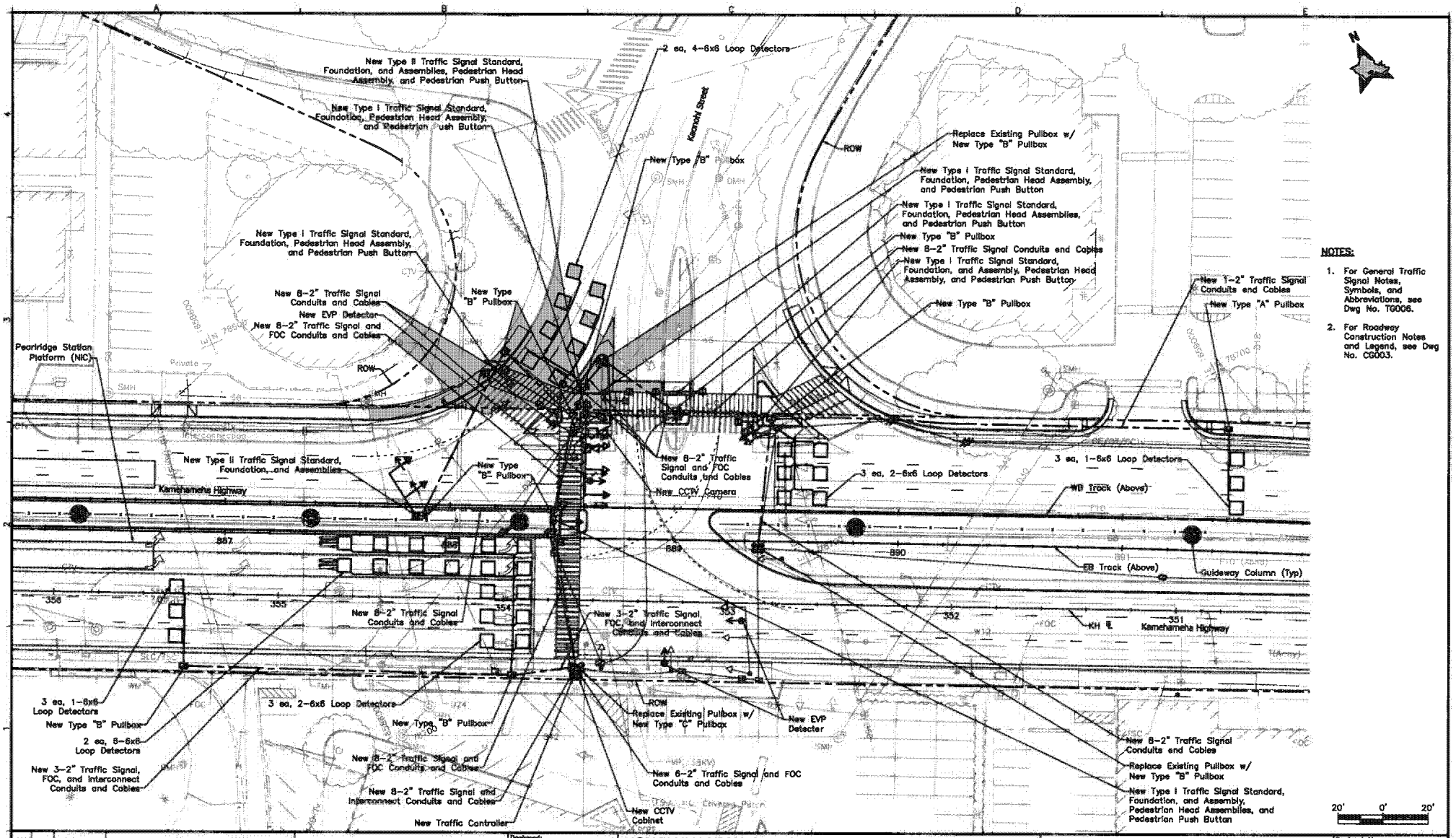
KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRAFFIC SIGNAL PLAN
KAMEHAMEHA HWY AT KĀNUKU ST

Contract No.: DB-320
CADD File: KHDB-C04-TR308
Drawing No: TR308 Rev. A
Scale: 1"=20'
Page No. 205 of 265



NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

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PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: Z Tong
Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: ATA AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRAFFIC SIGNAL PLAN
KAMEHAMEHA HWY AT KAONOHI ST

Contract No.: DB-320
CADD File: KHDB-C04-TR309
Drawing No: TR309 Rev. A
Scale: 1"=20'
Page No. 206 of 265

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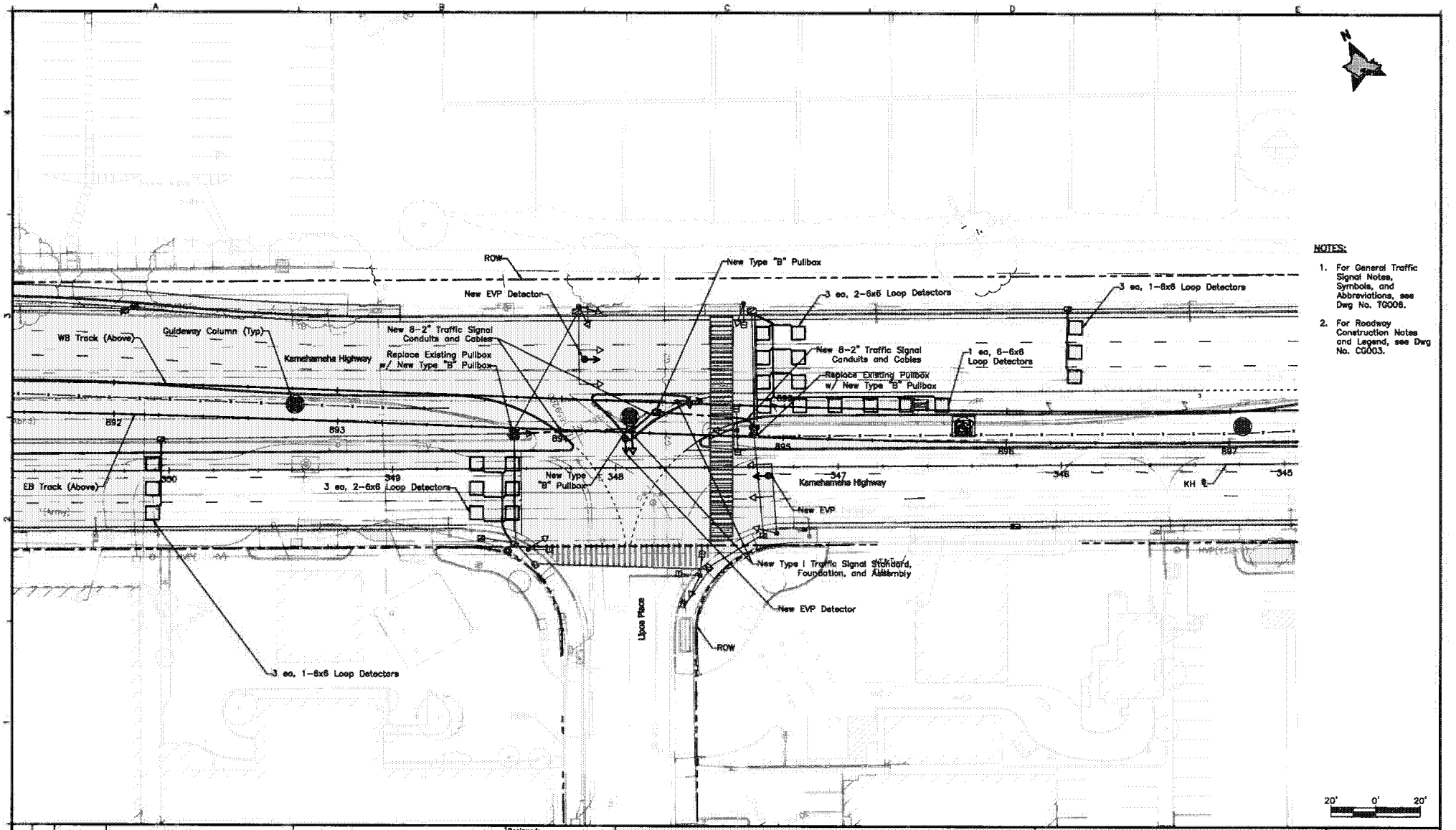

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

2010-03-10 10:40 AM X:\2007\07-099\Segment D-B\DWG\KHDB-C04-TR310.dwg

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: Z Tong
Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: ATA AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRAFFIC SIGNAL PLAN
KAMEHAMEHA HWY AT LĪPOA PL

Contract No.: DB-320
CADD File: KHDB-C04-TR310
Drawing No: TR310 Rev. A
Scale: 1"=20'
Page No. 207 of 285

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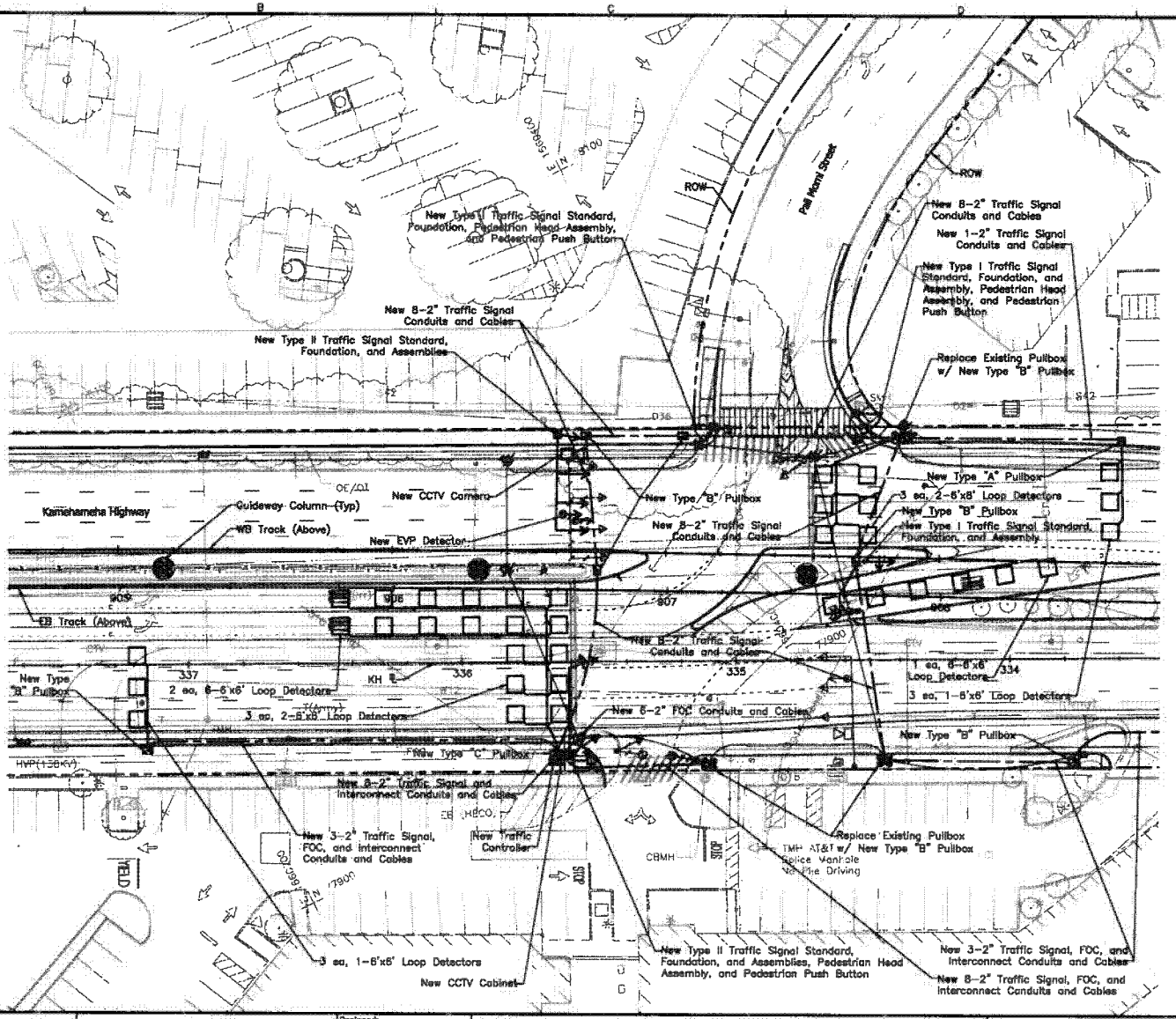

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

2010-03-10 10:43 AM X:\2007\07-099\Segment D-B\DWG\KHDB-C04-TR311.dwg

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: Z Tang
Drawn: Z Tang
Checked: L Yokomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: ATA AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRAFFIC SIGNAL PLAN
KAMEHAMEHA HWY AT PALI MOMI ST (WEST)

Contract No.: DB-320
CADD File: KHDB-C04-TR311
Drawing No: TR311 Rev. A
Scale: 1"=20'
Page No. 208 of 265

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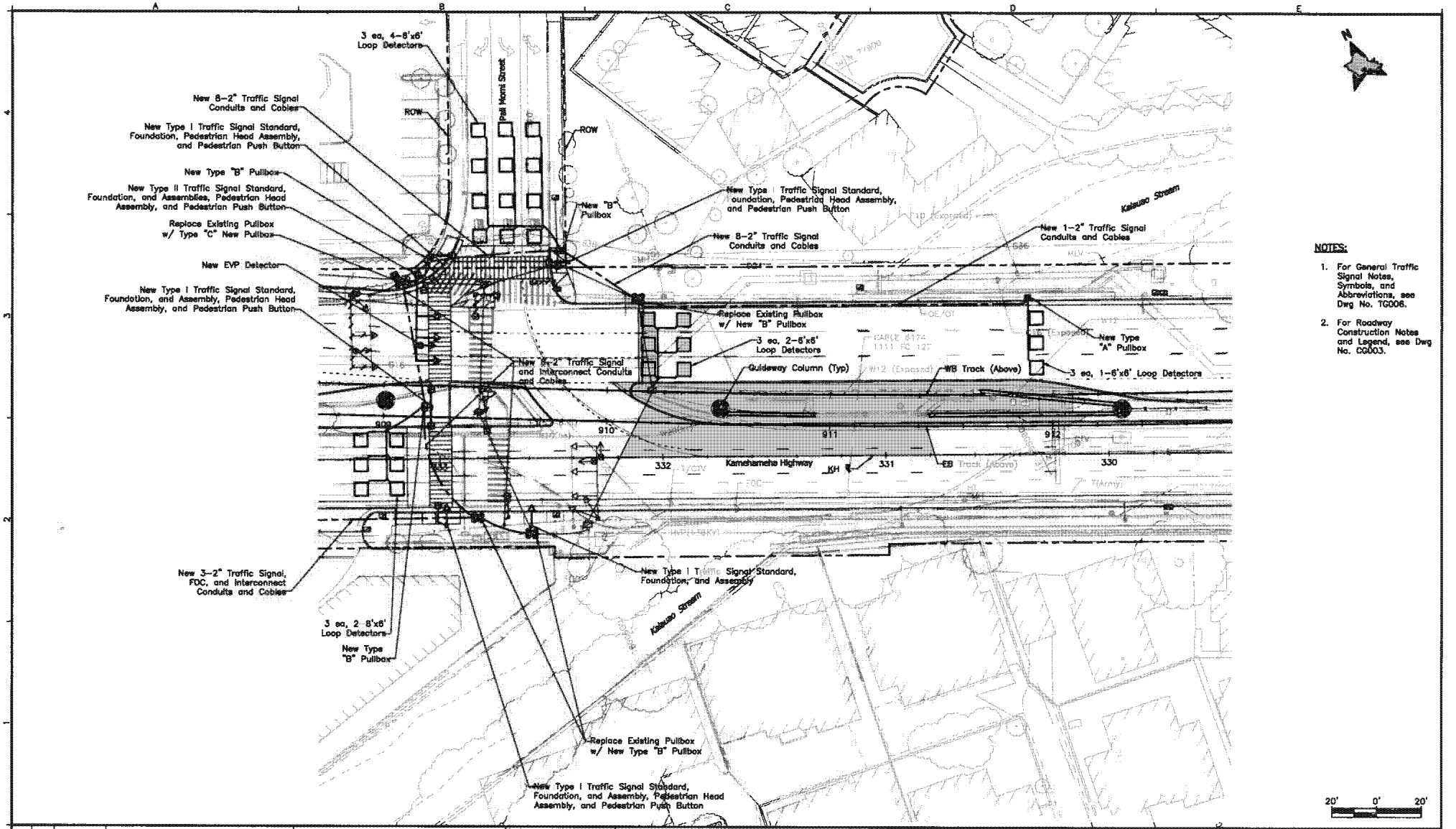

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: Z Tong
Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU · DEPARTMENT OF TRANSPORTATION SERVICES · RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRAFFIC SIGNAL PLAN
KAMEHAMEHA HWY AT PALI MOMI ST (EAST)

Contract No.: DB-320
CADD File: KHDB-C04-TR312
Drawing No: TR312
Rev. A
Scale: 1"=20'
Page No. 209 of 265

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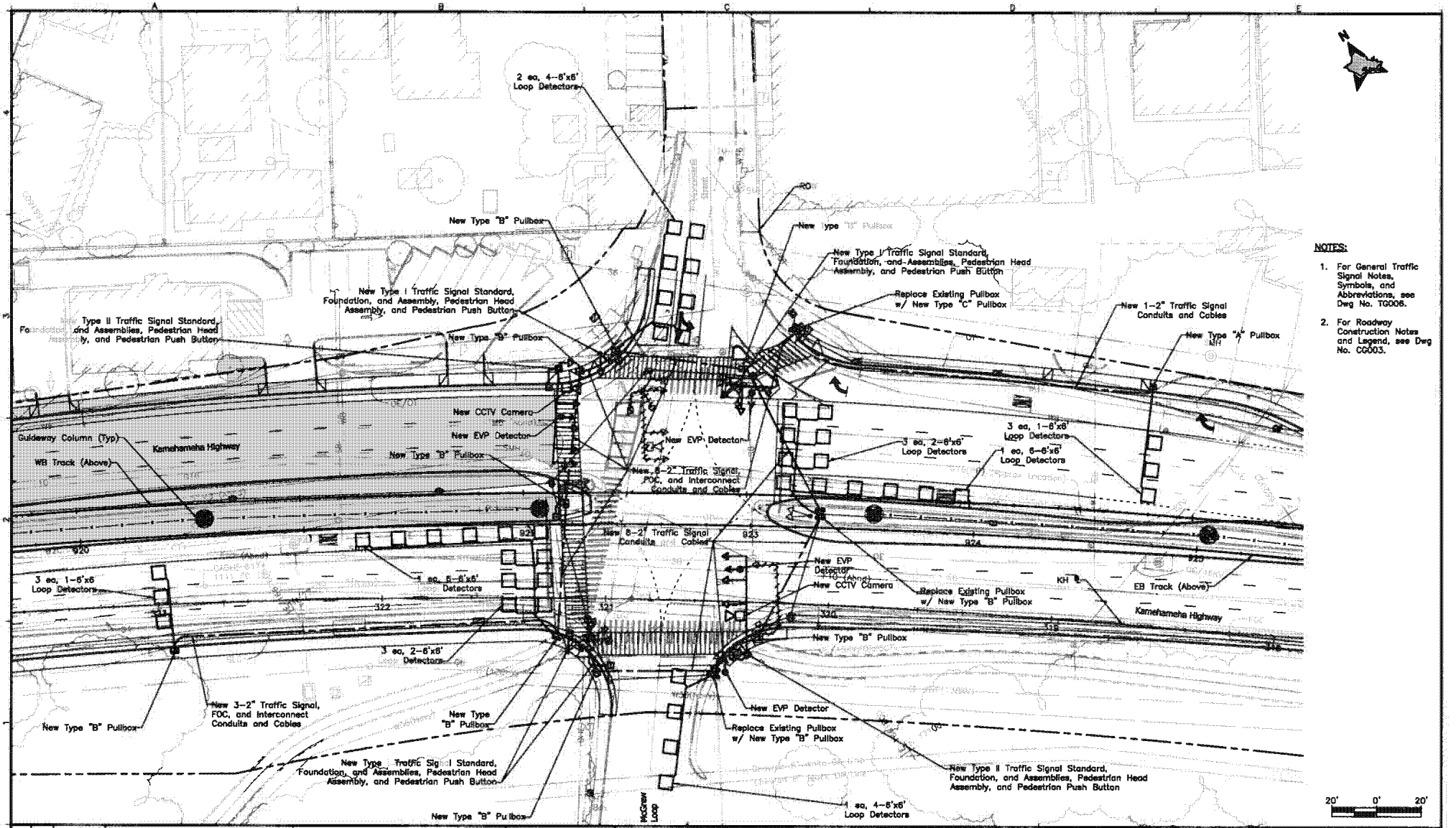

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: Z Tong
Drawn: Z Tong
Checked: Y Moorthy
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRAFFIC SIGNAL PLAN
KAMEHAMEHA HWY AT HONOMANŪ ST

Contract No.: DB-320
CADD File: KHDB-C04-TR313
Drawing No.: TR313 Rev. A
Scale: 1"=20'
Page No. 210 of 265

2010-03-10 11:02 AM X:\2007\07-099\Segment D-B\DWG\KHDB-C04-TR313.dwg

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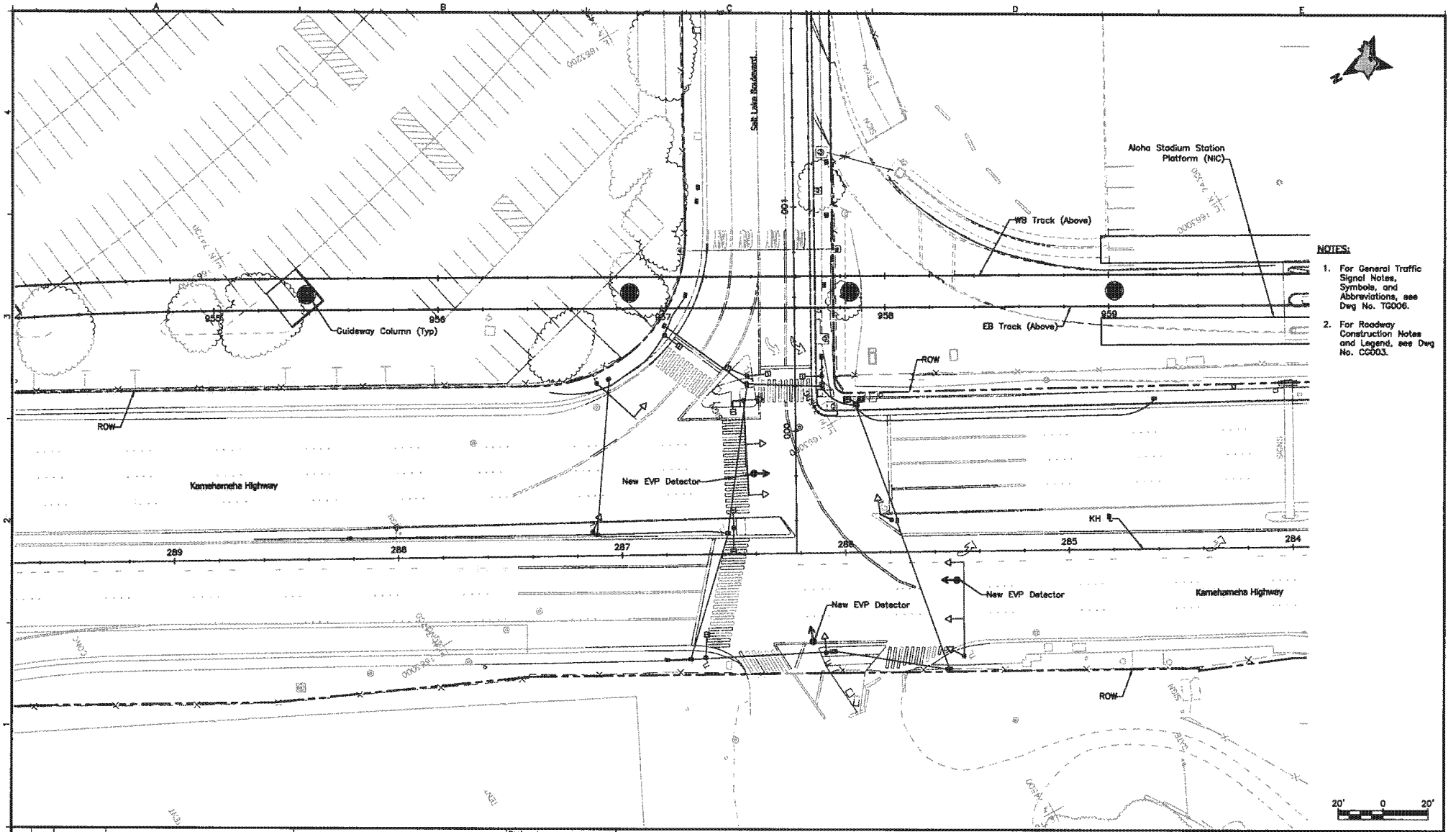

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT
NOT FOR CONSTRUCTION

Designed: Z Tong
Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: ATA AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRAFFIC SIGNAL PLAN
KAMEHAMEHA HWY AT SALT LAKE BLVD (OUTBOUND)

Contract No.: DB-320
CADD File: KHDB-C04-TR314
Drawing No: TR314 Rev. A
Scale: 1" = 20'
Page No. 211 of 265

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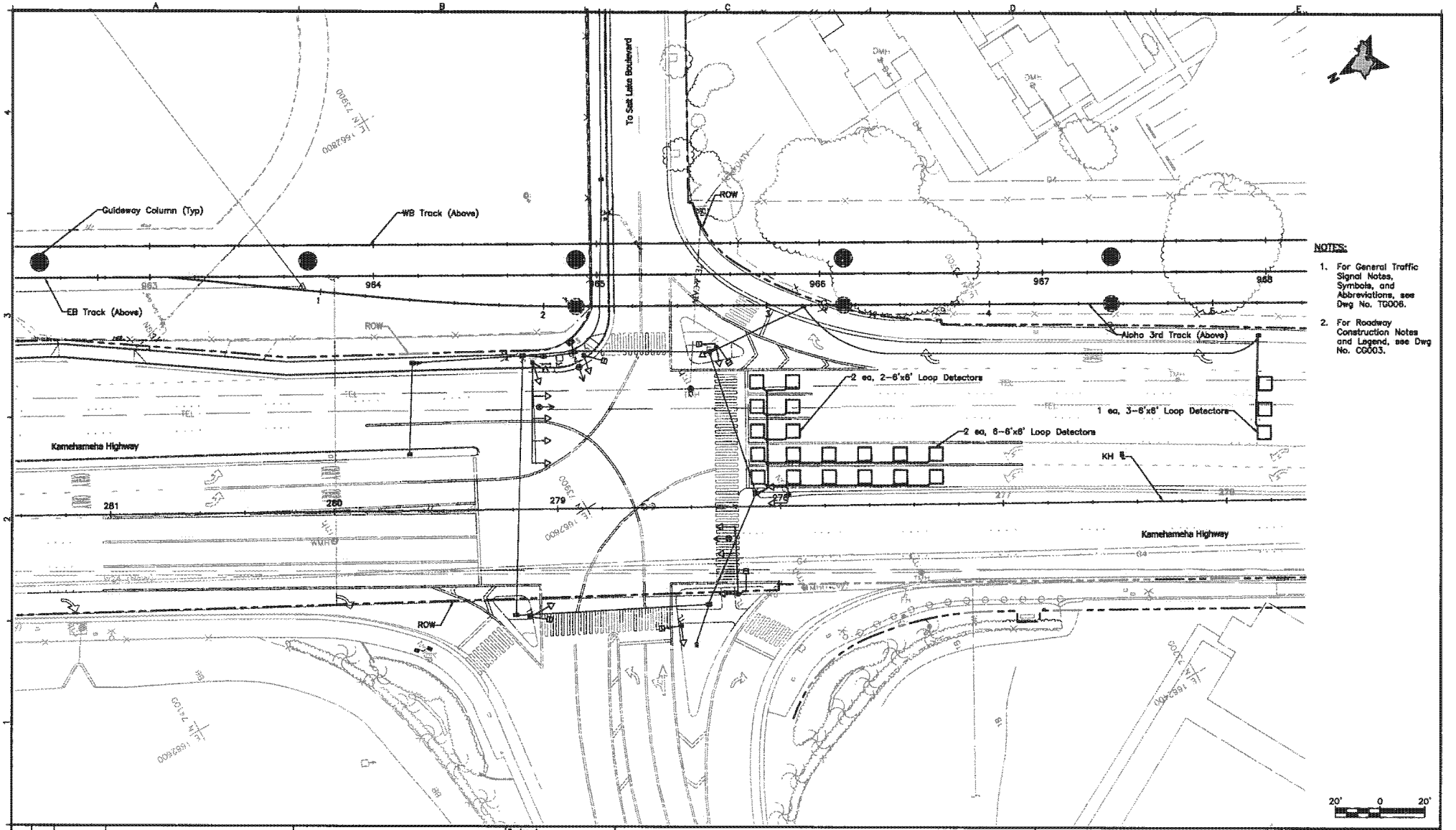

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: Z Tong
Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: ATA AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

For reduced prints, original page size in inches: 0 1 2 3 4 5

KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

TRAFFIC SIGNAL PLAN
KAMEHAMEHA HWY AT SALT LAKE BLVD (INBOUND)

Contract No.: DB-320
CADD File: KHDB-C04-TR315
Drawing No: TR315 Rev. A
Scale: 1" = 20'
Page No. 212 of 285

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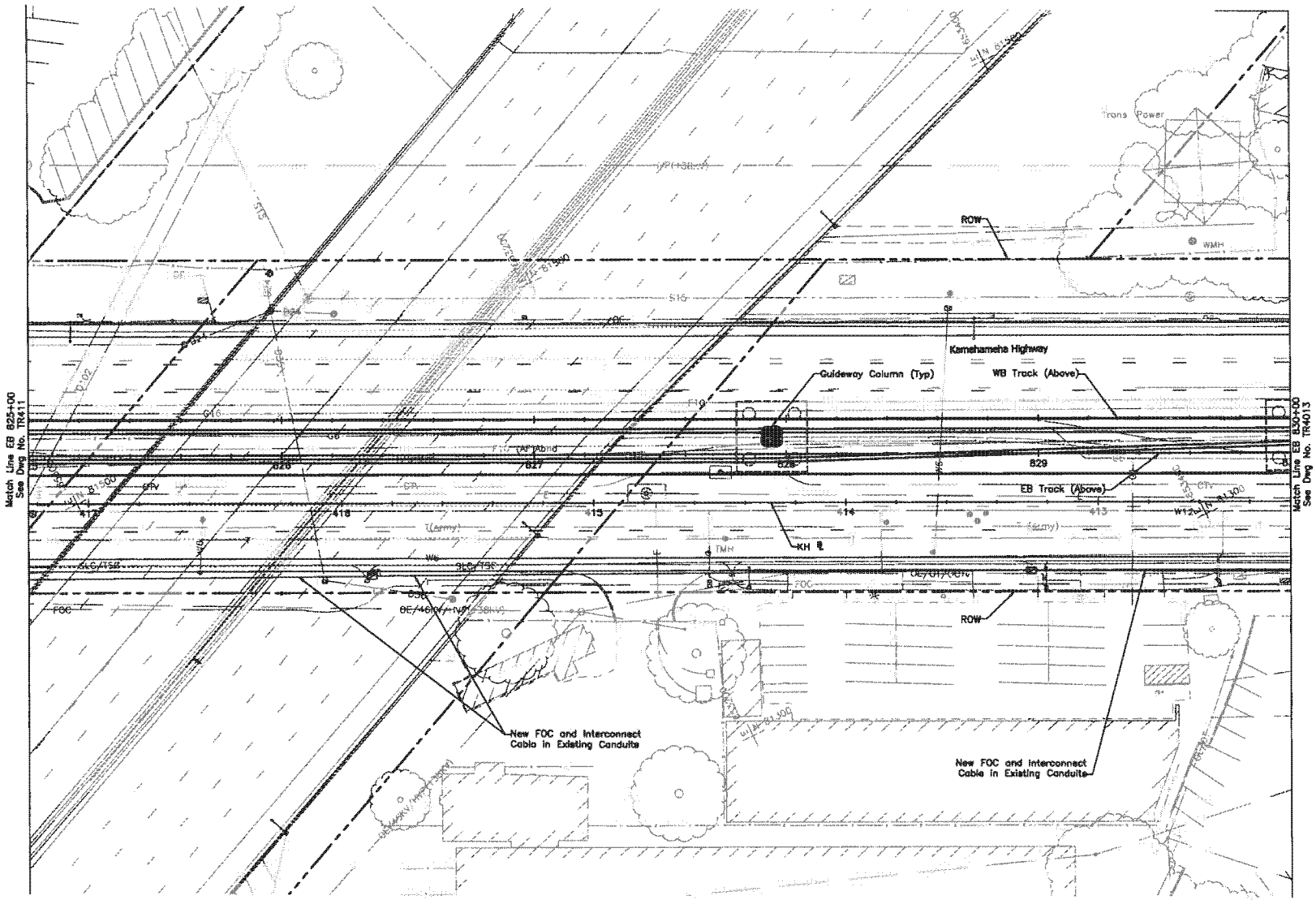

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg. No TG006.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

2010-03-11 11:48 AM X:\2007\07-099\Segment D-B\DWG\KHDB-C04-TR412.dwg

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: Z Tong
Drawn: Z Tong
Checked: L Yokomiza
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 - Honolulu, HI 96813
For reduced prints, original page size in inches: 0 1 2 3 4

Subconsultant: ATA AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 825+00 TO EB 830+00

Contract No.: DB-320
CADD File: KHDB-C04-TR412
Drawing No: TR412 Rev. A
Scale: 1"=20'
Page No. 223 of 265

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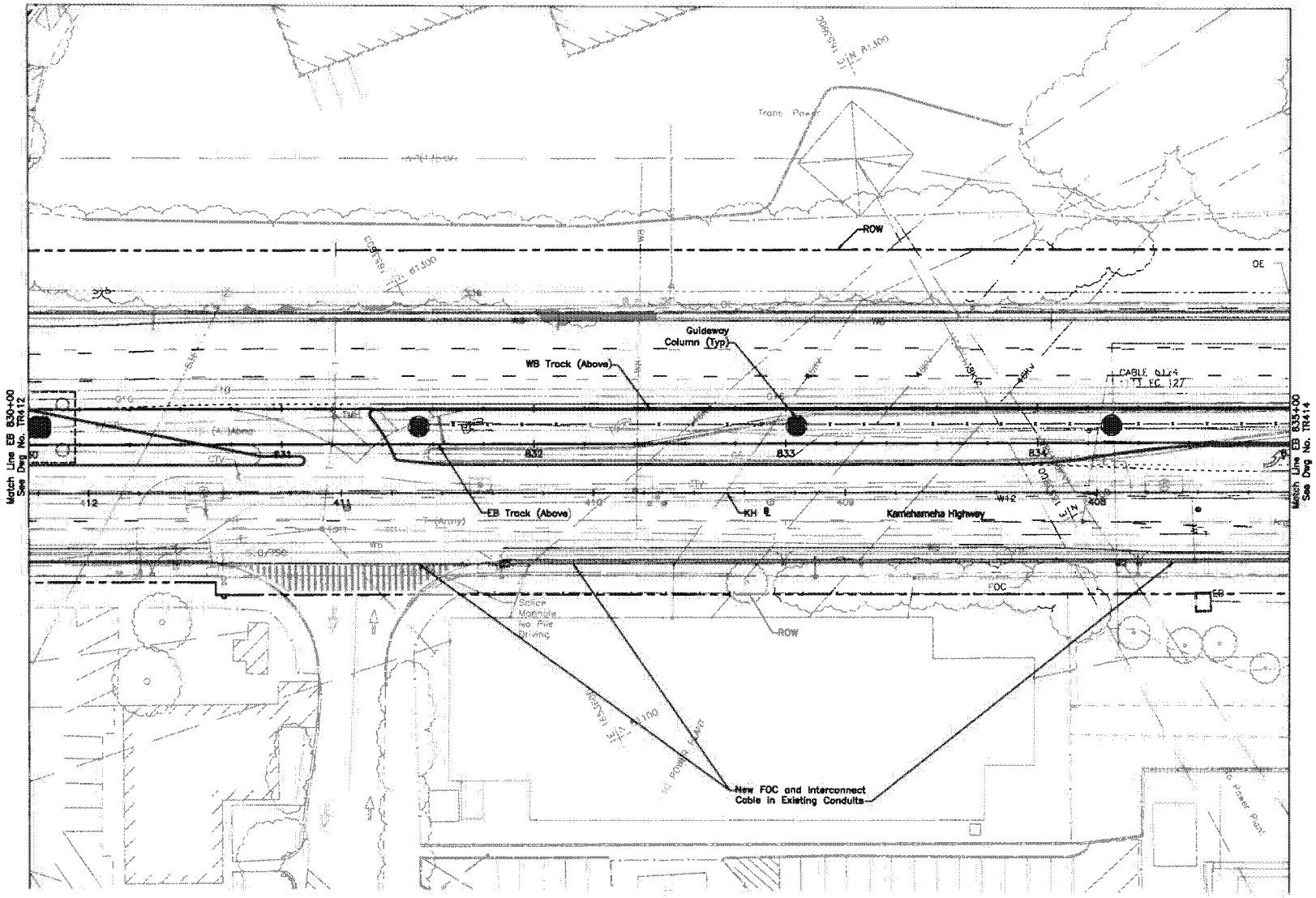

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

20' 0 20'

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

2010-03-11 8:46 AM X:\2007\07-099\Segment D-B\DWG\KHDB-C04-TR413.dwg

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: Z Tong
Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: ATA AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 830+00 TO EB 835+00

Contract No.: DB-320
CADD File: KHDB-C04-TR413
Drawing No: TR413 Rev. A
Scale: 1"=20'
Page No. 224 of 265

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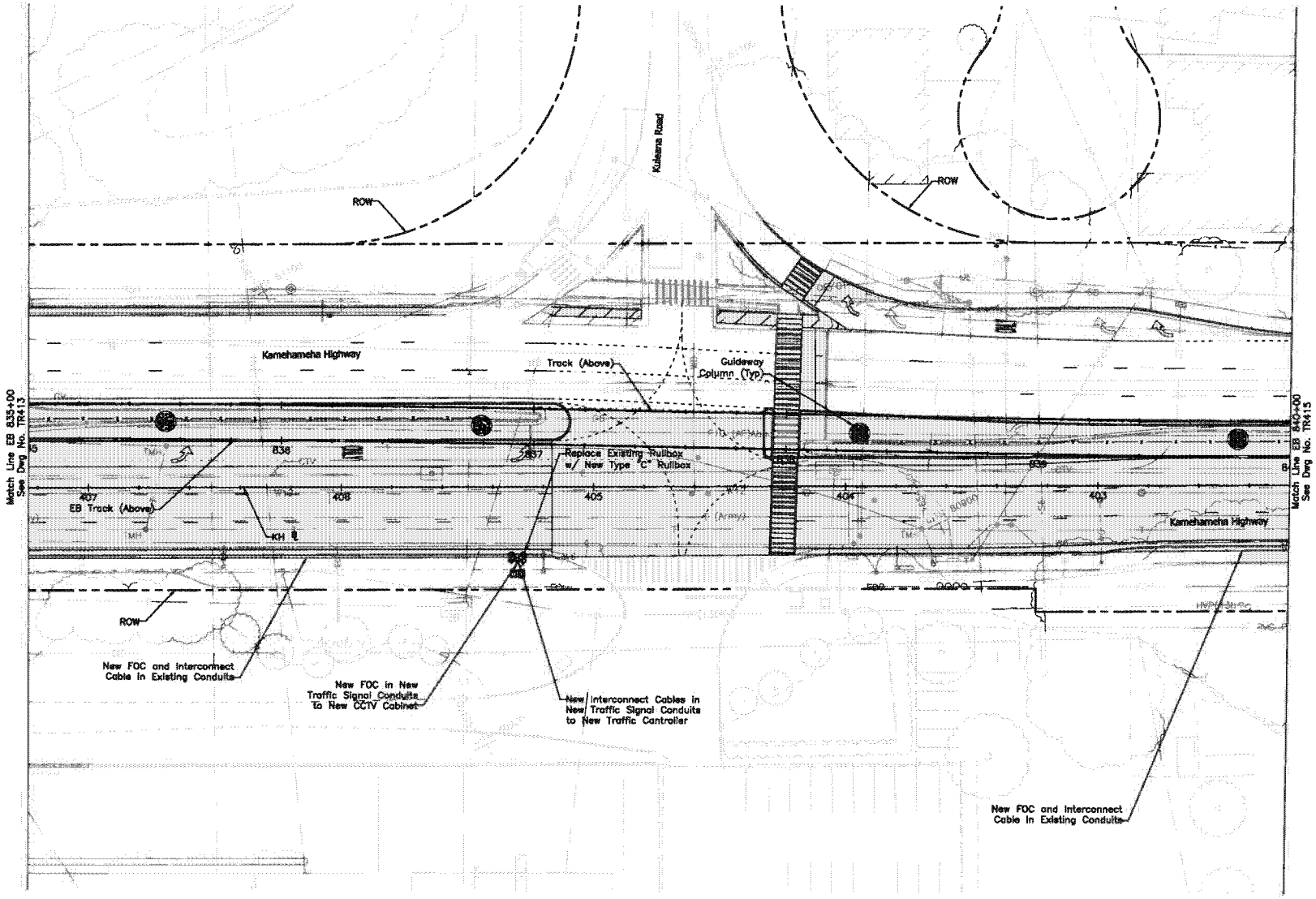

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.
3. For Traffic Signal Plan, see Dwg. No. TR305.

20' 0 20'

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

2010-03-11 11:35 AM X:\2007\07-099\Segment D-B\DWG\KHDB-C04-TR414.dwg

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: Z Tong
Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: ATA AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 835+00 TO EB 840+00

Contract No.: DB-320
CADD File: KHDB-C04-TR414
Drawing No: TR414 Rev. A
Scale: 1"=20'
Page No. 225 of 265

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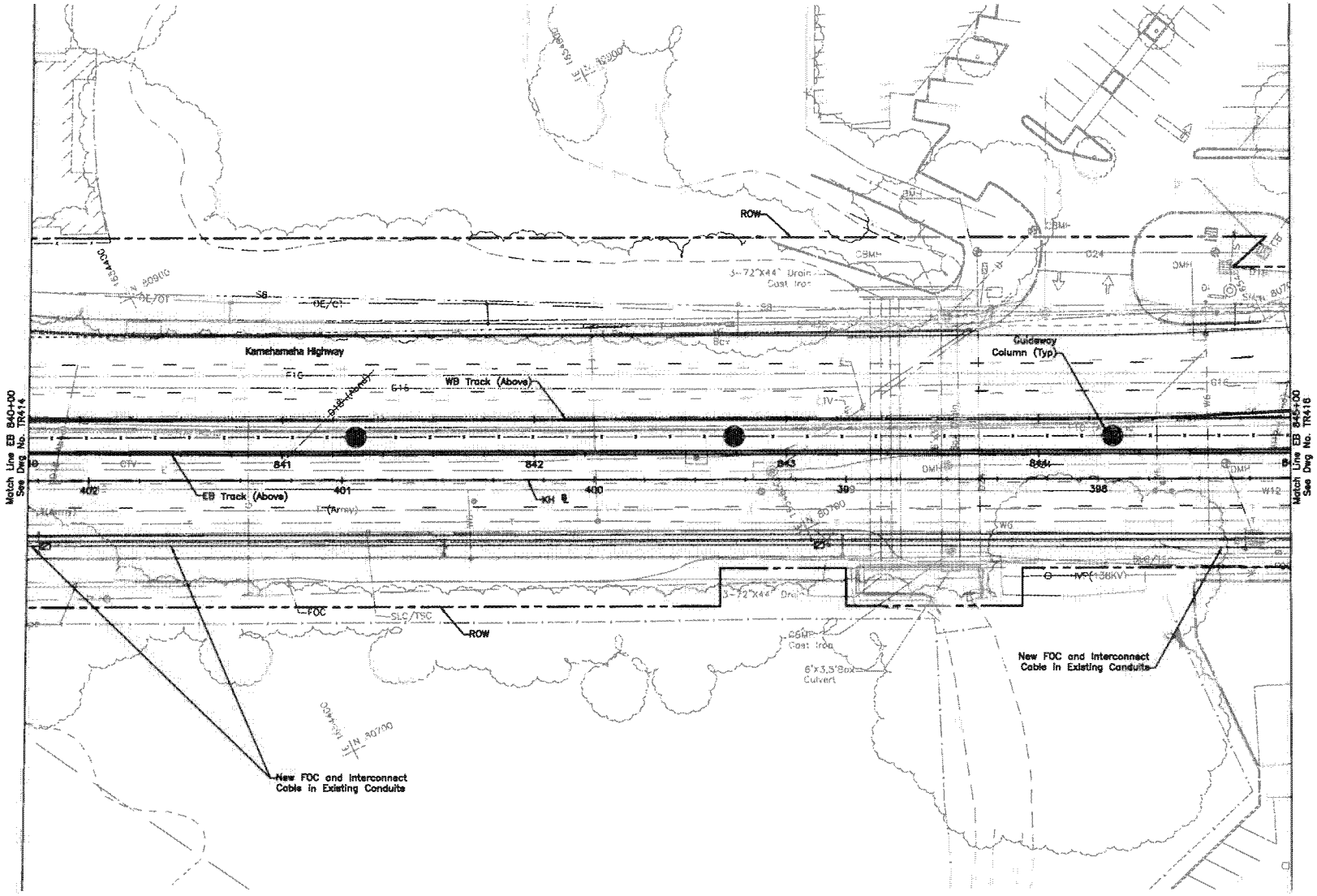

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

20' 0 20'

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

2010-03-11 8:50 AM X:\2007\07-099\Segment D-B\DWG\KHDB-C04-TR415.dwg

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: Z Tong
Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: ATA AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 840+00 TO EB 845+00

Contract No.: DB-320
CADD File: KHDB-C04-TR415
Drawing No: TR415 Rev. A
Scale: 1"=20'
Page No. 228 of 285

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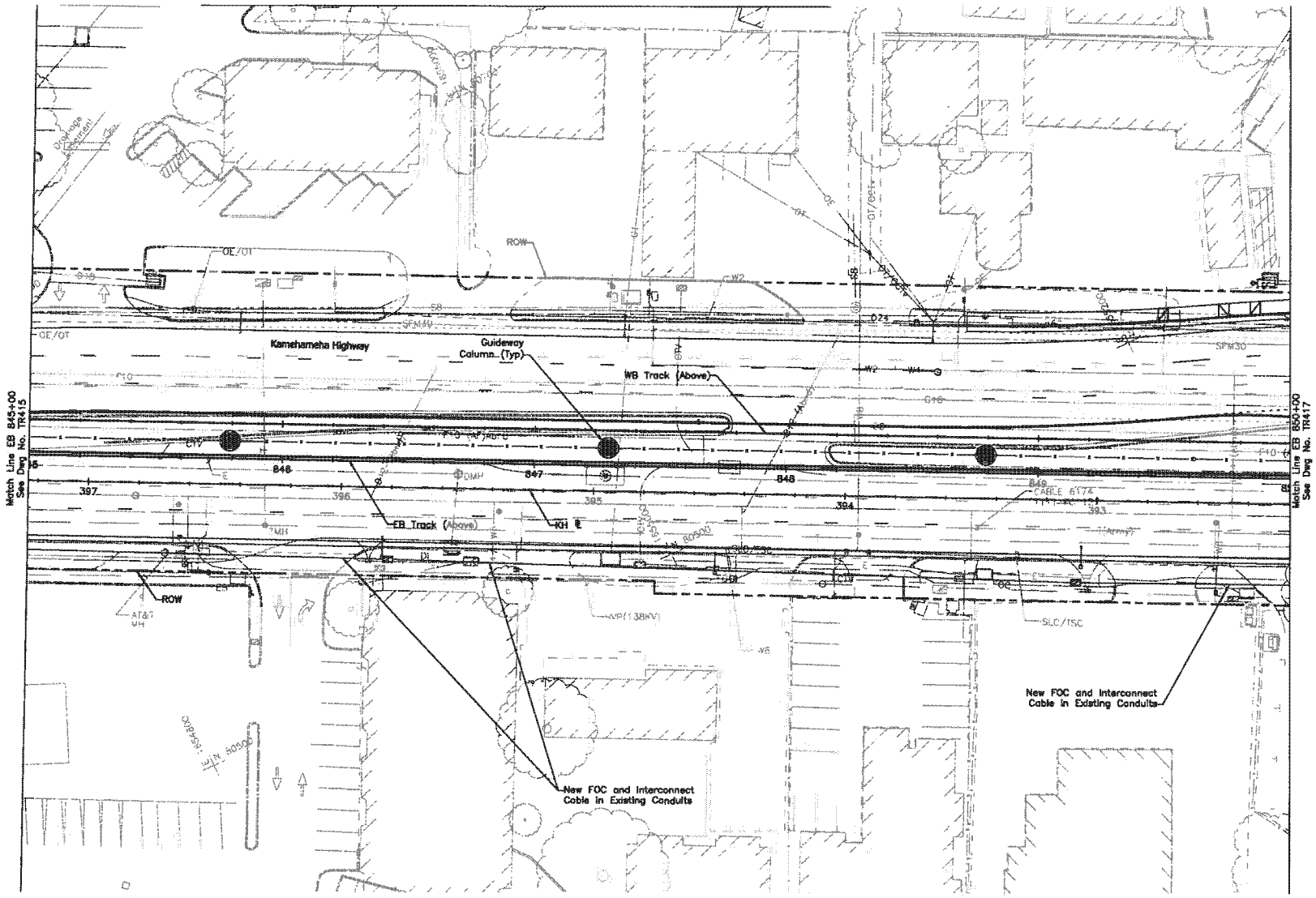

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CC003.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

2010-03-11 8:54 AM X:\2007\07-099\Segment D-B\DWG\KHDB-C04-TR416.dwg

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: Z Tong
Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
For reduced prints, original page size in inches:

Subconsultant: ATA AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 845+00 TO EB 850+00

Contract No.: DB-320
CADD File: KHDB-C04-TR416
Drawing No: TR416 Rev. A
Scale: 1"=20'
Page No. 227 of 285

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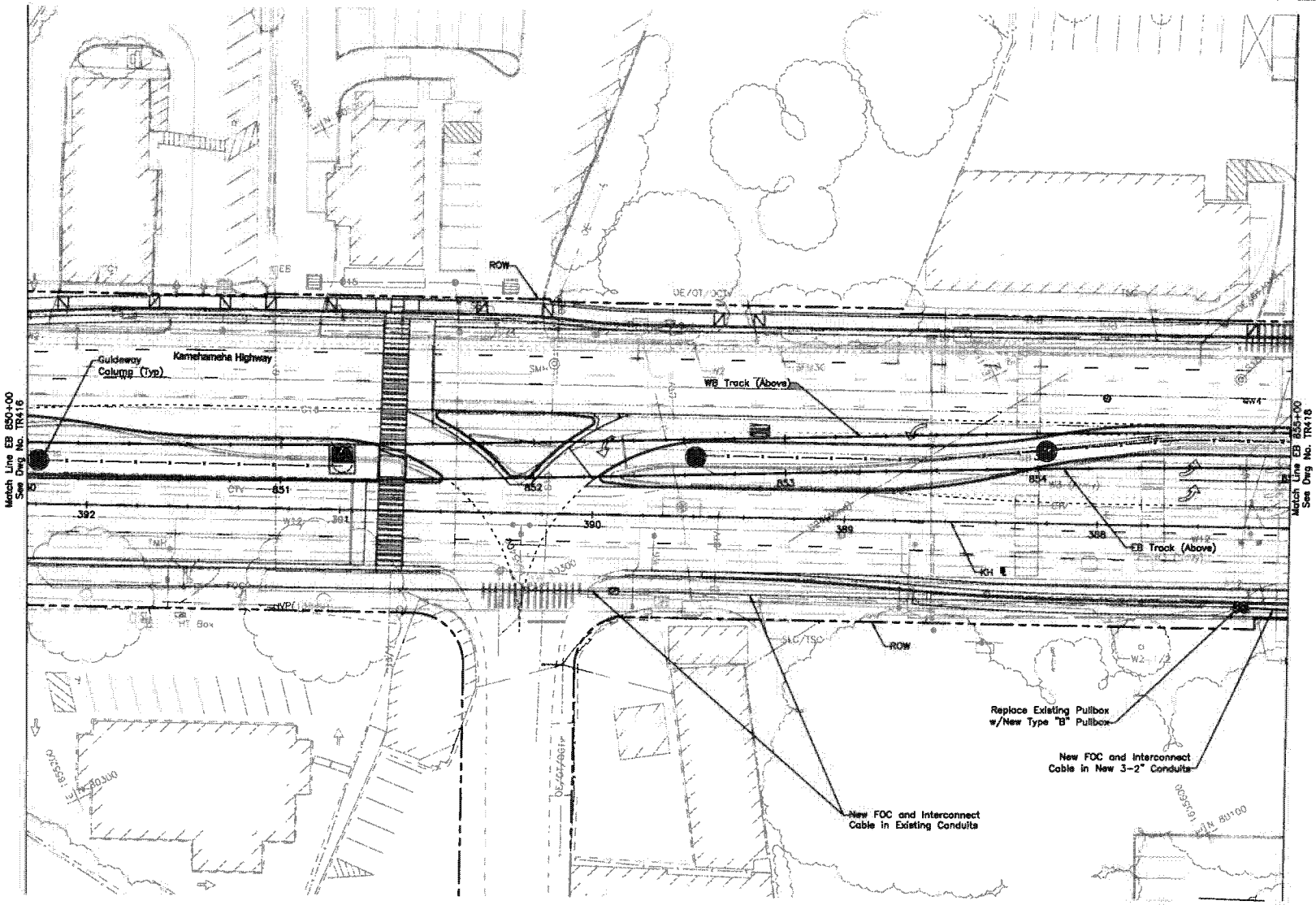

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

20' 0 20'

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

2010-03-11 8:58 AM X:\2007\07-099\Segment D-B\DWG\KHDB-C04-TR417.dwg

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Designed: Z Tong
Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 850+00 TO EB 855+00

Contract No.: DB-320
CADD File: KHDB-C04-TR417
Drawing No: TR417 Rev. A
Scale: 1"=20'
Page No. 228 of 265

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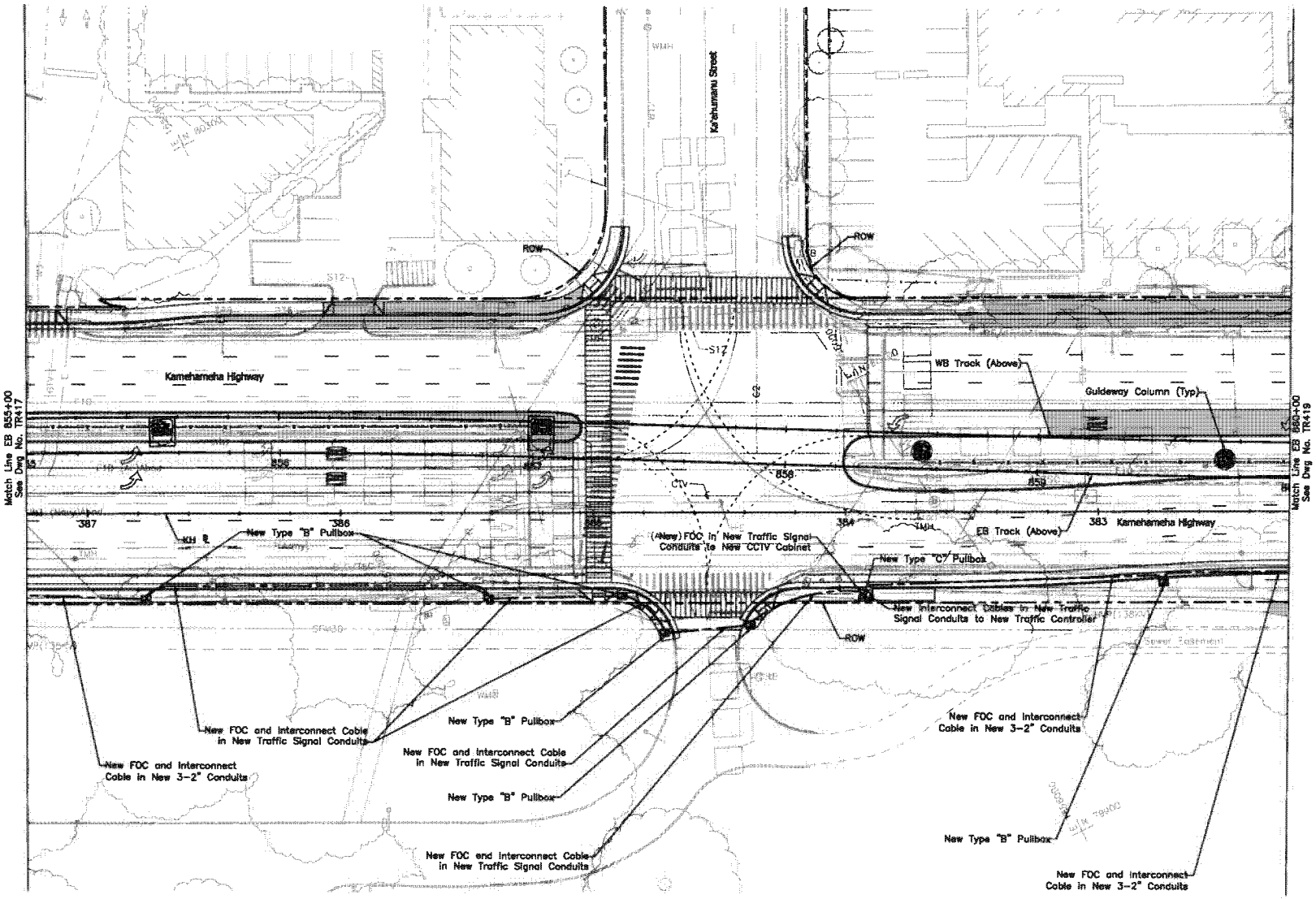

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.
3. For Traffic Signal Plan, see Dwg. No. TR306.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

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Checked: L Yokomizo
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Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 855+00 TO EB 860+00

Contract No.: DB-320
CADD File: KHDB-C04-TR418
Drawing No: TR418 Rev. A
Scale: 1"=20'
Page No. 229 of 265

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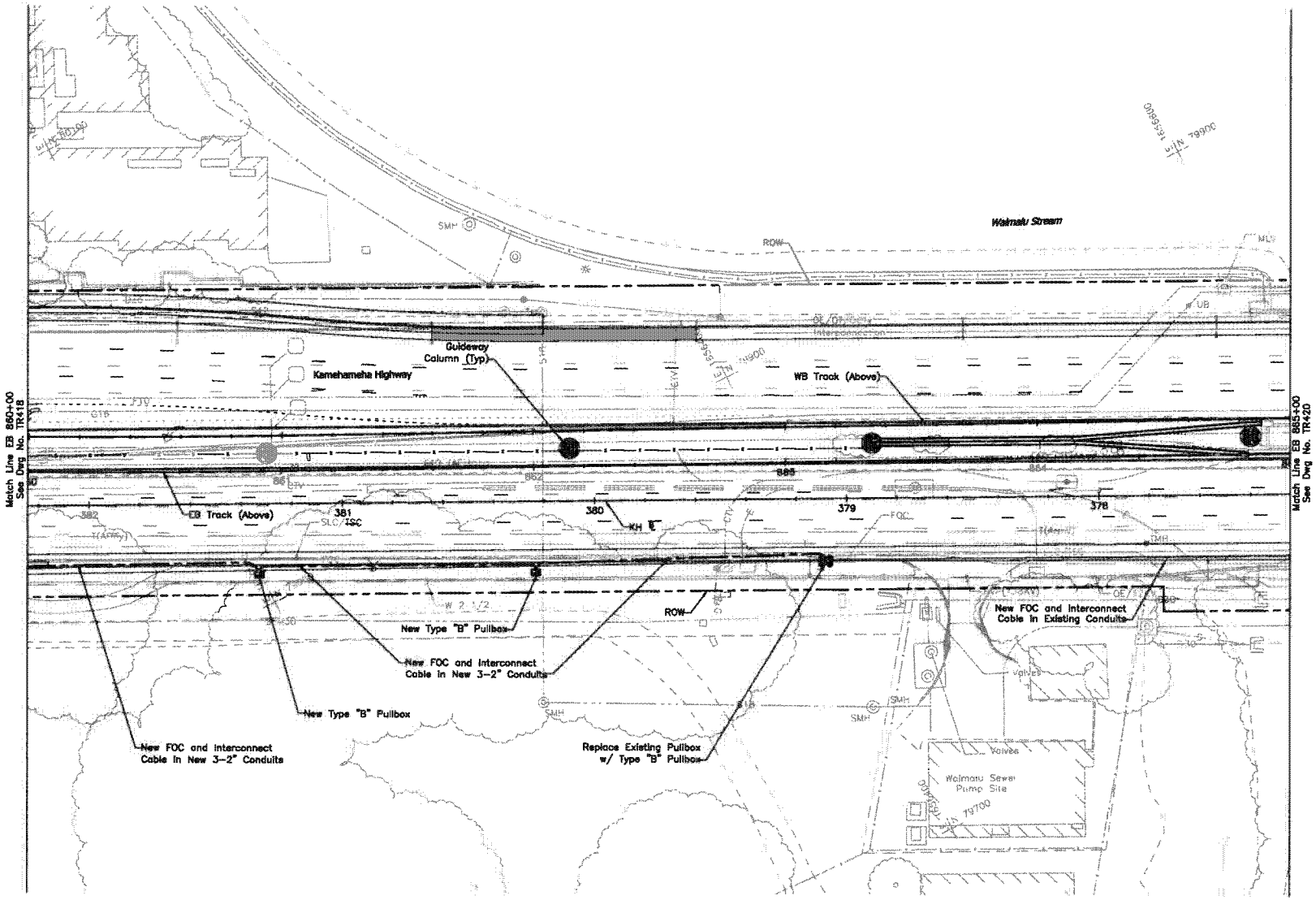

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

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Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 860+00 TO EB 865+00

Contract No.: DB-320
CADD File: KHDB-C04-TR419
Drawing No: TR419 Rev. A
Scale: 1"=20'
Page No. 230 of 265

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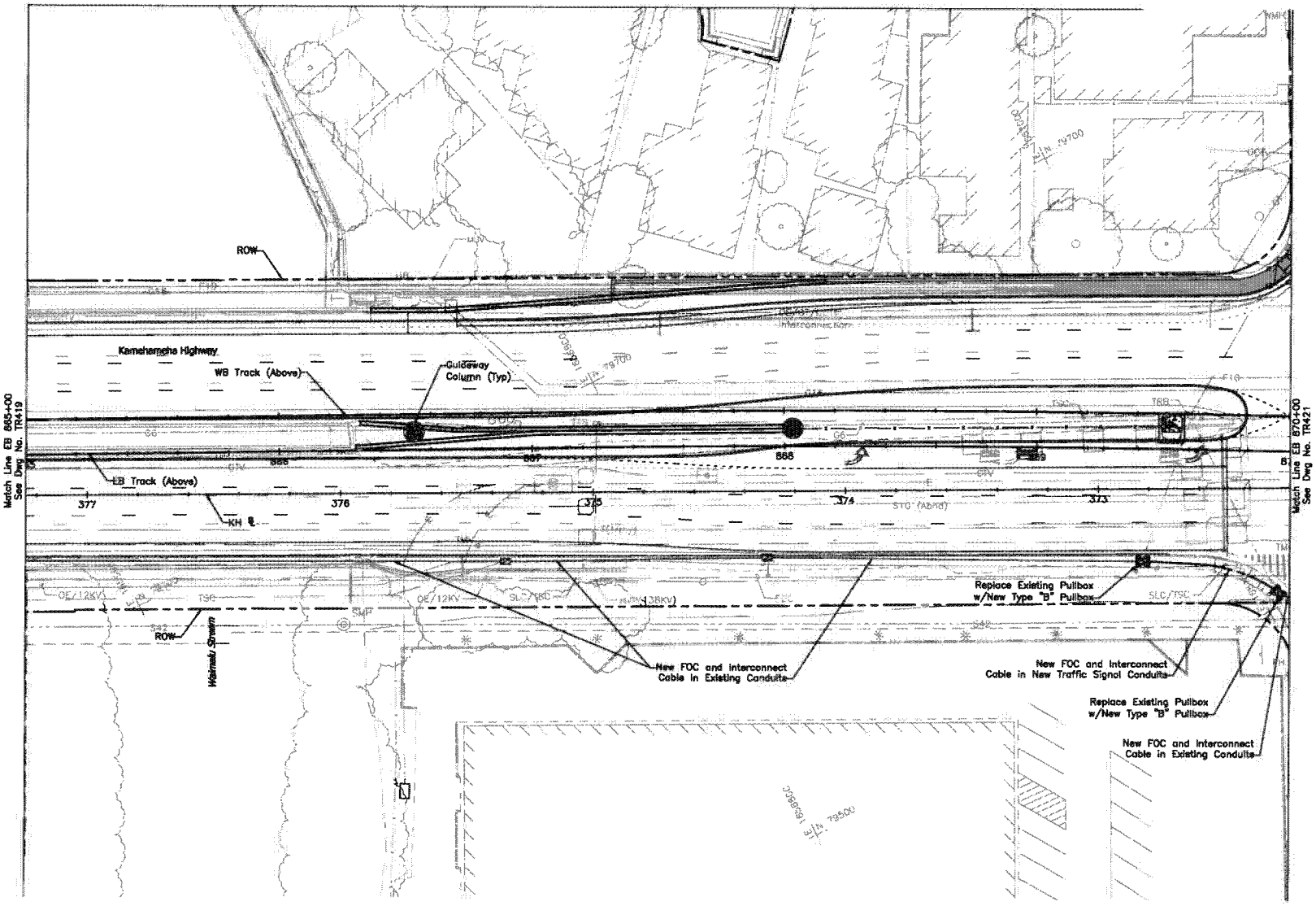

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.
3. For Traffic Signal Plan, see Dwg No. TR307.

20' 0 20'

Rev	By	Date	Description
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Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 865+00 TO EB 870+00

Contract No.: DB-320
CADD File: KHDB-C04-TR420
Drawing No: TR420 Rev. A
Scale: 1"=20'
Page No. 231 of 285

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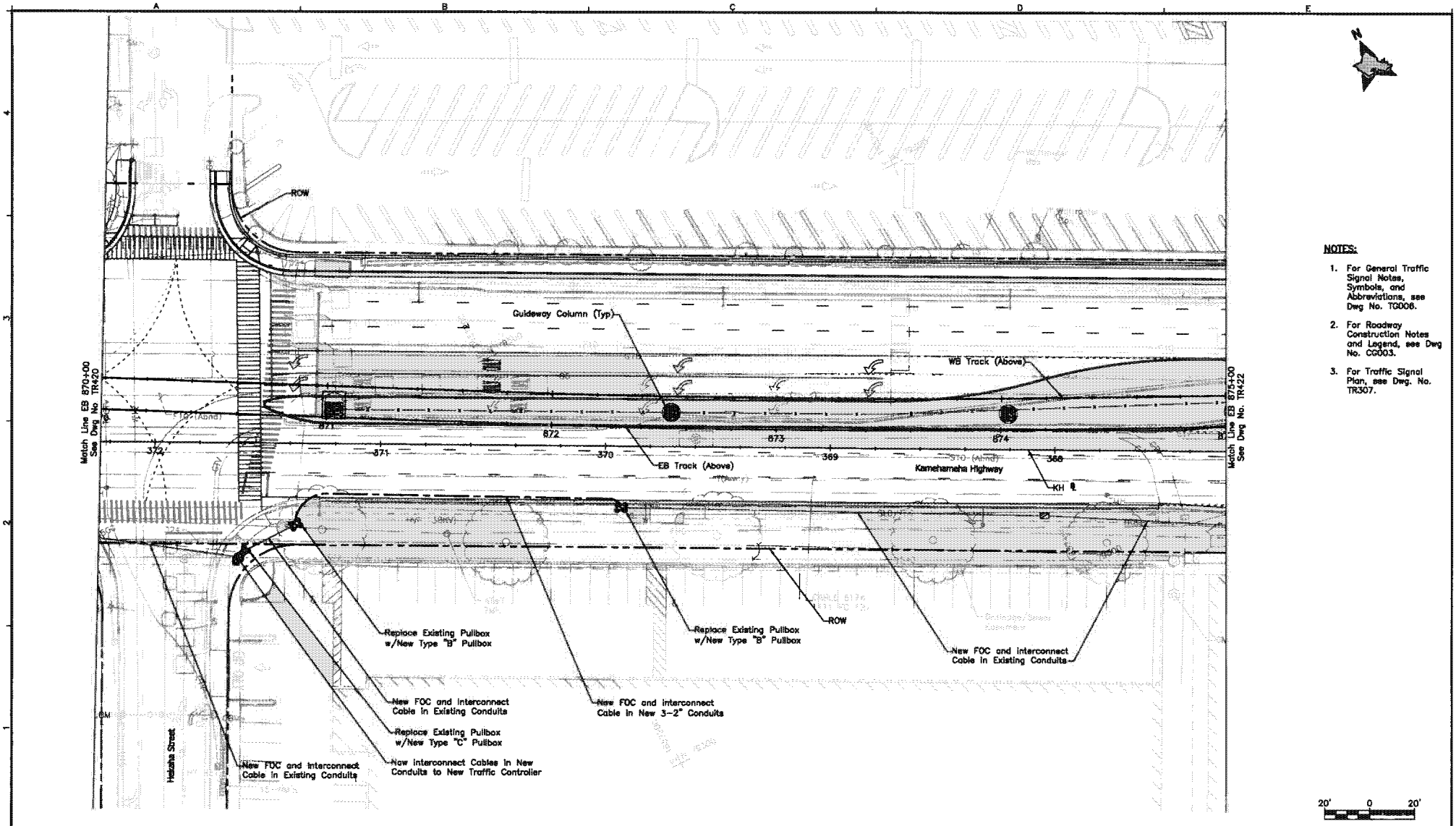

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.
3. For Traffic Signal Plan, see Dwg. No. TR307.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

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Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 870+00 TO EB 875+00

Contract No.: DB-320
CADD File: KHDB-C04-TR421
Drawing No: TR421 Rev. A
Scale: 1"=20'
Page No. 232 of 285

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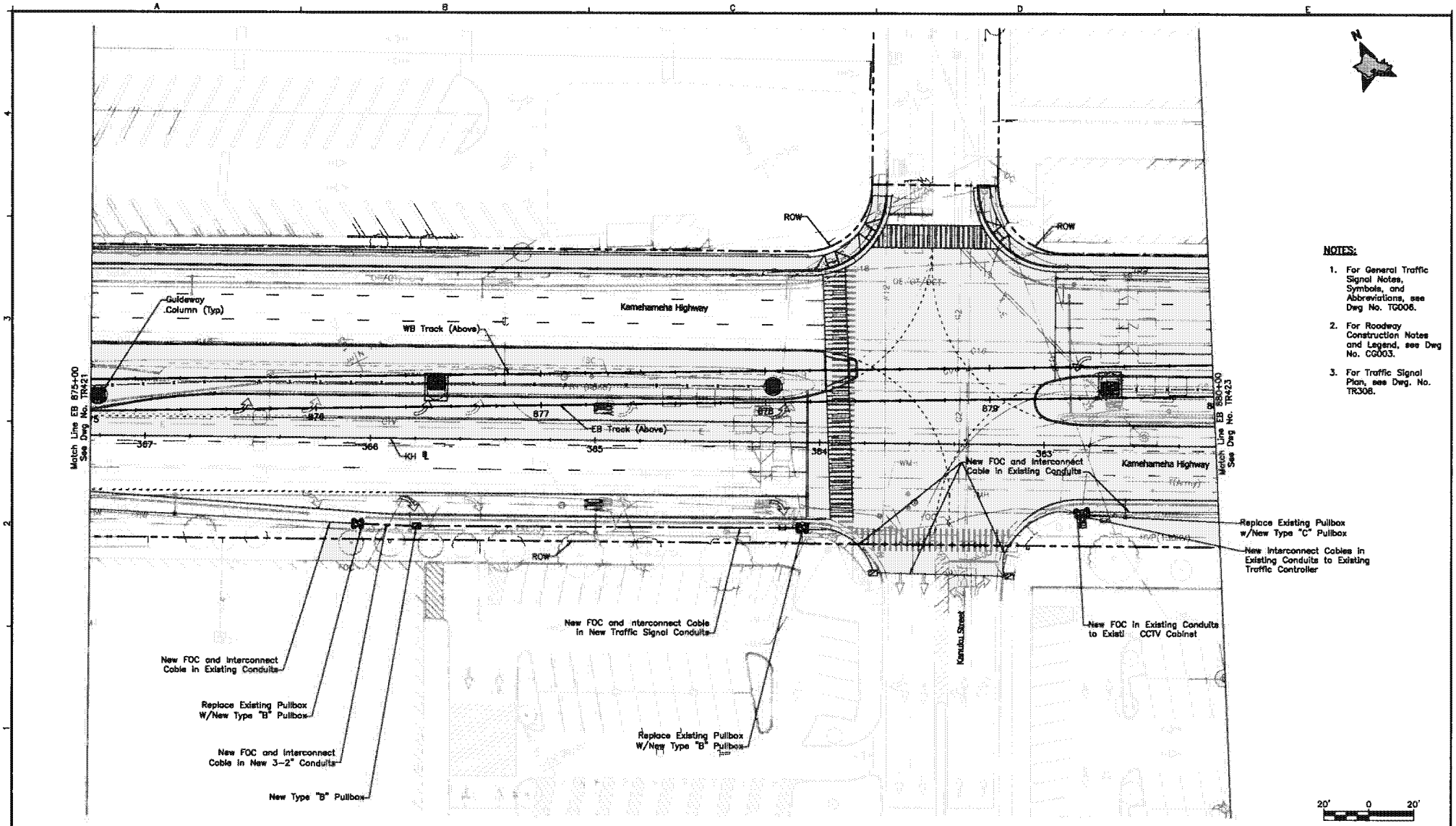

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.
3. For Traffic Signal Plan, see Dwg. No. TR306.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

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Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 875+00 TO EB 880+00

Contract No.: DB-320
CADD File: KHDB-C04-TR422
Drawing No: TR422 Rev. A
Scale: 1"=20'
Page No. 233 of 265

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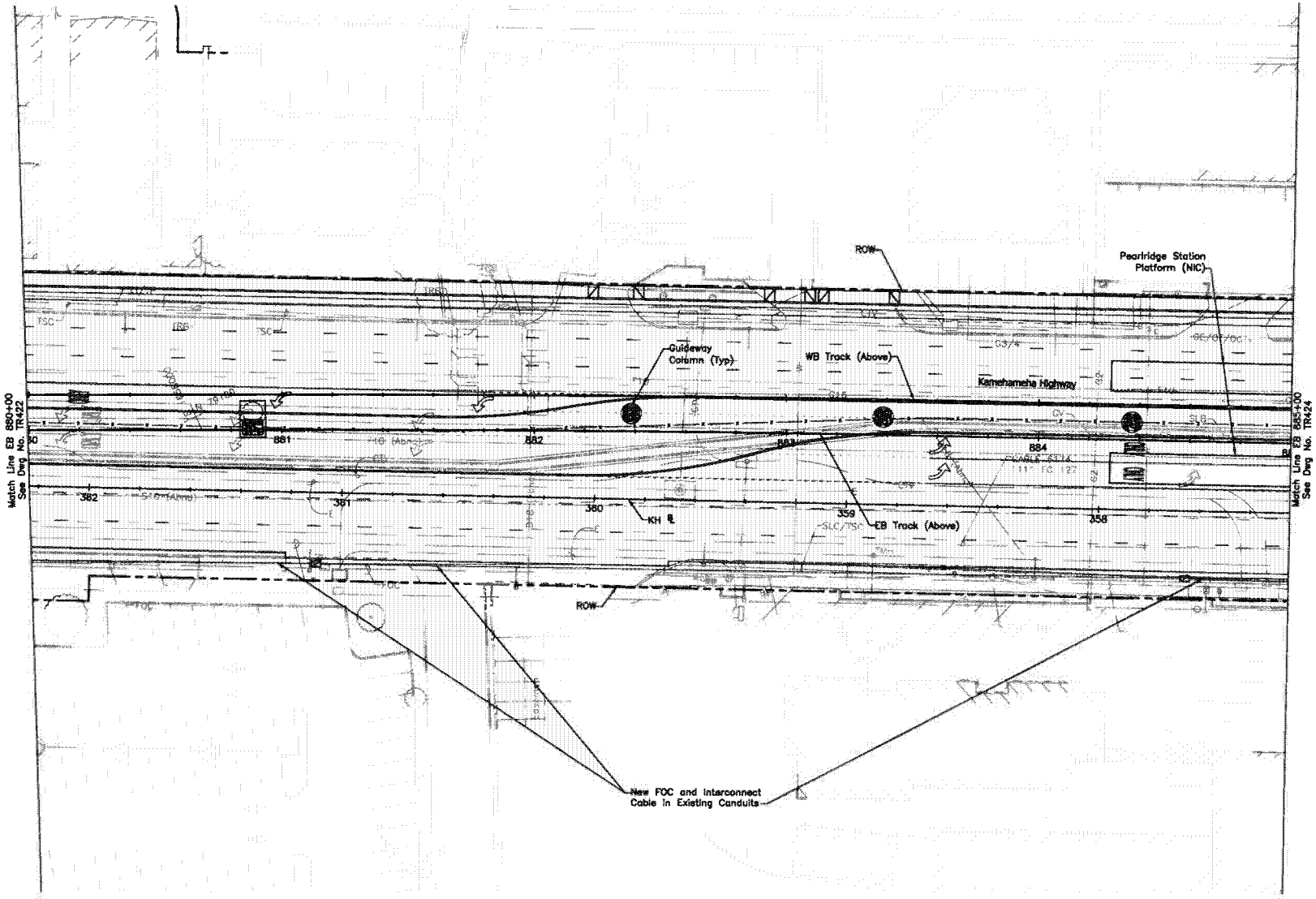

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG005.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

20' 0 20'

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

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Drawn: Z Tong
Checked: L Yakamize
Approved: K Niiyo
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 880+00 TO EB 885+00

Contract No.: DB-320
CADD File: KHDB-C04-TR423
Drawing No: TR423 Rev. A
Scale: 1"=20'
Page No. 234 of 285

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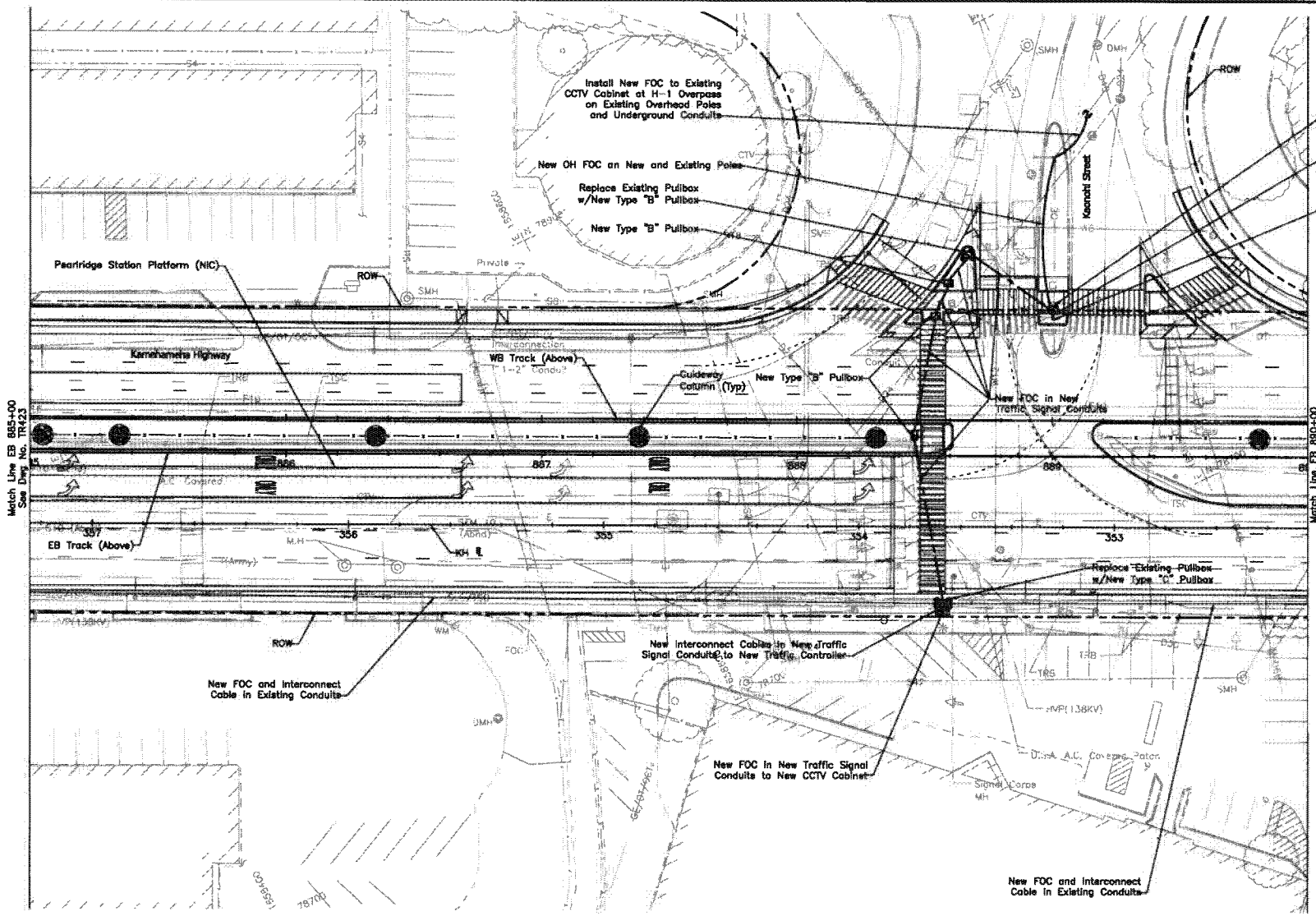

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.
3. For Traffic Signal Plan, see Dwg. No. TR309.
4. For Electrical & Communications Relocation, see Dwg No. UP324.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

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Designed: Z Tang
Drawn: Z Tang
Checked: L Yakomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 - Honolulu, HI 96813
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 885+00 TO EB 890+00

Contract No.: DB-320
CADD File: KHDB-C04-TR424
Drawing No: TR424 Rev. A
Scale: 1"=20'
Page No. 235 of 285

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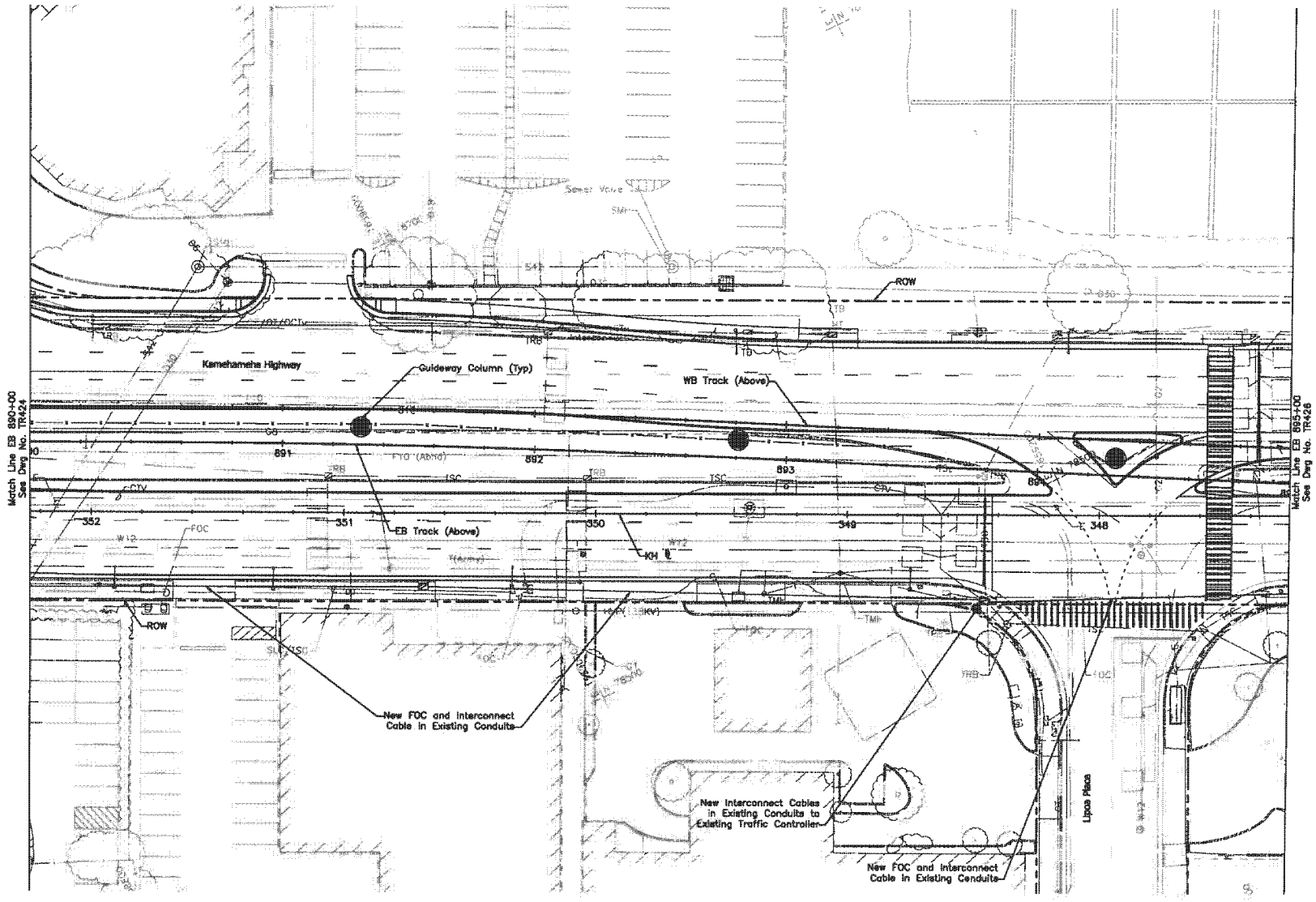

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.
3. For Traffic Signal Plan, see Dwg. No. TR310.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

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PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: Z Tong
Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: ATA AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 890+00 TO EB 895+00

Contract No.: DB-320
CADD File: KHDB-C04-TR425
Drawing No: TR425 Rev. A
Scale: 1"=20'
Page No. 236 of 265

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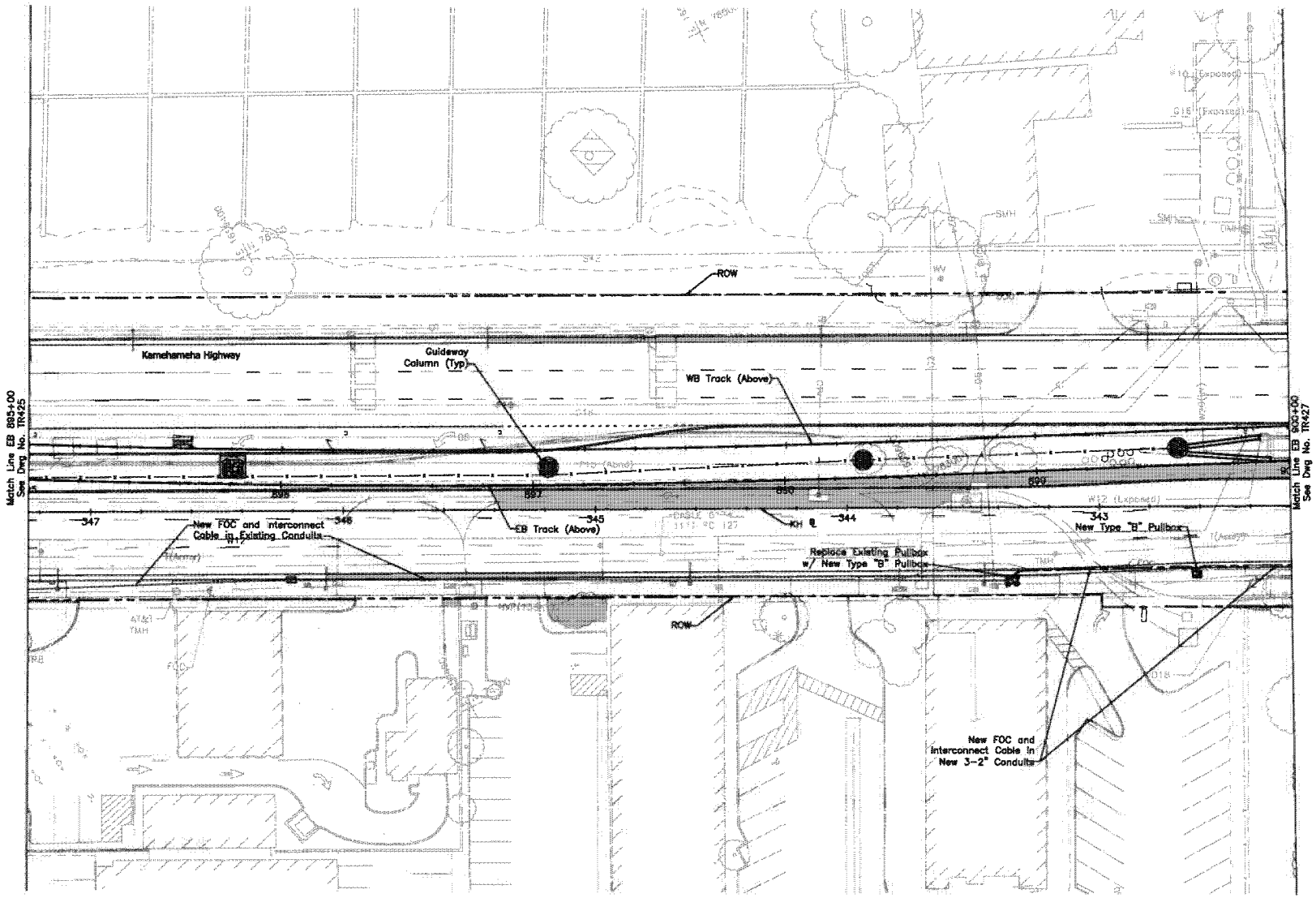

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

20' 0 20'

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

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Designed: Z Tong
Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiyo
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: ATA AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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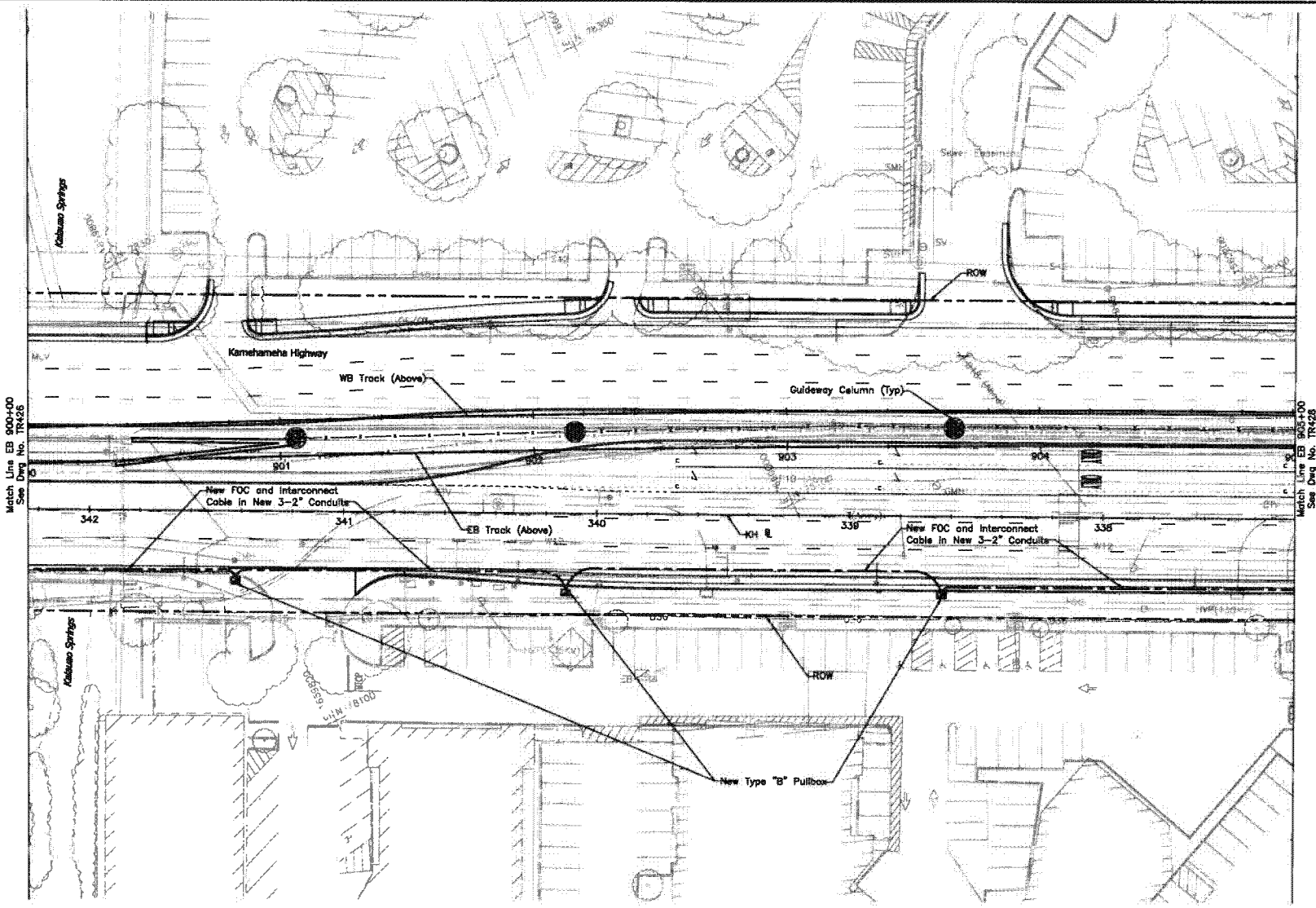
FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 895+00 TO EB 900+00

Contract No.: DB-320
CADD File: KHDB-C04-TR426
Drawing No: TR426 Rev. A
Scale: 1"=20'
Page No. 237 of 265



NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

20' 0 20'

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

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Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES • RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 900+00 TO EB 905+00

Contract No.: DB-320
CADD File: KHDB-C04-TR427
Drawing No: TR427 Rev. A
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Page No. 238 of 265

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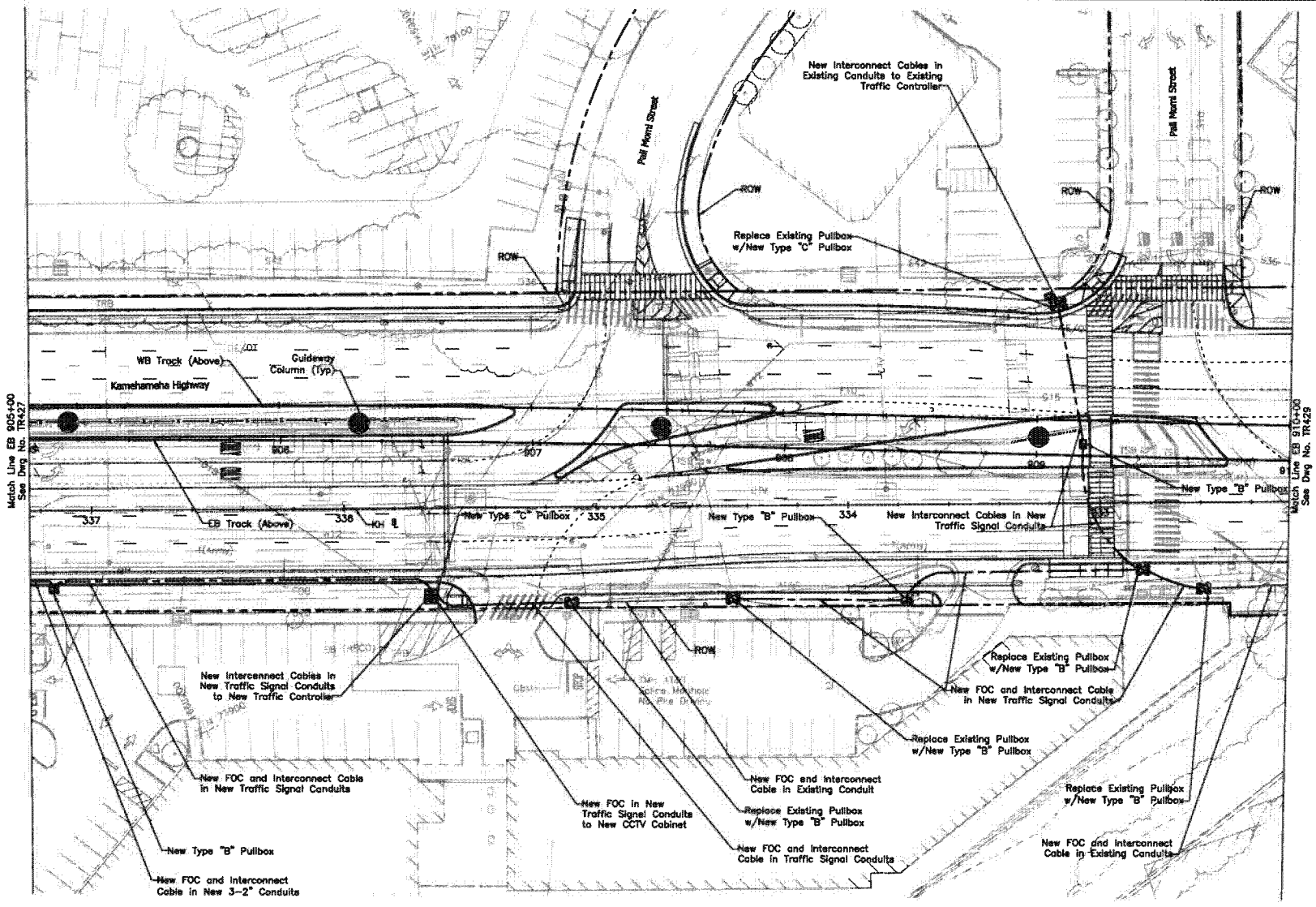

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.
3. For Traffic Signal Plan, see Dwg. No. TR311 and TR312.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

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Checked: L Yokomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 905+00 TO EB 910+00

Contract No.: DB-320
CADD File: KHDB-C04-TR428
Drawing No: TR428 Rev. A
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Page No. 239 of 285

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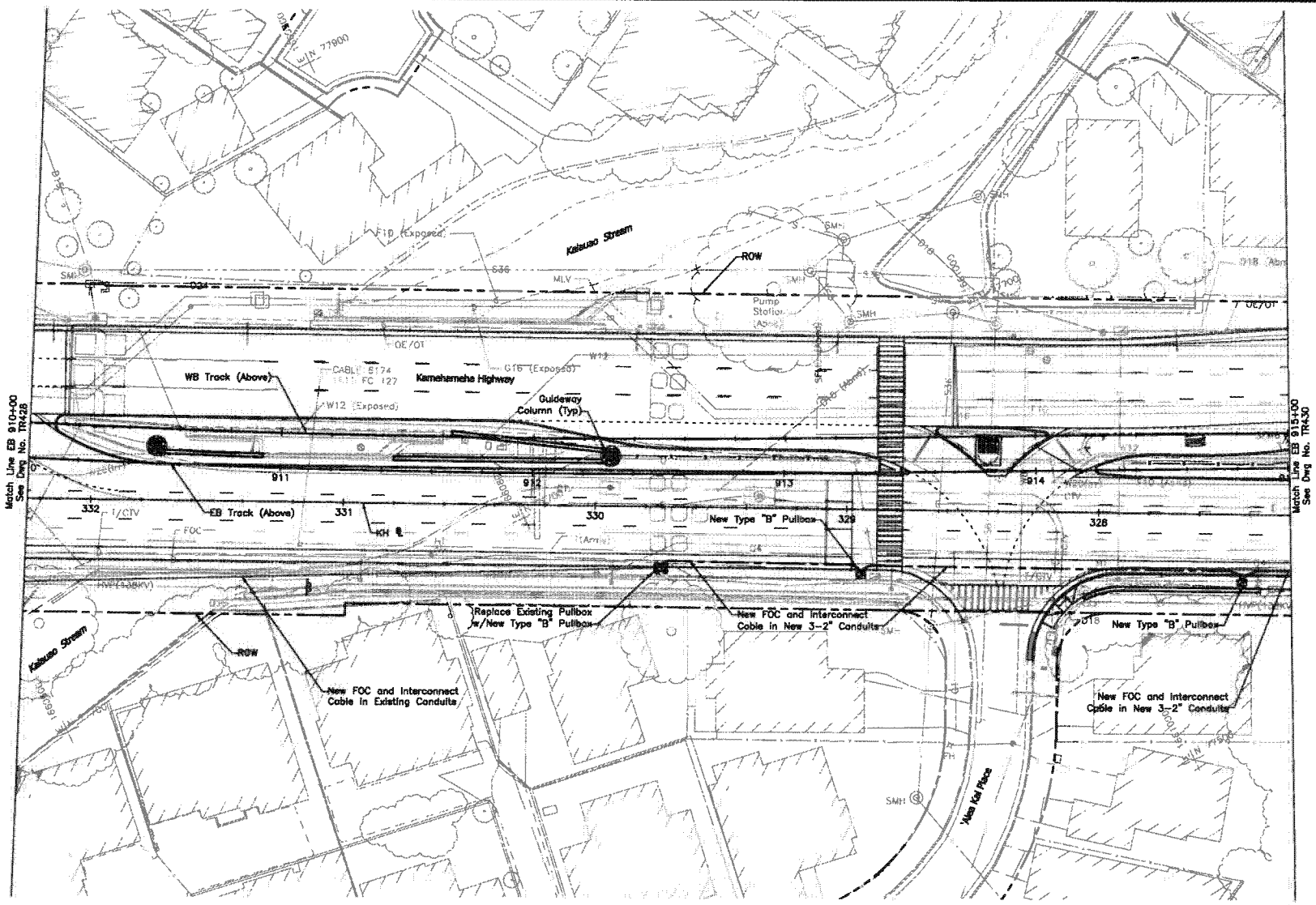

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

20' 0 20'

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

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Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 910+00 TO EB 915+00

Contract No.: DB-320
CADD File: KHDB-C04-TR429
Drawing No: TR429 Rev. A
Scale: 1"=20'
Page No. 240 of 265

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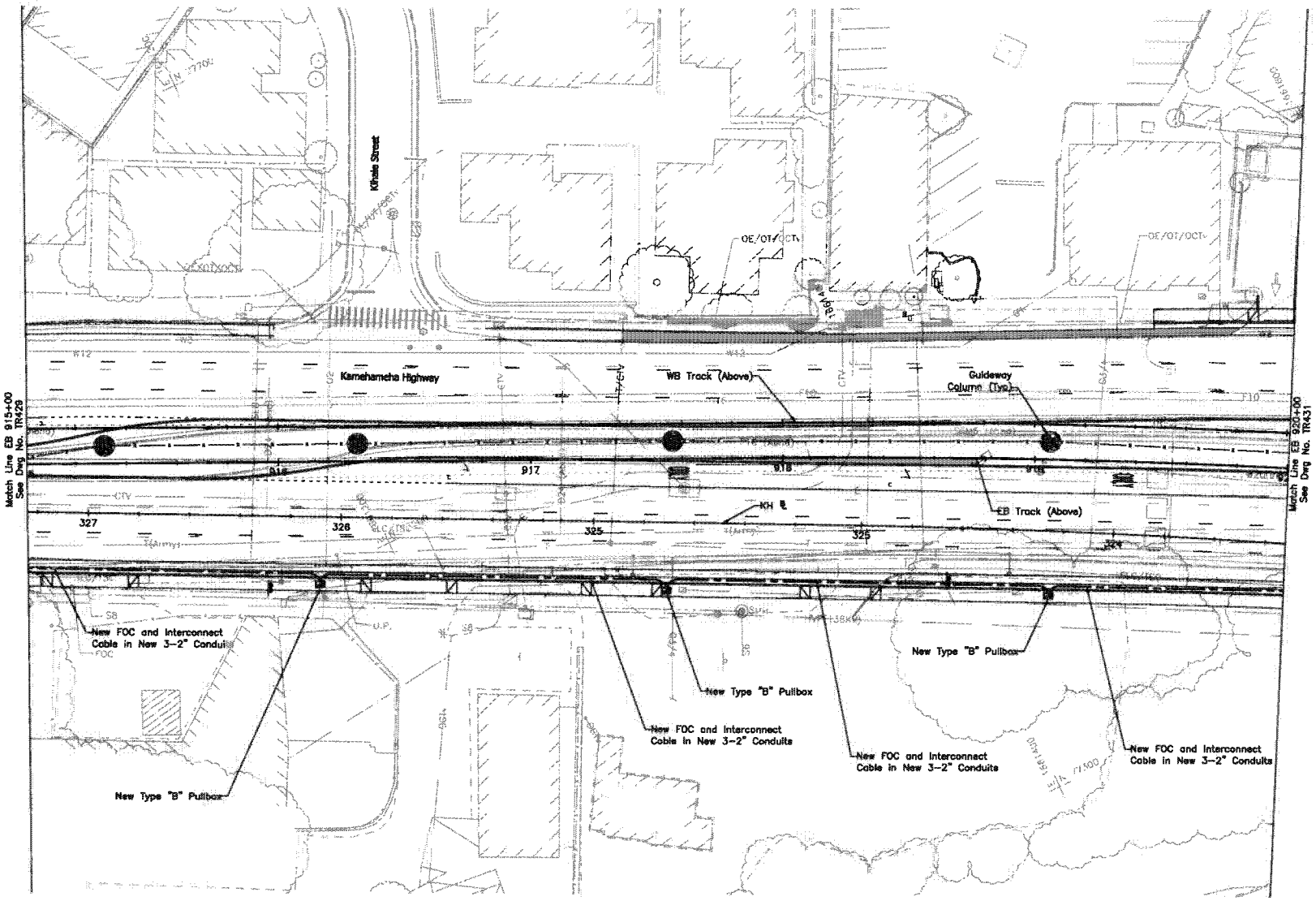

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

20' 0 20'

Rev	By	Date	Description

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HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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Subconsultant: ATA AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 915+00 TO EB 920+00

Contract No.: DB-320
CADD File: KHDB-C04-TR430
Drawing No: TR430 Rev. A
Scale: 1"=20'
Page No. 241 of 265

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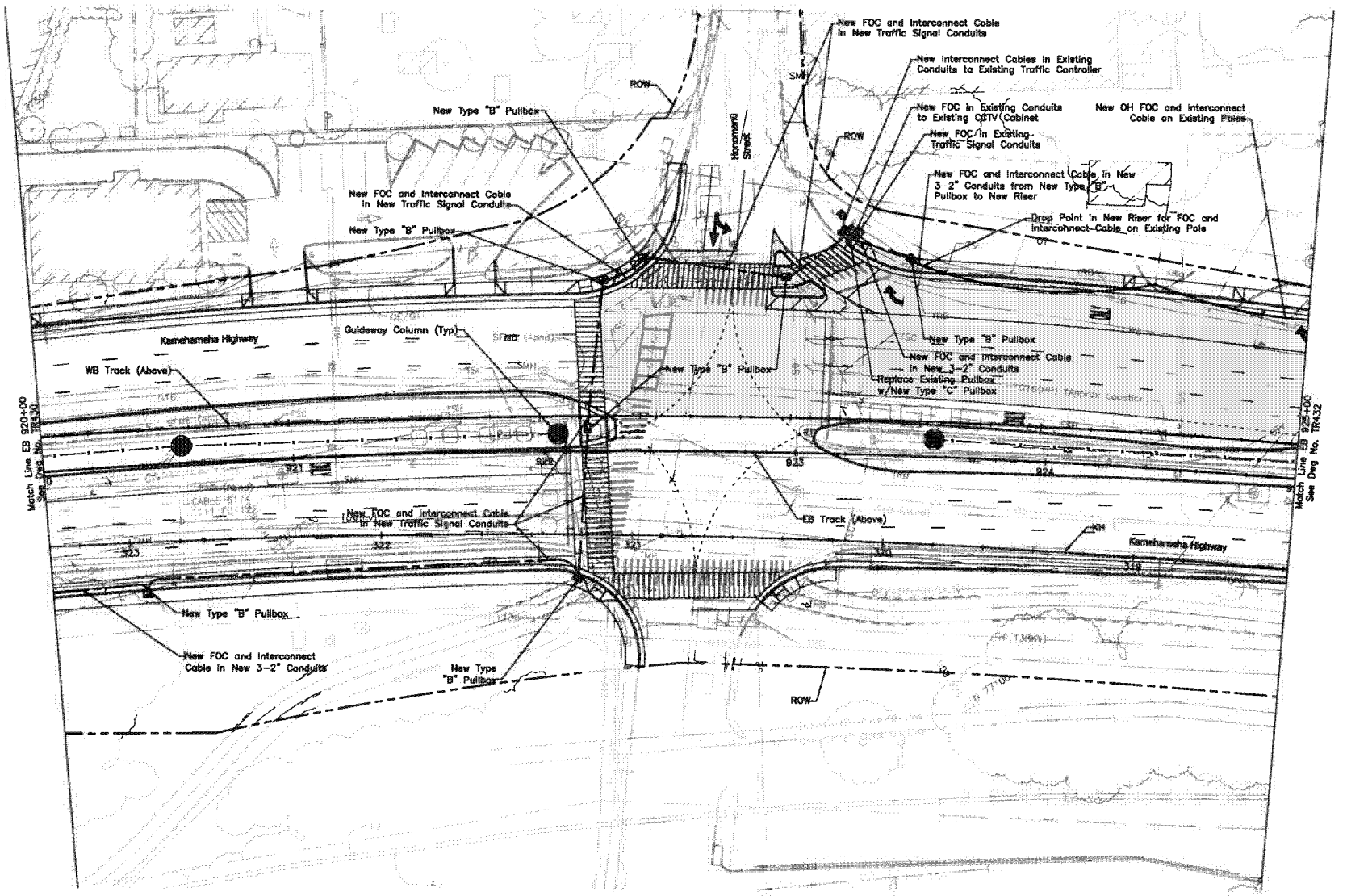

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG008.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.
3. For Traffic Signal Plan, see Dwg. No. TR313.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

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Designed: Z Tong
Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 920+00 TO EB 925+00

Contract No.: DB-320
CADD File: KHDB-C04-TR431
Drawing No: TR431 Rev. A
Scale: 1"=20'
Page No. 242 of 265

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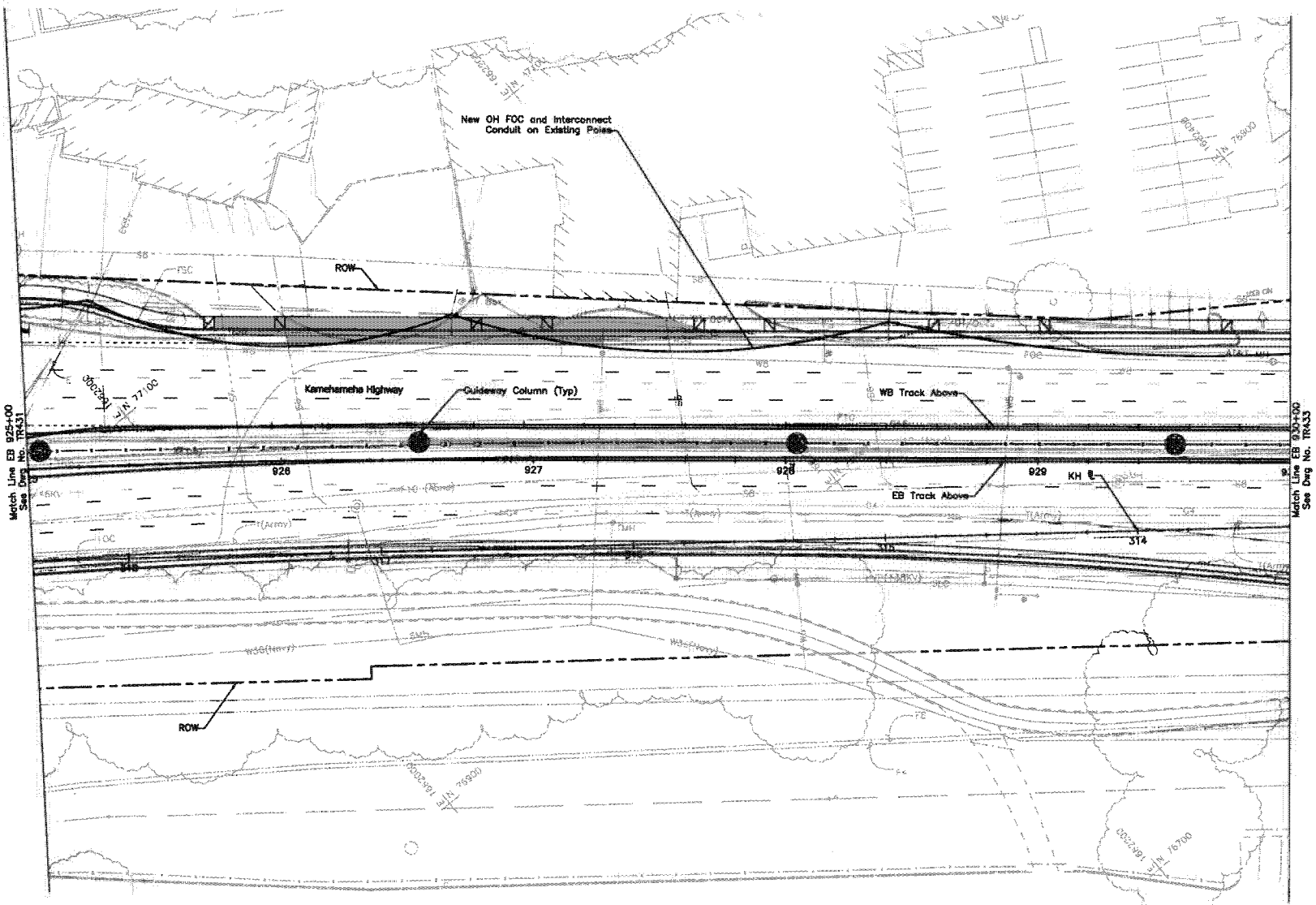

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

20' 0 20'

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

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PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: Z Tang
Drawn: Z Tang
Checked: L Yokomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 925+00 TO EB 930+00

Contract No.: DB-320
CADD File: KHDB-C04-TR432
Drawing No: TR432 Rev. A
Scale: 1"=20'
Page No. 243 of 265

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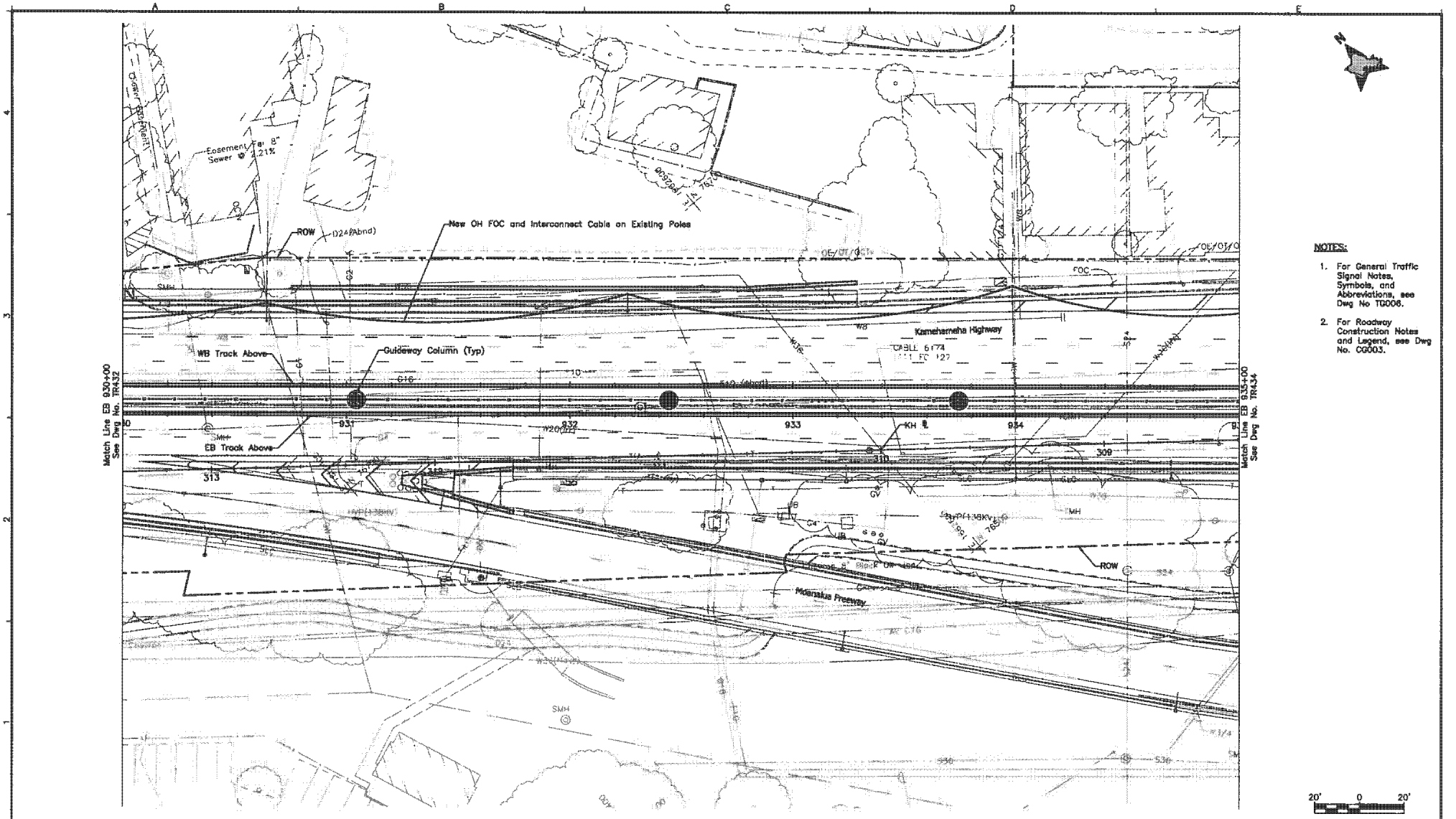

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

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Approved: K Niiya
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HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 930+00 TO EB 935+00

Contract No.: DB-320
CADD File: KHDB-C04-TR433
Drawing No: TR433 Rev. A
Scale: 1"=20'
Page No. 244 of 265

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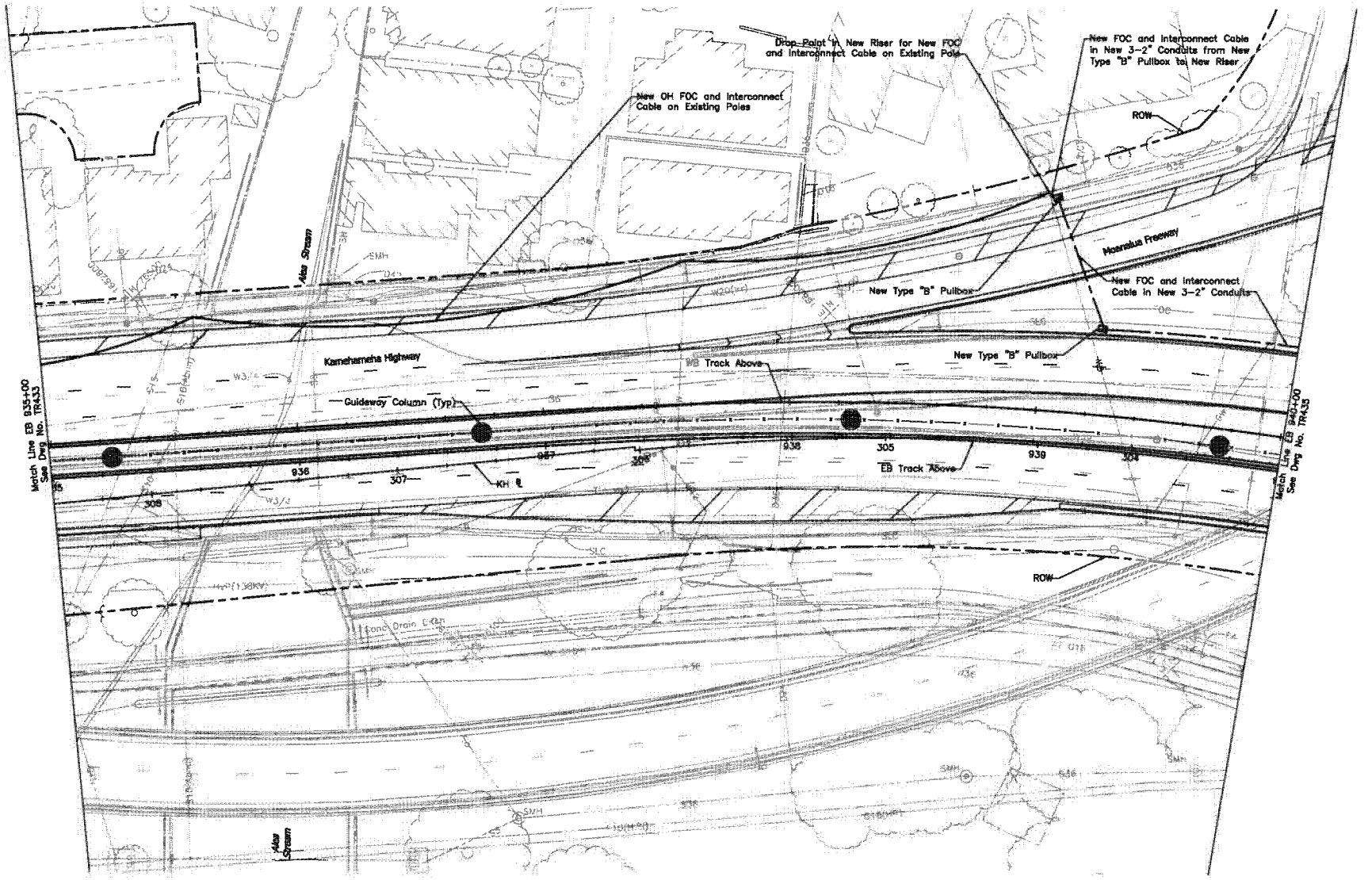

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG008.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

20' 0 20'

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

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Approved: K Niiya
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HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 935+00 TO EB 940+00

Contract No.: DB-320
CADD File: KHDB-C04-TR434
Drawing No.: TR434 Rev. A
Scale: 1"=20'
Page No. 245 of 265

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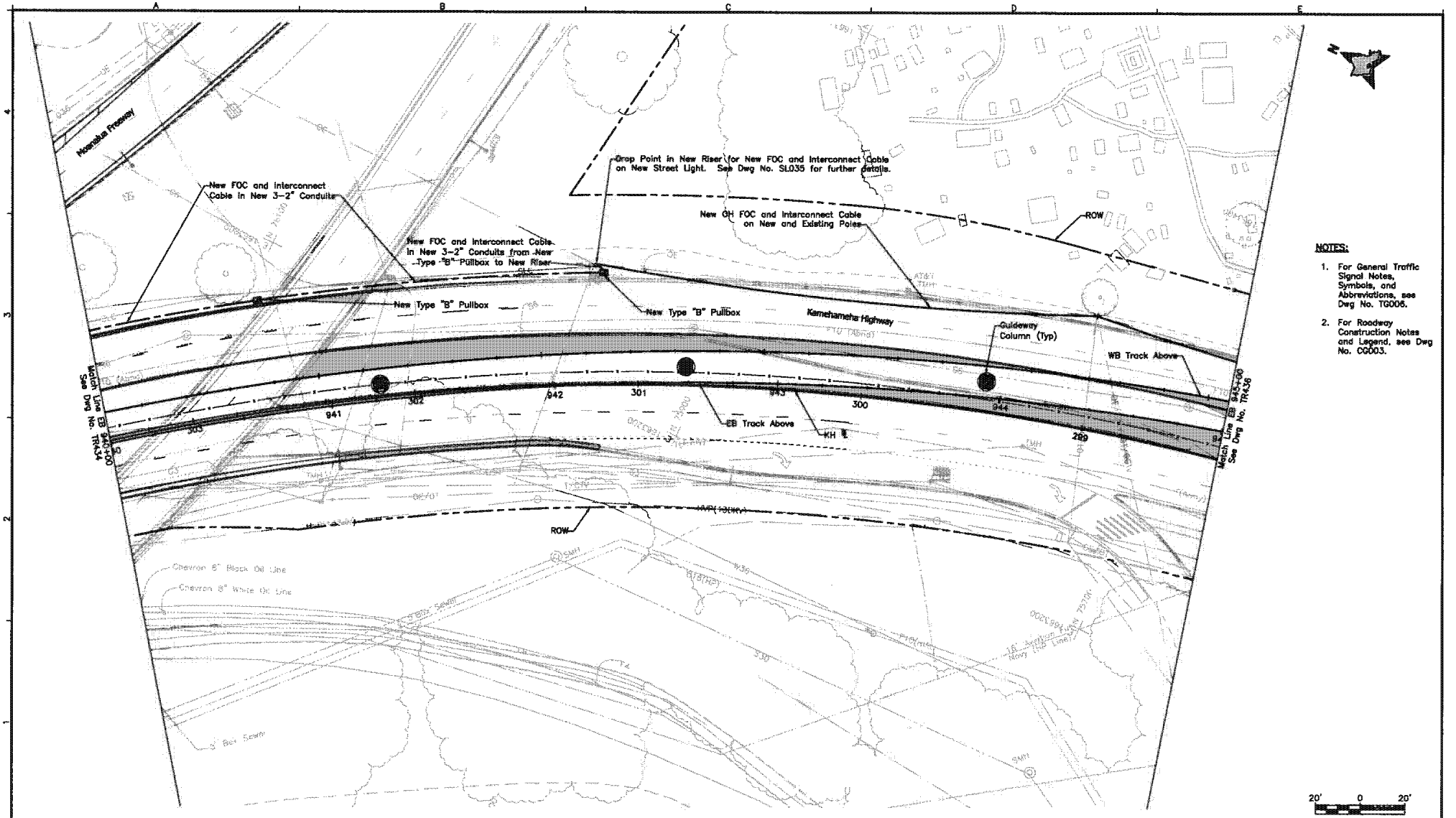

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

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Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 940+00 TO EB 945+00

Contract No.: DB-320
CADD File: KHDB-C04-TR435
Drawing No: TR435 Rev. A
Scale: 1"=20'
Page No. 246 of 265

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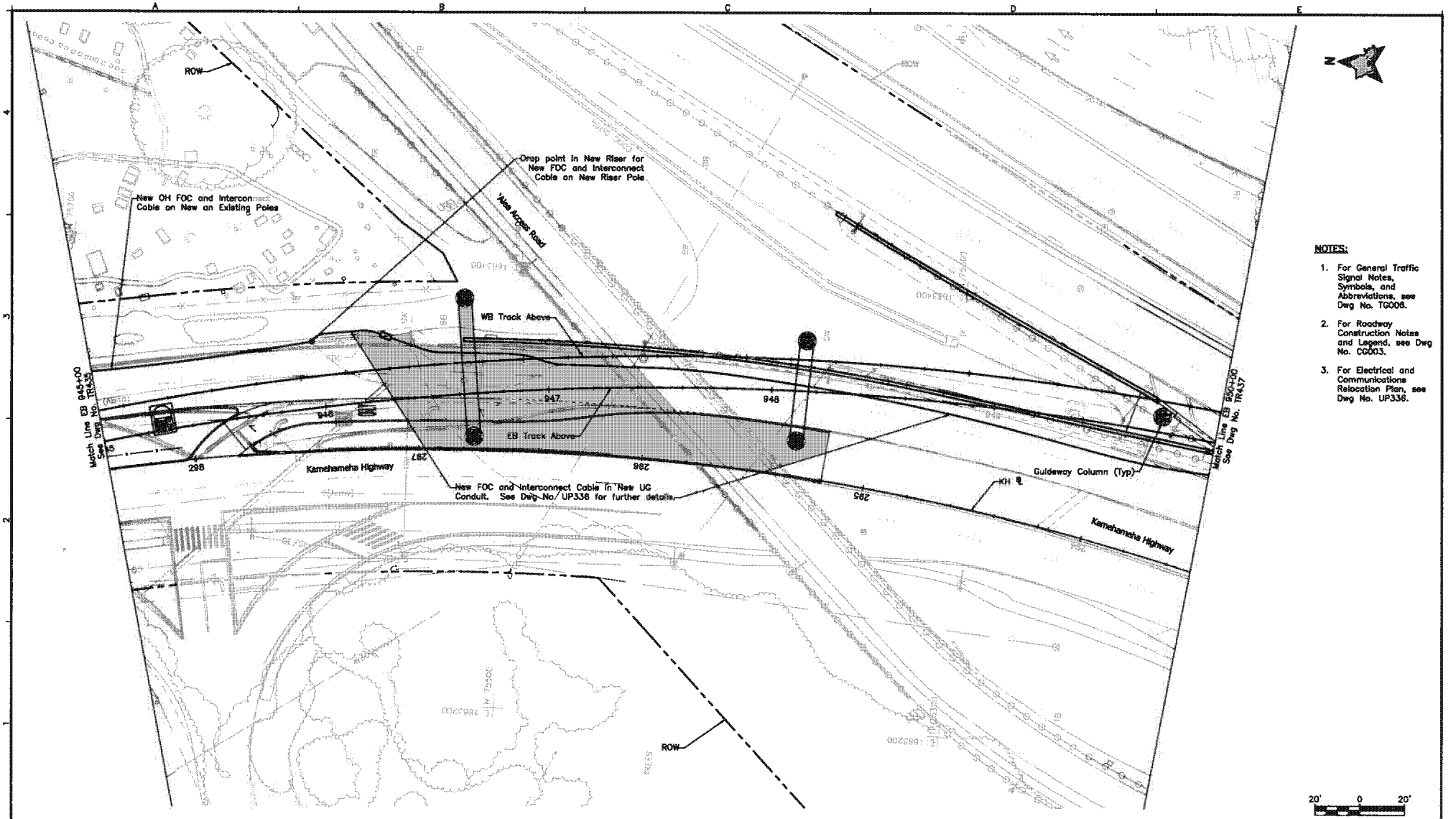

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG008.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.
3. For Electrical and Communications Relocation Plan, see Dwg No. UP336.

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A	KKN	03-19-10	Issued for Proposal

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HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PARSONS BRINCKERHOFF
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 945+00 TO EB 950+00

Contract No.: DB-320
CADD File: KHDB-C04-TR436
Drawing No.: TR436 Rev. A
Scale: 1"=20'
Page No. 247 of 265

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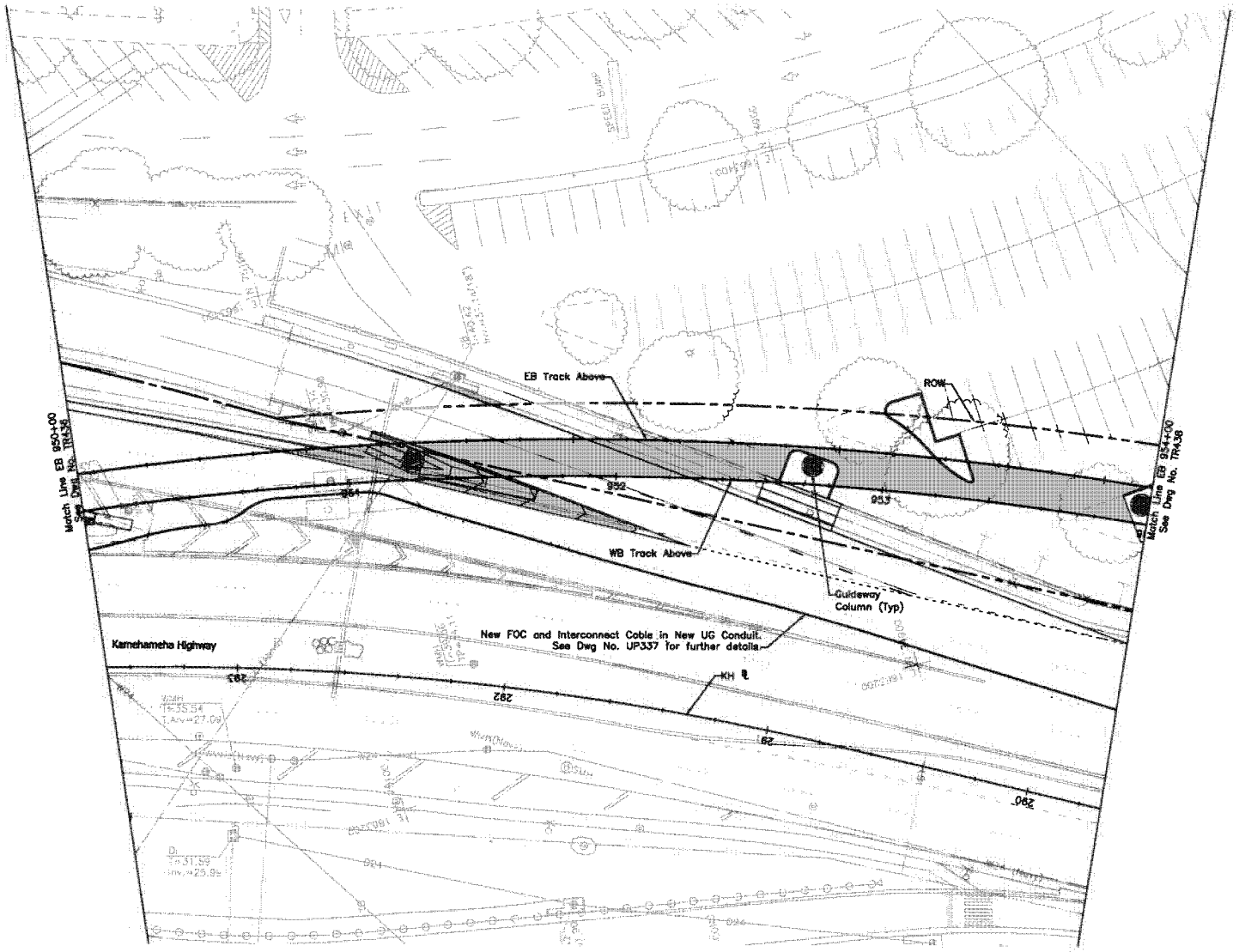

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.
3. For Electrical and Communications Relocation Plan, see Dwg No. UP337.

20' 0 20'

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 950+00 TO EB 954+00

Contract No.: DB-320
CADD File: KHDB-C04-TR437
Drawing No: TR437 Rev. A
Scale: 1"=20'
Page No. 248 of 265

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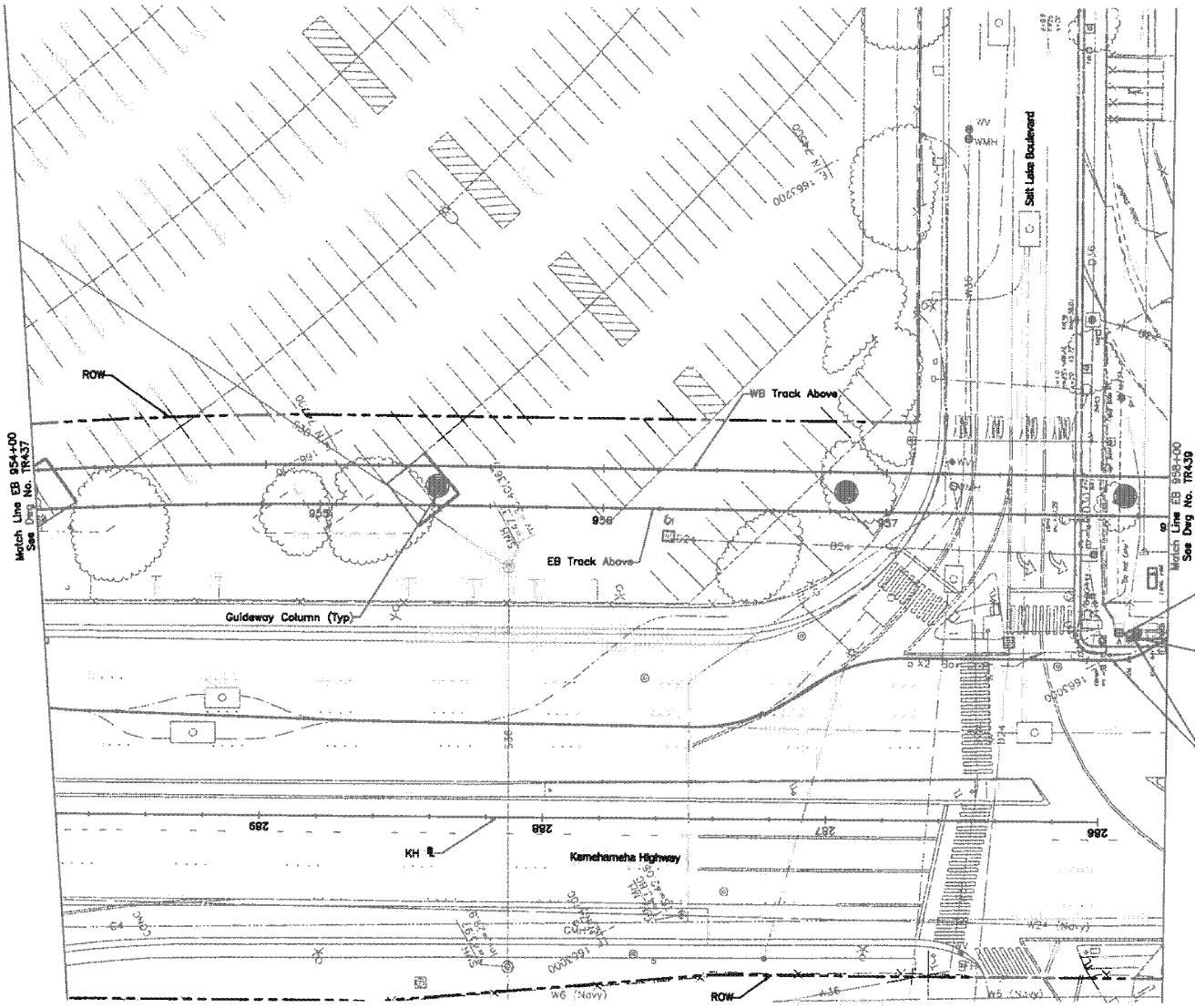

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.
3. For Traffic Signal Plan, see Dwg. No. TR314.
4. For Electrical and Communications Relocation, see Dwg No. UP338.

New Interconnect Cable in Existing Traffic Signal Conduits to Existing Controller

New FOC in Existing Traffic Signal Conduits to Existing CCTV Cabinet

New FOC and Interconnect Cable in New UG Conduit. See Dwg No. UP338 for more details.

20' 0 20'

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

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PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

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Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 954+00 TO EB 958+00

Contract No.: DB-320
CADD File: KHDB-C04-TR438
Drawing No: TR438 Rev. A
Scale: 1"=20'
Page No. 249 of 265

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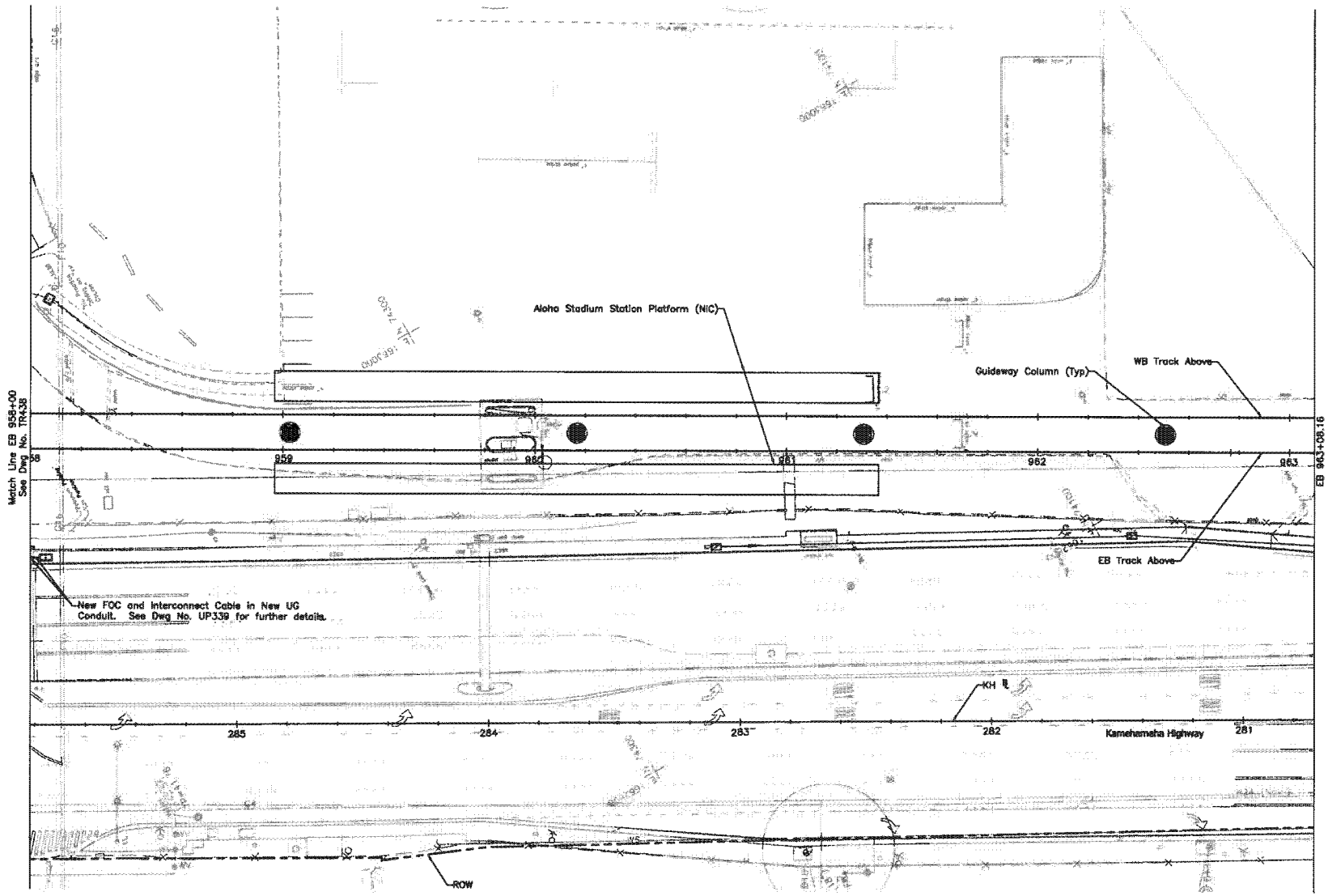

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Notes and Legend, see Dwg No. CG003.
3. For Traffic Signal Plan, see Dwg. No. TR314.
4. For Electrical and Communication Relocation Plan, see Dwg No. UP339.

20' 0 20'

Rev	By	Date	Description
A	KKN	03-19-10	Issued for Proposal

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PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: Z Tong
Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiya
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

FIBER OPTIC AND TRAFFIC SIGNAL INTERCONNECT PLAN

EB 958+00 TO EB 963+08.16

Contract No.: DB-320
CADD File: KHDB-C04-TR439
Drawing No.: TR439 Rev. A
Scale: 1"=20'
Page No. 250 of 285

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UTILITIES SYMBOLS

- Exist AT&T Line
- Exist Cable Television
- Exist Cable Television, Overhead
- Exist Communication Fiber Optic
- Exist Drain Line (Size in Inches)
- Exist Electrical Line, Overhead
- Exist Electrical Line
- Exist Fire Alarm
- Exist Fuel or Oil Line (Size in Inches)
- Exist Force Main (Size in Inches)
- Exist Gas Line (Size in Inches)
- Exist Non-Potable Water Line (Size in Inches)
- Exist Sandwich Isle Communications Line
- Exist Sewer Line (Size in Inches)
- Exist Signal Corps Line
- Exist Street Light Conduit
- Exist Telephone Line, Overhead
- Exist Telephone Line
- Exist Traffic Signal Conduit
- Exist Water Line (Size in Inches)

- Exist Air Relief Valve
- Exist AT&T Box
- Exist AT&T Manhole
- Exist Backflow Preventor
- Exist Utility Box
- Exist Catch Basin
- Exist Catch Basin
- Exist Cable TV Box
- Exist Clean Out
- Exist Drain Inlet
- Exist Drain Manhole
- Exist Dry Standpipe
- Exist Electrical Box
- Exist Electrical Manhole
- Exist Electrical Transformer
- Exist Fire Alarm Box
- Exist Fire Hydrant
- Exist Gas Manhole
- Exist Gas Valve
- Exist Guy Wire
- Exist Irrigation Control Valve Box
- Exist Irrigation Control Valve
- Exist Light Pole
- Exist Manhole
- Exist Street Monument
- Exist Pole (EP, U.P.)
- Exist Pedestrian Street Light

- Exist Traffic Sensor
- Exist Street Light
- Exist Street Light Box
- Exist Sewer Manhole
- Exist Telephone Box
- Exist Telephone Manhole
- Exist Traffic/Pedestrian Street Light
- Exist Traffic Signal Box
- Exist Traffic Street Light
- Exist Water Meter
- Exist Water Manhole
- Exist Water Valve

- Prop Drain Line (Size in Inches)
- Prop Fuel or Oil Line (Size in Inches)
- Prop Gas Line (Size in Inches)
- Prop Non-Potable Water Line (Size in Inches)
- Prop Sewer Line (Size in Inches)
- Prop Water Line (Size in Inches)

- Prop Air Relief Valve
- Prop Backflow Preventor
- Prop Catch Basin
- Prop Catch Basin
- Prop Clean Out
- Prop Drain Inlet
- Prop Drain Manhole
- Prop Swale
- Prop Fire Hydrant
- Prop Gas Manhole
- Prop Gas Valve
- Prop Sewer Manhole
- Prop Water Meter
- Prop Water Manhole
- Prop Water Valve
- Cut and Plug
- Abandon in Place
- Demolish/Remove

For Electrical and Communications Utilities Notes and Symbols, See Dwg. No UG007.

For General Traffic Signal Notes, Symbols, and Abbreviations, See Dwg. No TG006.

UTILITIES ABBREVIATIONS

&	And
Abnd	Abandoned
ABS	Absolute Volume
AC	Asphalt Concrete
AF	Air Force
Approx	Approximate
ARV	Air Relief Valve
AT&T	American Telephone & Telegraph
Ave	Avenue
℄	Baseline
BFP	Backflow Preventor
BGGV	Bevel-geared gate valve
Blvd	Boulevard
BWS	Board of Water Supply
℄	Centerline
C&C	City and County
CB	Catch Basin
CBMH	Catch Basin Manhole
CO	Cleanout
Comm	Communication
Conc	Concrete
CTV	Cable TV
D	Drain
DI	Drainage Inlet
DMH	Drainage Manhole
DS	Down Spout
Dwg	Drawing
E	Electric, Electrical
EB	Electrical Box
EH	Electrical Handhole
Elec	Electric, Electrical
EP	Electric Pole
EMH	Electrical Manhole
EV	Electrical Vault
Exist	Existing
F	Fuel
FA	Fire Alarm
FAB	Fire Alarm Box
FH	Fire Hydrant
FM	Force Main
FMH	Fuel Manhole
FOC	Fiber Optic Cable
FSA	Fire Safety Alarm
FTB	Fluidized Thermal Backfill
Fwy	Freeway
G	Gas
Gal	Gallons
GM	Gas Meter
GMH	Gas Manhole
GR	Gravity
GV	Gas Valve, Gate Valve
GW	Guy Wire
HECO	Hawaiian Electric Company
HH	Handhole
HITS	Hawaii Information Transfer System
HP	High Pressure
HPFF	High Pressure Fluid Filled
HT	Hawaiian Telcom
HVP	High Voltage Power
HW	Headwall
Hwy	Highway
ICB	Irrigation Control Box
ICV	Irrigation Control Valve
ID	Inside Diameter or Identification
Irr	Irrigation
KH	Kamehameha Highway
kV	Kilovolt
Lat	Lateral
Ln	Lane
LP	Light Pole
Lt	Light
MH	Manhole
MHP	Manhole (Positive)
MHN	Manhole (Negative)
Misc	Miscellaneous
MTCO	Mutual Telephone Company
MW	Monitoring Well
N/A	Not Applicable
NAVFAC	Naval Facilities Engineering Command
NEPTCO	New England Printed Tape Company
NPW	Non-Potable Water
OCTv	Overhead Cable Television
OE	Overhead Electrical
OH	Overhead
OSHA	Occupational Safety & Health Administration
OT	Overhead Telephone
OTWC	Oceanic Time Warner Cable
PB	Pullbox
Pkwy	Parkway
Pl	Place
PM	Petroleum Marker
PP	Power Pole
PPB	Pedestrian Push Button
Prop	Proposed
PVC	Polyvinyl Chloride
Pwr	Power
RCP	Reinforced Concrete Pipe
Rd	Road
ROW	Right-of-Way
S	Sewer
SC	Signal Corps Line
SDMH	Storm Drain Manhole
SIC	Sandwich Isle Communications
Sig	Signal
Sk	Sack (sacks of cement)
SL	Street Light
SLB	Street Light Box
SLC	Street Light Conduit
SMH	Sewer Manhole
SP	Specific
St	Street
St Mon	Street Monument
T	Top
TBD	To Be Determined
TCB	Traffic Control Box
Tel	Telephone
Temp	Temporary
TGC	The Gas Company
TL	Traffic Light
TMH	Telephone Manhole
TP	Telephone Pole
TPOL	Traffic Signal Pole
TRB	Traffic Box
TS	Top Stem
TSB	Traffic Signal Box
TSC	Traffic Signal Conduit
TSL	Traffic Signal
TV	Television
UB	Utility Box
UD	Underdrain
UMH	Utility Manhole
UP	Utility Pole
USN	United States Navy
USAF	United States Air Force
Util	Utility
W	Water
WM	Water Meter
WMH	Water Manhole
WRD	Waiawa Ridge Development
Wtr	Water
WV	Water Valve
WVB	Water Valve Box
WVMH	Water Valve Manhole

Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: G Tam
Drawn: K Tanaka
Checked: H Andrews
Approved: J Yamomoto
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

GENERAL UTILITIES SYMBOLS AND ABBREVIATIONS

Contract No.: DB-320
CADD File: KHDB-D01-UG001
Drawing No: UG001 Rev. A
Scale: N/A
Page No. 16 of 186

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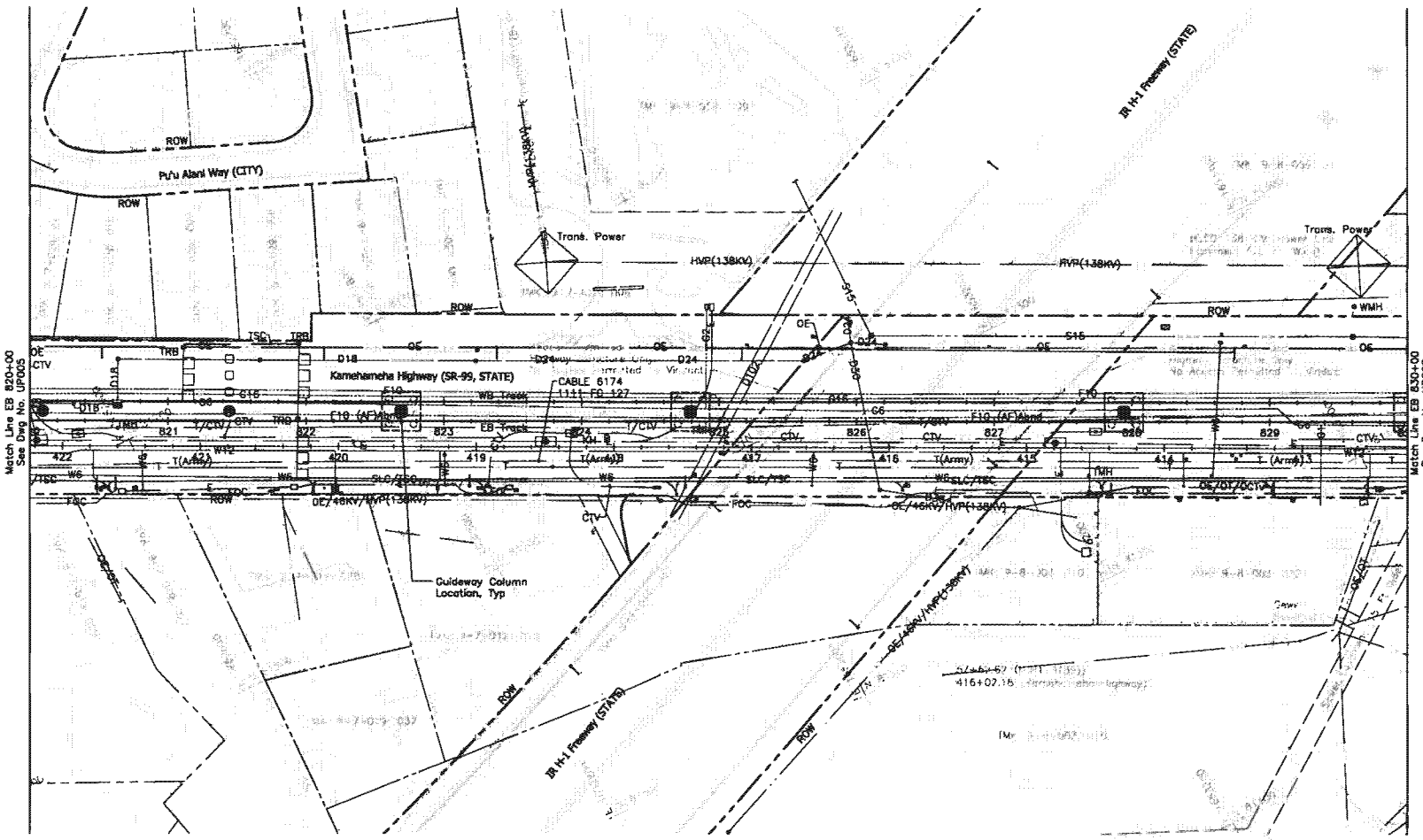

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.

40' 0' 40'

Rev	By	Date	Description
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PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: G Tom
Drawn: K Tanaka
Checked: H Andrews
Approved: J Yamamoto
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

COMPOSITE PLAN EXISTING UTILITIES

EB 820+00 TO EB 830+00

Contract No.: DB-320
CADD File: KHDB-D02-UP006
Drawing No: UP006 Rev. A
Scale: 1"=40'
Page No. 32 of 186

2010-03-12 4:31 PM K:\civil\21132 Honolulu Transit Corridor\Segment D\Sheet Files\KHDB-D02-UP001-UP021.dwg

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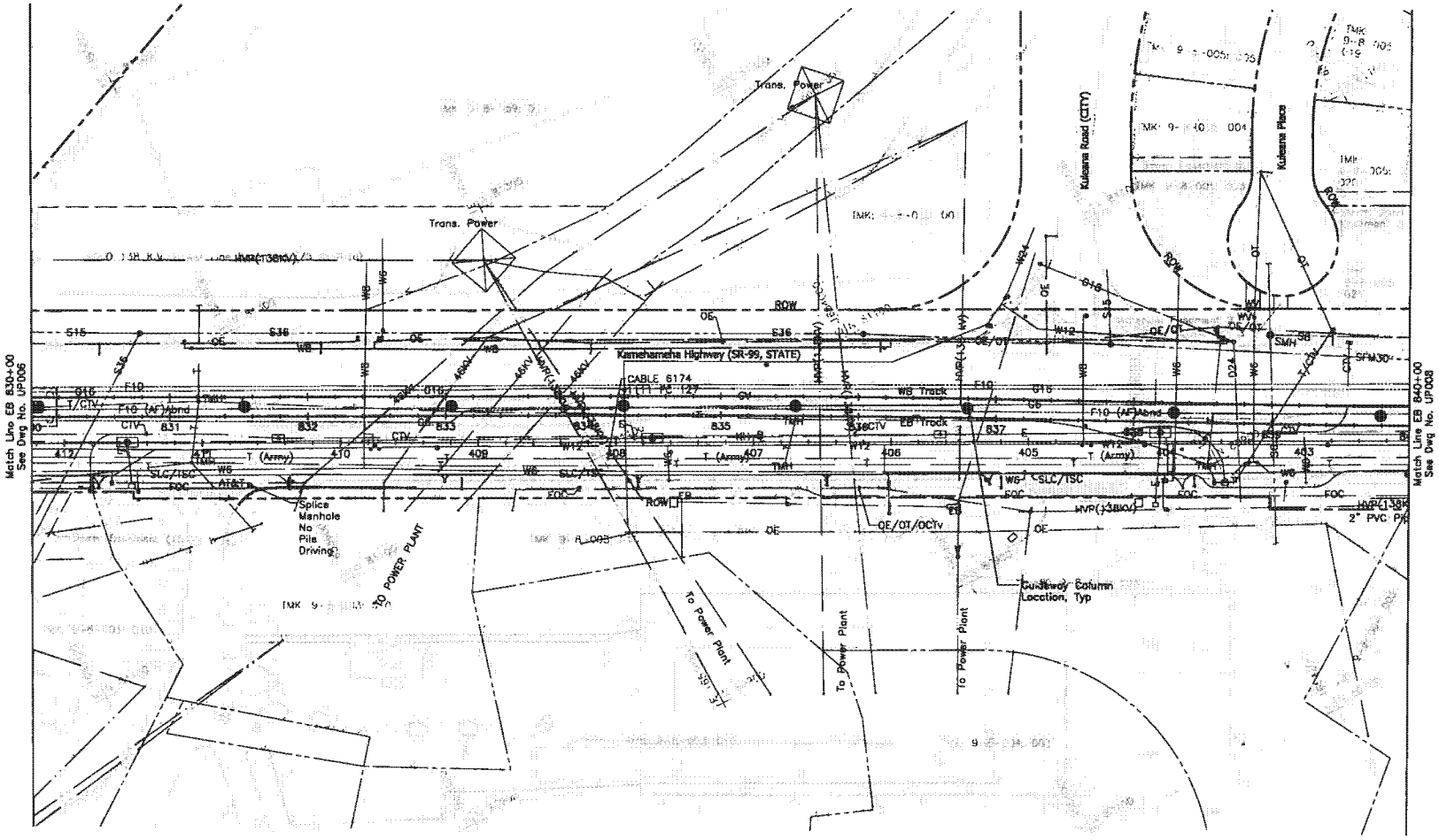

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.

40' 0' 40'

Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

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Designed: G Tom
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HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

COMPOSITE PLAN EXISTING UTILITIES

EB 830+00 TO EB 840+00

Contract No.: DB-320
CADD File: KHDB-002-UP007
Drawing No.: UP007 Rev. A
Scale: 1"=40'
Page No. 33 of 186

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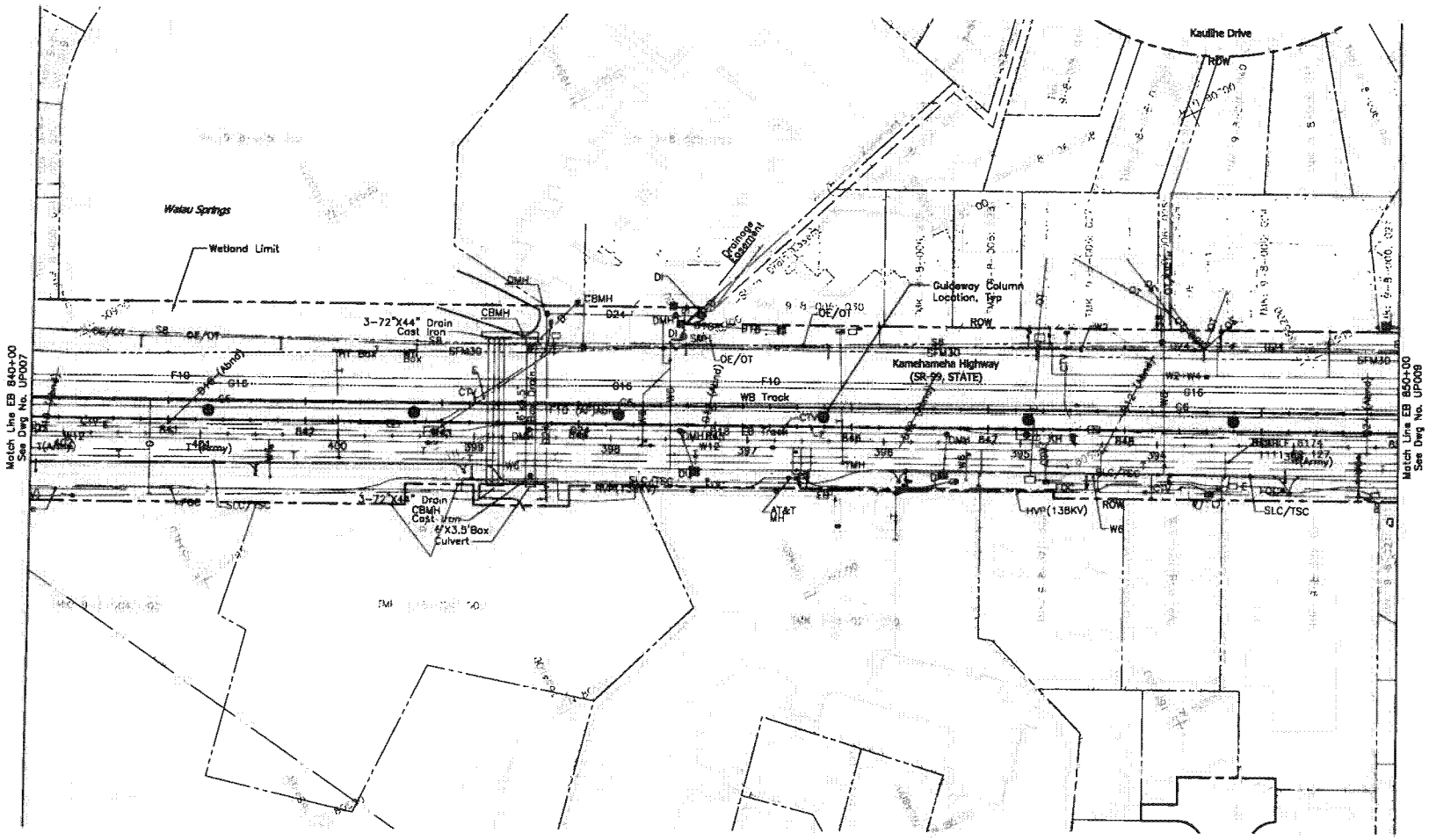

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.

40' 0' 40'

Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: G Tom
Drawn: K Tanoka
Checked: H Andrews
Approved: J Yamamoto
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

COMPOSITE PLAN
EXISTING UTILITIES

EB 840+00 TO EB 850+00

Contract No.: DB-320
CADD File: KHDB-D02-UP008
Drawing No: UP008 Rev. A
Scale: 1"=40'
Page No. 34 of 186

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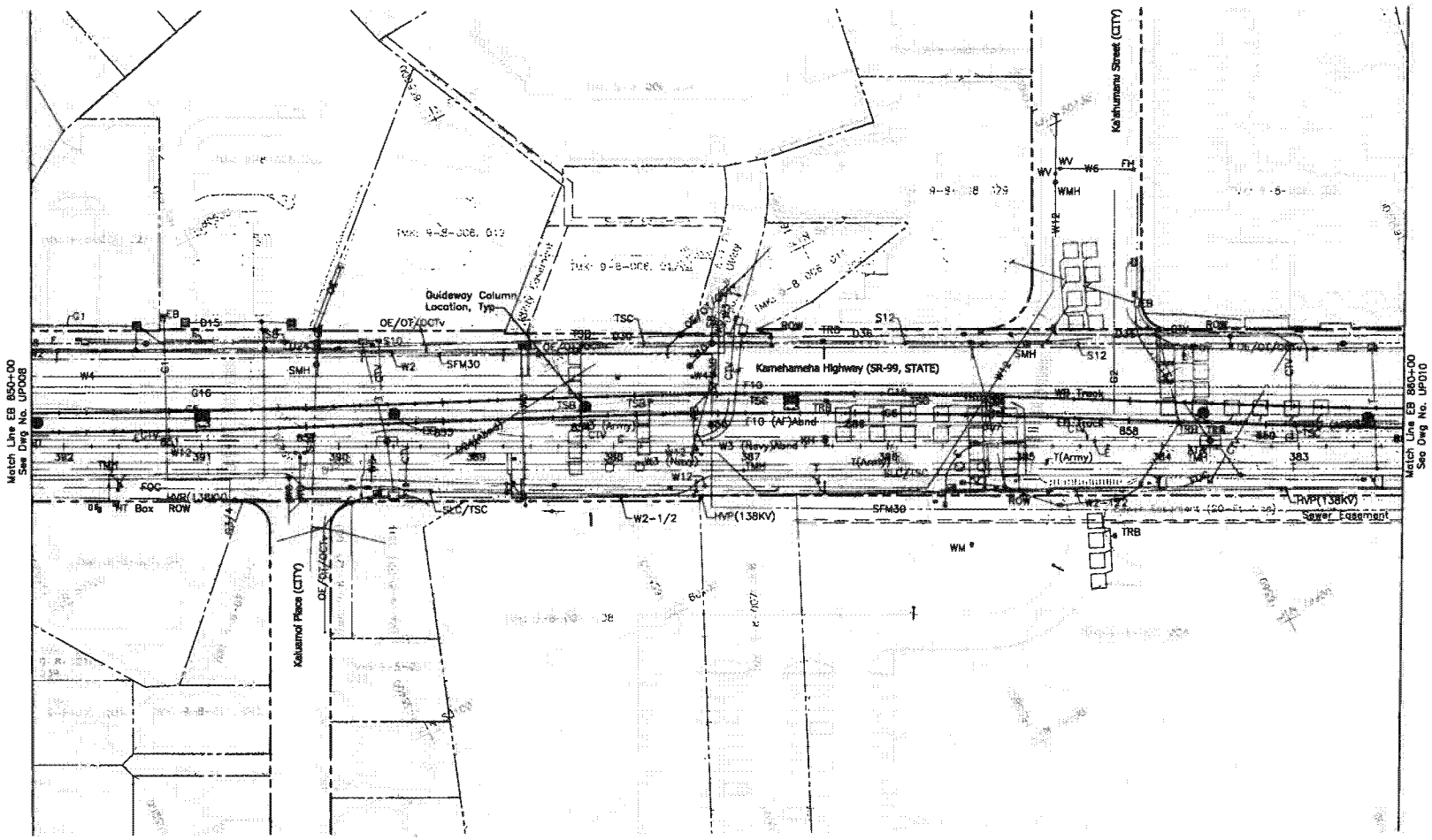

NOTES:

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2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.

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Prime Consultant: PB PARSONS BRINCKERHOFF
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

COMPOSITE PLAN
EXISTING UTILITIES

EB 850+00 TO EB 860+00

Contract No.: DB-320
CADD File: KHDB-D02-UP009
Drawing No: UP009 Rev. A
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Page No. 35 of 186

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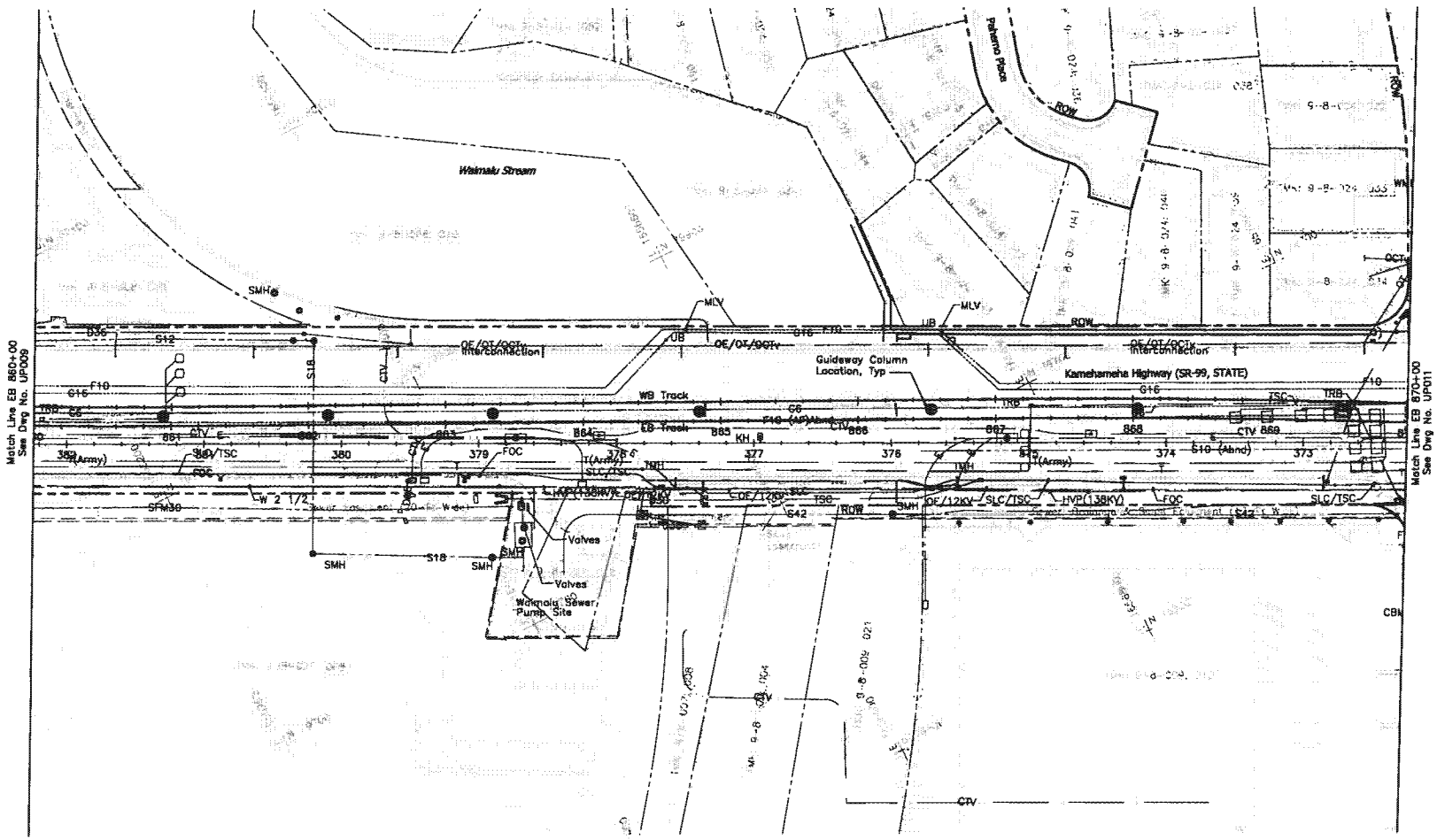

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

COMPOSITE PLAN EXISTING UTILITIES

EB 860+00 TO EB 870+00

Contract No.: DB-320
CADD File: KHDB-D02-UP010
Drawing No: UP010 Rev. A
Scale: 1"=40'
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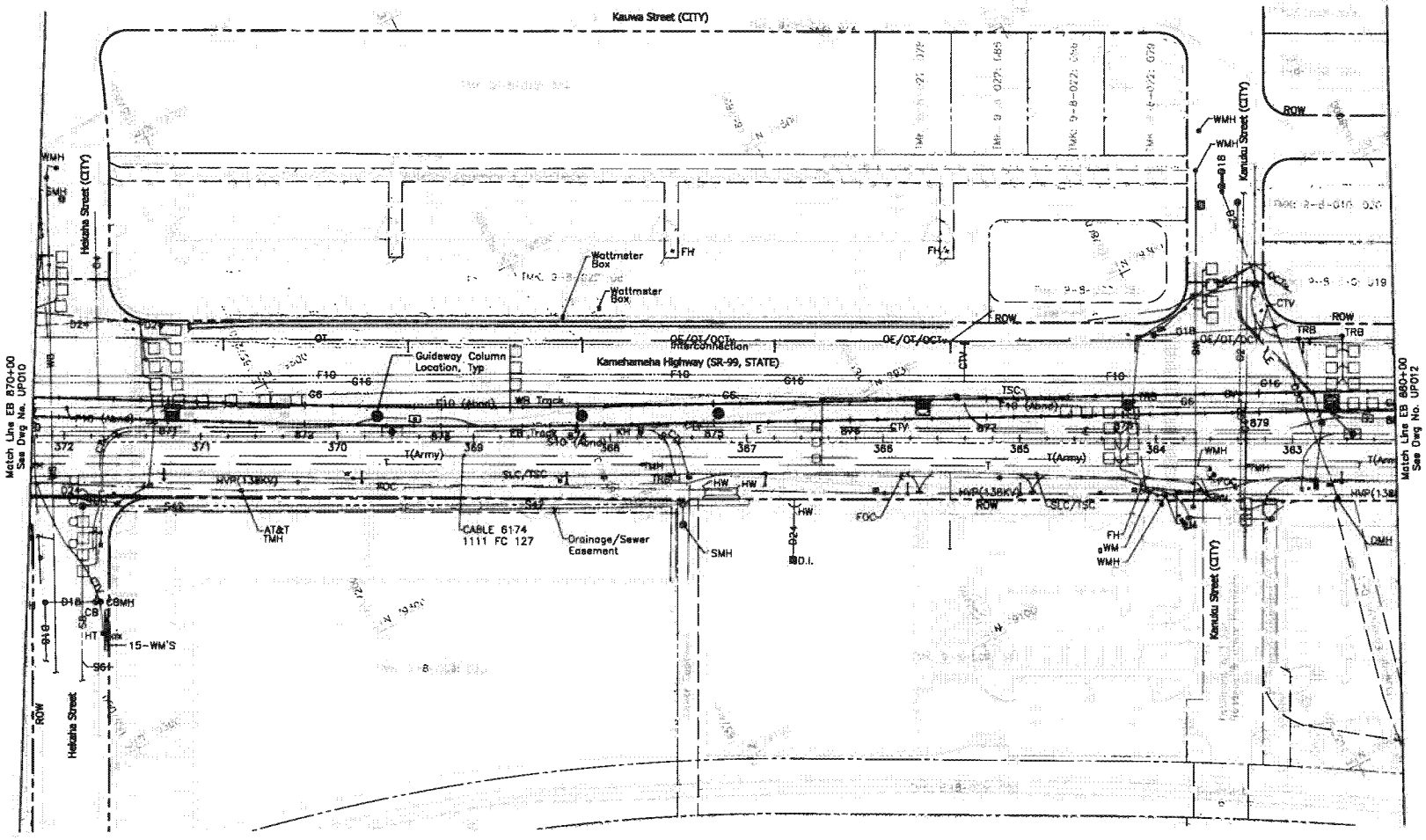

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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1003 Bishop Street, Suite 2250 - Honolulu, HI 96813

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COMPOSITE PLAN EXISTING UTILITIES

EB 870+00 TO EB 880+00

Contract No.: DB-320
CADD File: KHDB-D02-UP011
Drawing No: UP011 Rev. A
Scale: 1"=40'
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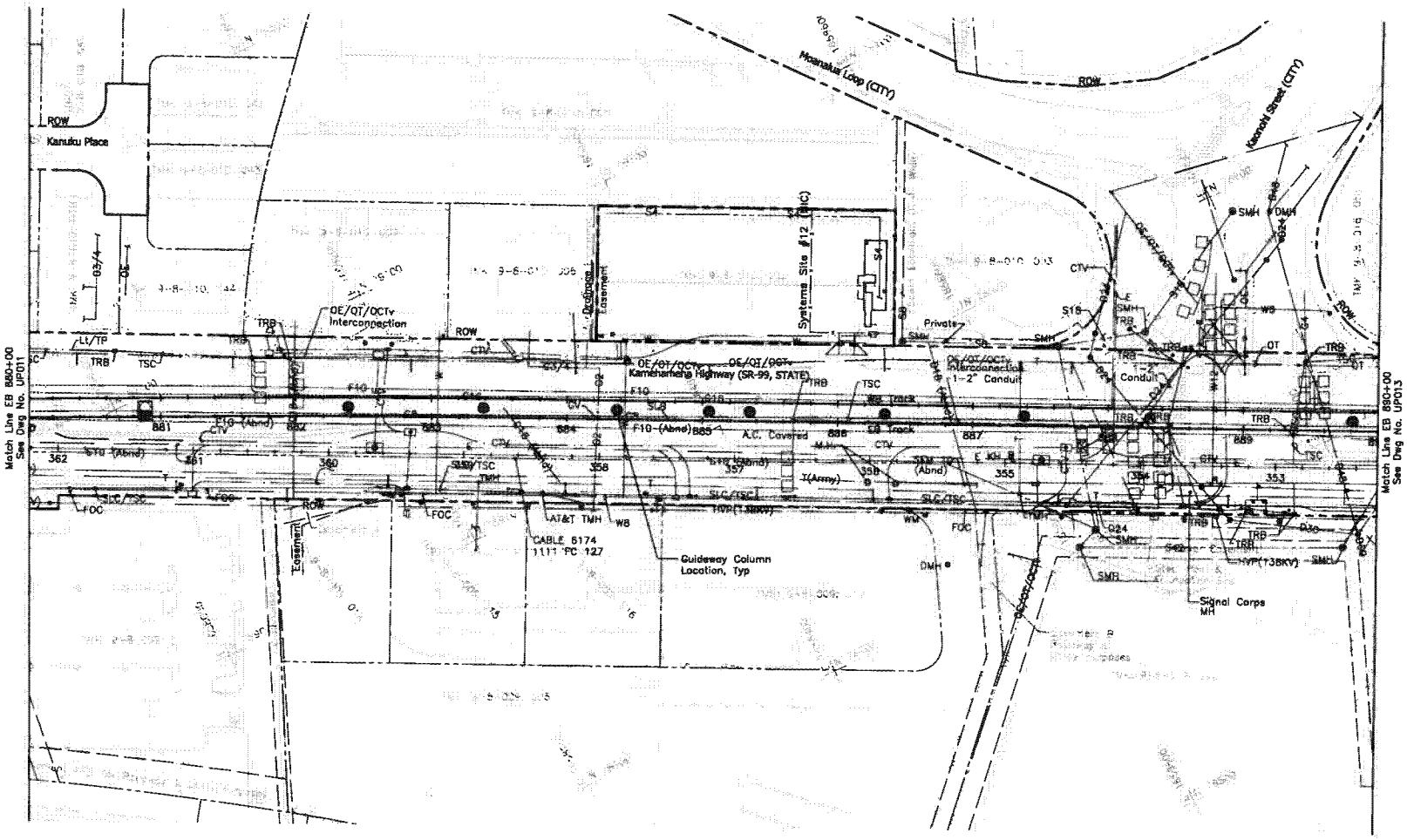

NOTES:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

COMPOSITE PLAN
EXISTING UTILITIES

EB 880+00 TO EB 890+00

Contract No.: DB-320
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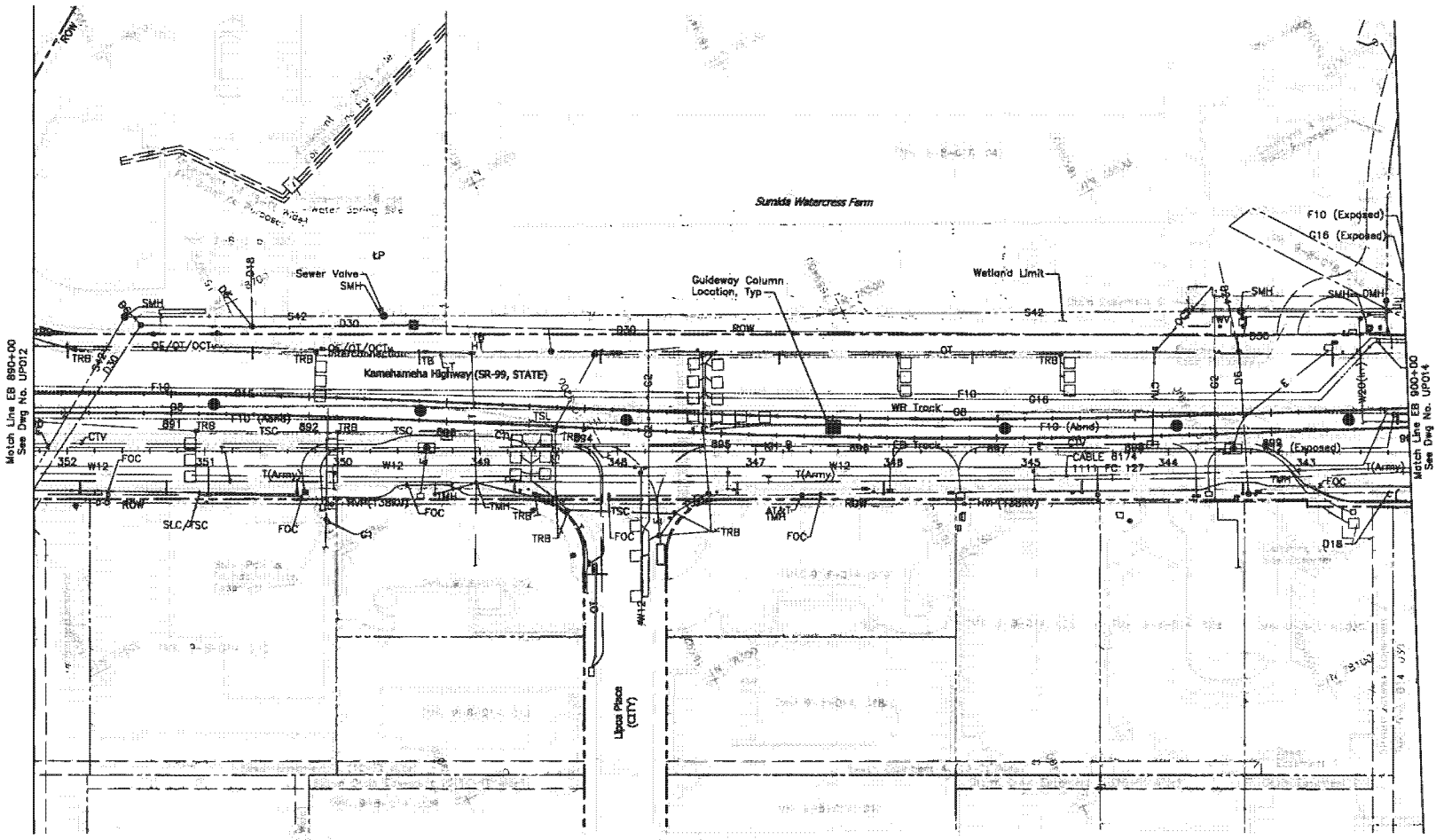

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COMPOSITE PLAN EXISTING UTILITIES

EB 890+00 TO EB 900+00

Contract No.: DB-320
CADD File: KHDB-D02-UP013
Drawing No: UP013 Rev. A
Scale: 1"=40'
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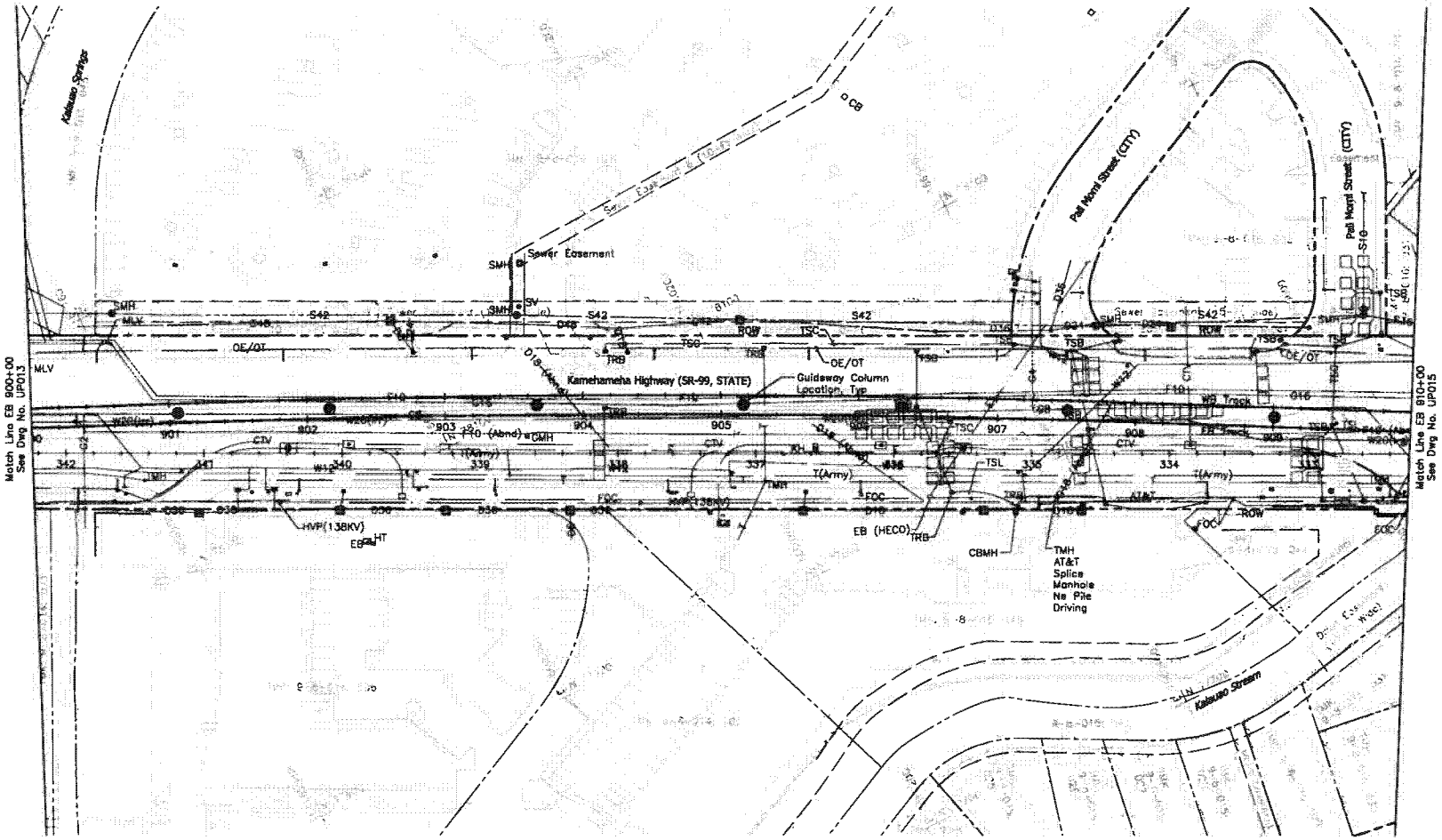

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Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

COMPOSITE PLAN EXISTING UTILITIES

EB 900+00 TO EB 910+00

Contract No.: DB-320
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Page No. 40 of 186

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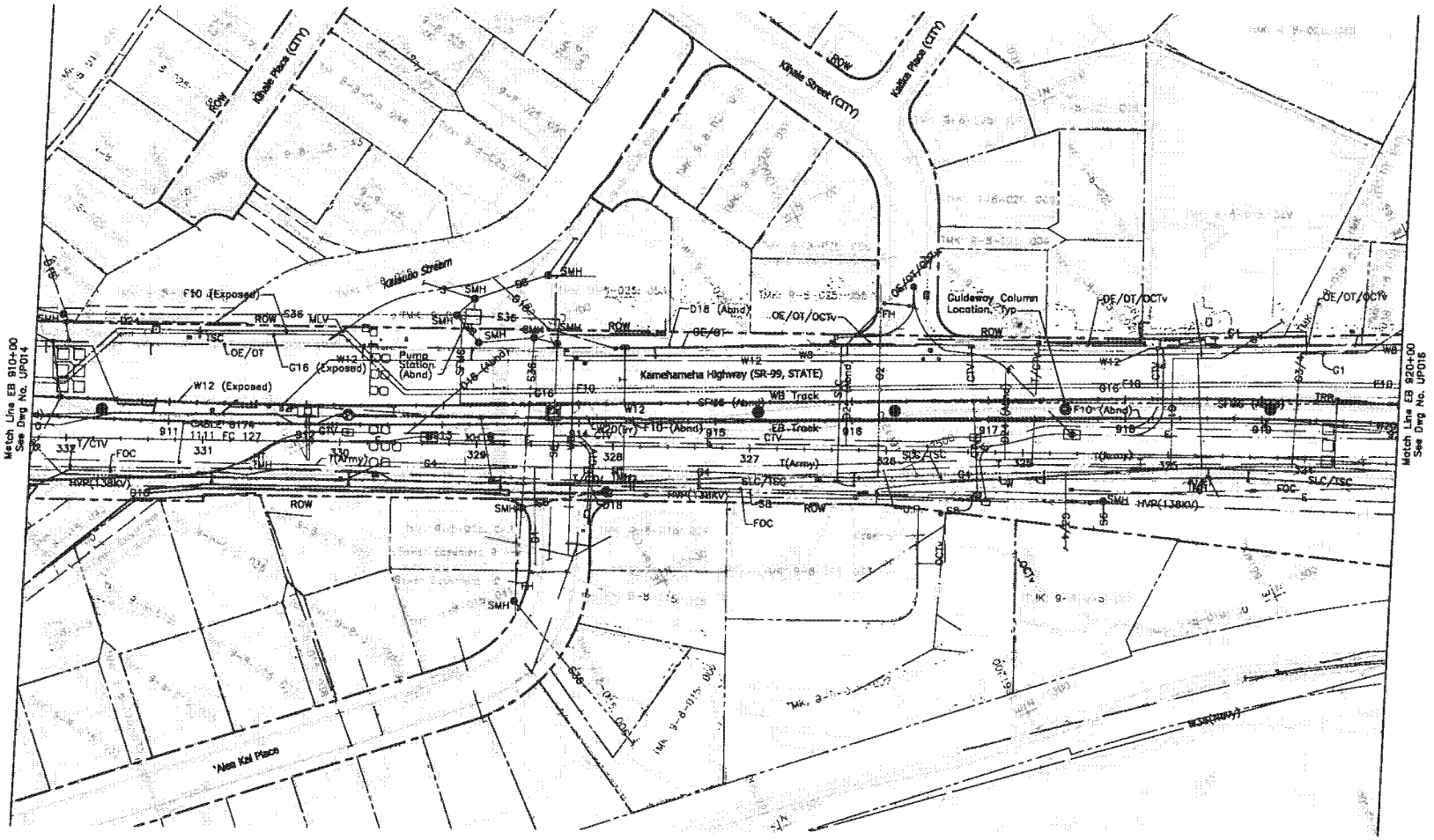

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

COMPOSITE PLAN EXISTING UTILITIES

EB 910+00 TO EB 920+00

Contract No.: DB-320
CADD File: KHDB-D02-UP015
Drawing No: UP015 Rev. A
Scale: 1"=40'
Page No. 41 of 186

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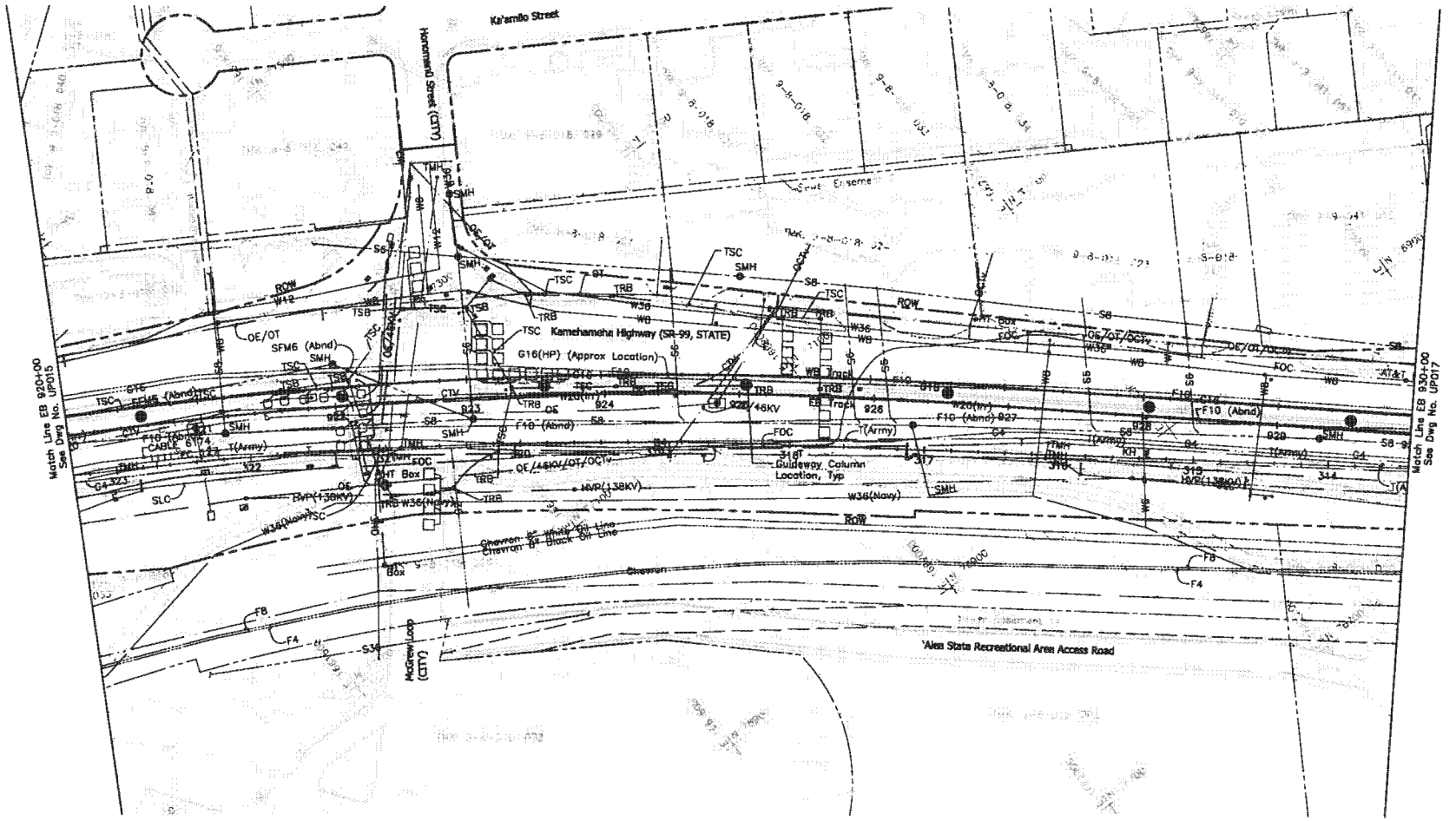

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Prime Consultant: PB PARSONS BRINCKERHOFF
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Subconsultant: R. M. TOWILL CORPORATION

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COMPOSITE PLAN EXISTING UTILITIES

EB 920+00 TO EB 930+00

Contract No.: DB-320
CADD File: KHDB-D02-UP016
Drawing No: UP016 Rev. A
Scale: 1"=40'
Page No. 42 of 186

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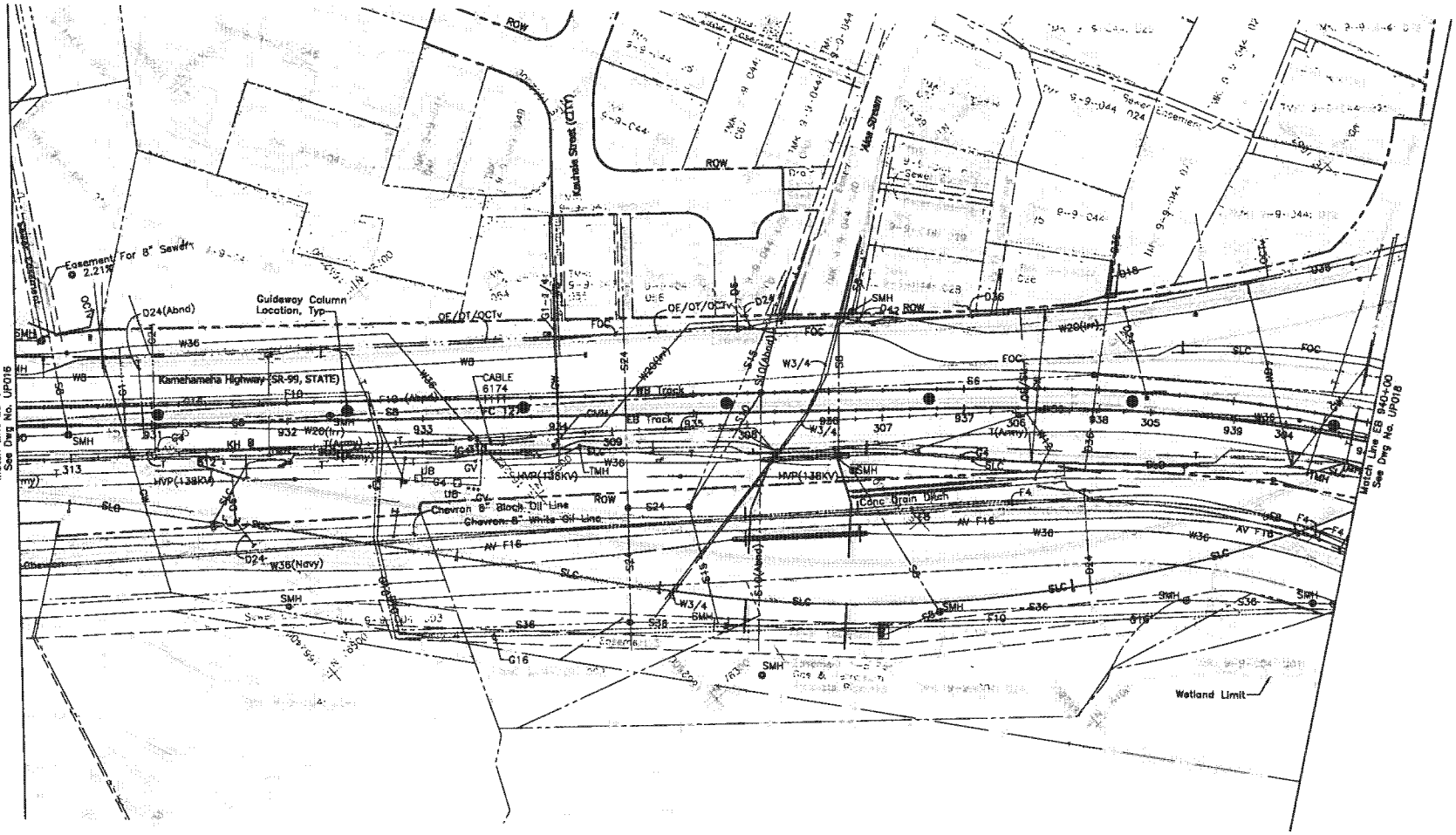

NOTES:

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40' 0' 40'

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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COMPOSITE PLAN EXISTING UTILITIES

EB 930+00 TO EB 940+00

Contract No.: DB-320
CADD File: KHDB-D02-UP017
Drawing No: UP017 Rev. A
Scale: 1"=40'
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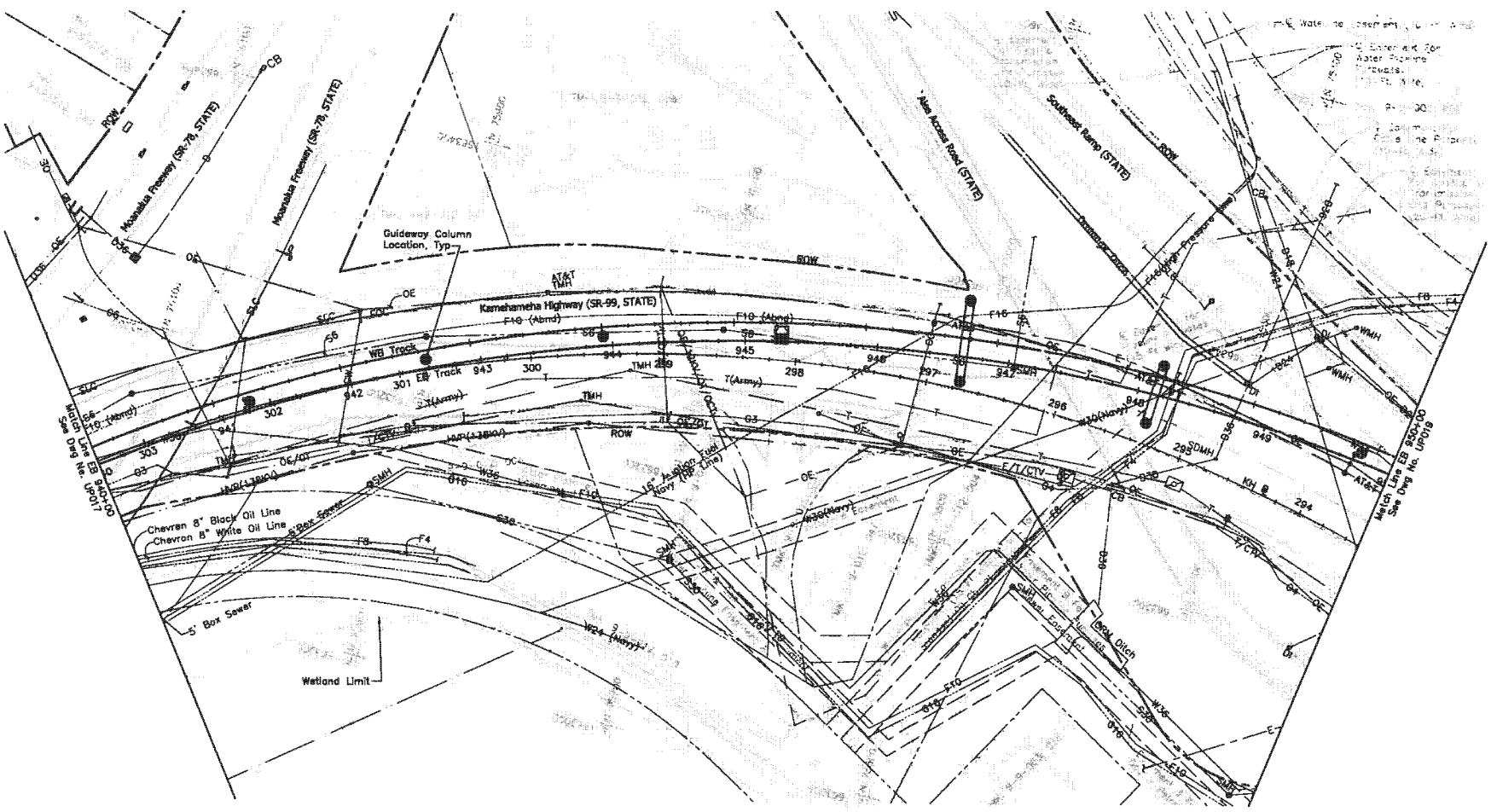

NOTES:

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 ~ Honolulu, HI 96813

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

COMPOSITE PLAN EXISTING UTILITIES

EB 940+00 TO EB 950+00

Contract No.: DB-320
CADD File: KHDB-D02-UP018
Drawing No: UP018 Rev. A
Scale: 1"=40'
Page No. 44 of 186

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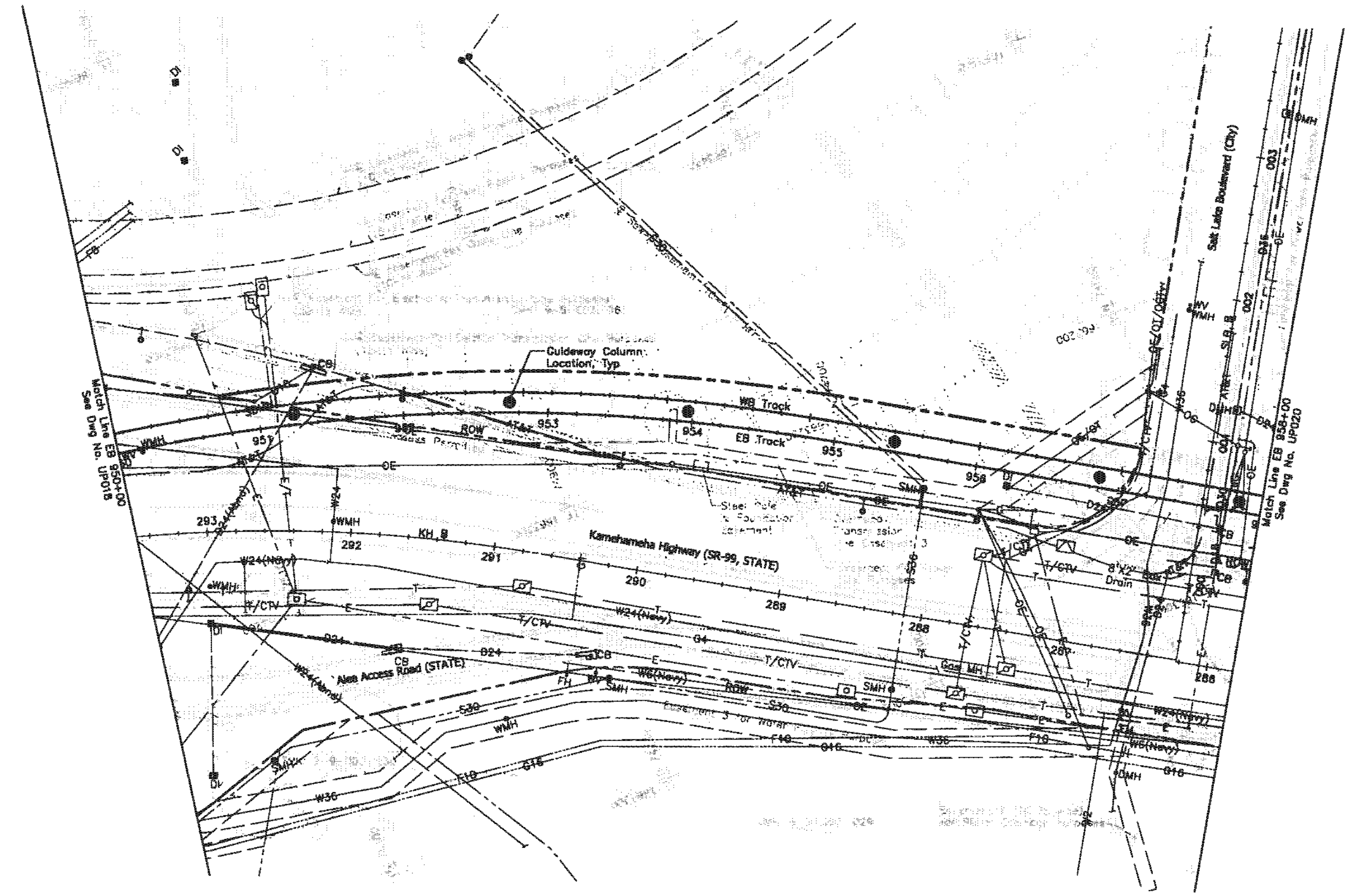

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

COMPOSITE PLAN
EXISTING UTILITIES

EB 950+00 TO EB 958+00

Contract No.: DB-320
CADD File: KHDB-D02-UP019
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Rev. A
Scale: 1"=40'
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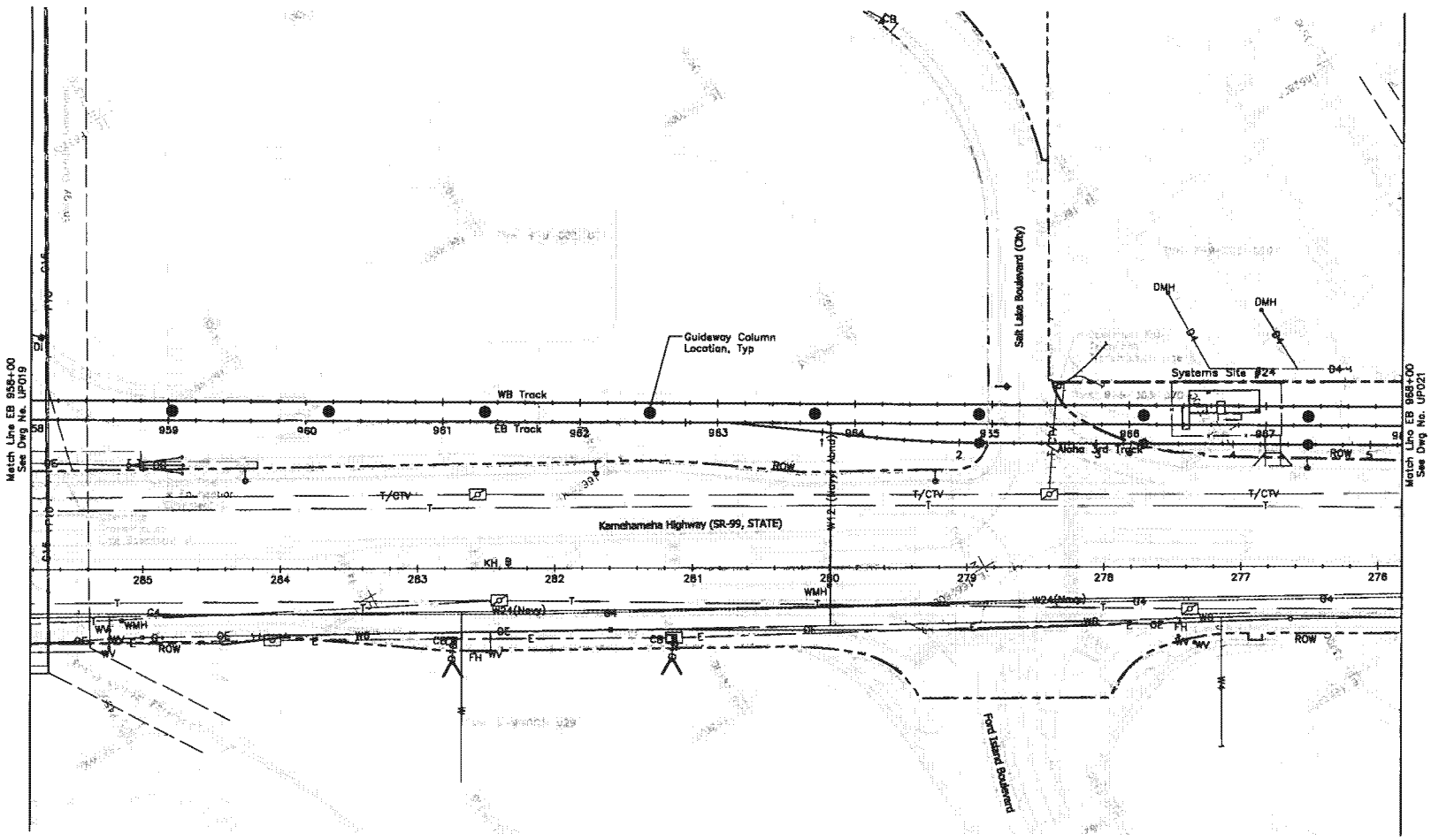

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Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

COMPOSITE PLAN EXISTING UTILITIES

EB 958+00 TO EB 968+00

Contract No.: DB-320
CADD File: KHDB-D02-UP020
Drawing No: UP020 Rev. A
Scale: 1"=40'
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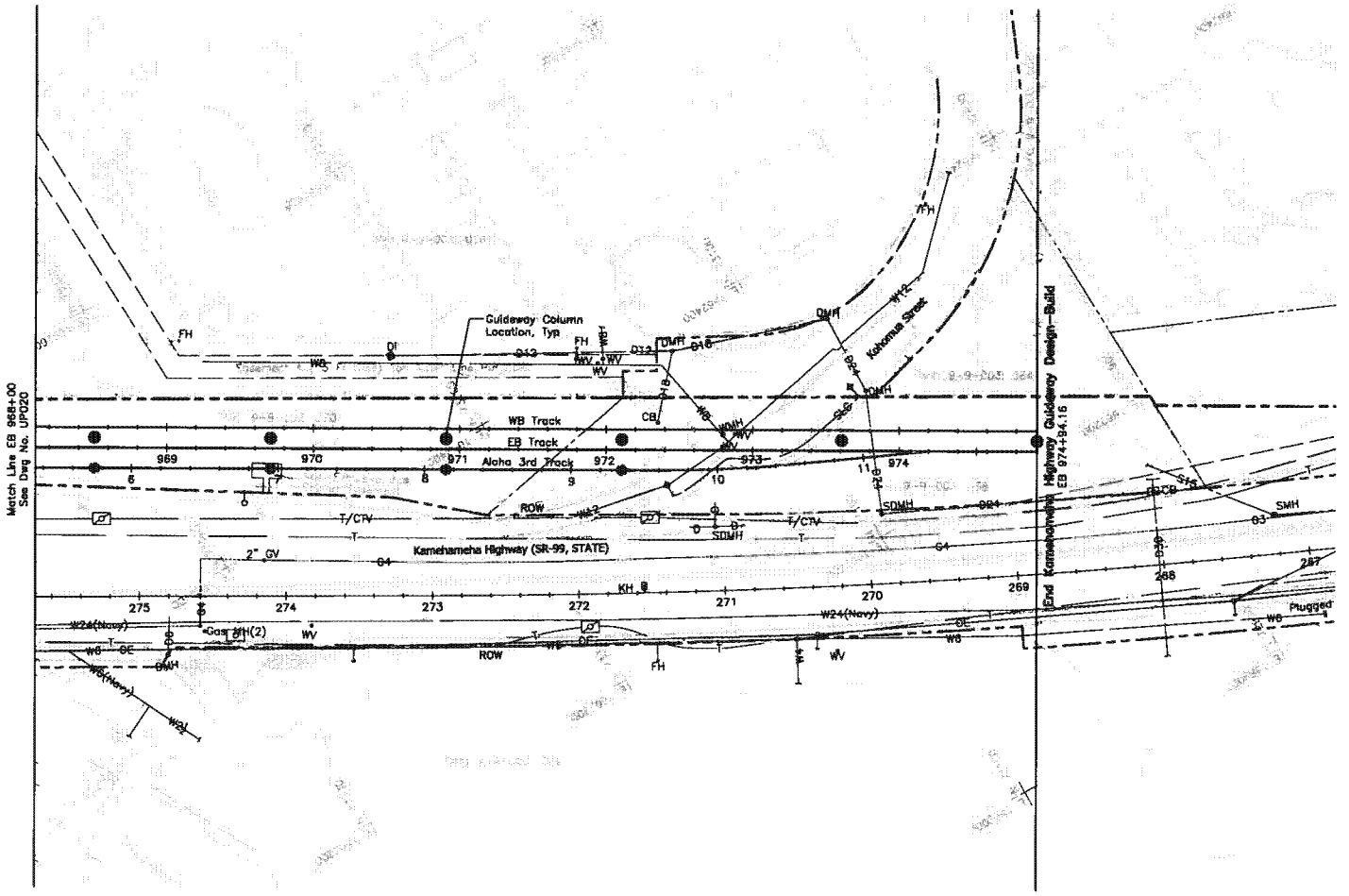

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

COMPOSITE PLAN
EXISTING UTILITIES

EB 968+00 TO END

Contract No.: DB-320
CADD File: KHDB-D02-UP021
Drawing No: UP021 Rev. A
Scale: 1"=40'
Page No. 47 of 186

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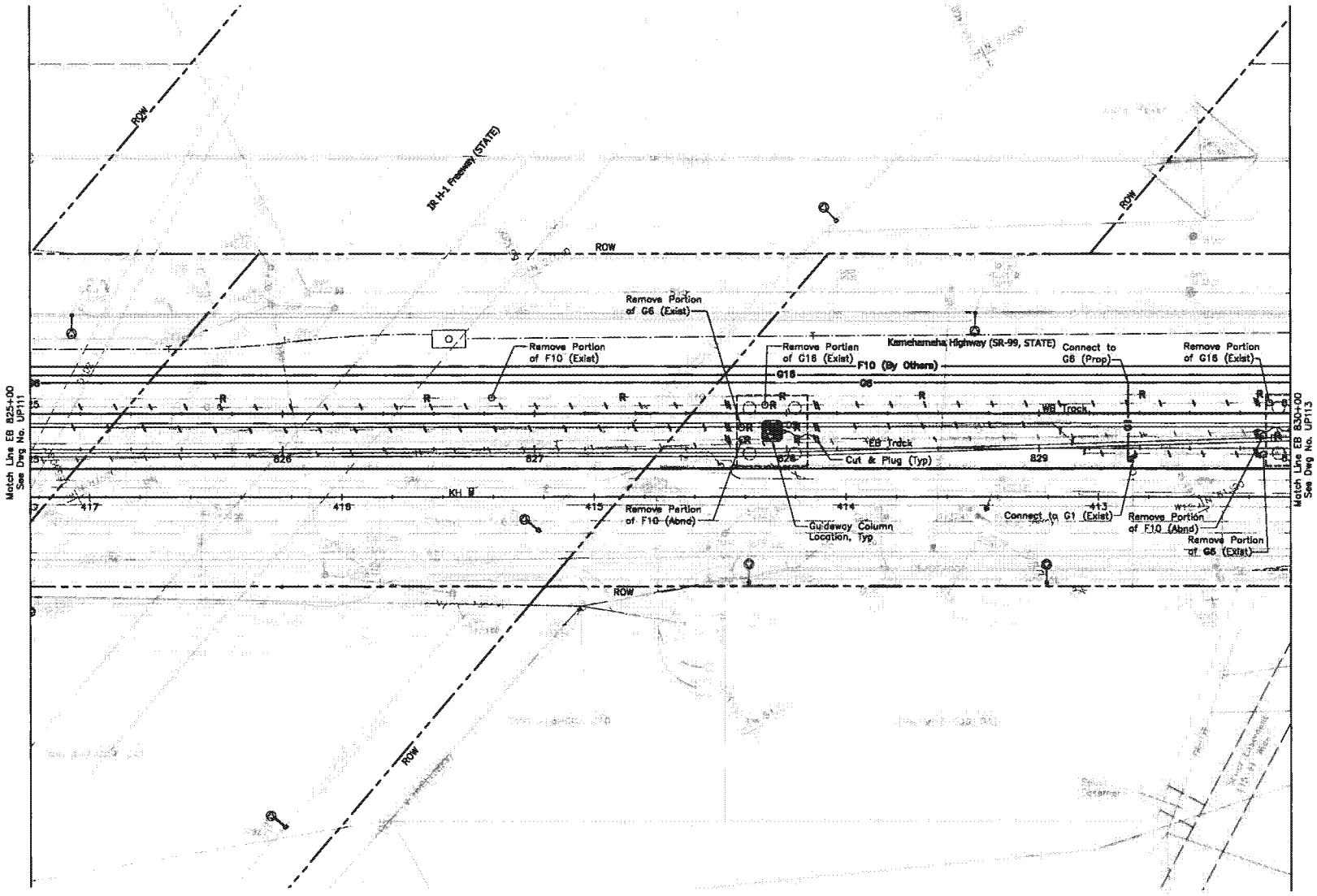

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

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Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 825+00 TO EB 830+00

Contract No.: DB-320
CADD File: KHDB-D03-UP112
Drawing No: UP112 Rev. A
Scale: 1"=20'
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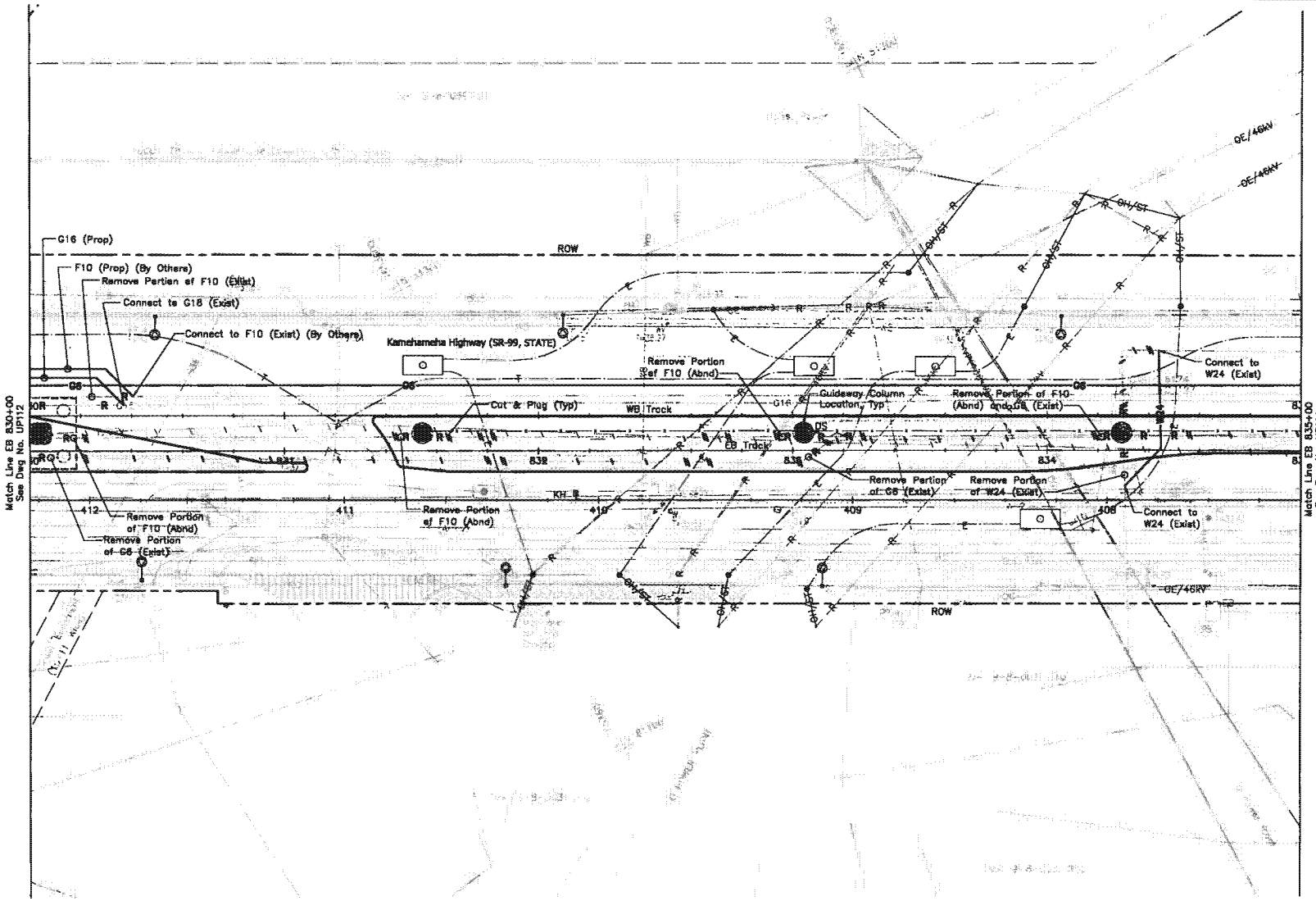

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

20' 0' 20'

Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: G Tom
Drawn: K Tenaka
Checked: H Andrews
Approved: J Yamamoto
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

For reduced prints, original page size in inches:

KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 830+00 TO EB 835+00

Contract No.: DB-320
CADD File: KHDB-D03-UP113
Drawing No: UP113 Rev. A
Scale: 1"=20'
Page No. 60 of 186

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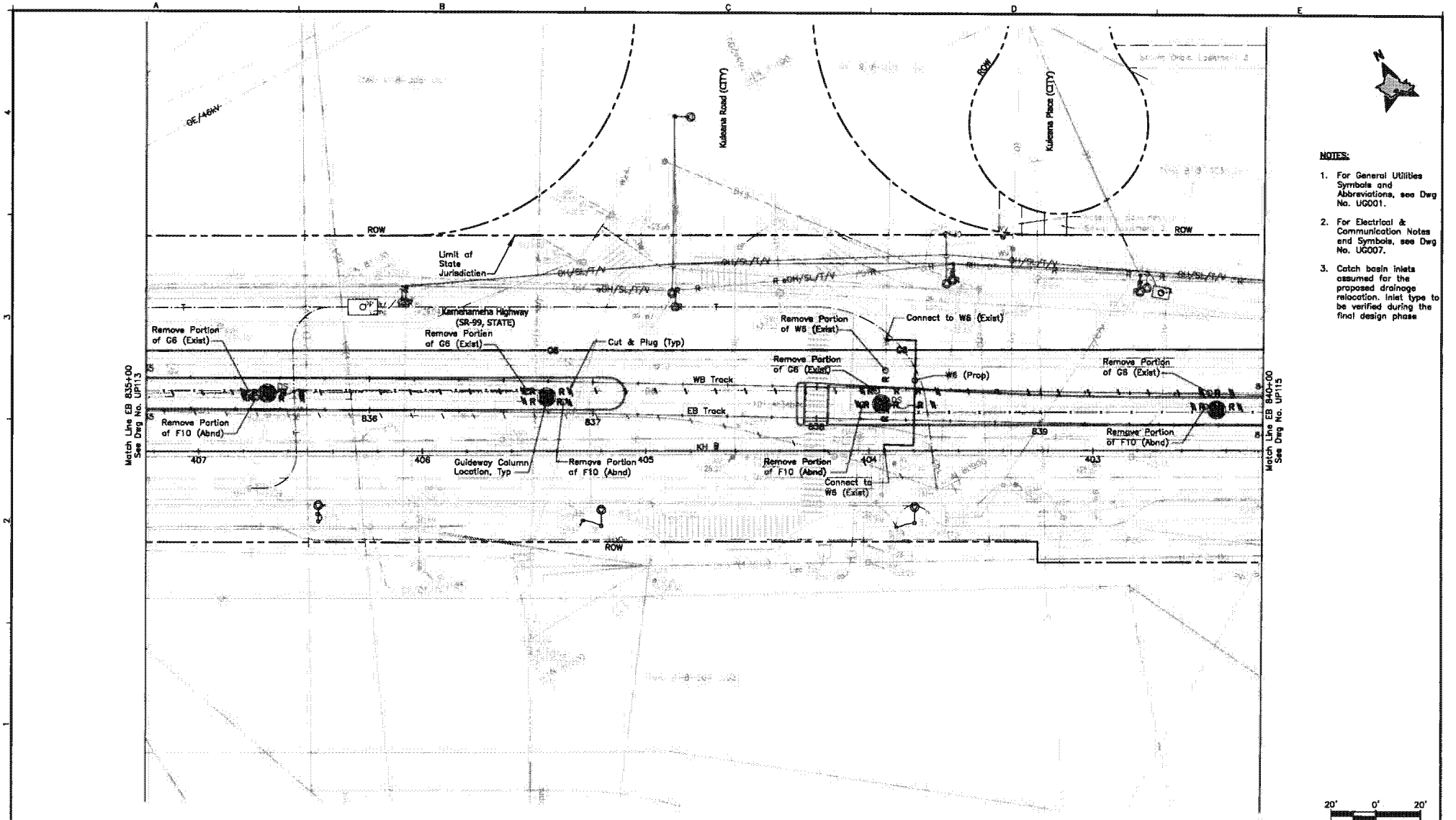

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

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Date: 03-19-10

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Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 835+00 TO EB 840+00

Contract No.: DB-320
CADD File: KHDB-D03-UP114
Drawing No: UP114 Rev. A
Scale: 1"=20'
Page No. 61 of 166

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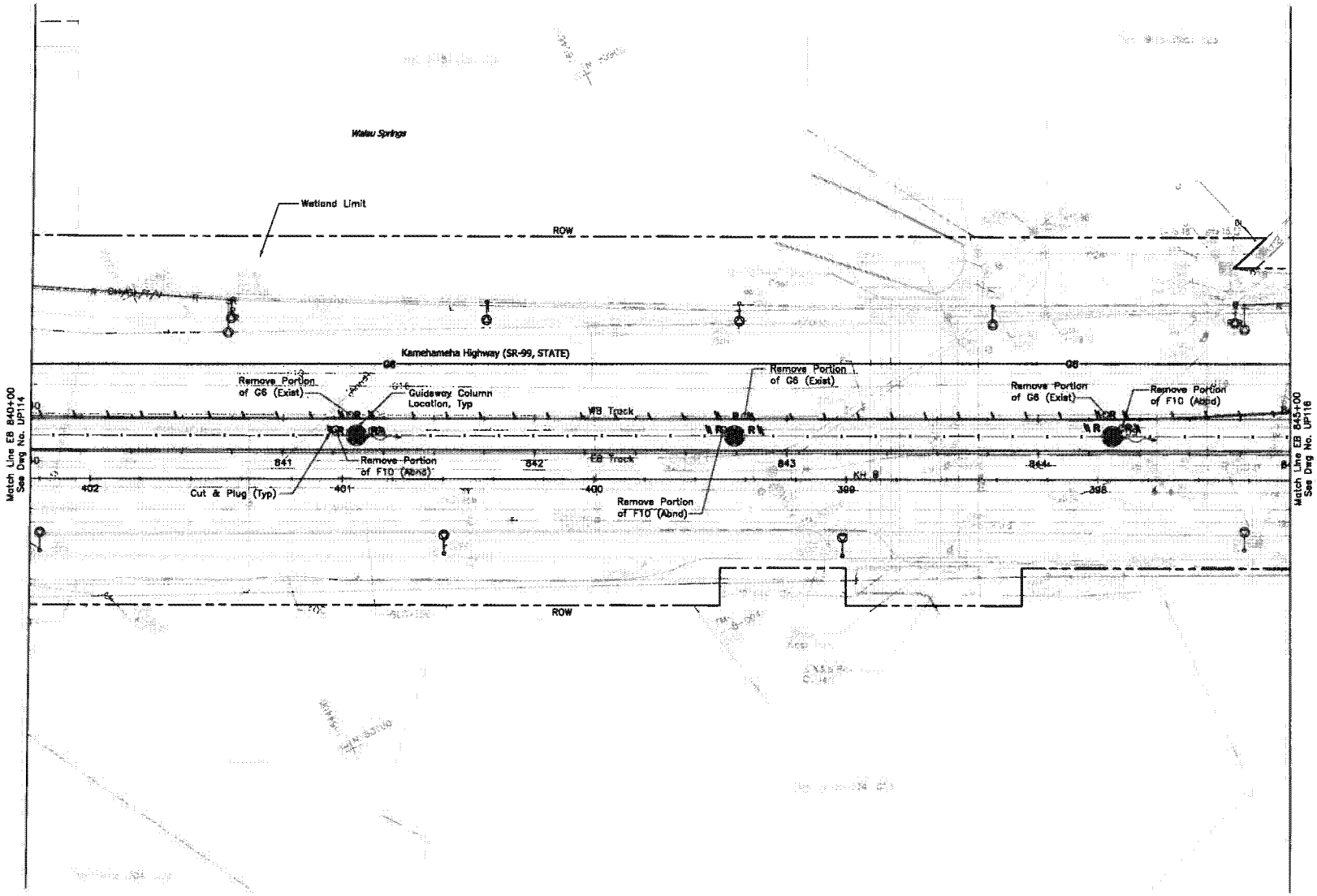

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

20' 0' 20'

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UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 840+00 TO EB 845+00

Contract No.: DB-320
CADD File: KHDB-D03-UP115
Drawing No: UP115 Rev. A
Scale: 1"=20'
Page No. 62 of 186

2010-03-12 4:31 PM K:\civil\21132 Honolulu Transit Corridor\Segment D\Sheet Files\KHDB-D03-UP101-UP121.dwg

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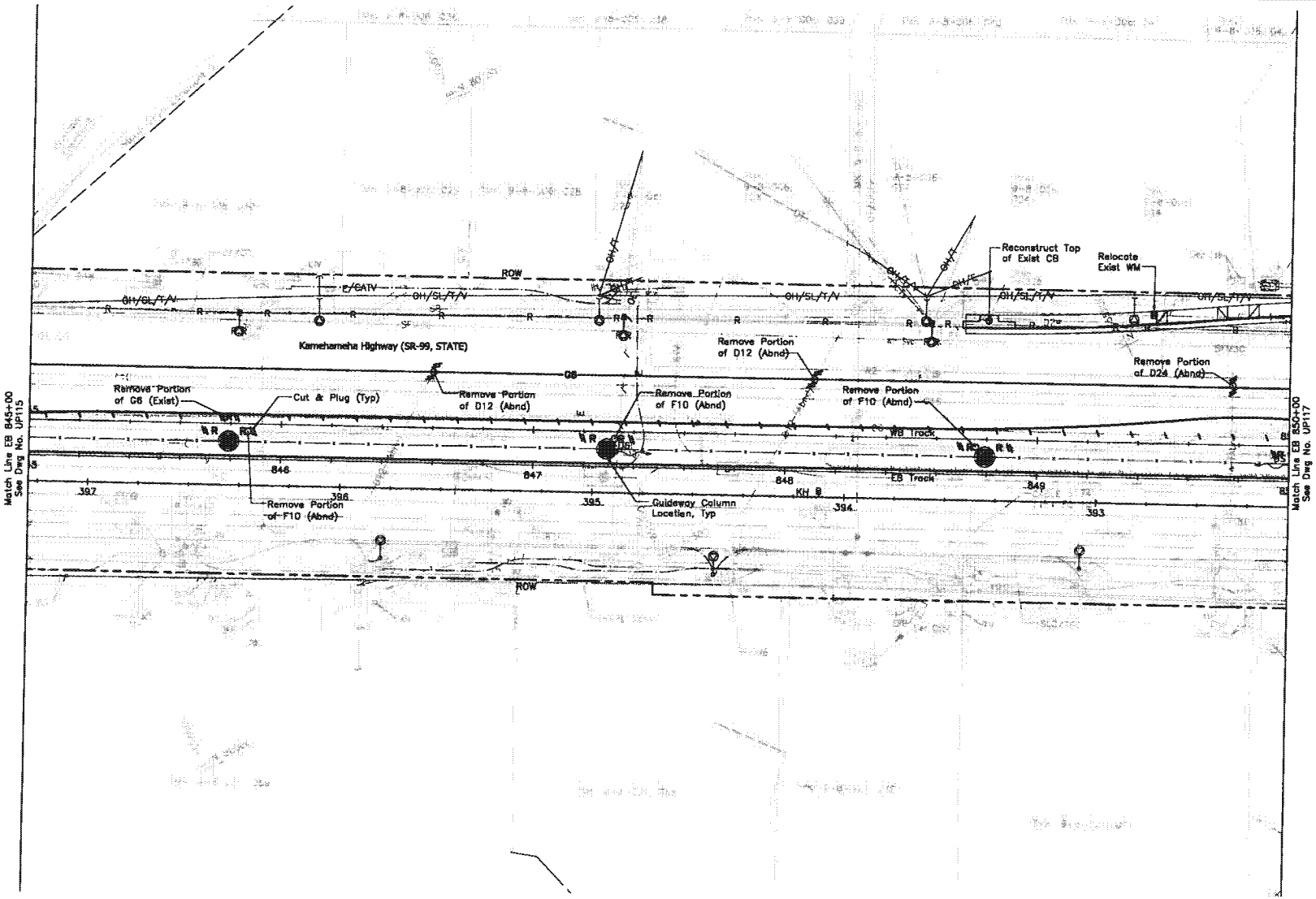

NOTES:

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UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 845+00 TO EB 850+00

Contract No.: DB-320
CADD File: KHDB-D03-UP116
Drawing No: UP116 Rev. A
Scale: 1"=20'
Page No. 63 of 186

2010-03-12 4:31 PM K:\civil\21132 Honolulu Transit Corridor\Segment D\Sheet Files\KHDB-D03-UP101-UP121.dwg

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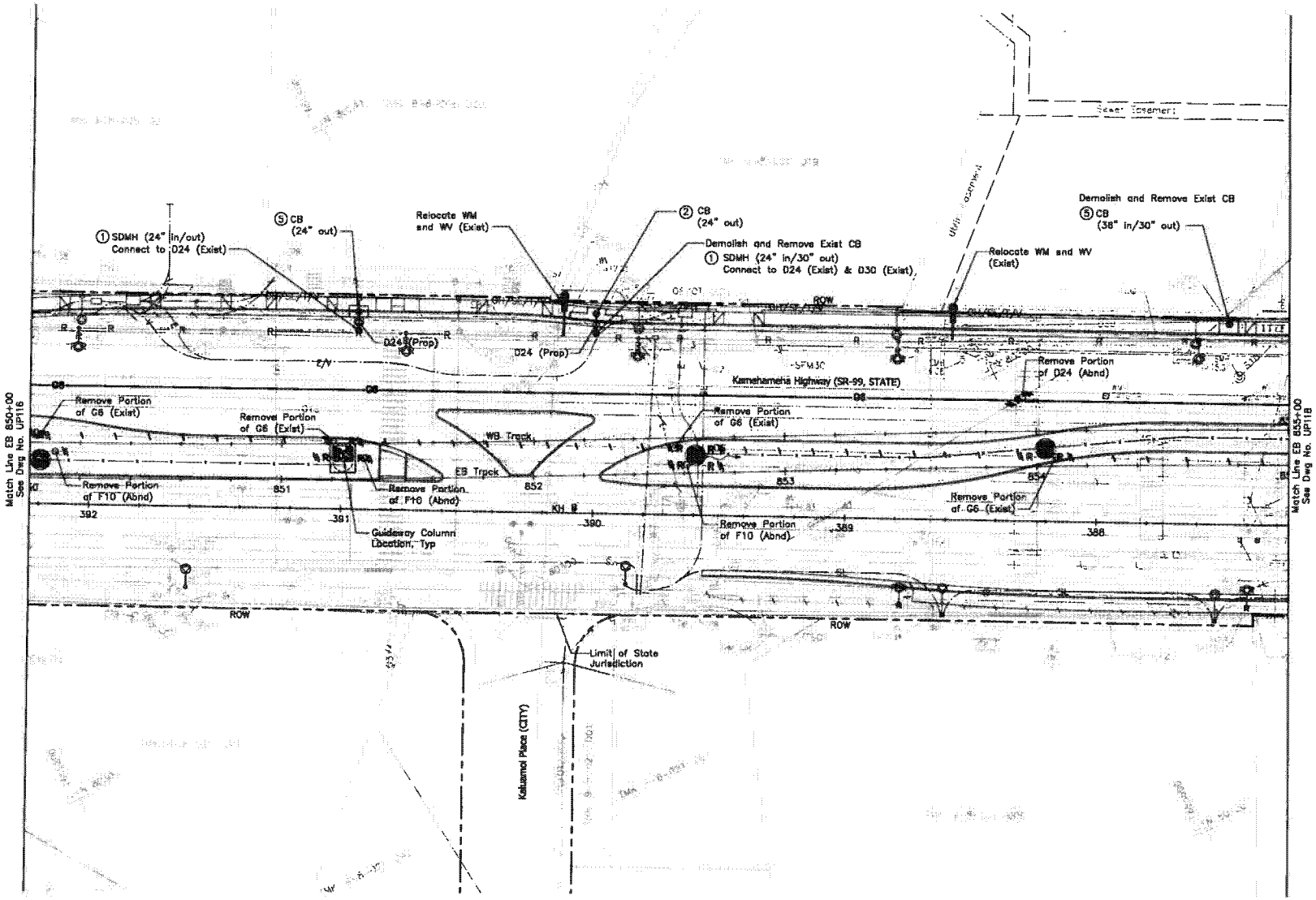

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

DRAINAGE CONSTRUCTION NOTES:

① Construct Storm Drain Manhole, Type A per HDOT Std. Plan No. H-03

② Construct Catch Basin, Type A per HDOT Std. Plan No. H-01A

⑤ Construct Catch Basin, Type D per HDOT Std. Plan No. H-01D

20' 0' 20'

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UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 850+00 TO EB 855+00

Contract No.: DB-320
CADD File: KHDB-D03-UP117
Drawing No: UP117 Rev. A
Scale: 1"=20'
Page No. 64 of 188

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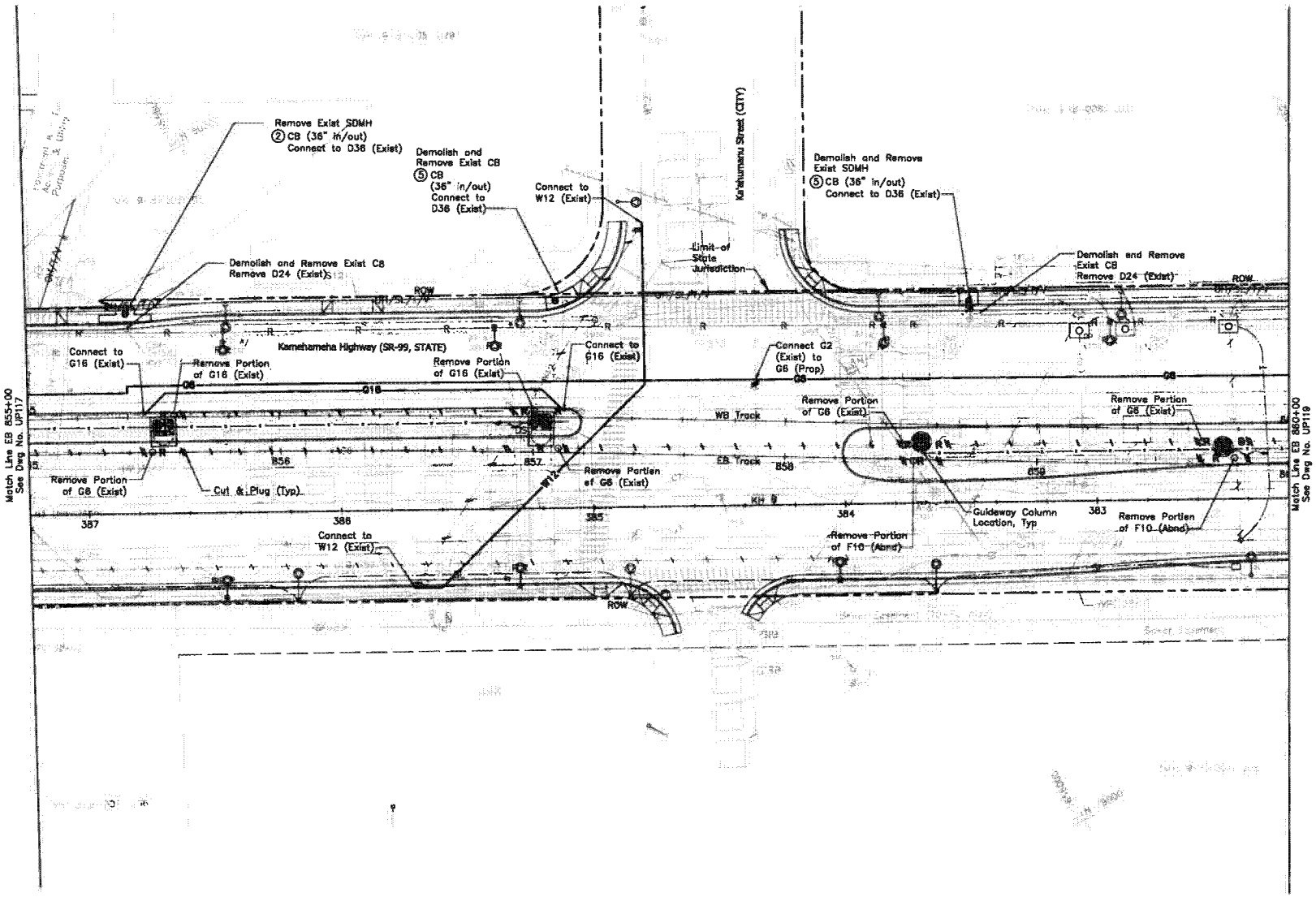

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

DRAINAGE CONSTRUCTION NOTES:

② Construct Catch Basin, Type A per HDOT Std. Plan No. H-01A

⑤ Construct Catch Basin, Type D per HDOT Std. Plan No. H-010

20' 0' 20'

Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

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Checked: H Andrews
Approved: J Yamamoto
Date: 03-19-10

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Subconsultant: R. M. TOWILL CORPORATION

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UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 855+00 TO EB 860+00

Contract No.: DB-320
CADD File: KHDB-D03-UP118
Drawing No: UP118 Rev. A
Scale: 1"=20'
Page No. 65 of 186

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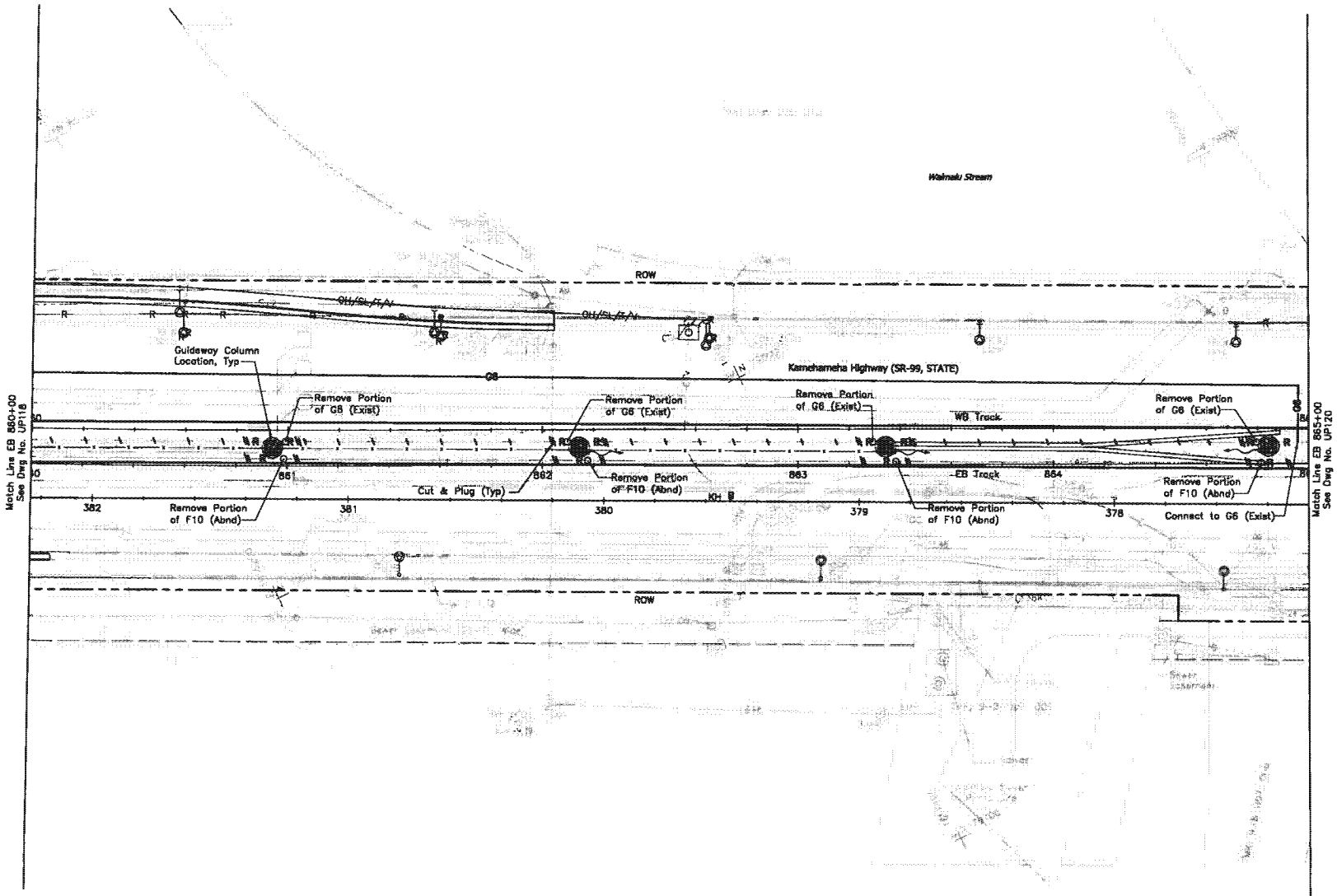

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

20' 0' 20'

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Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 860+00 TO EB 865+00

Contract No.: DB-320
CADD File: KHDB-D03-UP119
Drawing No: UP119 Rev. A
Scale: 1"=20'
Page No. 66 of 188

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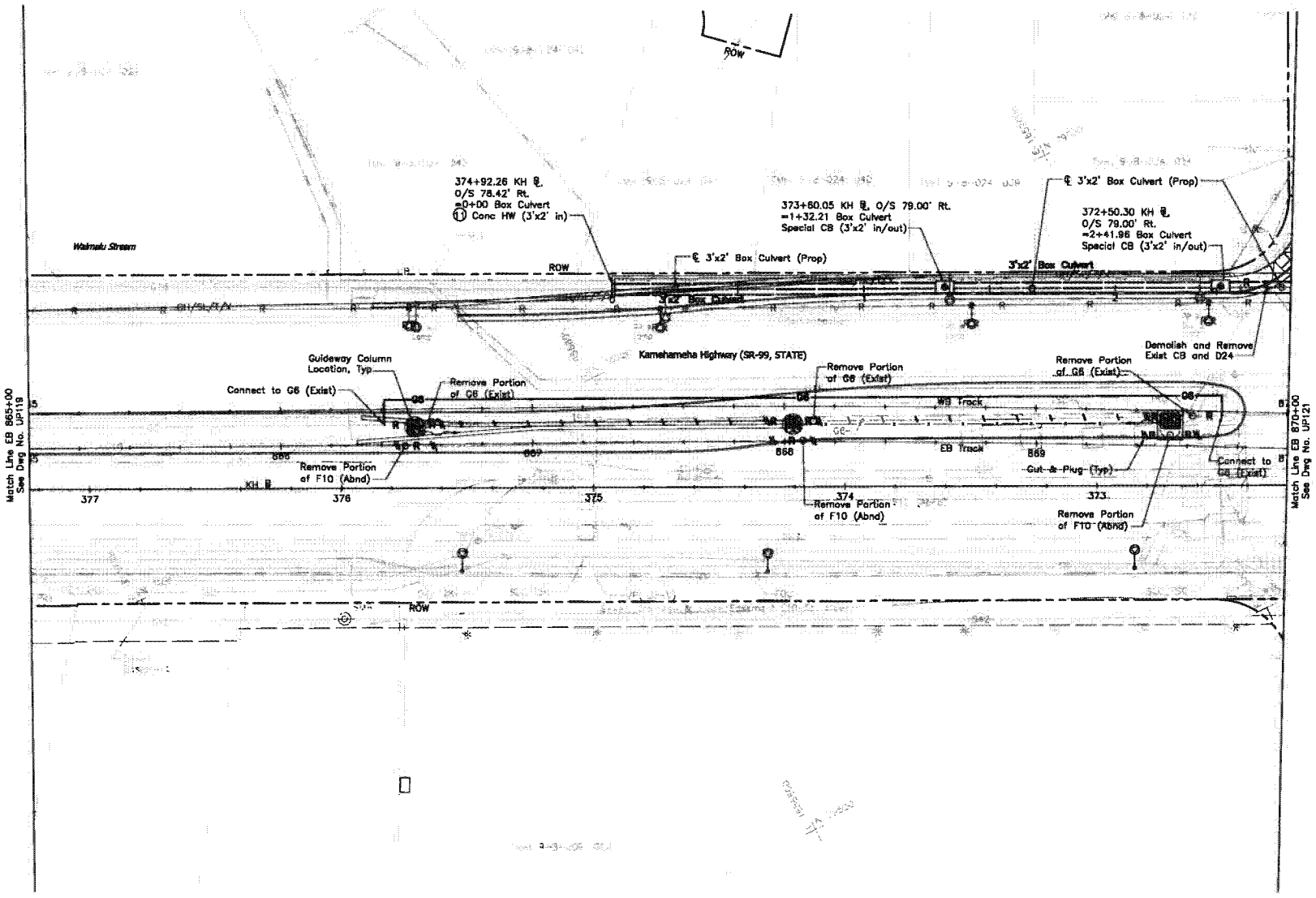

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

DRAINAGE CONSTRUCTION NOTES:

11 Construct Conc Headwall per HDOT Std. Plan No. H-21

20' 0' 20'

Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: G Tom
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Checked: H Andrews
Approved: J Yamamoto
Date: 03-19-10

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant: R. M. TOWILL CORPORATION

For reduced prints, original page size in inches:

KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 865+00 TO EB 870+00

Contract No.: DB-320
CADD File: KHDB-D03-UP120
Drawing No: UP120 Rev. A
Scale: 1"=20'
Page No. 67 of 186

2010-03-12 4:31 PM K:\civil\21132 Honolulu Transit Corridor\Segment D\Sheet Files\KHDB-D03-UP101-UP121.dwg

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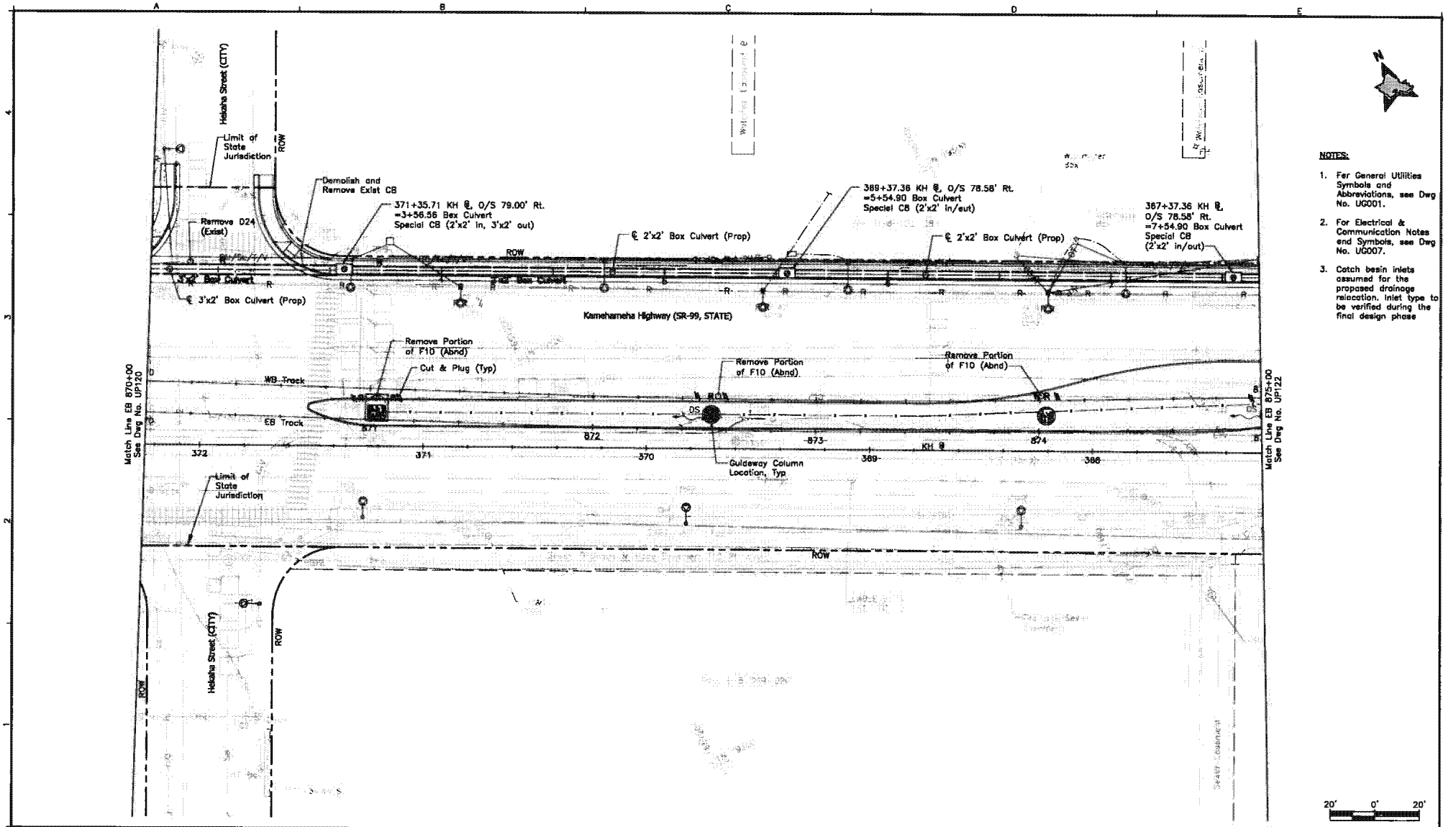

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

20' 0' 20'

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PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

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Checked: H Andrews
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Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 870+00 TO EB 875+00

Contract No.: DB-320
CADD File: KHDB-D03-UP121
Drawing No: UP121 Rev. A
Scale: 1"=20'
Page No. 68 of 186

2010-03-12 4:31 PM K:\civil\21132 Honolulu Transit Corridor\Segment D\Sheet Files\KHDB-D03-UP101-UP121.dwg

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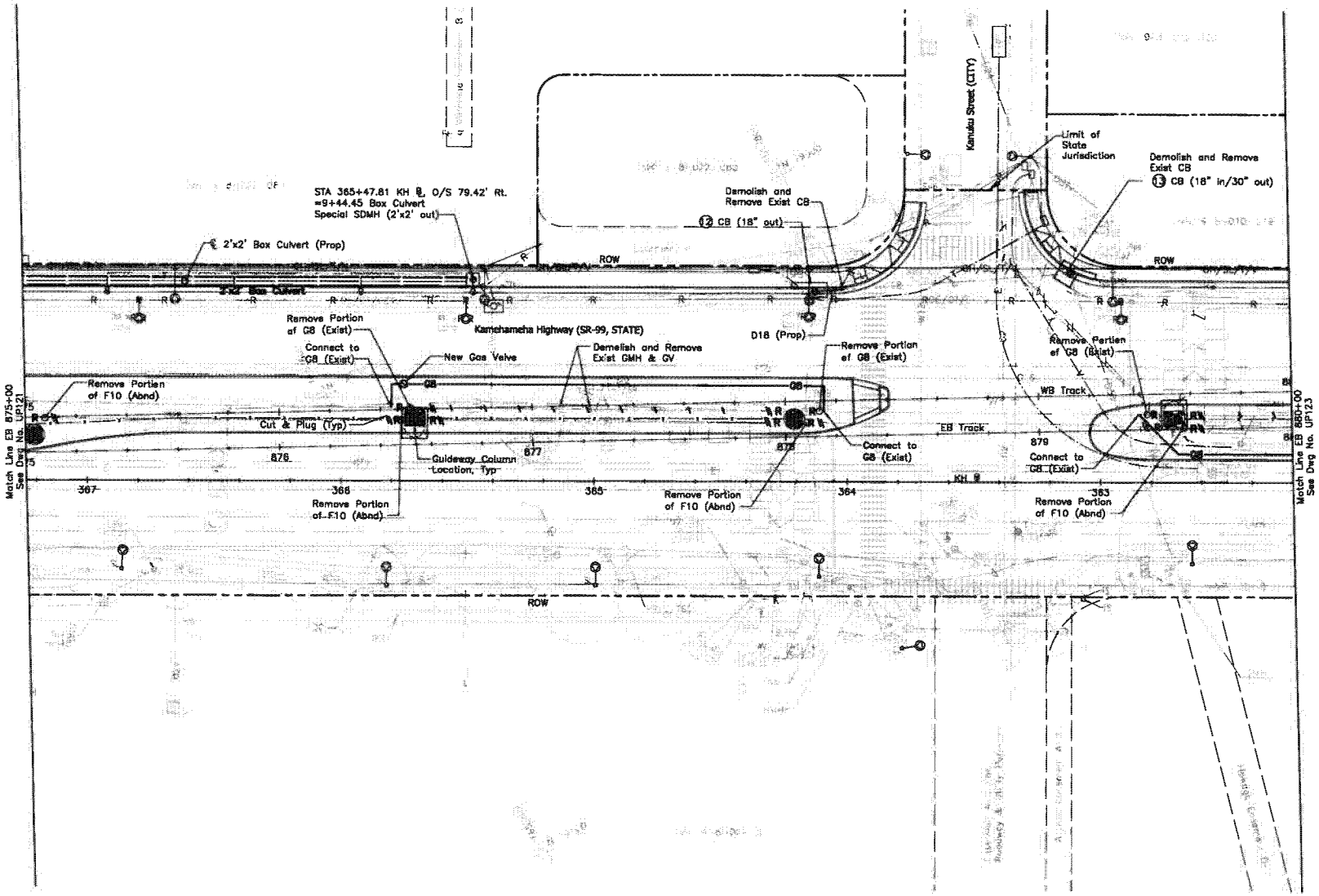

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
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3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

DRAINAGE CONSTRUCTION NOTES:

12 Construct Catch Basin, Type B1 per HDOT Std. Plan No. H-02B

13 Construct Catch Basin, Type C1 per HDOT Std. Plan No. H-02C

20' 0' 20'

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 875+00 TO EB 880+00

Contract No.: DB-320
CADD File: KHDB-D03-UP122
Drawing No: UP122 Rev. A
Scale: 1"=20'
Page No. 69 of 186

2010-03-12 4:07 PM K:\civil\21132 Honolulu Transit Corridor\Segment D\Sheet Files\KHDB-D03-UP122-UP142.dwg

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NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase
4. Water service to TMK: 9-8-010: 002 to be reconnected by Pearlridge Station Contract.

20' 0' 20'

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Checked: H Andrews
Approved: J Yamamoto
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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 880+00 TO EB 885+00

Contract No.: DB-320
CADD File: KHDB-003-UP123
Drawing No: UP123 Rev. A
Scale: 1"=20'
Page No. 70 of 186

2010-03-12 4:07 PM K:\civil\21132 Honolulu Transit Corridor\Segment D\Sheet Files\KHDB-003-UP122-UP142.dwg

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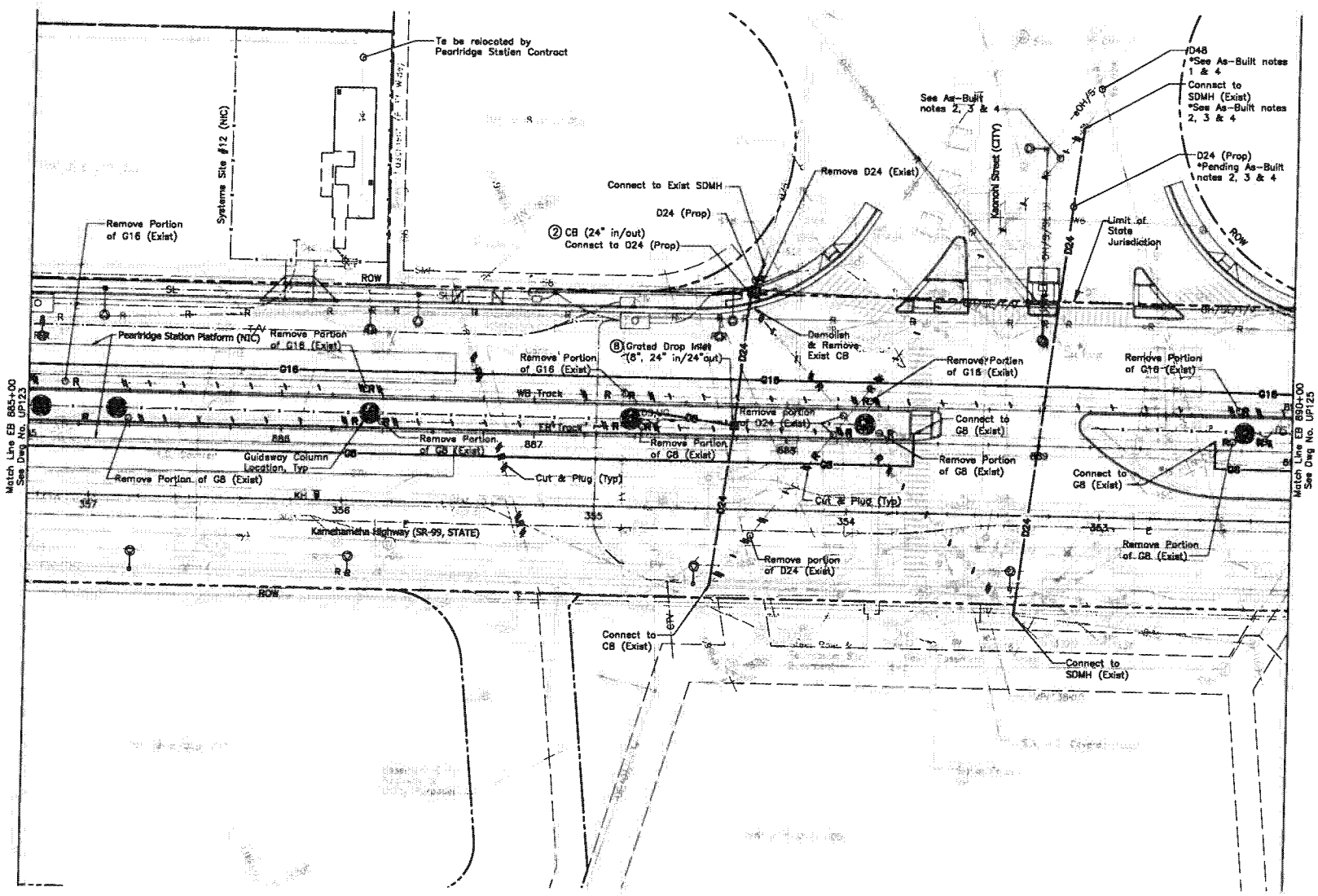

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
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3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

DRAINAGE CONSTRUCTION NOTES:

② Construct Catch Basin, Type A per HDOT Std. Plan No. H-01A

Ⓑ Construct Grated Drop Inlet, Type 1A-9P per HDOT Std. Plan No. H-08

***AS-BUILT NOTES:**

1. 48" Drainline not shown on BWS as-built: 1983-019: Kamehamaha Highway 8-Inch Water Main Ewa of Kaonehi Street
2. 24" Drainline shown on BWS as-built: 326-WRP: 80 Foot Roadway, Pearl Harbor Heights.
3. 24" Drainline not shown in CCH GIS systems.
4. Final Designer to verify size and location of all utilities.

20' 0' 20'

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 885+00 TO EB 890+00

Contract No.: DB-320
CADD File: KHDB-003-UP124
Drawing No: UP124 Rev. A
Scale: 1"=20'
Page No. 71 of 186

2010-03-12 4:87 PM K:\civil\21132 Honolulu Transit Corridor\Segment D\Sheet Files\KHDB-003-UP122-UP142.dwg

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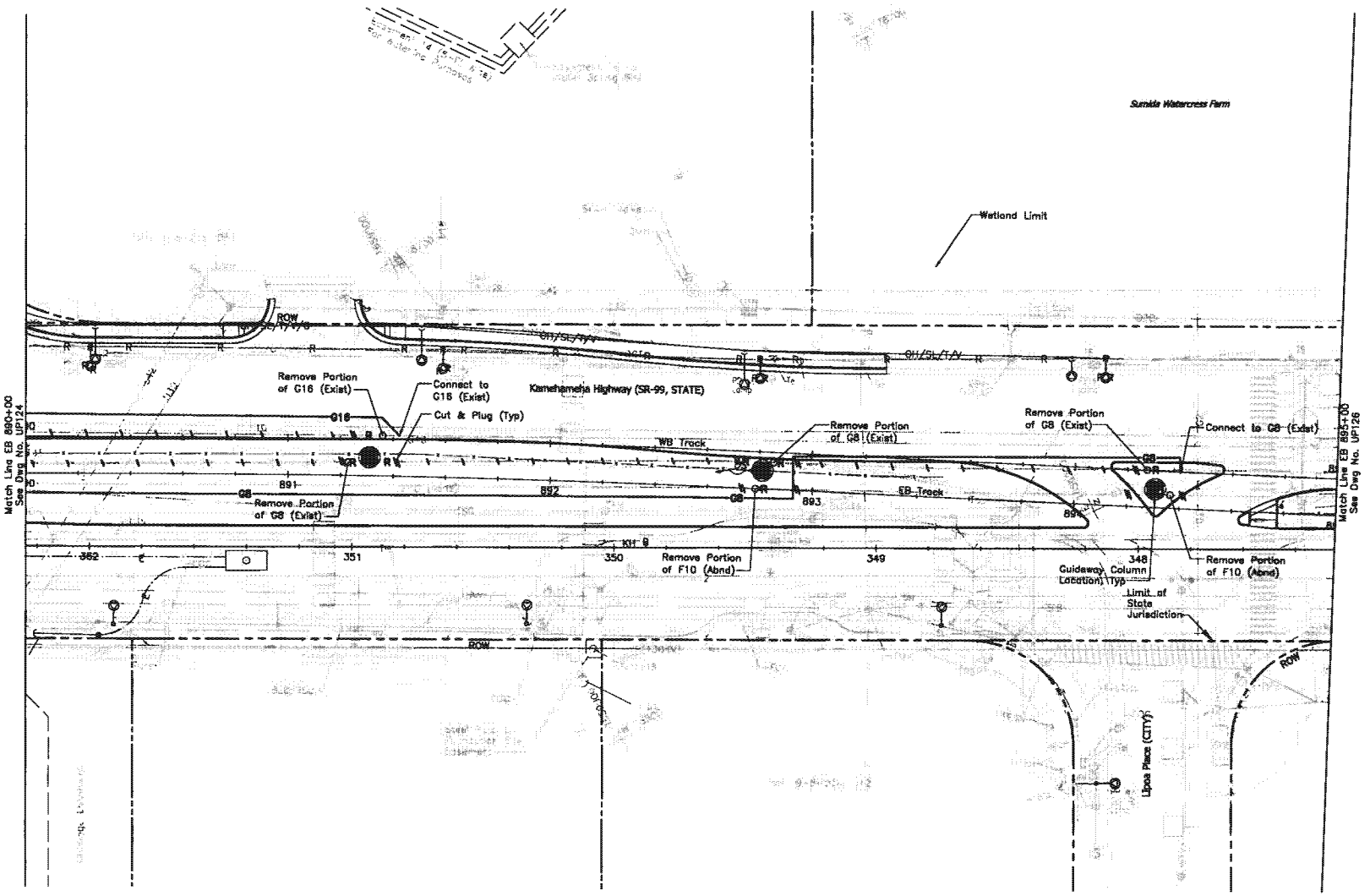

NOTES:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 890+00 TO EB 895+00

Contract No.: DB-320
CADD File: KHDB-003-UP125
Drawing No: UP125 Rev. A
Scale: 1"=20'
Page No. 72 of 186

2010-03-12 4:07 PM K:\civil\21132 Honolulu Transit Corridor\Segment D\Sheet Files\KHDB-003-UP122-UP142.dwg

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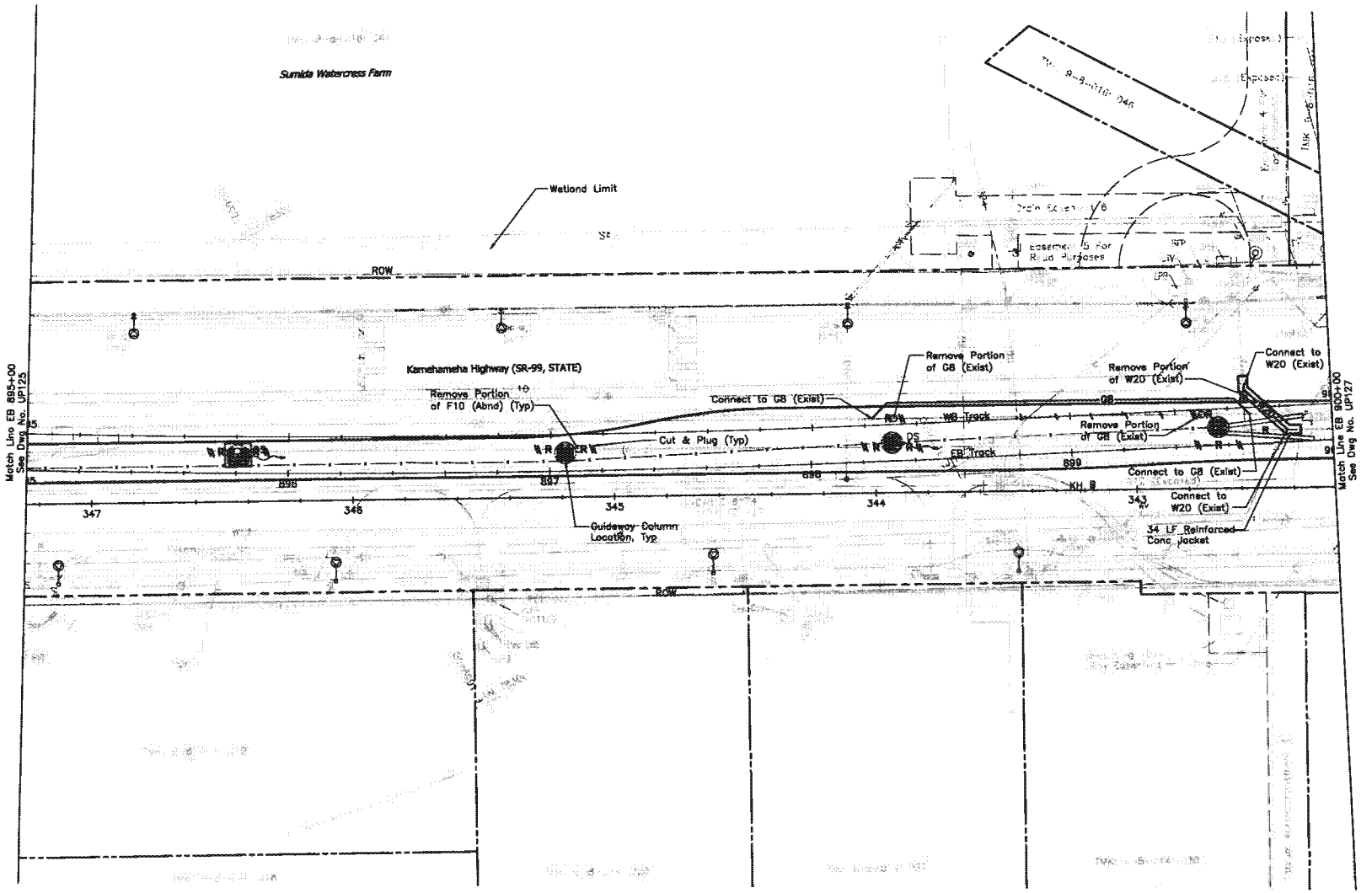

NOTES:

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Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 895+00 TO EB 900+00

Contract No.: DB-320
CADD File: KHDB-D03-UP126
Drawing No: UP126 Rev. A
Scale: 1"=20'
Page No. 73 of 186

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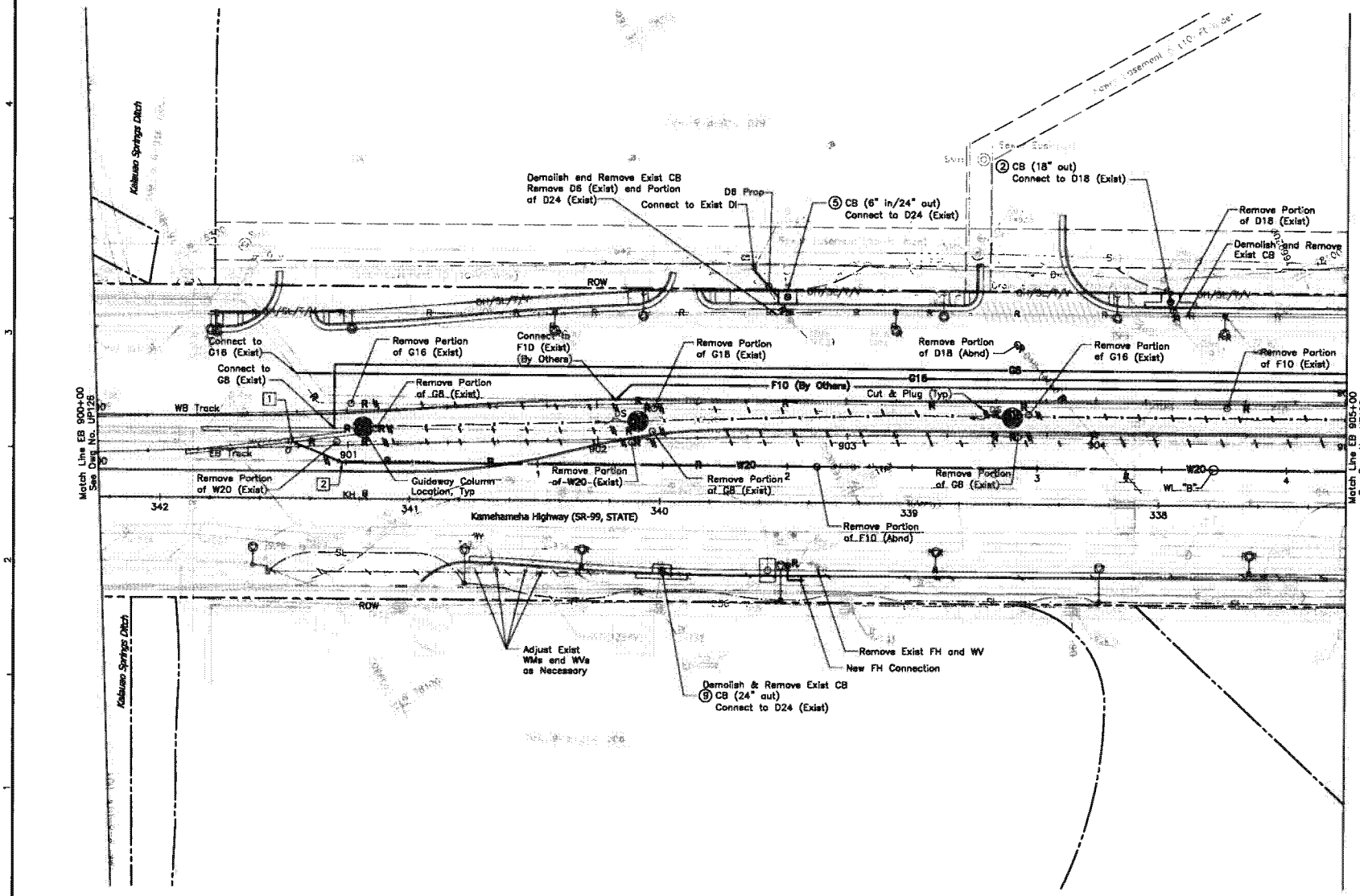

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

DRAINAGE CONSTRUCTION NOTES:

② Construct Catch Basin, Type A per HDOT Std. Plan No. H-01A

⑤ Construct Catch Basin, Type D per HDOT Std. Plan No. H-01D

⑨ Construct Catch Basin, Type A1 per HDOT Std. Plan No. H-02A

WATER CONSTRUCTION NOTES:

1 STA 341+47.20 KH ℄, O/S 22.81' Rt.
=0+00 WL "B"
Connect to W20 (Exist)
1-20" ⅛ Bend (H) D.I.
1-Conc Block w/ Structural Struts
1-20" Sleeve, 15' Long
8± LF 20" D.I. Pipe, Cl. 52
Temp for Testing:
1-20" Cap w/ 4" C.O.
1-Conc Block

2 STA 341+27.09 KH ℄, O/S 14.48' Rt.
=0+21.77 WL "B"
1-20" ⅛ Bend (H) D.I.
1-Conc Block

20' 0' 20'

Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT
NOT FOR CONSTRUCTION

Designed: G Tom
Drawn: K Tanaka
Checked: H Andrews
Approved: J Yamamoto
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 900+00 TO EB 905+00

Contract No.: DB-32D
CADD File: KHDB-D03-UP127
Drawing No: UP127 Rev. A
Scale: 1"=20'
Page No. 74 of 186

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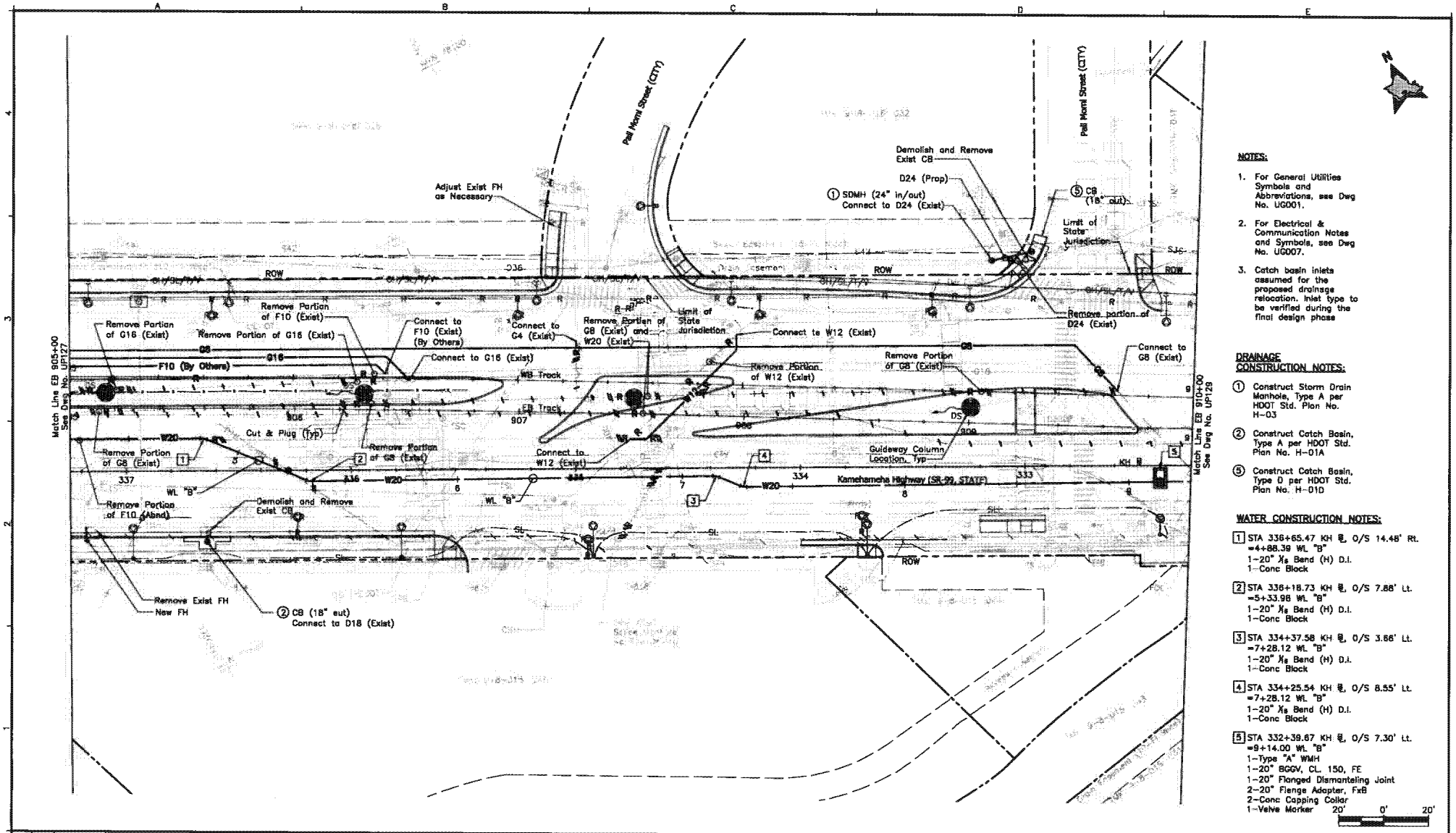

NOTES:

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2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

DRAINAGE CONSTRUCTION NOTES:

① Construct Storm Drain Manhole, Type A per HDOT Std. Plan No. H-03

② Construct Catch Basin, Type A per HDOT Std. Plan No. H-01A

⑤ Construct Catch Basin, Type D per HDOT Std. Plan No. H-01D

WATER CONSTRUCTION NOTES:

1 STA 336+65.47 KH ⓡ, O/S 14.48' Rt.
=4+88.39 WL "B"
1-20" X 8 Bend (H) D.I.
1-Conc Block

2 STA 336+18.73 KH ⓡ, O/S 7.88' Lt.
=5+33.98 WL "B"
1-20" X 8 Bend (H) D.I.
1-Conc Block

3 STA 334+37.58 KH ⓡ, O/S 3.86' Lt.
=7+28.12 WL "B"
1-20" X 8 Bend (H) D.I.
1-Conc Block

4 STA 334+25.54 KH ⓡ, O/S 8.55' Lt.
=7+28.12 WL "B"
1-20" X 8 Bend (H) D.I.
1-Conc Block

5 STA 332+39.67 KH ⓡ, O/S 7.30' Lt.
=9+14.00 WL "B"
1-Type "A" WMH
1-20" BGGV, CL. 150, FE
1-20" Flanged Dismantaling Joint
2-20" Flange Adapter, FxB
2-Conc Capping Collar
1-Valve Marker

20' 0' 20'

Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

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HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PARSONS BRINCKERHOFF
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Subconsultant: R. M. TOWILL CORPORATION

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UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 905+00 TO EB 910+00

Contract No.: DB-320
CADD File: KHDB-D03-UP128
Drawing No: UP128 Rev. A
Scale: 1"=20'
Page No. 75 of 186

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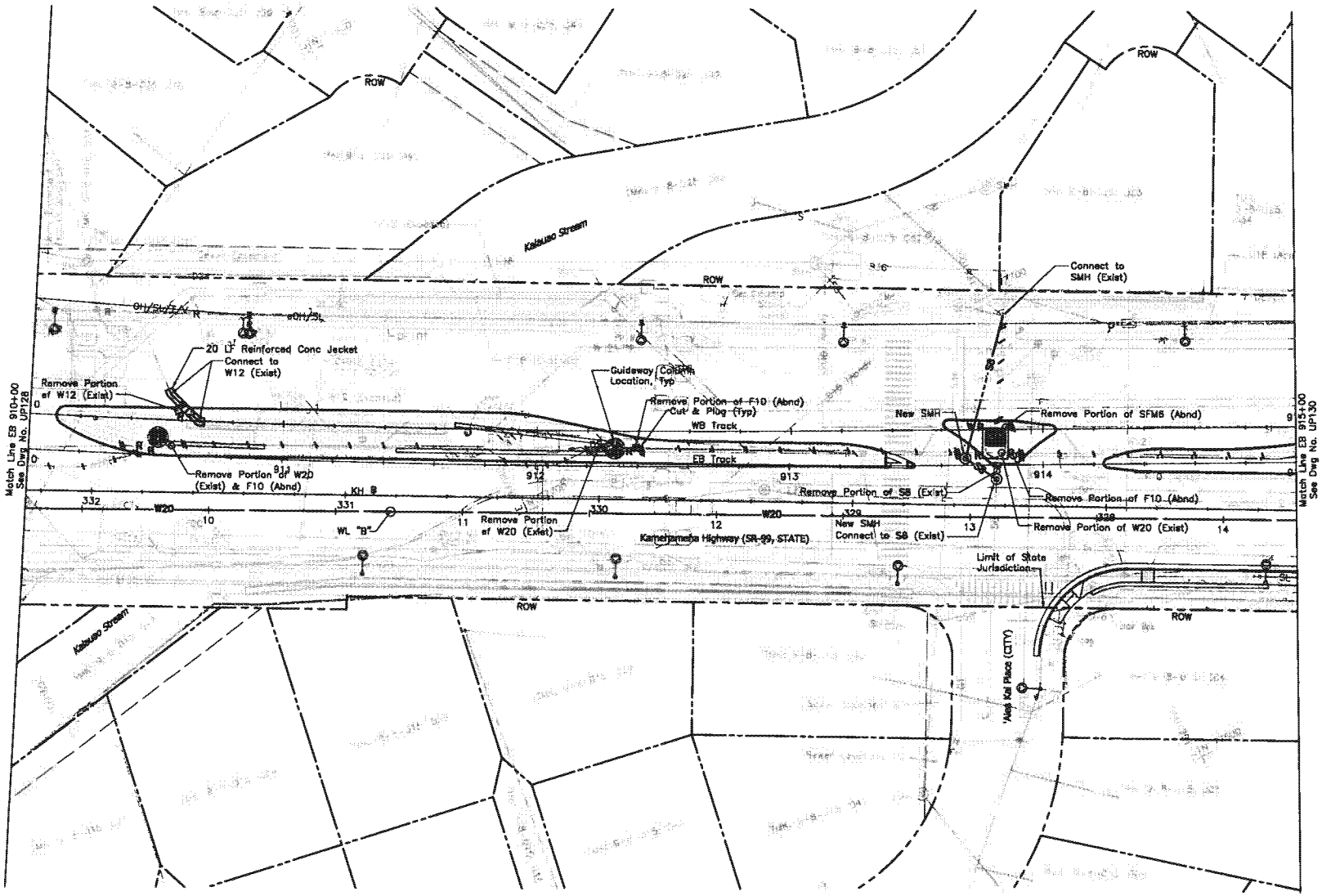

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

20' 0' 20'

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HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 910+00 TO EB 915+00

Contract No.: DB-320
CADD File: KHDB-D03-UP129
Drawing No: UP129 Rev. A
Scale: 1"=20'
Page No. 76 of 186

2010-03-12 4:07 PM K:\civil\21132 Honolulu Transit Corridor\Segment D\Sheet Files\KHDB-D03-UP122-UP142.dwg

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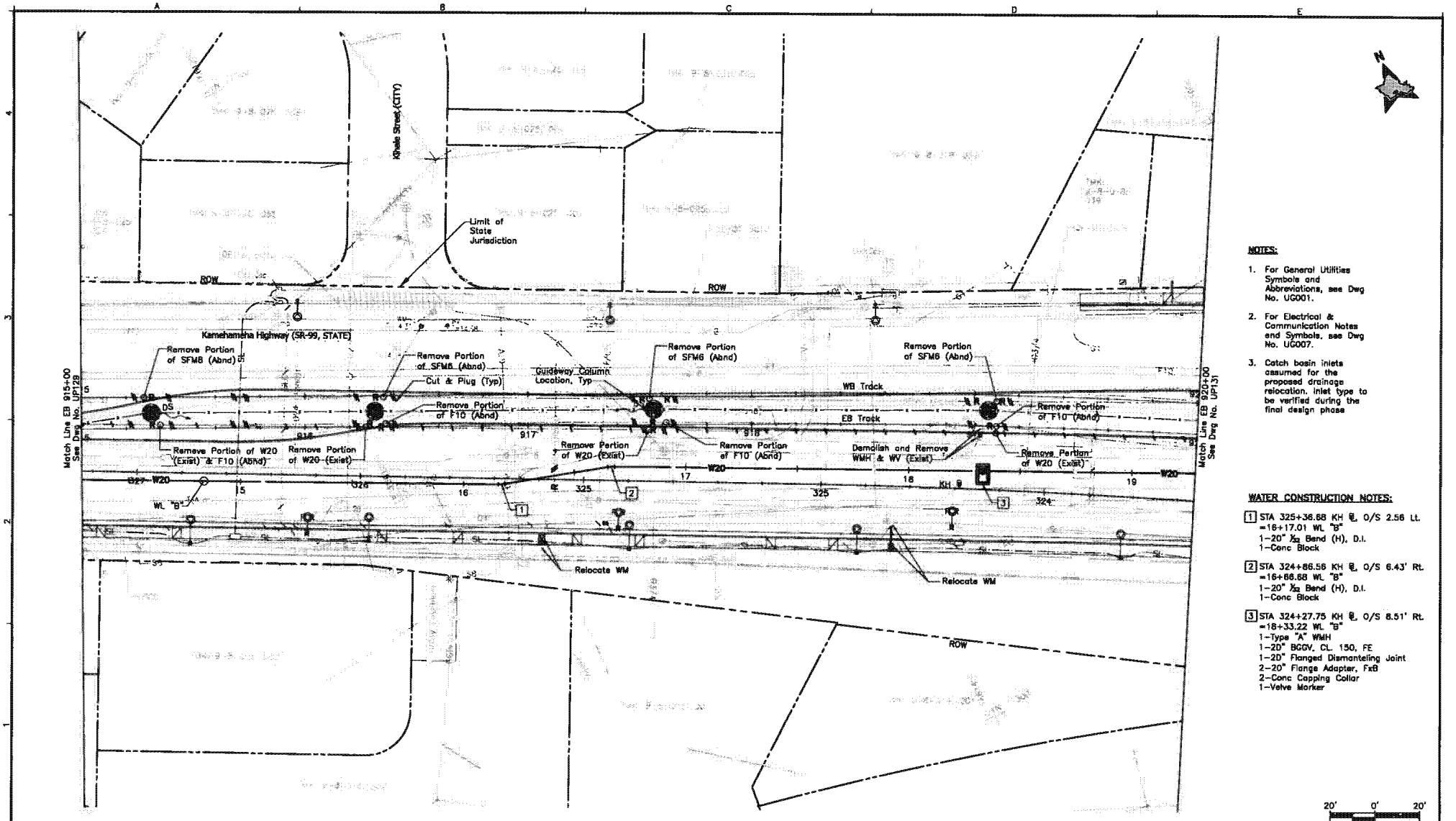

NOTES:

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3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

WATER CONSTRUCTION NOTES:

1. STA 325+36.68 KH ℄, O/S 2.56 Lt. =16+17.01 WL "B"
   1-20" X⁄⁄ Bend (H), D.I.
   1-Conc Block
2. STA 324+86.56 KH ℄, O/S 6.43' Rt. =16+66.88 WL "B"
   1-20" X⁄⁄ Bend (H), D.I.
   1-Conc Block
3. STA 324+27.75 KH ℄, O/S 8.51' Rt. =18+33.22 WL "B"
   1-Type "A" WMH
   1-20" BGGV, CL. 150, FE
   1-20" Flanged Dismanteling Joint
   2-20" Flange Adapter, FxB
   2-Conc Capping Collar
   1-Valve Marker

Rev	By	Date	Description
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WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 915+00 TO EB 920+00

Contract No.: DB-320
CADD File: KHDB-D03-UP130
Drawing No: UP130 Rev. A
Scale: 1"=20'
Page No. 77 of 186

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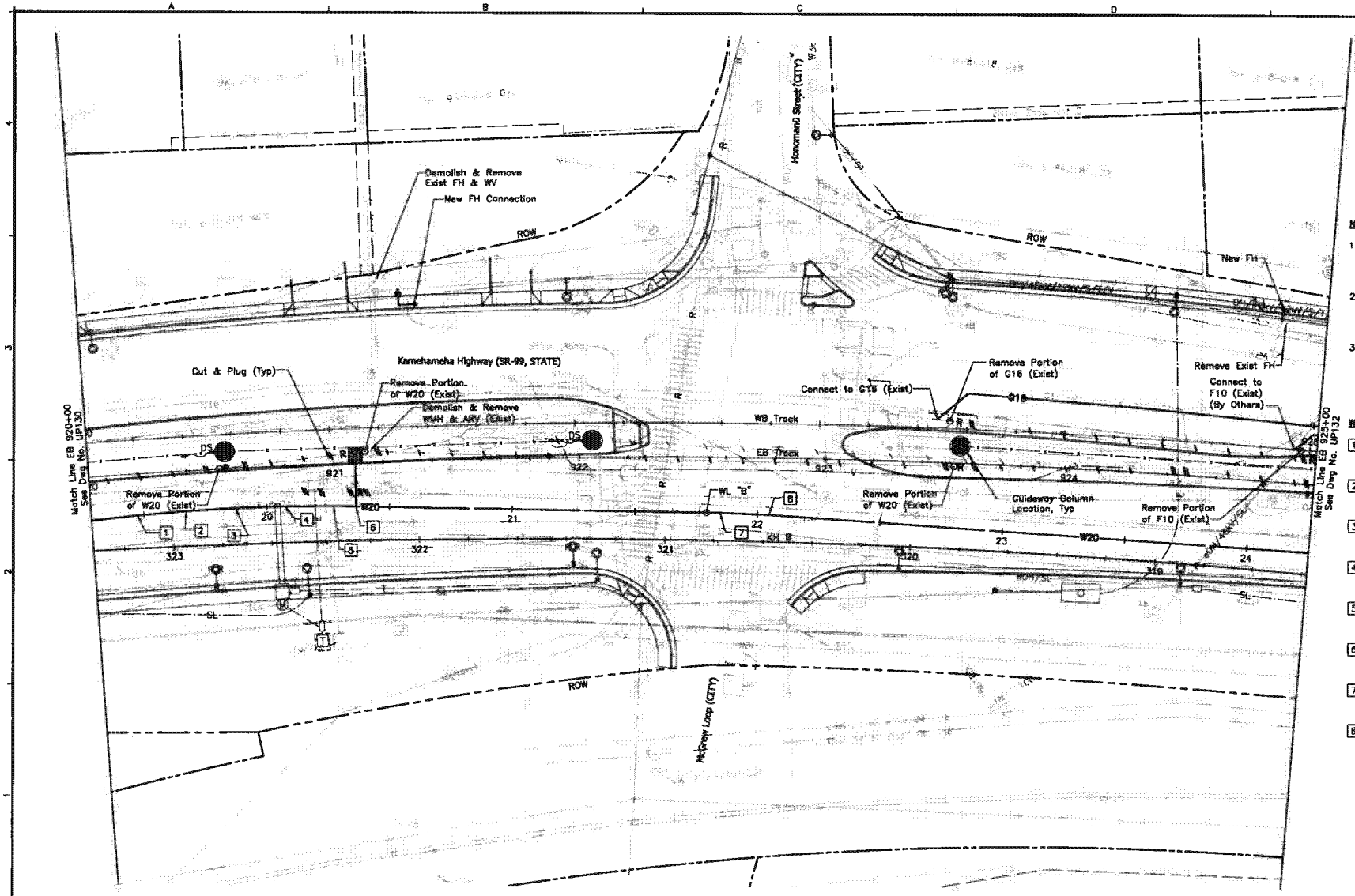

NOTES:

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2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

WATER CONSTRUCTION NOTES:

1. STA 323+14.23 KH ℄, O/S 13.53' Rt. =19+47.22 WL "B" Deflect W20 1.5'
2. STA 322+94.33 KH ℄, O/S 14.35' Rt. =19+67.22 WL "B" Deflect W20 1.5'
3. STA 322+74.43 KH ℄, O/S 14.76 Rt. =19+87.22 WL "B" Deflect W20 1.5'
4. STA 322+54.51 KH ℄, O/S 14.77' Rt. =20+07.22 WL "B" Deflect W20 1.5'
5. STA 322+34.60 KH ℄, O/S 14.36' Rt. =20+27.22 WL "B" Deflect W20 1.5'
6. STA 322+25.50 KH ℄, O/S 14.00' Rt. =20+38.38 WL "B" 1-2" ARV w/ Type "D" WMH
7. STA 320+77.74 KH ℄, O/S 11.32 Rt. =21+84.71 WL "B" Deflect W20 1.5'
8. STA 320+57.81 KH ℄, O/S 10.93' Rt. =22+38.38 WL "B" Deflect W20 1.5'

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 920+00 TO EB 925+00

Contract No.: DB-320
CADD File: KHDB-D03-UP131
Drawing No: UP131 Rev. A
Scale: 1"=20'
Page No. 78 of 186

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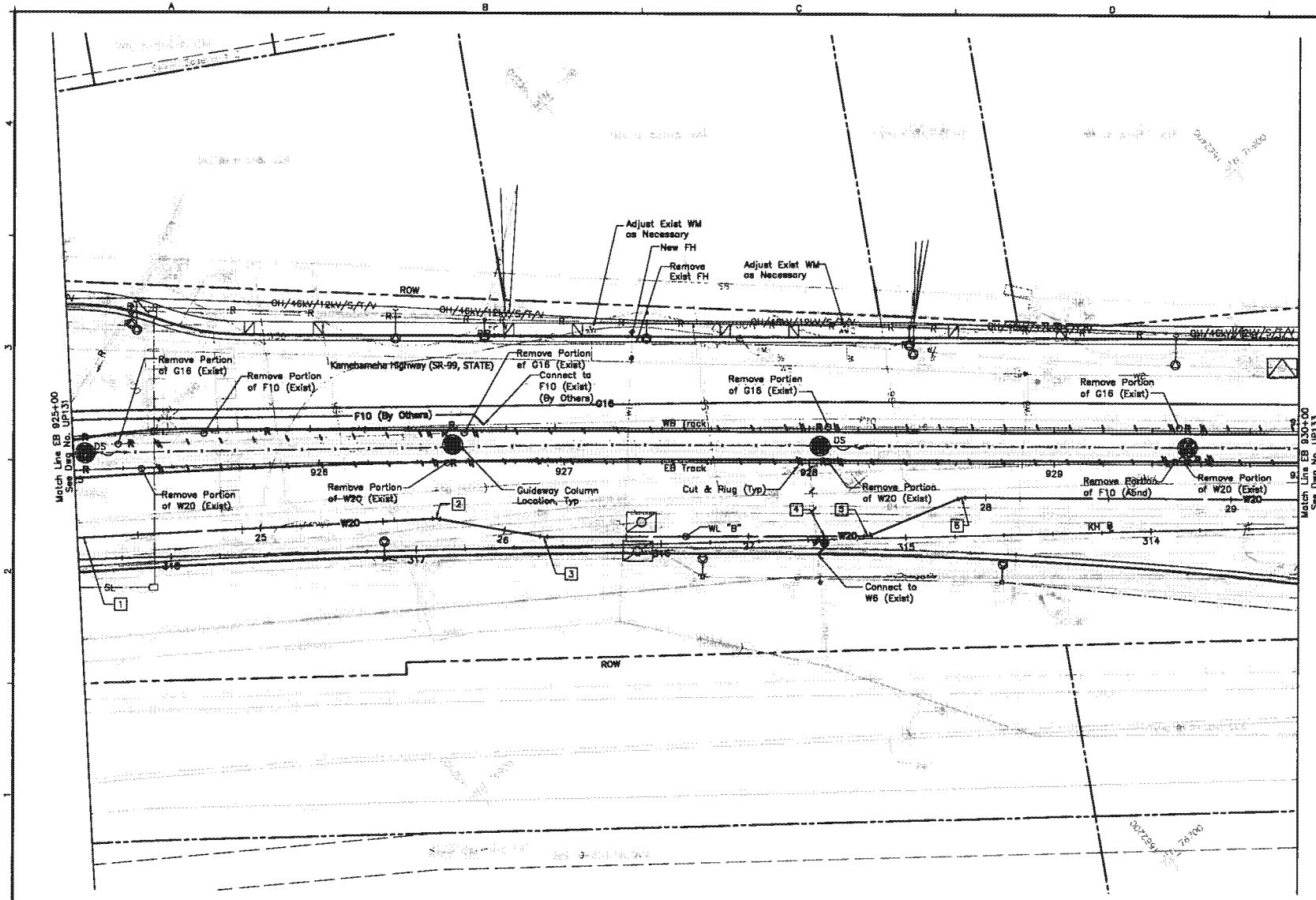

NOTES:

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2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

WATER CONSTRUCTION NOTES:

1. STA 318+35.38 KH ℄, O/S 8.96' Rt. =24+27.77 WL "B" Deflect W20 0.5'
2. STA 316+91.54 KH ℄, O/S 12.75' Rt. =25+71.77 WL "B" 1-20" 11.25° Bend (H), D.I. 1-Conc Block
3. STA 316+47.87 KH ℄, O/S 4.15 Rt. =26+16.28 WL "B" 1-20" 22.5° Bend (H), D.I. 1-Conc Block
4. STA 315+33.19 KH ℄, O/S 1.39 Rt. =27+31.00 WL "B" 1-20"x6" Tee 1-Conc. Block 1-6" GV, 150# 1-Valve Box
5. STA 315+15.48 KH ℄, O/S 0.94 Rt. =27+48.71 WL "B" 1-20" 45° Bend (H), D.I. 1-Conc Block
6. STA 314+76.82 KH ℄, O/S 15.86' Rt. =27+90.15 WL "B" 1-20" 45° Bend (H), D.I. 1-Conc Block

20' 0' 20'

Rev	By	Date	Description
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HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 925+00 TO EB 930+00

Contract No.: DB-320
CADD File: KHDB-D03-UP132
Drawing No: UP132 Rev. A
Scale: 1"=20'
Page No. 79 of 186

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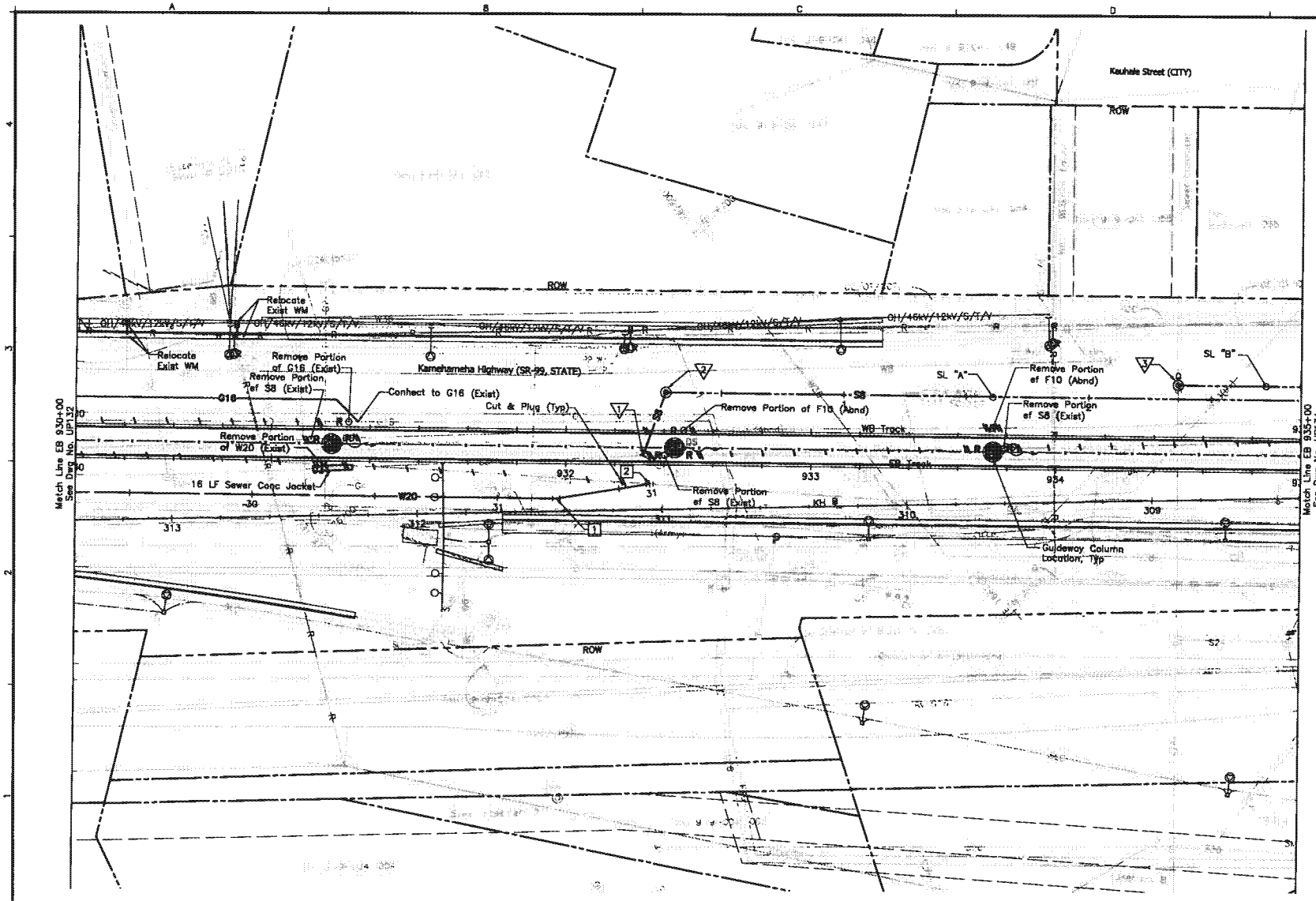

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

WATER CONSTRUCTION NOTES:

1. STA 311+43.05 KH ℄, O/S 5.29' Rt.
   =31+24.09 WL "B"
   1-20" 22½ Bend (H), D.I.
   1-Conc Block
2. STA 311+04.89 KH ℄, O/S 10.61' Rt.
   =31+62.62 WL "B"
   Connect to W20 (Exist)
   1-20" 22½ Bend (H), D.I.
   1-Conc Block w/ Structural Struts
   1-20" Sleeve 15' Long
   8± LF 20" D.I. Pipe, Cl. 52
   Temp for Testing:
   1-20" Cap 2/ 4" C.O.
   1-Conc Block

SEWER CONSTRUCTION NOTES:

1. STA 311+07.33 KH ℄, O/S 22.08' Rt.
   =0+00 SL "A"
   Connect to SMH (Exist)
   T=
   Inv.=
2. STA 310+97.49 KH ℄, O/S 47.62' Rt.
   =0+27.37 SL "A"
   New SMH
   T=
   Inv.=
3. STA 308+88.35 KH ℄, O/S 46.75' Rt.
   =0+00 SL "B"
   New SMH
   Connect to S24 (Exist)
   T=
   Inv.=

20' 0' 20'

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PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

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HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 930+00 TO EB 935+00

Contract No.: DB-320
CADD File: KHDB-D03-UP133
Drawing No: UP133 Rev. A
Scale: 1"=20'
Page No. 80 of 186

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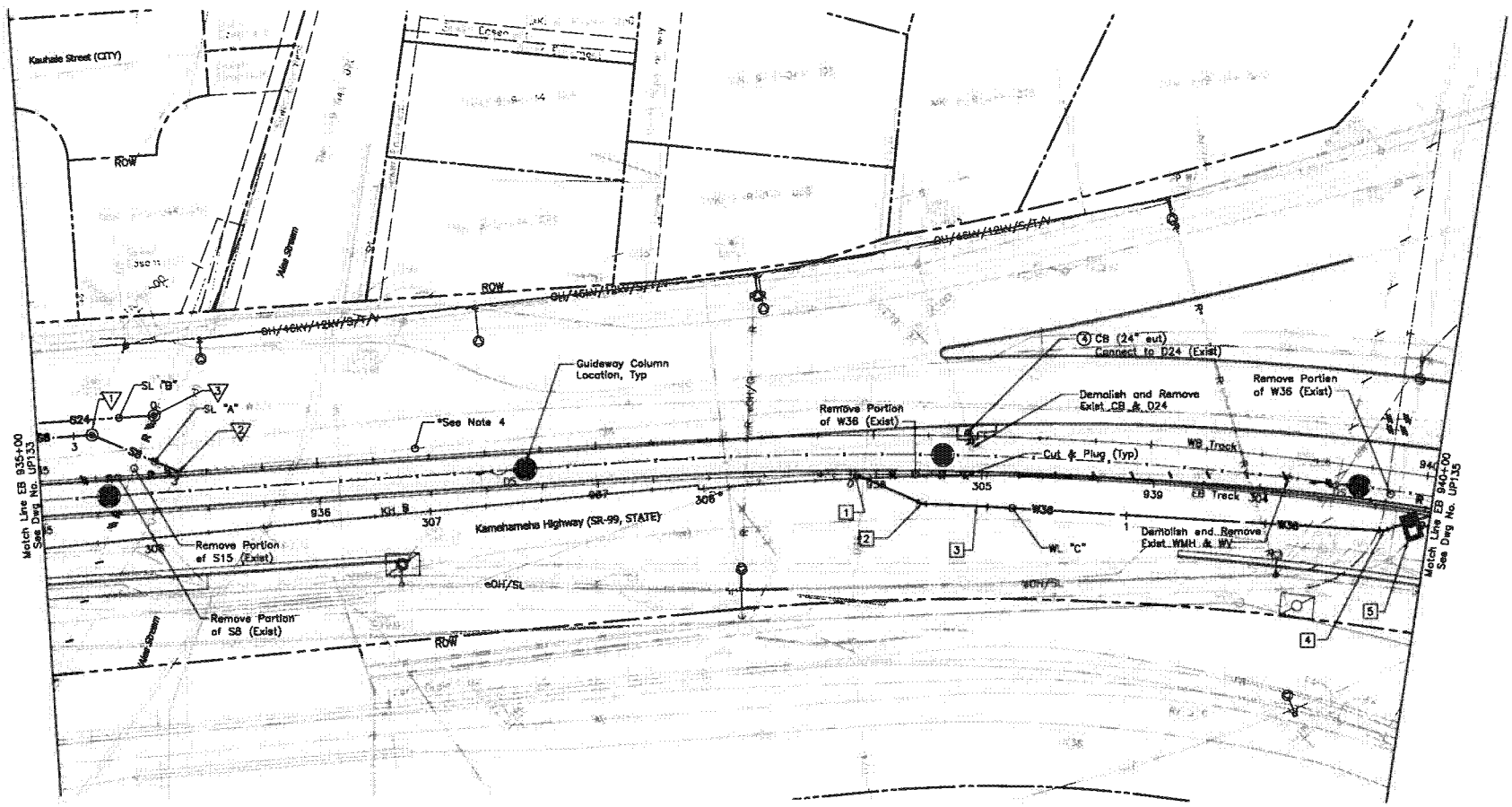

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase
4. Existing S6 line is abandoned. Per consultation with C&C Department of Planning and Permitting, Wastewater Branch. Final Designer to verify.

DRAINAGE CONSTRUCTION NOTES:

(4) Construct Catch Basin, Type C per HDOT Std. Plan No. H-01C

WATER CONSTRUCTION NOTES:

[1] STA 305+45.84 KH ℄, O/S 1.56' Rt.
=0+00 WL "C"
Connect to W36 (Exist)
1-36" X/S Bend (H), D.I.
1-Conc Block w/ Structural Struts
1-36" Sleeve 15' Long
8± LF 36" D.I. Pipe, Cl. 52
Temp. for Testing:
1-36" Cap w/ 6" C.O.
1-Conc Block

[2] STA 305+21.85 KH ℄, O/S 9.85' Lt.
=0+26.27 WL "C"
1-36" X/S Bend (H), D.I.
1-Conc Block

[3] STA 305+01.99 KH ℄, O/S 10.95' Lt.
=0+45.97 WL "C"
Deflect W36 1°

[4] STA 303+53.76 KH ℄, O/S 10.31' Lt.
=1+92.82 WL "C"
1-36" X/S Bend (H), D.I.
1-Conc Block

[5] STA 303+44.73 KH ℄, O/S 5.94' Lt.
=2+02.59 WL "C"
1-Type "A" WMH
1-36" BGGV, CL. 150, FE
1-36" Flanged Dismantling Joint
2-36" Flange Adapter, FxB
2-Conc Capping Collar
1-Valve Marker

20' 0' 20'

SEWER CONSTRUCTION NOTES:

(1) STA 308+18.37 KH ℄, O/S 39.11' Rt.
=3+06.63 SL "A"
New SMH
T=
Inv.=

(2) STA 307+88.51 KH ℄, O/S 22.92 Rt.
=3+40.80 SL "A"
Connect to SMH (Exist)
T=
Inv.=

(3) STA 307+95.52 KH ℄, O/S 43.92' Rt.
=0+92.87 SL "B"
New SMH
Connect to S15 (Exist)
T=
Inv.=

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UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 935+00 TO EB 940+00

Contract No.: DB-320
CADD File: KHDB-D03-UP134
Drawing No: UP134 Rev. A
Scale: 1"=20'
Page No. 81 of 186

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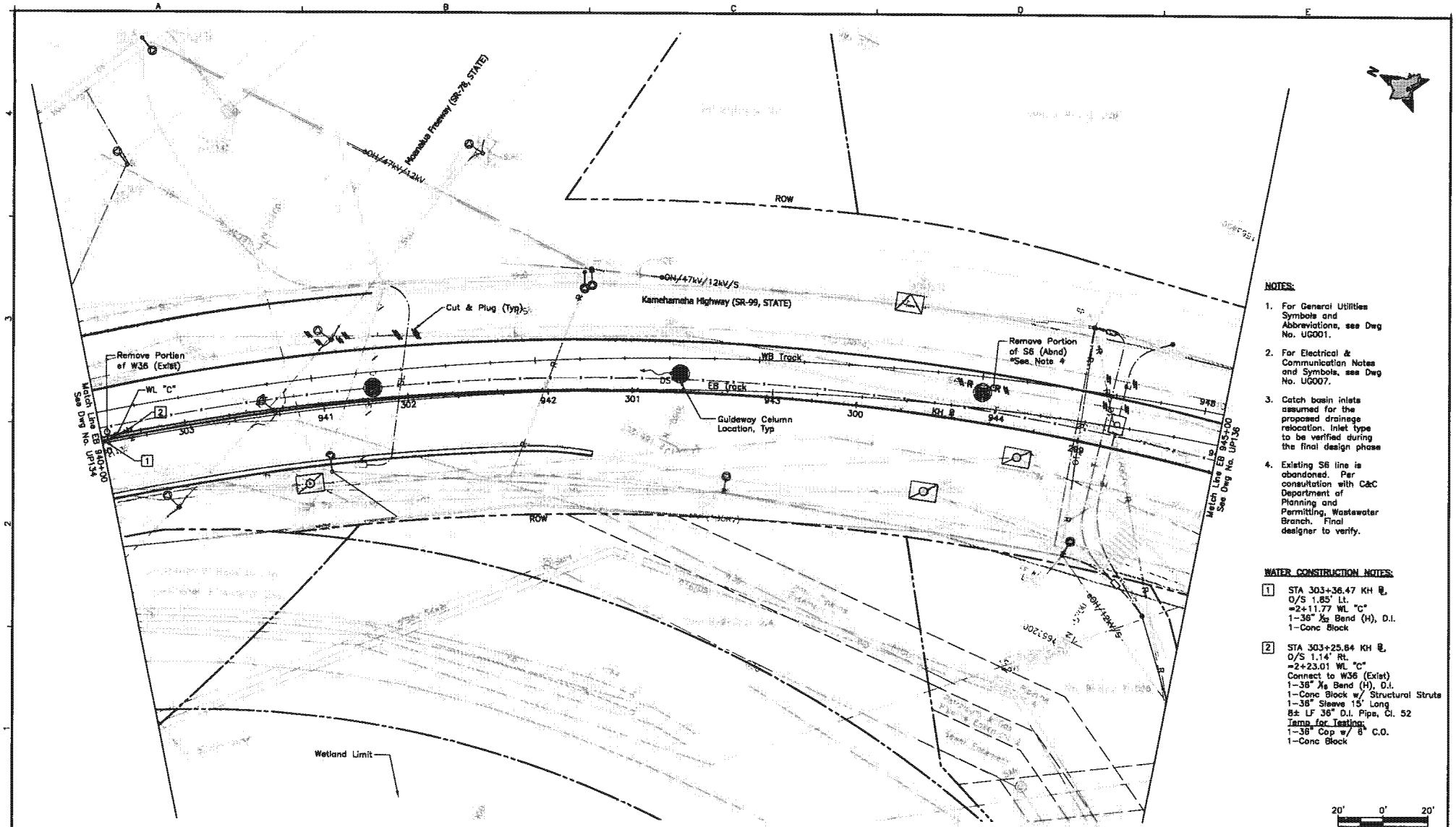

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3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase
4. Existing S6 line is abandoned. Per consultation with C&C Department of Planning and Permitting, Wastewater Branch. Final designer to verify.

WATER CONSTRUCTION NOTES:

1. STA 303+36.47 KH ℄, O/S 1.85' Lt. =2+11.77 WL "C"
   1-36" 22½ Bend (H), D.I.
   1-Conc Block
2. STA 303+25.84 KH ℄, O/S 1.14' Rt. =2+23.01 WL "C"
   Connect to W36 (Exist)
   1-36" 11¼ Bend (H), D.I.
   1-Conc Block w/ Structural Struts
   1-36" Sleeve 15' Long
   8± LF 36" D.I. Pipe, Cl. 52
   Temp for Testing:
   1-36" Cap w/ 8" C.O.
   1-Conc Block

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HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 940+00 TO EB 945+00

Contract No.: DB-320
CADD File: KHDB-D03-UP135
Drawing No: UP135 Rev. A
Scale: 1"=20'
Page No. 82 of 186

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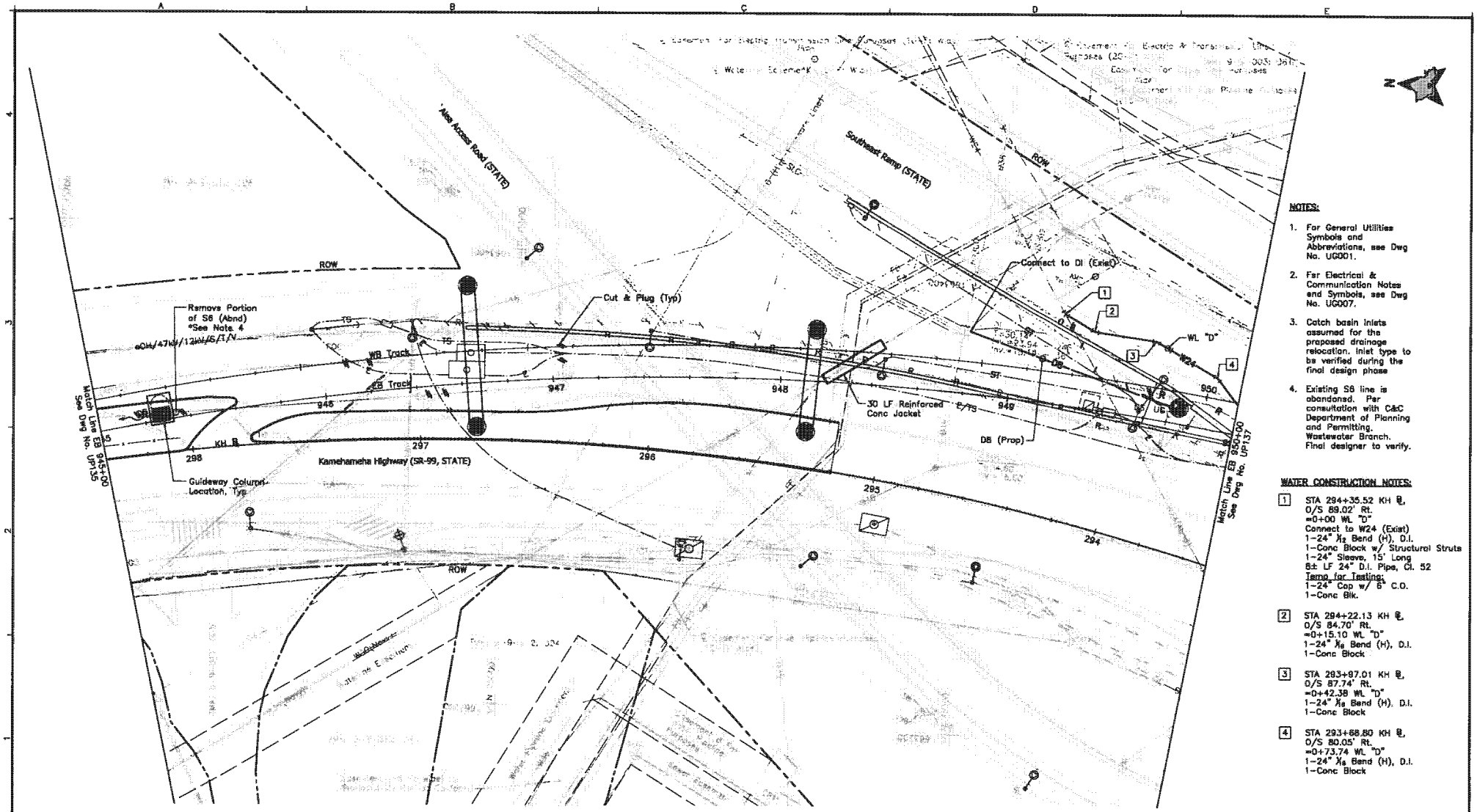

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase
4. Existing S6 line is abandoned. Per consultation with C&C Department of Planning and Permitting. Wastewater Branch. Final designer to verify.

WATER CONSTRUCTION NOTES:

1. STA 294+35.52 KH ℄, O/S 89.02' Rt. =0+00 WL "D" Connect to W24 (Exist)
   1-24" ⅛ Bend (H), D.I.
   1-Conc Block w/ Structural Struts
   1-24" Sleeve, 15' Long
   8± LF 24" D.I. Pipe, Cl. 52
   Temp for Testing:
   1-24" Cap w/ 6" C.O.
   1-Conc Blk.
2. STA 294+22.13 KH ℄, O/S 84.70' Rt. =0+15.10 WL "D"
   1-24" ⅛ Bend (H), D.I.
   1-Conc Block
3. STA 293+87.01 KH ℄, O/S 87.74' Rt. =0+42.38 WL "D"
   1-24" ⅛ Bend (H), D.I.
   1-Conc Block
4. STA 293+68.80 KH ℄, O/S 80.05' Rt. =0+73.74 WL "D"
   1-24" ⅛ Bend (H), D.I.
   1-Conc Block

20' 0' 20'

Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: G Tom
Drawn: K Tanaka
Checked: H Andrews
Approved: J Yamamoto
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 945+00 TO EB 950+00

Contract No.: DB-320
CADD File: KHDB-D03-UP136
Drawing No: UP136 Rev. A
Scale: 1"=20'
Page No. 83 of 186

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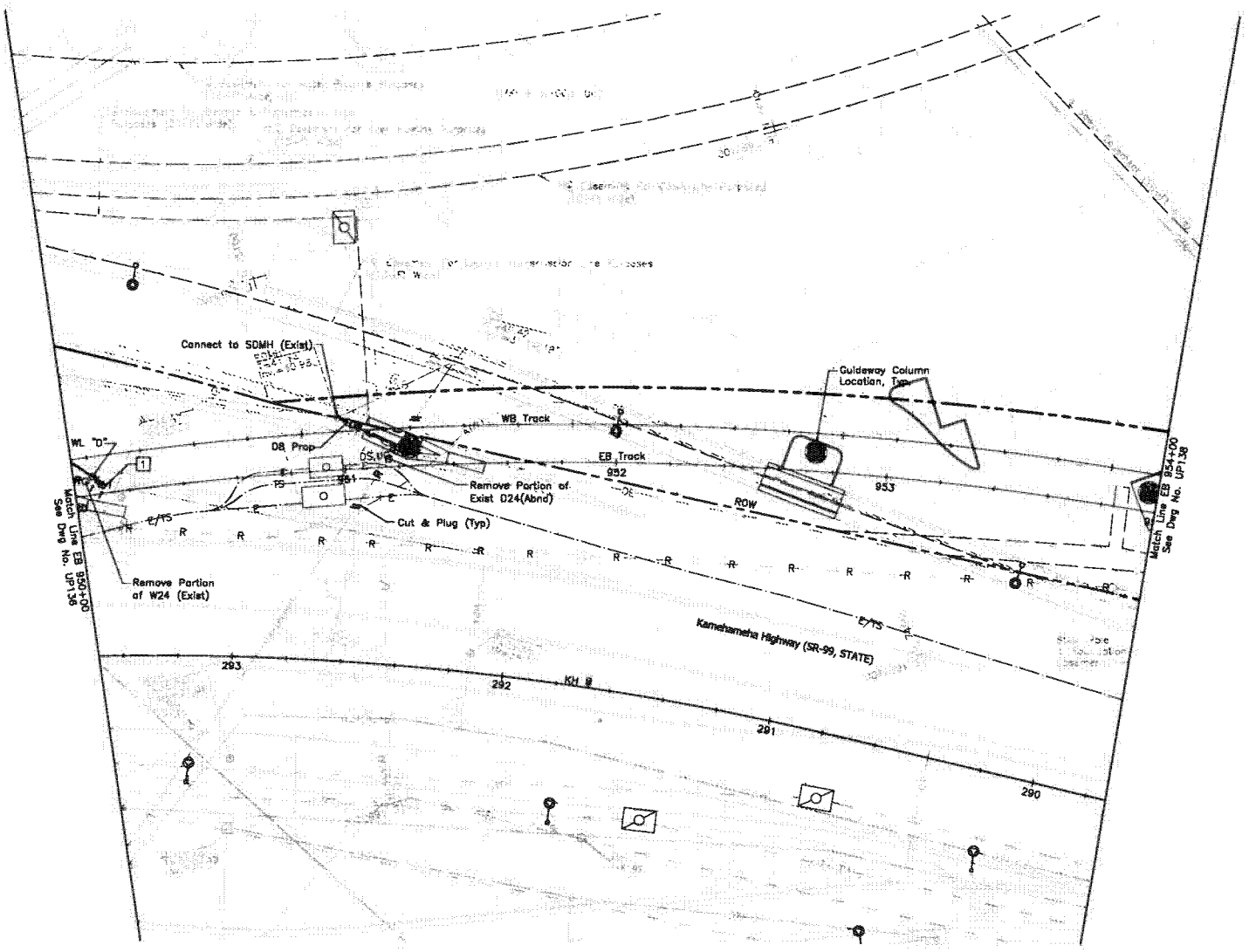

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

WATER CONSTRUCTION NOTES:

1. STA 293+45.49 KH ℄, O/S 62.76' Rt. =1+04.02 WL "D"
   Connect to W24 (Exist)
   1-24" X2 Bend (H), D.I.
   1-Conc Block w/ Structural Struts
   1-24" Sleeve, 15' Long
   8± LF 24" D.I. Pipe, Cl. 52
   Temp for Testing:
   1-24" Cap w/ 8" C.O.
   1-Conc Blk.

20' 0' 20'

Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: G Tom
Drawn: K Tanoka
Checked: H Andrews
Approved: J Yamamoto
Date: 03-19-10

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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Subconsultant: R. M. TOWILL CORPORATION

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UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 945+00 TO EB 950+00

Contract No.: DB-320
CADD File: KHDB-D03-UP137
Drawing No: UP137 Rev. A
Scale: 1"=20'
Page No. 84 of 186

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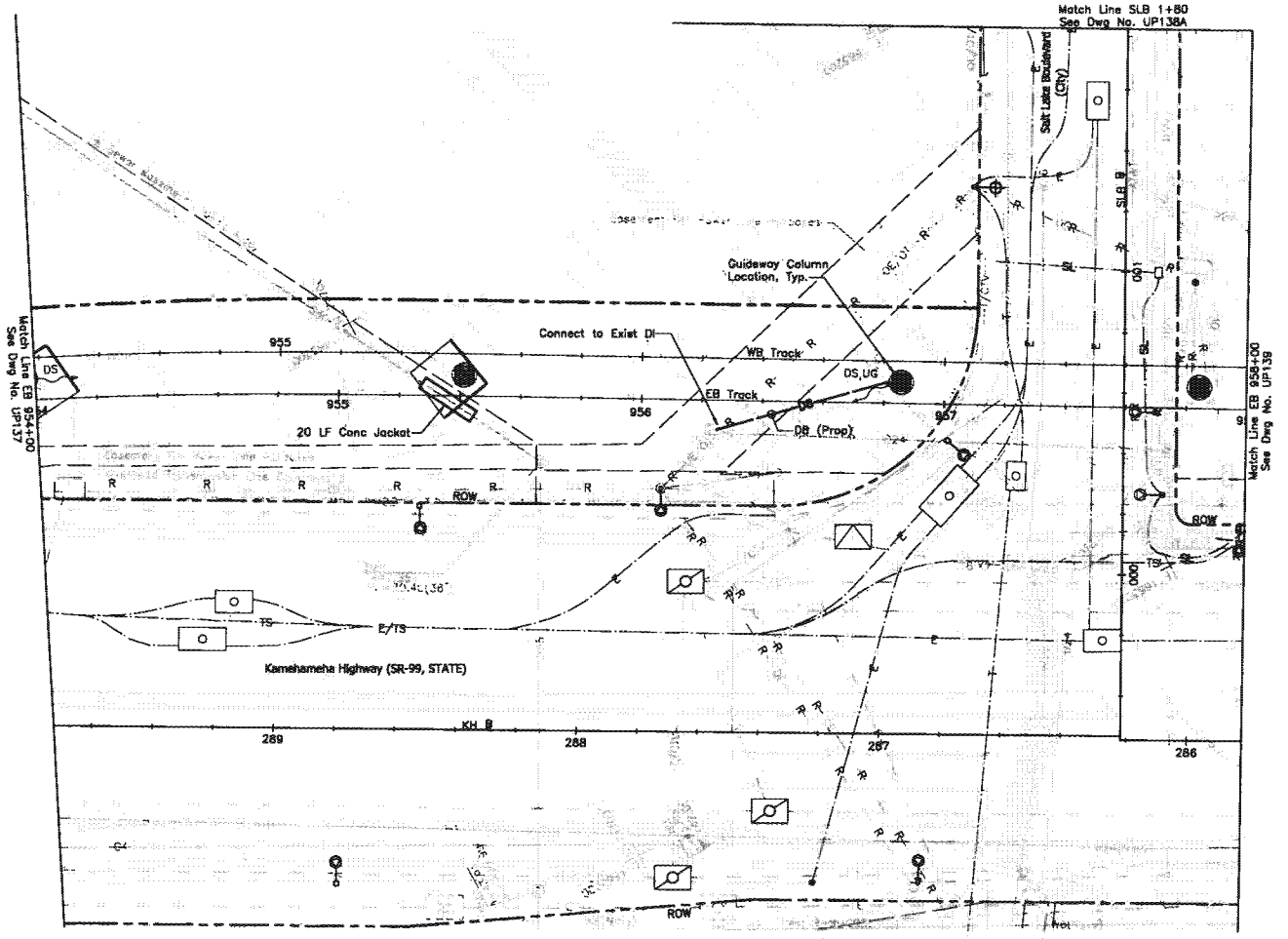

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

20' 0' 20'

Rev	By	Date	Description
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PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: G Tom
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Checked: H Andrews
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Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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Subconsultant: R. M. TOWILL CORPORATION

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UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 954+00 TO EB 958+00

Contract No.: DB-320
CADD File: KHDB-D03-UP138
Drawing No: UP138 Rev. A
Scale: 1"=20'
Page No. 85 of 186

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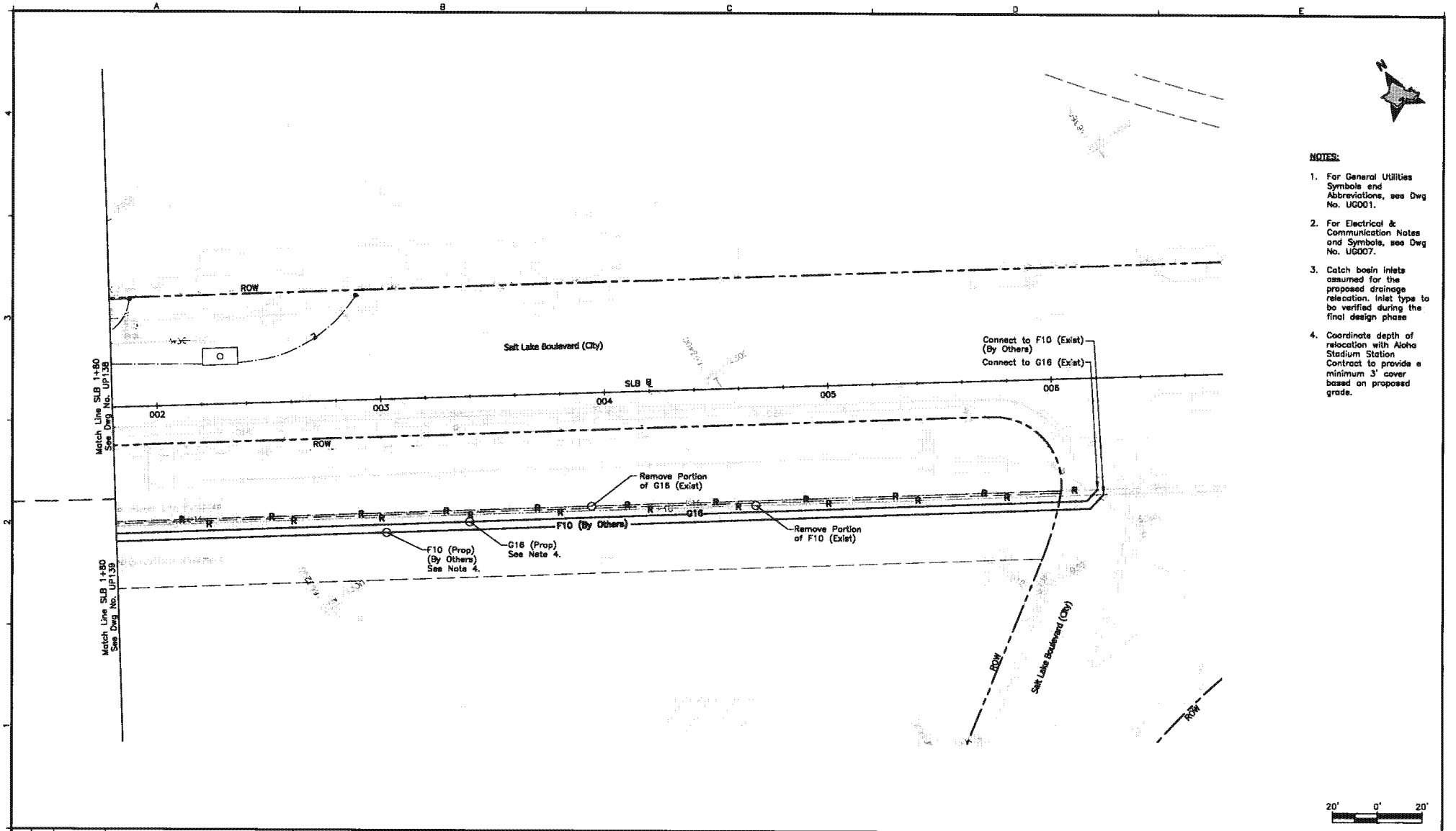

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase
4. Coordinate depth of relocation with Aloha Stadium Station Contract to provide a minimum 3' cover based on proposed grade.

Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT
NOT FOR CONSTRUCTION

Designed: G Tom
Drawn: K Tanaka
Checked: H Andrews
Approved: J Yamamoto
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PARSONS BRINCKERHOFF
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Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

SLB 1+80 TO END

Contract No.: DB-320
CADD File: KHDB-D03-UP138A
Drawing No: UP138A Rev. A
Scale: 1"=20'
Page No. 86 of 186

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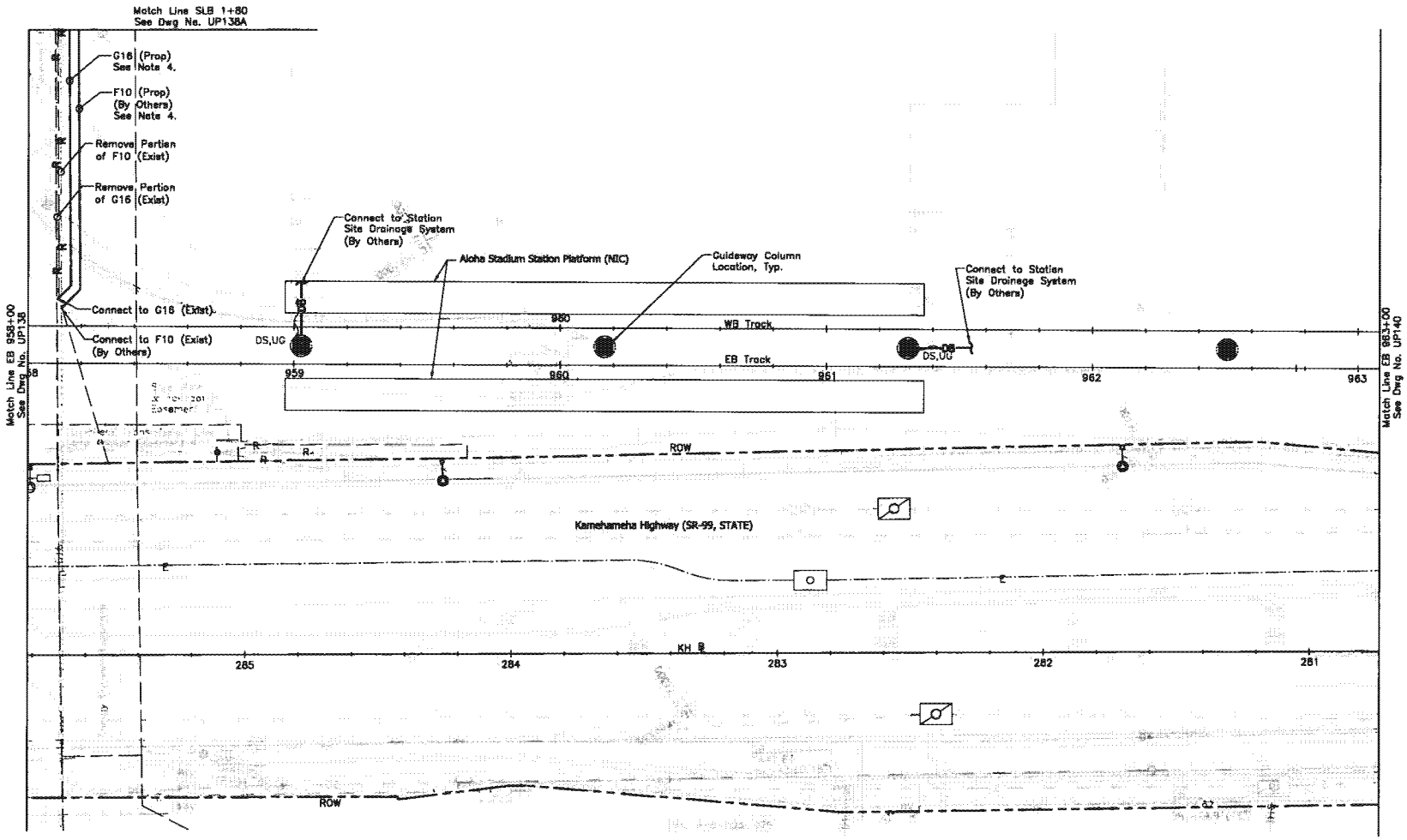

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
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20' 0' 20'

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Subconsultant: R. M. TOWILL CORPORATION

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UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 958+00 TO EB 963+00

Contract No.: DB-320
CADD File: KHDB-D03-UP139
Drawing No: UP139 Rev. A
Scale: 1"=20'
Page No. 87 of 188

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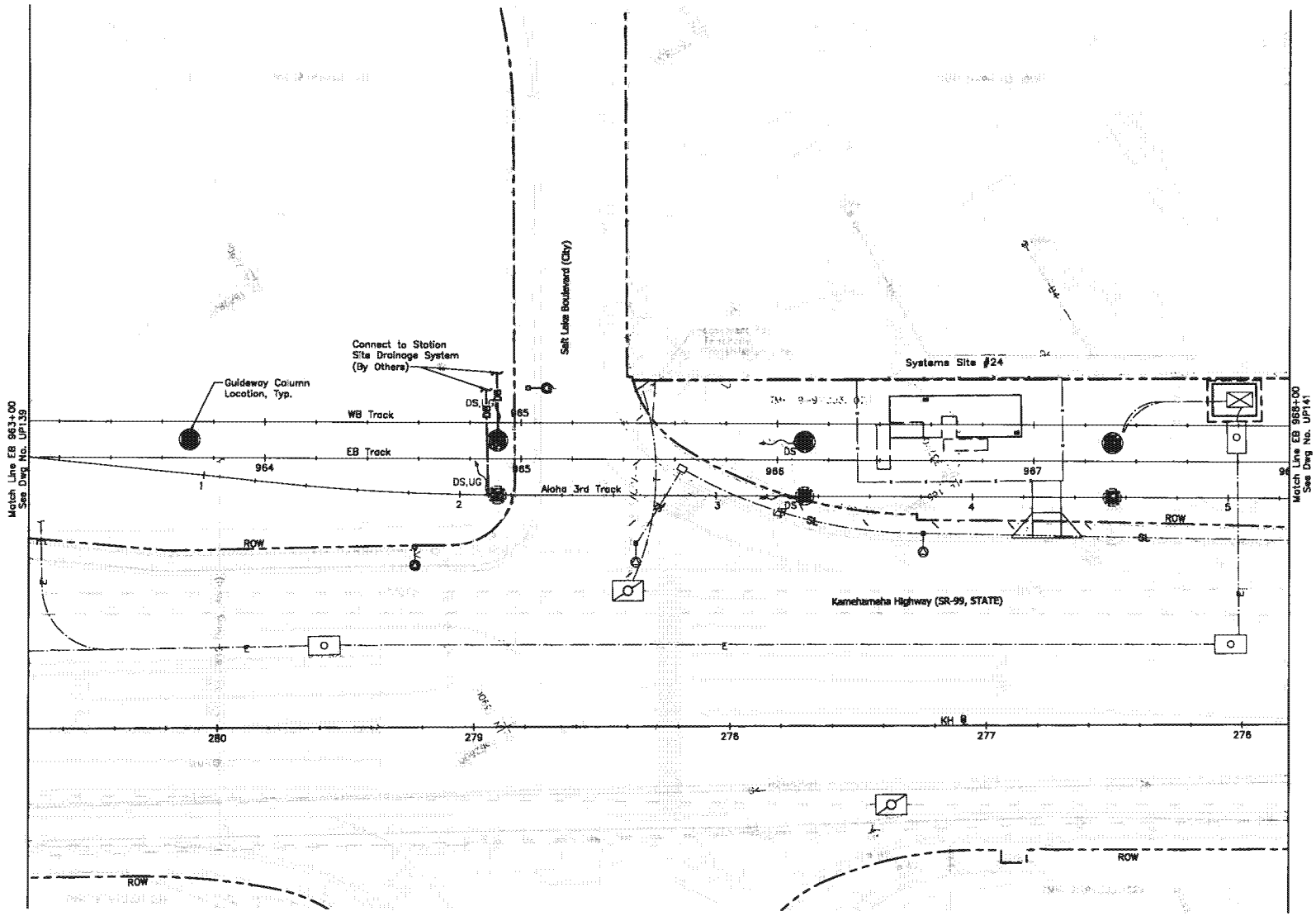

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

20' 0' 20'

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Subconsultant: R. M. TOWILL CORPORATION

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UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 963+00 TO EB 968+00

Contract No.: DB-320
CADD File: KHDB-D03-UP140
Drawing No: UP140 Rev. A
Scale: 1"=20'
Page No. 88 of 186

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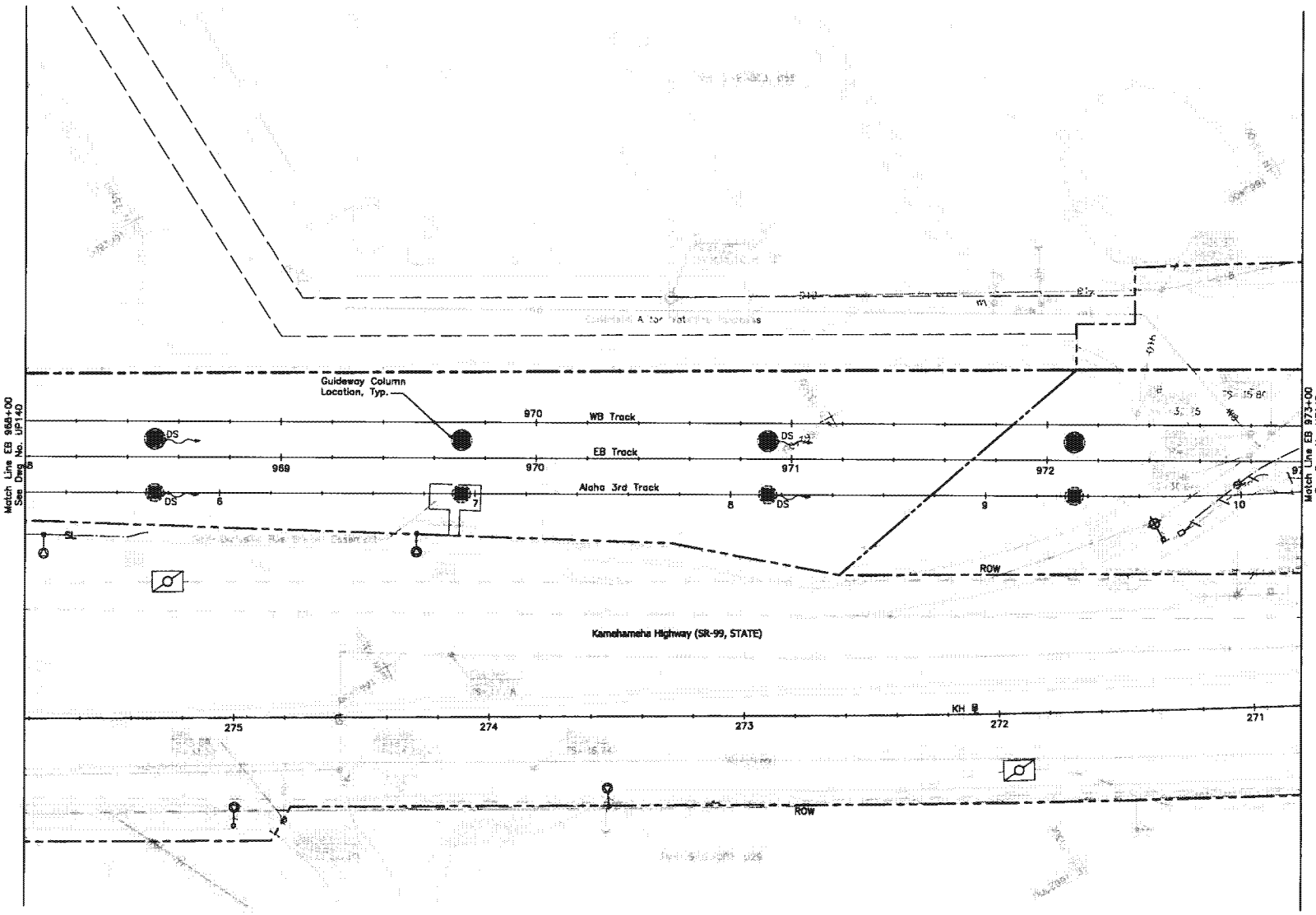

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

20' 0' 20'

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PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

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HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 968+00 TO EB 973+00

Contract No.: DB-320
CADD File: KHDB-D03-UP141
Drawing No: UP141 Rev. A
Scale: 1"=20'
Page No. 89 of 186

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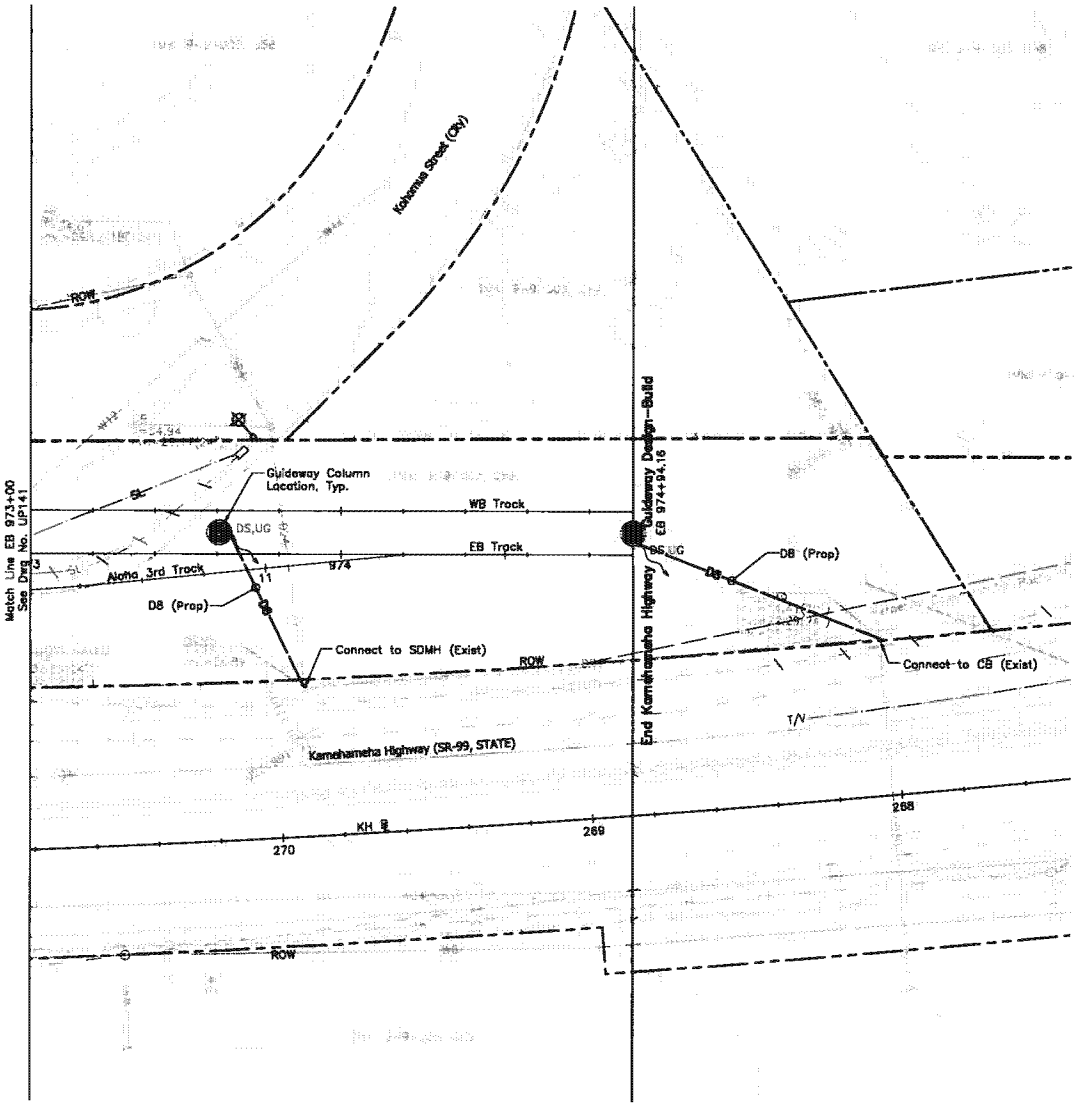

NOTES:

1. For General Utilities Symbols and Abbreviations, see Dwg No. UG001.
2. For Electrical & Communication Notes and Symbols, see Dwg No. UG007.
3. Catch basin inlets assumed for the proposed drainage relocation. Inlet type to be verified during the final design phase

20' 0' 20'

Rev	By	Date	Description
A	JY	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: G Tam
Drawn: K Tanaka
Checked: H Andrews
Approved: J Yamamoto
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 973+00 TO END

Contract No.: DB-320
CADD File: KHDB-D03-UP142
Drawing No: UP142 Rev. A
Scale: 1"=20'
Page No. 90 of 186

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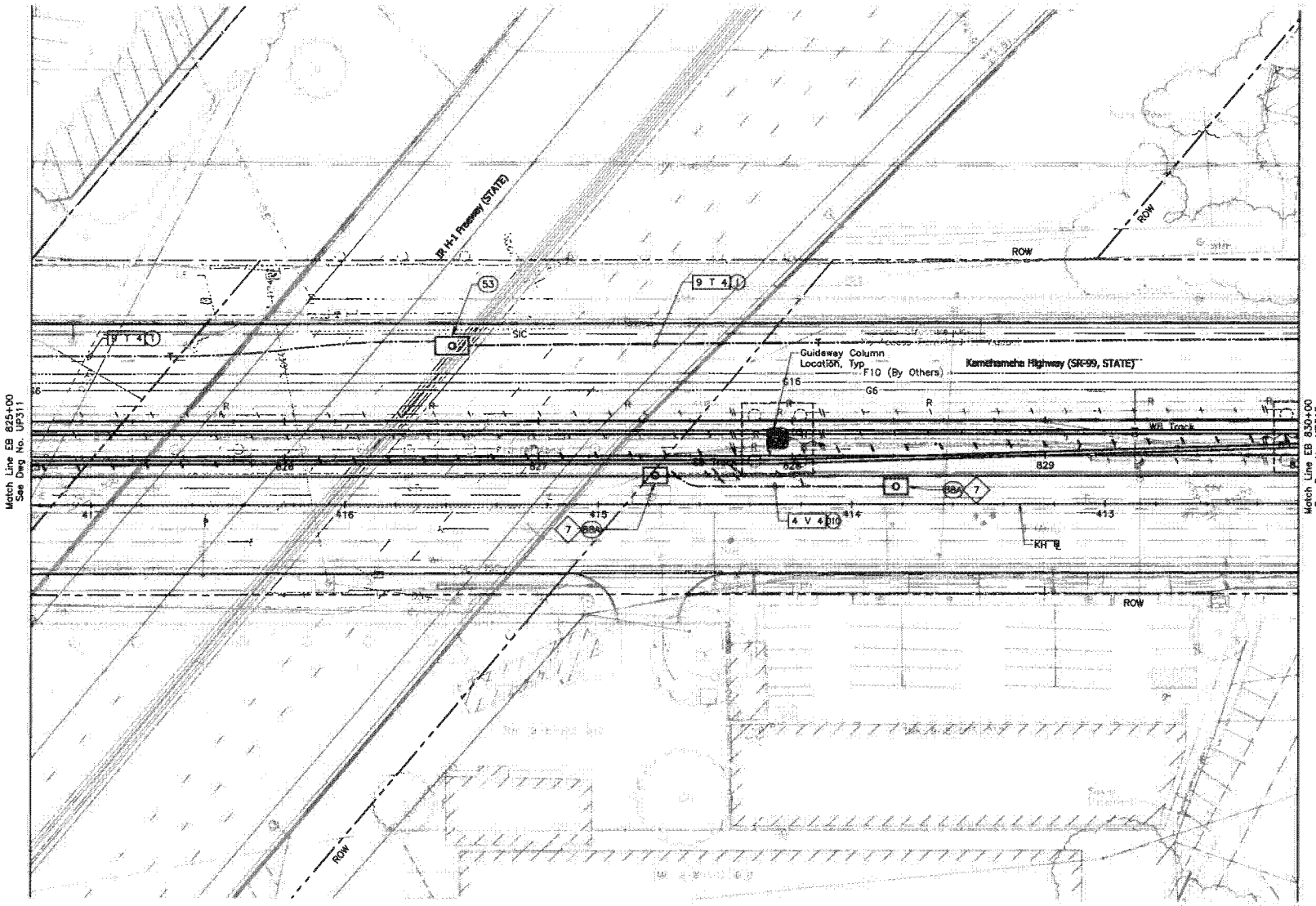

NOTES:

1a. See Dwg No. UG007 for General Notes and Symbols.

1b. Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. Coordinate the location of this future line with SIC to avoid potential conflicts. Inform the City of all coordination efforts.

7 Intercept existing duct line with new manhole, handhole, or pullbox as indicated. Demolish concrete jacket and duct within manhole, handhole, or pullbox as indicated and expose cables. Preserve cables during demolition of duct.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT
NOT FOR CONSTRUCTION

Designed: F Hirokami
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: MKengineers
285 Kalihi Street
Honolulu, Hawaii 96819
Phone: (808) 848-0803
Fax: (808) 848-0874
E-mail: info@mkengineers.com

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 825+00 TO EB 830+00

Contract No.: DB-320
CADD File: KHDB-D03-UP312
Drawing No: UP312
Rev. A
Scale: 1"=20'
Page No. 106 of 186

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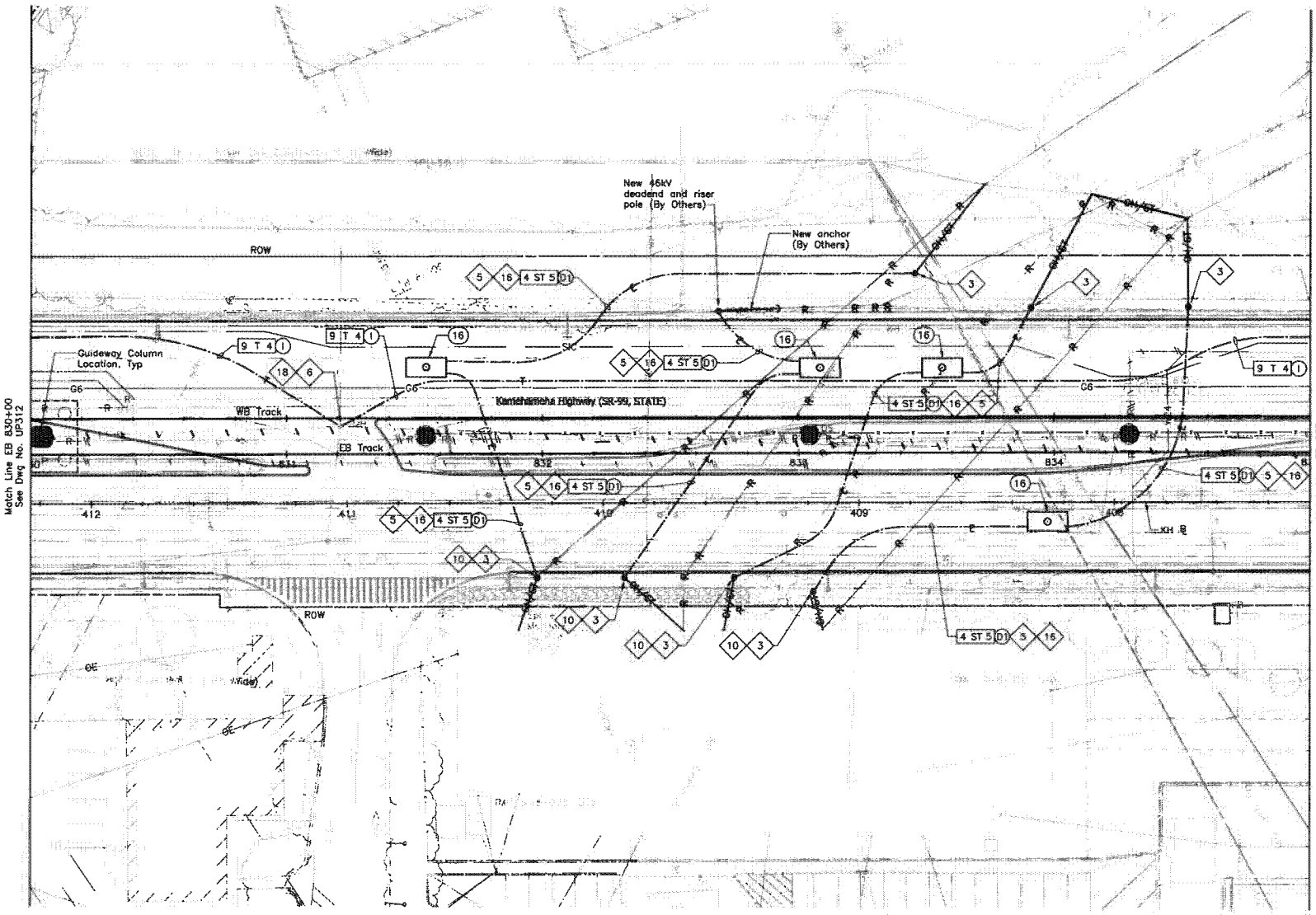

NOTES:

1a. See Dwg No. UG007 for General Notes and Symbols.

1b. Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. Coordinate the location of this future line with SIC to avoid potential conflicts. Inform the City of all coordination efforts.

3 Provide new self-sustaining metal pole (By others).

5 Provide pole riser conduits in complement indicated up to applicable location on pole.

6 Install conduits into manhole, handhole, or pullbox under applicable utility company supervision. See Detail 3/UP401.

10 Hand-dig area around proposed column/pole location to locate and expose existing utility ducts. Protect ducts during column/pole installation and restore area upon completion of column/pole installation.

16 See Detail 2/UP403.

18 Enlarge existing manhole, handhole, or pullbox as indicated.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: F Hirakami
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: MKengineers

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 830+00 TO EB 835+00

Contract No.: DB-320
CADD File: KHDB-D03-UP313
Drawing No: UP313
Rev. A
Scale: 1"=20'
Page No. 107 of 186

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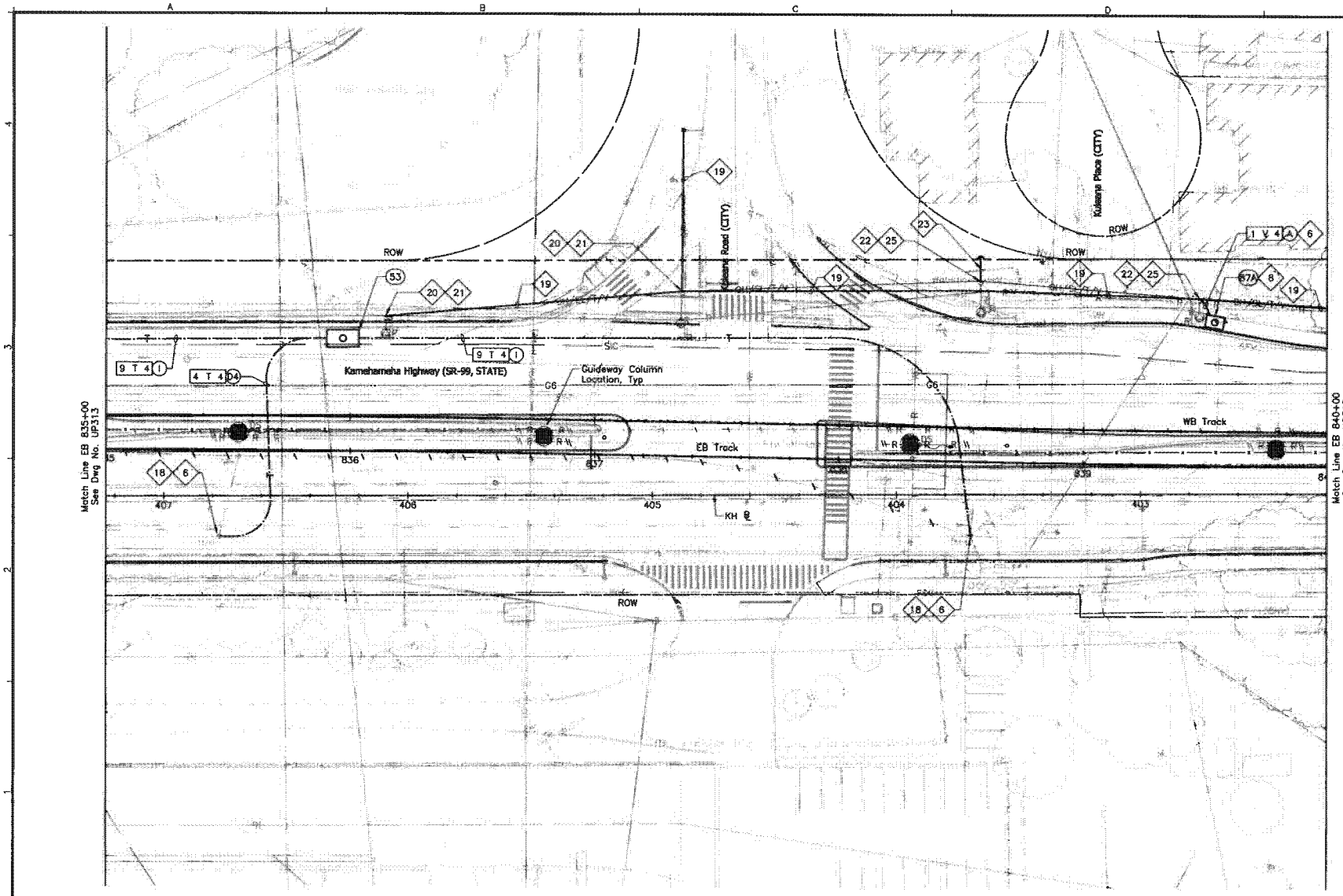

NOTES:

1a. See Dwg No. UG007 for General Notes and Symbols.

1b. Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. Coordinate the location of this future line with SIC to avoid potential conflicts. Inform the City of all coordination efforts.

5 Provide pole riser conduits in complement indicated up to applicable location on pole.

6 Install conduits into manhole, handhole, or pullbox under applicable utility company supervision. See Detail 3/UP401.

8 Replace existing handhole with new manhole. Restore walls as necessary.

18 Enlarge existing manhole, handhole, or pullbox as indicated.

19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

22 Provide new wood joint pole. See Detail 1/UP407.

23 Provide new anchor. See Detail 3/UP407.

25 Provide new highway lighting fixture and mount on new wood pole, and make connection to street lighting circuit. If power source is underground, provide conduit riser with weather head at street light level and make connections to lighting fixtures. Poles shall be designed and constructed to support telecom and related overhead cables. Coordinate design and construction with appropriate utility company.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: F Hirakami
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
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Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 - Honolulu, HI 96813

Subconsultant: MKengineers

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UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 835+00 TO EB 840+00

Contract No.: DB-320
CADD File: KHDB-D03-UP314
Drawing No: UP314 Rev. A
Scale: 1"=20'
Page No. 108 of 186

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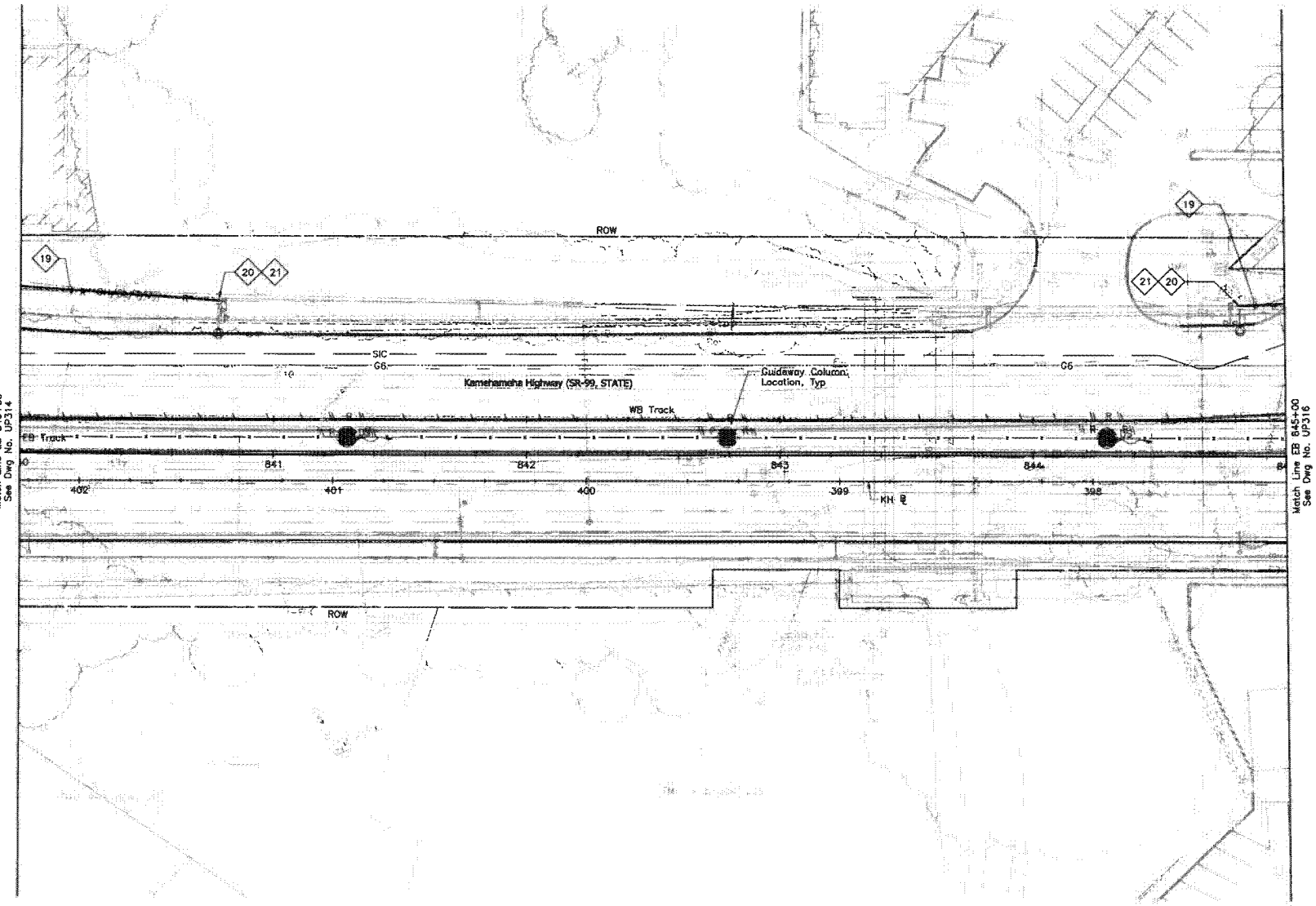


NOTES:

1a. See Dwg No. UG007 for General Notes and Symbols.

1b. Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. Coordinate the location of this future line with SIC to avoid potential conflicts. Inform the City of all coordination efforts.

19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: F Hirakami
Drawn: D Saito
Checked: P Uyede
Approved: P Uyeda
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: MKengineers
226 Kalihi Street
Honolulu, Hawaii 96819
Phone: (808) 845-8822
Fax: (808) 848-0874
E-Mail: info@mkengineers.com

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

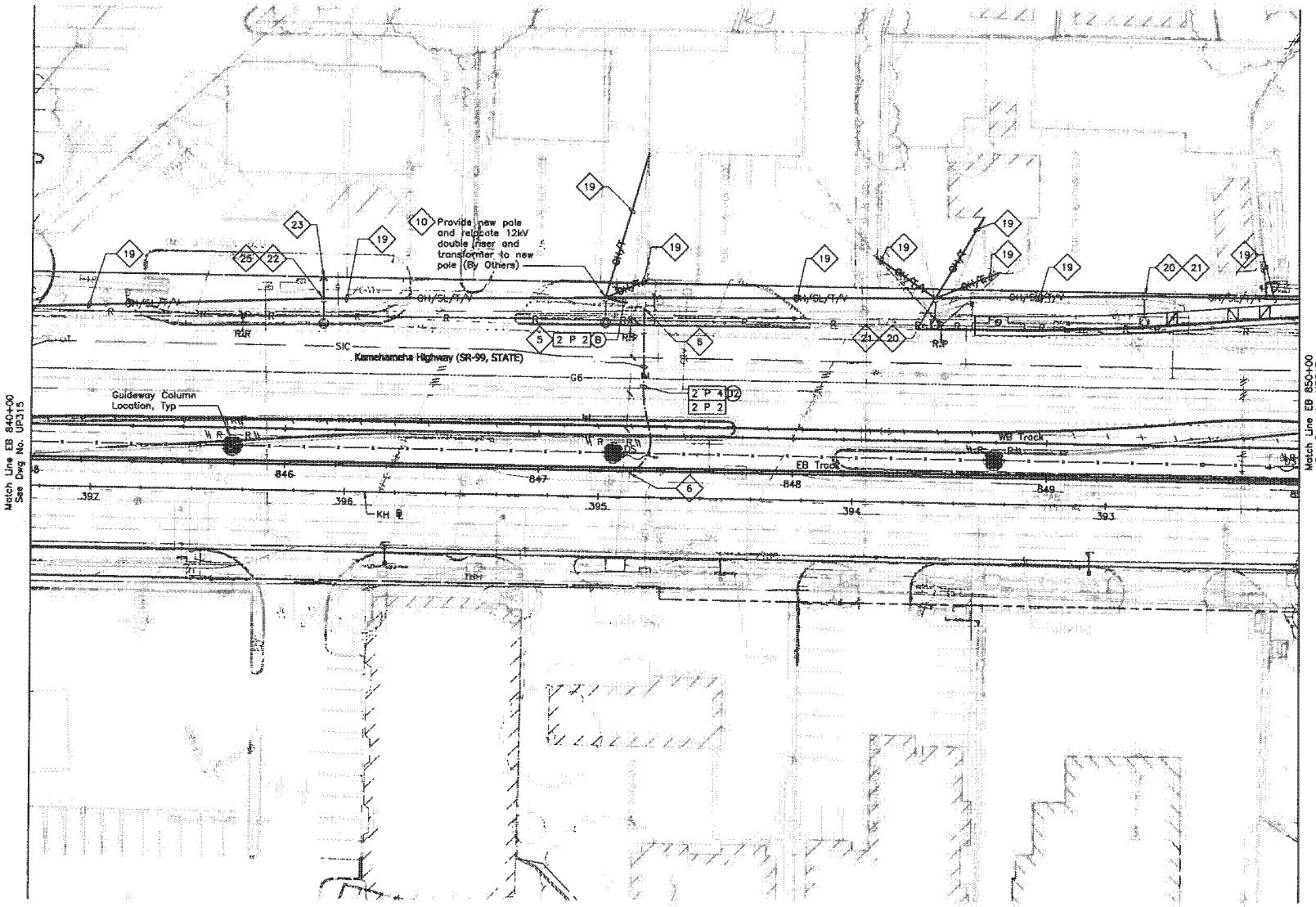
KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 840+00 TO EB 845+00

Contract No.: DB-320
CADD File: KHDB-D03-UP315
Drawing No: UP315
Rev. A
Scale: 1"=20'
Page No. 109 of 186

AR00077900



NOTES:

1a. See Dwg No. UG007 for General Notes and Symbols.

1b. Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. Coordinate the location of this future line with SIC to avoid potential conflicts. Inform the City of all coordination efforts.

5 Provide pole riser conduits in complement indicated up to applicable location on pole.

6 Install conduits into manhole, handhole, or pullbox under applicable utility company supervision. See Detail 3/UP401.

10 Hand-dig area around proposed column/pole location to locate and expose existing utility ducts. Protect ducts during column/pole installation and restore area upon completion of column/pole installation.

19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

22 Provide new wood joint pole. See Detail 1/UP407.

23 Provide new anchor. See Detail 3/UP407.

25 Provide new highway lighting fixture and mount on new wood pole, and make connection to street lighting circuit. If power source is underground, provide conduit riser with weather head at street light level and make connections to lighting fixtures. Poles shall be designed and constructed to support telecom and related overhead cables. Coordinate design and construction with appropriate utility company.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: F Hirakami
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 845+00 TO EB 850+00

Contract No.: DB-320
CADD File: KHDB-D03-UP316
Drawing No: UP316
Rev. A
Scale: 1"=20'
Page No. 110 of 186

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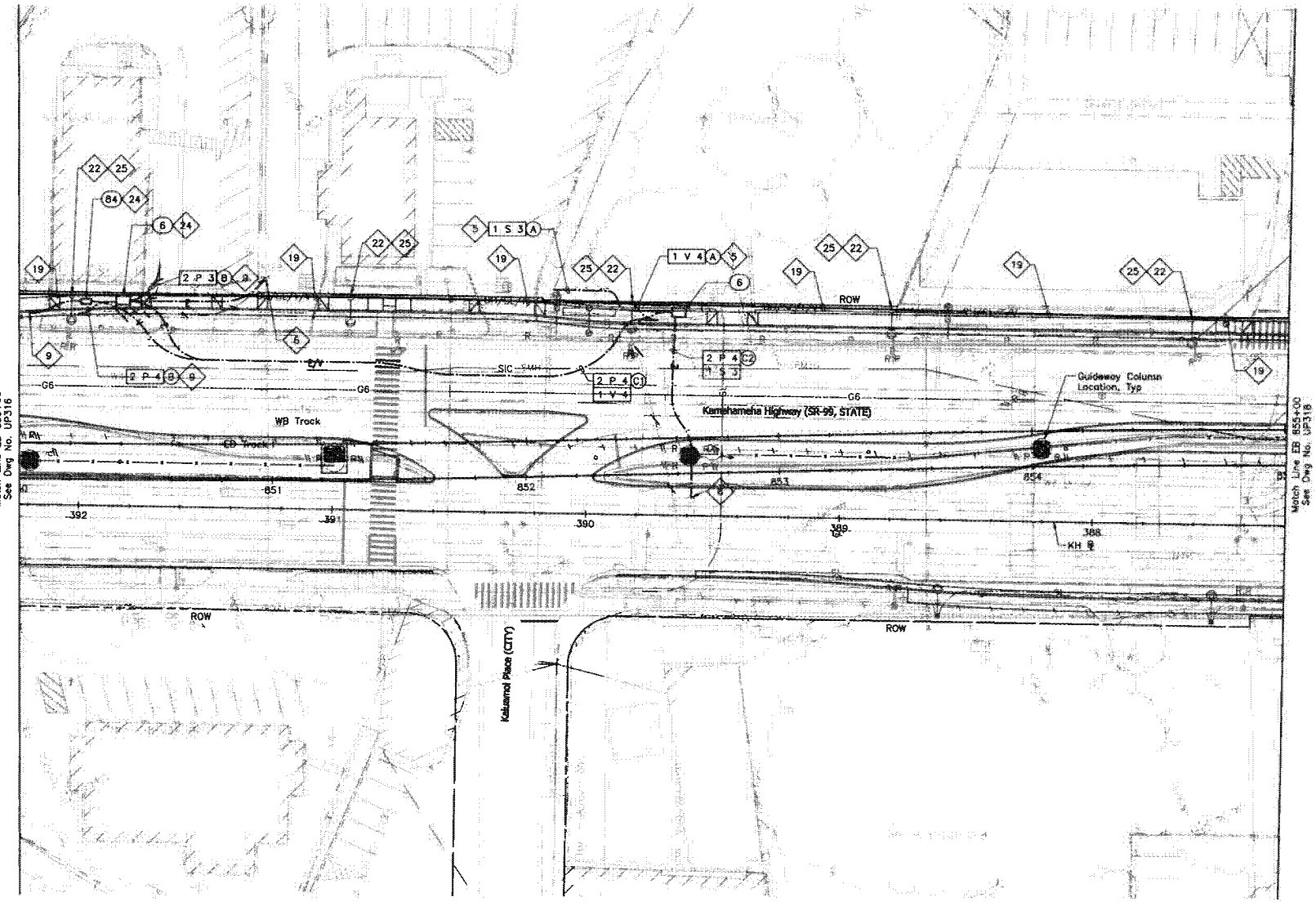

N

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6 Install conduits into manhole, handhole, or pullbox under applicable utility company supervision. See Detail 3/UP401.

9 Intercept existing duct line with new duct line under applicable utility company supervision.

19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

22 Provide new wood joint pole. See Detail 1/UP407.

24 Re-route existing ducts and cables to new manhole or handhole, and demolish existing handhole.

25 Provide new highway lighting fixture and mount on new wood pole, and make connection to street lighting circuit. If power source is underground, provide conduit riser with weather head at street light level and make connections to lighting fixtures. Poles shall be designed and constructed to support telecom and related overhead cables. Coordinate design and construction with appropriate utility company.

20' 0' 20'

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UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 850+00 TO EB 855+00

Contract No.: DB-320
CADD File: KHDB-D03-UP317
Drawing No: UP317
Rev. A
Scale: 1"=20'
Page No. 111 of 186

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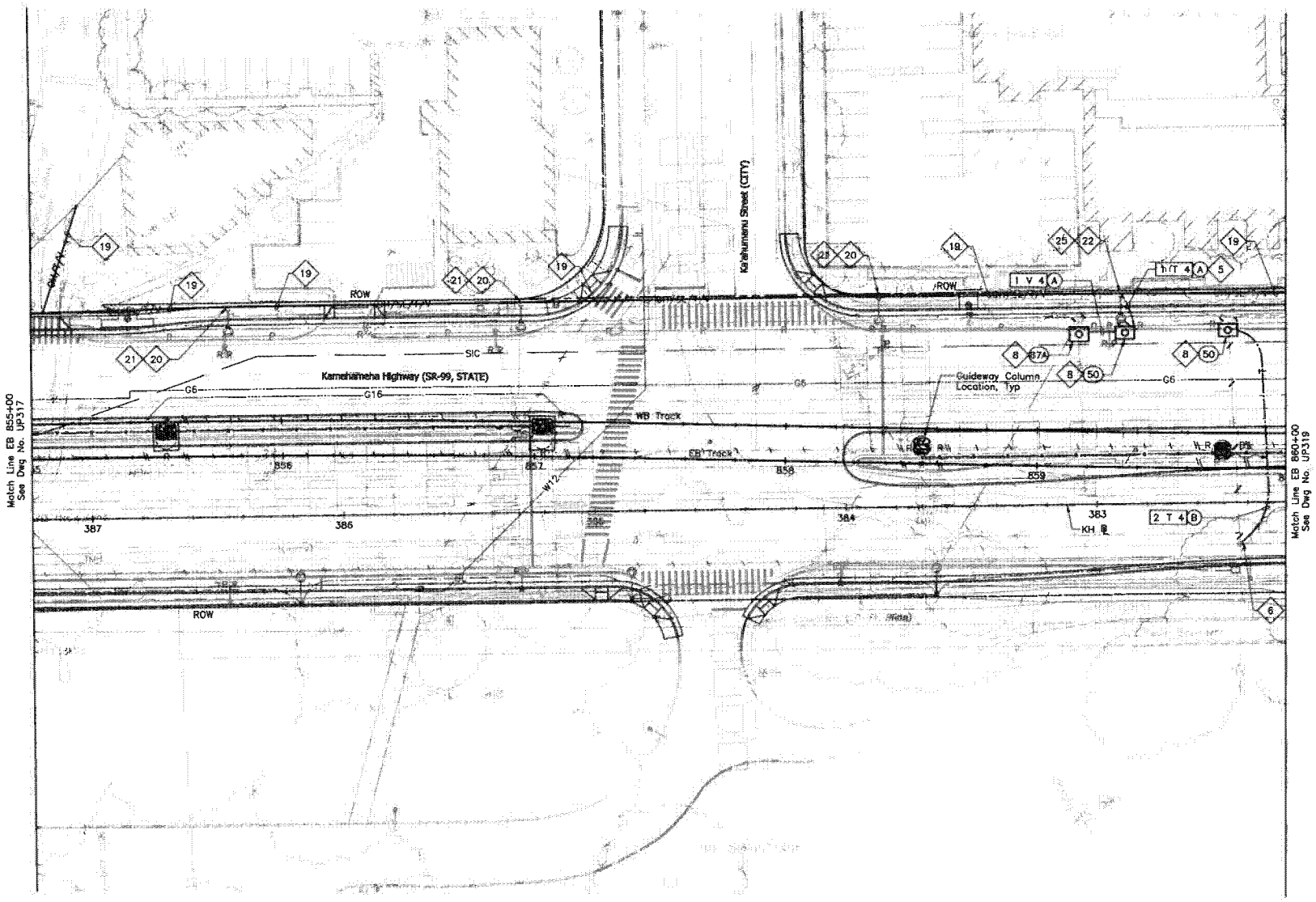

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8 Replace existing handhole with new manhole. Restore walls as necessary.

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20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

22 Provide new wood joint pole. See Detail 1/UP407.

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UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 855+00 TO EB 860+00

Contract No.: DB-320
CADD File: KHDB-D03-UP318
Drawing No: UP318 Rev. A
Scale: 1"=20'
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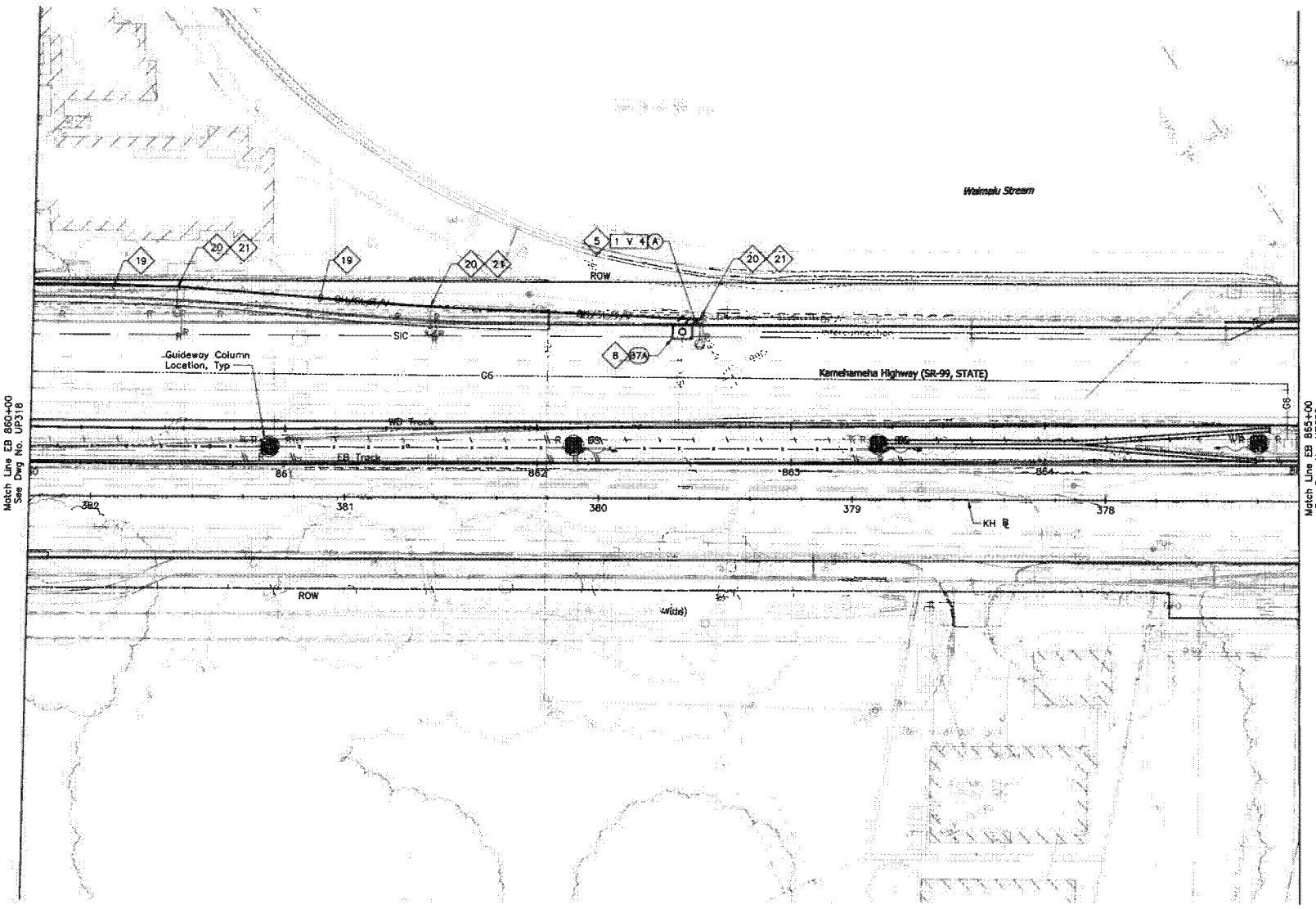

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20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

20' 0' 20'

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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Subconsultant: MKengineers

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 860+00 TO EB 865+00

Contract No.: DB-320
CADD File: KHDB-D03-UP319
Drawing No: UP319 Rev. A
Scale: 1"=20'
Page No. 113 of 186

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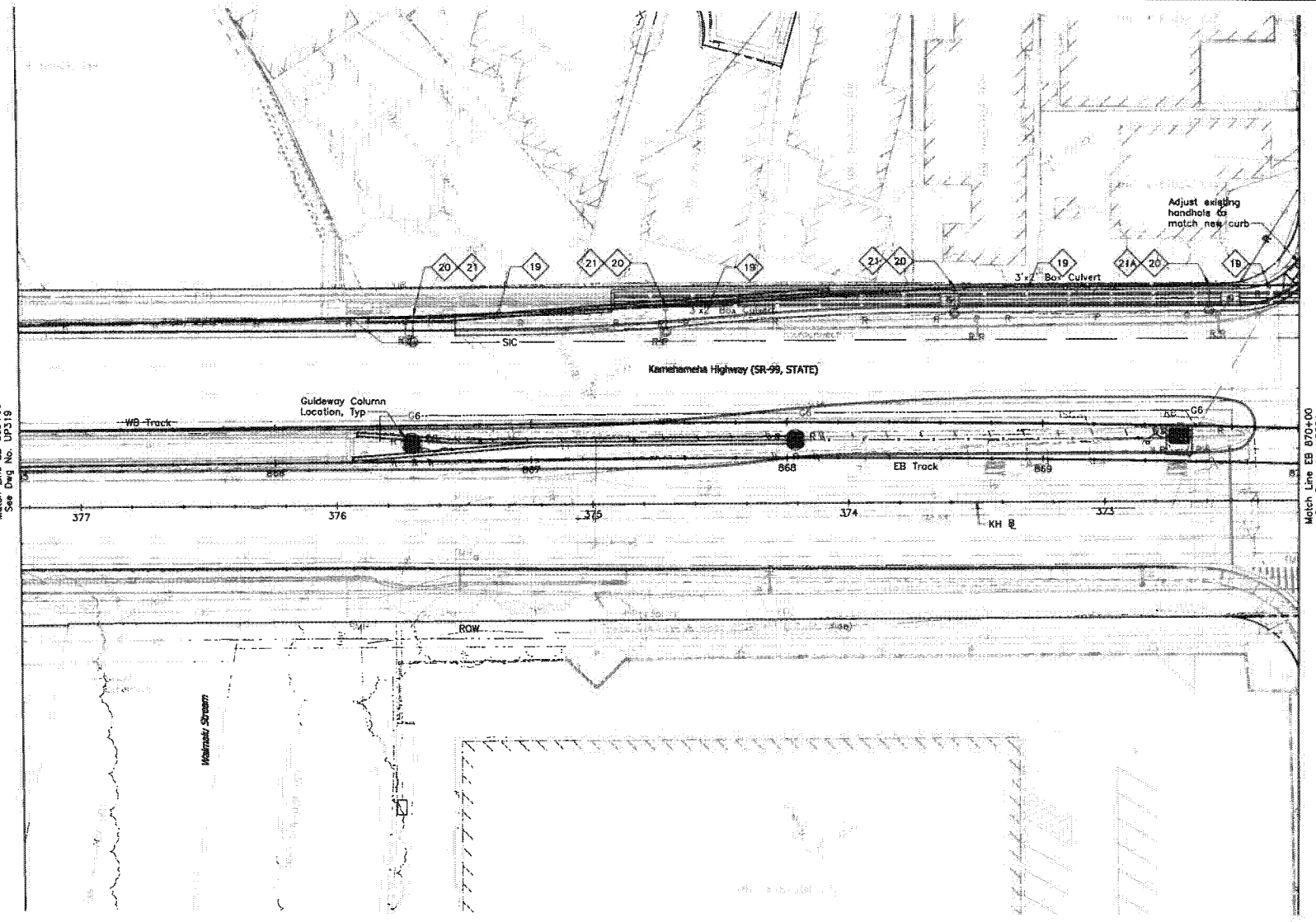

NOTES:

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20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

21A Provide new self-sustaining metallic joint pole. (By Others).

20' 0' 20'

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Date: 03-19-10

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 865+00 TO EB 870+00

Contract No.: DB-320
CADD File: KHDB-D03-UP320
Drawing No: UP320
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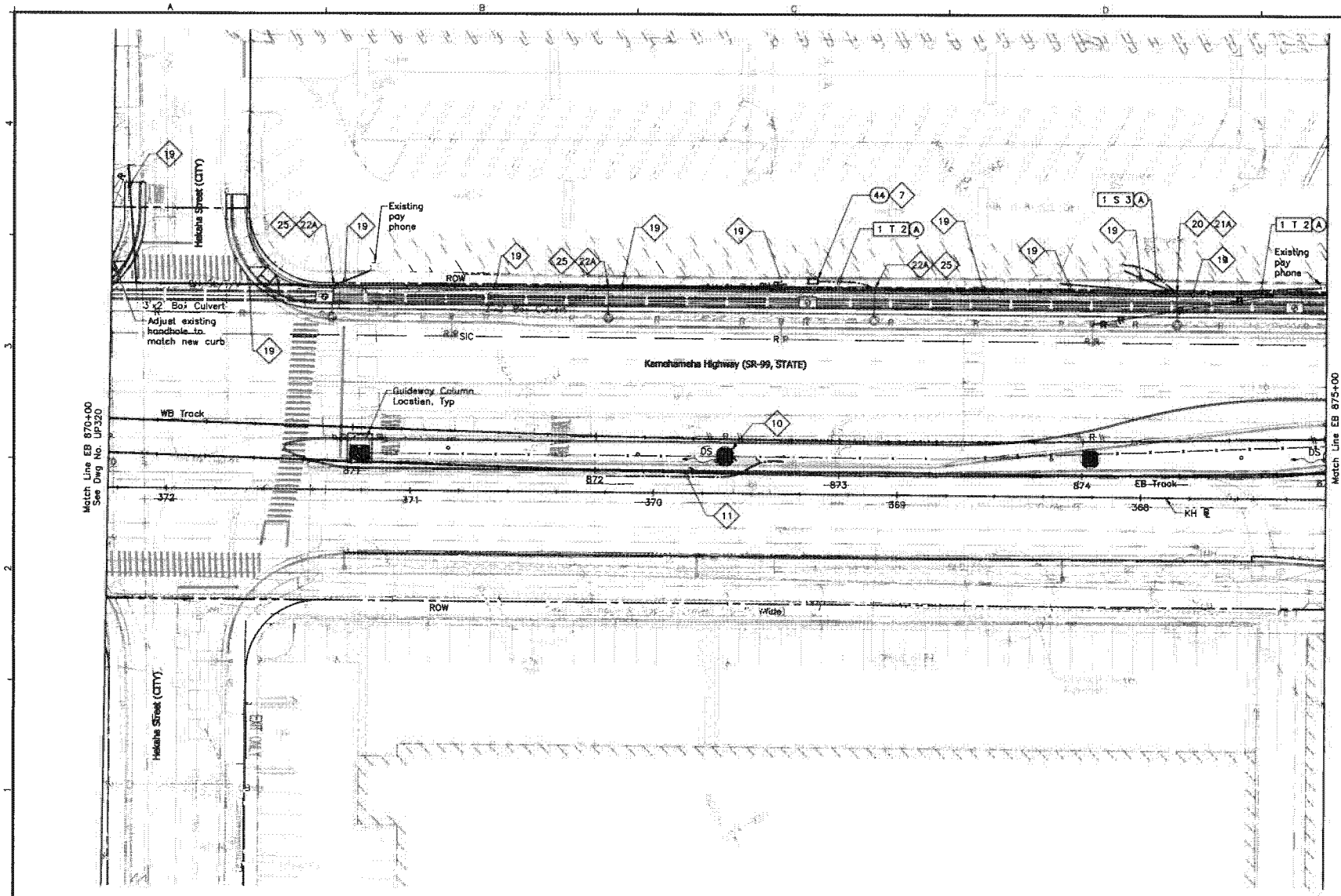
AR00077905



N

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7 Intercept existing duct line with new manhole, handhole, or pullbox as indicated. Demolish concrete jacket and duct within manhole, handhole, or pullbox as indicated and expose cables. Preserve cables during demolition of duct.

10 Hand-dig area around proposed column/pole location to locate and expose existing utility ducts. Protect ducts during column/pole installation and restore area upon completion of column/pole installation.

11 Coordinate with utility owner to re-route conduits and cables around guideway column.

19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21A Provide new self-sustaining metallic joint pole. (By Others).

22A Provide new wood joint pole. (By Others).

25 Provide new highway lighting fixture and mount on new wood pole, and make connection to street lighting circuit. If power source is underground, provide conduit riser with weather head at street light level and make connections to lighting fixtures. Poles shall be designed and constructed to support telecom and related overhead cables. Coordinate design and construction with appropriate utility company.

20' 0' 20'

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 870+00 TO EB 875+00

Contract No.: DB-320
CADD File: KHDB-D03-UP321
Drawing No: UP321
Rev. A
Scale: 1"=20'
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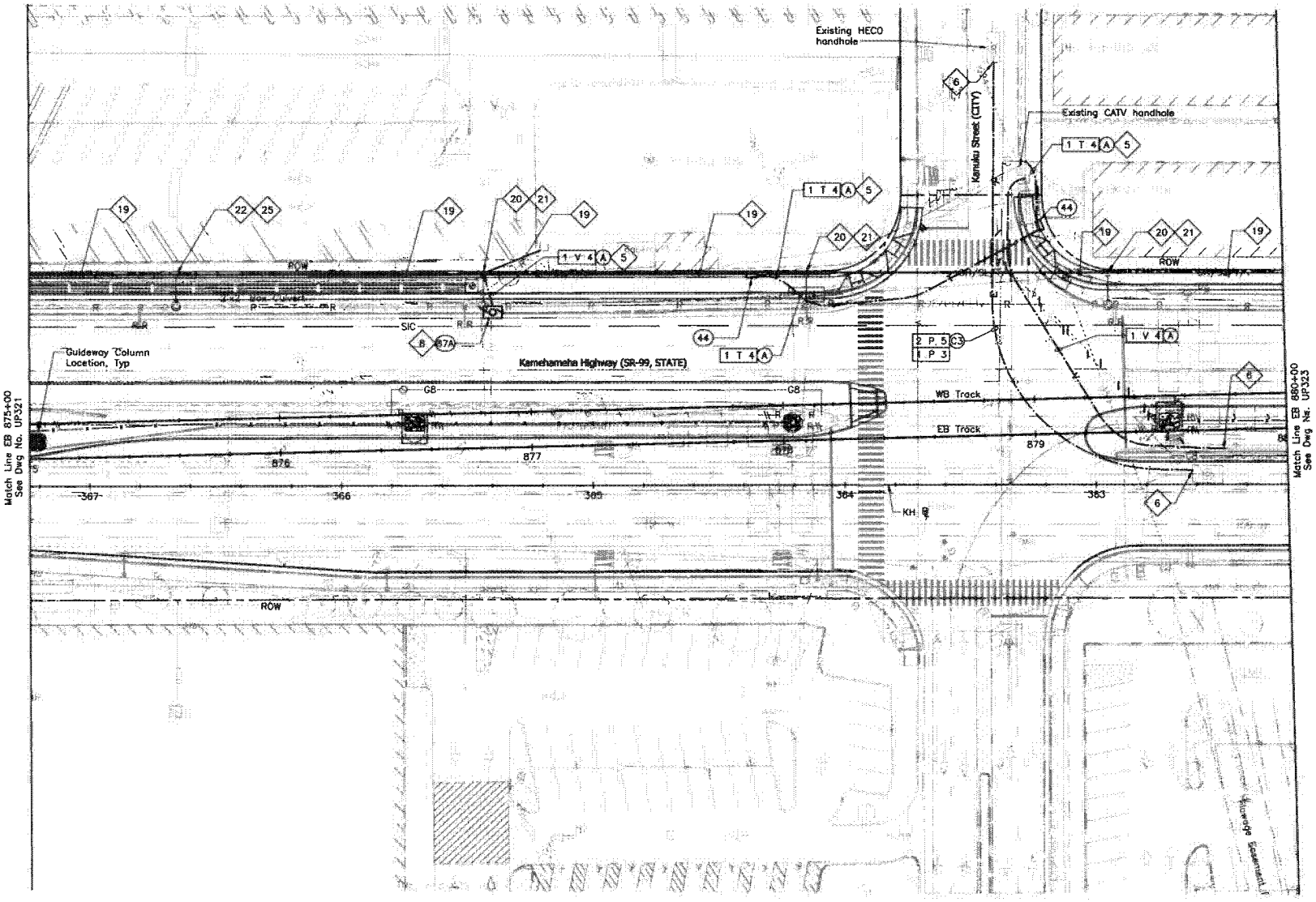

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5 Provide pole riser conduits in complement indicated up to applicable location on pole.

6 Install conduits into manhole, handhole, or pullbox under applicable utility company supervision. See Detail 3/UP401.

8 Replace existing handhole with new manhole. Restore walls as necessary.

9 Intercept existing duct line with new duct line under applicable utility company supervision.

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19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

22 Provide new wood joint pole. See Detail 1/UP407.

25 Provide new highway lighting fixture and mount on new wood pole, and make connection to street lighting circuit. If power source is underground, provide conduit riser with weather head at street light level and make connections to lighting fixtures. Poles shall be designed and constructed to support telecom and related overhead cables. Coordinate design and construction with appropriate utility company.

20' 0' 20'

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

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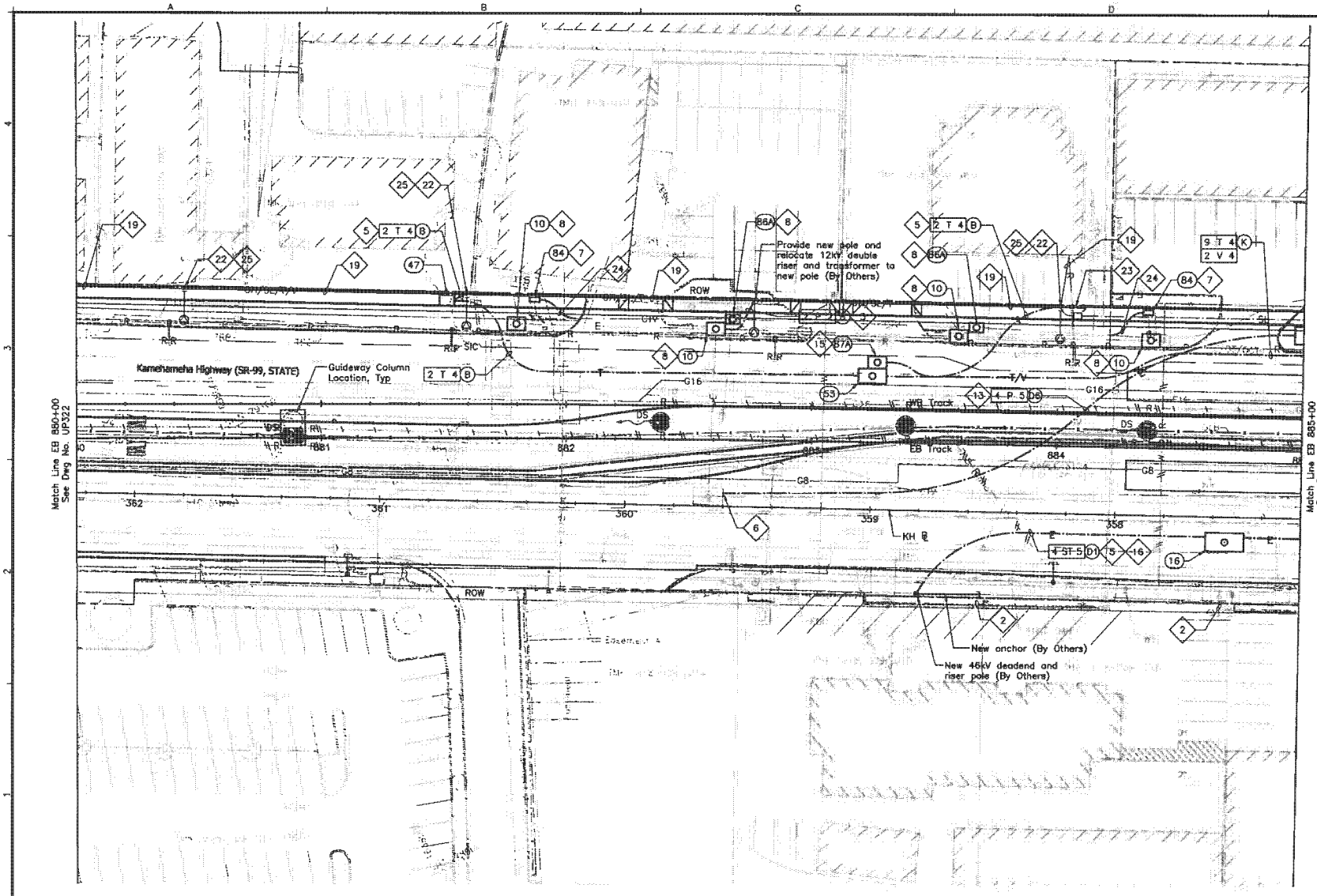
KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN ELECTRICAL & COMMUNICATIONS

EB 875+00 TO EB 880+00

Contract No.: DB-320
CADD File: KHDB-D03-UP322
Drawing No: UP322
Rev. A
Scale: 1"=20'
Page No. 116 of 186

AR00077907



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2 Remove 46kV conductors only (By Others). 138kV conductors to remain.

5 Provide pole riser conduits in complement indicated up to applicable location on pole.

6 Install conduits into manhole, handhole, or pullbox under applicable utility company supervision. See Detail 3/UP401.

7 Intercept existing duct line with new manhole, handhole, or pullbox as indicated. Demolish concrete jacket and duct within manhole, handhole, or pullbox as indicated and expose cables. Preserve cables during demolition of duct.

8 Replace existing handhole with new manhole. Restore walls as necessary.

13 Preliminary new HECO service design only; coordinate with HECO for final plans.

15 Provide 1-4" sleeve between CATV handhole / manhole and HT handhole / manhole.

16 See Detail 2/UP403.

19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

22 Provide new wood joint pole. See Detail 1/UP407.

23 Provide new anchor. See Detail 3/UP407.

24 Re-route existing ducts and cables to new manhole or handhole, and demolish existing handhole.

25 Provide new highway lighting fixture and mount on new wood pole, and make connection to street lighting circuit. If power source is underground, provide conduit riser with weather head at street light level and make connections to lighting fixtures. Poles shall be designed and constructed to support telecom and related overhead cables. Coordinate design and construction with appropriate utility company.

20' 0' 20'

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN ELECTRICAL & COMMUNICATIONS

EB 880+00 TO EB 885+00

Contract No.: DB-320
CADD File: KHDB-D03-UP323
Drawing No: UP323 Rev. A
Scale: 1"=20'
Page No. 117 of 186

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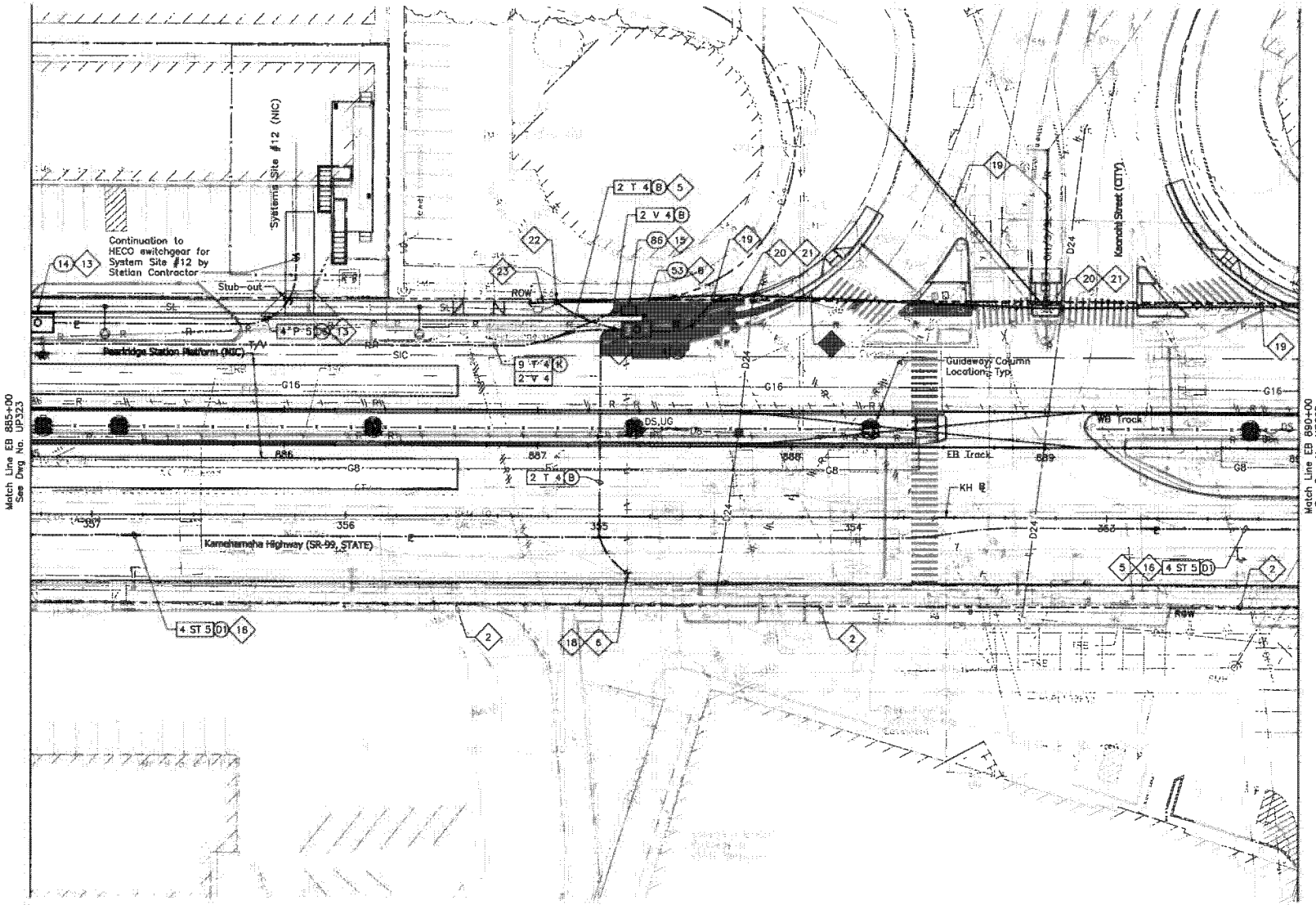

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8 Replace existing handhole with new manhole. Restore walls as necessary.

13 Preliminary new HECO service design only; coordinate with HECO for final plans.

15 Provide 1-4" sleeve between CATV handhole / manhole and HT handhole / manhole.

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18 Enlarge existing manhole, handhole, or pullbox as indicated.

19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

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20' 0' 20'

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UTILITY RELOCATION PLAN ELECTRICAL & COMMUNICATIONS

EB 885+00 TO EB 890+00

Contract No.: DB-320
CADD File: KHDB-D03-UP324
Drawing No.: UP324 Rev. A
Scale: 1"=20'
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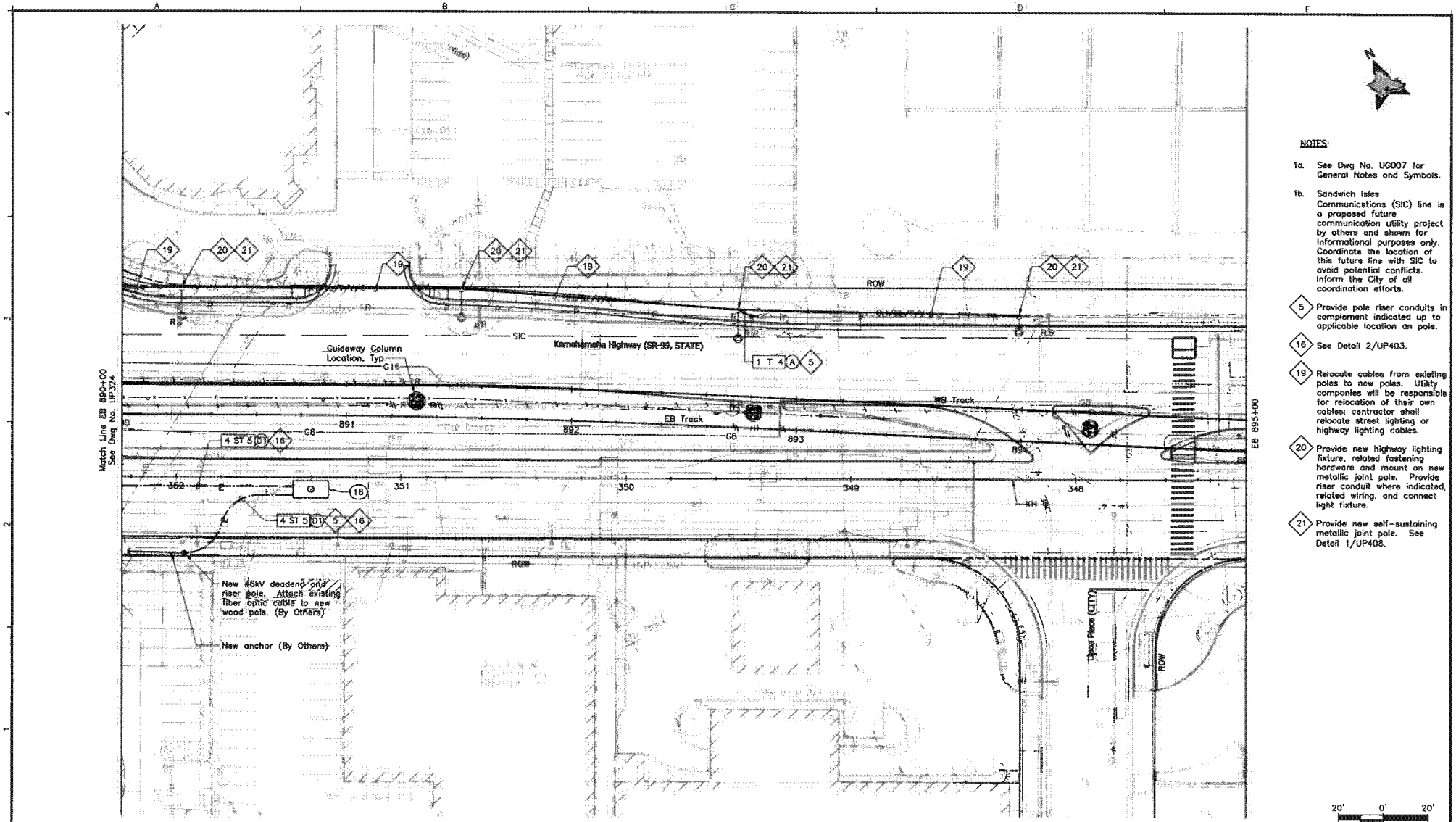

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21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

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UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 890+00 TO EB 895+00

Contract No.: DB-320
CADD File: KHDB-D03-UP325
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Rev. A
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Page No. 119 of 186

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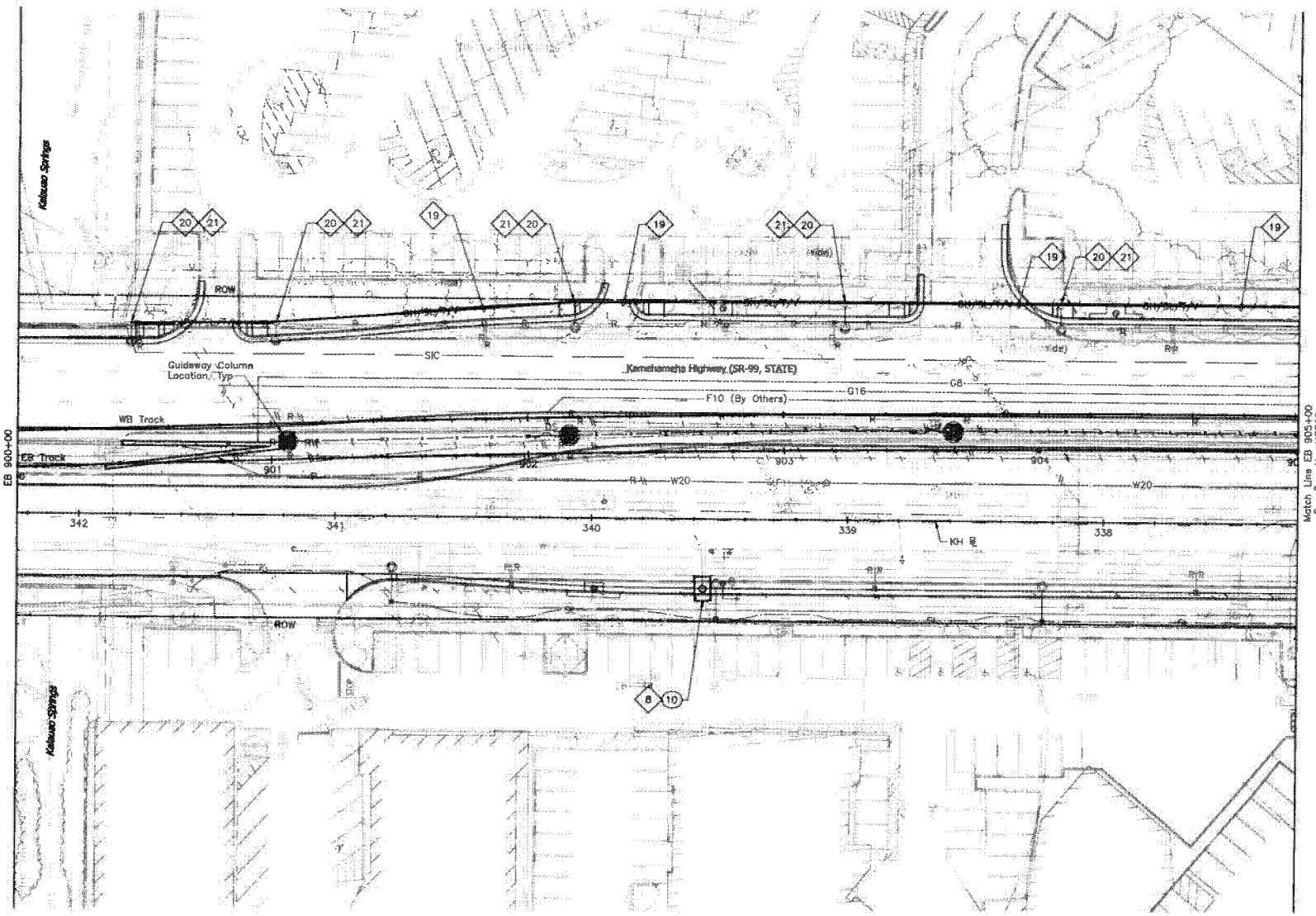

NOTES:

1a. See Dwg No. UG007 for General Notes and Symbols.

1b. Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. Coordinate the location of this future line with SIC to avoid potential conflicts. Inform the City of all coordination efforts.

8 Replace existing handhole with new manhole. Restore walls as necessary.

19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: F. Hirakami
Drawn: D. Saito
Checked: P. Uyeda
Approved: P. Uyeda
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: MKengineers

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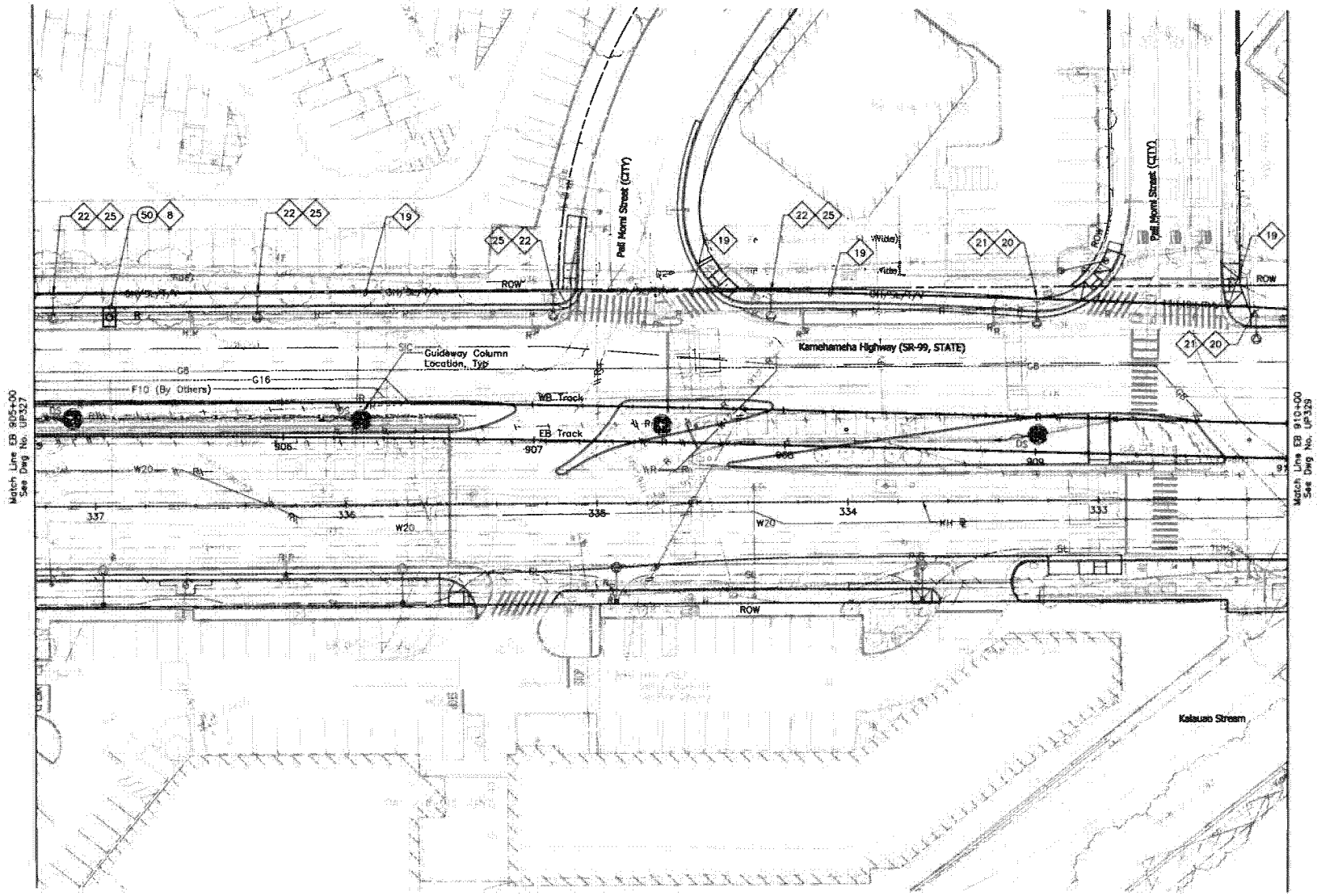
KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN ELECTRICAL & COMMUNICATIONS

EB 900+00 TO EB 905+00

Contract No.: DB-320
CADD File: KHDB-D03-UP327
Drawing No: UP327
Rev. A
Scale: 1"=20'
Page No. 120 of 186

AR00077911



NOTES:

1a. See Dwg No. UG007 for General Notes and Symbols.

1b. Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. Coordinate the location of this future line with SIC to avoid potential conflicts. Inform the City of all coordination efforts.

8 Replace existing handhole with new manhole. Restore walls as necessary.

19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new wood joint pole. See Detail 1/UP407.

22 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

25 Provide new highway lighting fixture and mount on new wood pole, and make connection to street lighting circuit. If power source is underground, provide conduit riser with weather head at street light level and make connections to lighting fixtures. Poles shall be designed and constructed to support telecom and related overhead cables. Coordinate design and construction with appropriate utility company.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Preposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: F Hirakami
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: MKengineers

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN ELECTRICAL & COMMUNICATIONS

EB 905+00 TO EB 910+00

Contract No.: DB-320
CADD File: KHDB-D03-UP328
Drawing No: UP328 Rev. A
Scale: 1"=20'
Page No. 121 of 186

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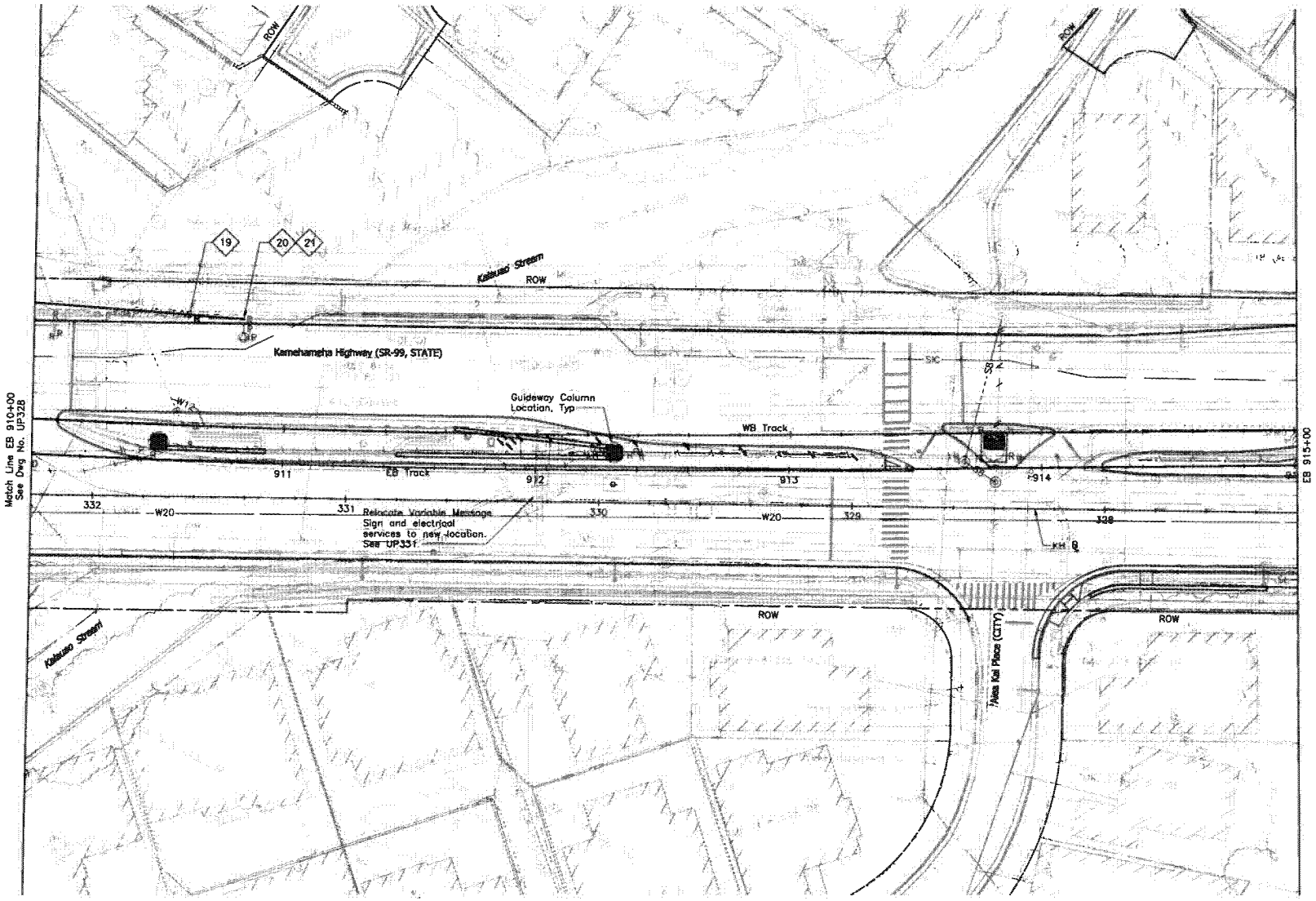

N

NOTES:

1a. See Dwg No. UG007 for General Notes and Symbols.

1b. Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. Coordinate the location of this future line with SIC to avoid potential conflicts. Inform the City of all coordination efforts.

19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: P. Hirakami
Drawn: D. Saito
Checked: P. Uyeda
Approved: P. Uyeda
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN ELECTRICAL & COMMUNICATIONS

EB 910+00 TO EB 915+00

Contract No.: DB-320
CADD File: KHDB-D03-UP329
Drawing No: UP329
Rev. A
Scale: 1"=20'
Page No. 122 of 186

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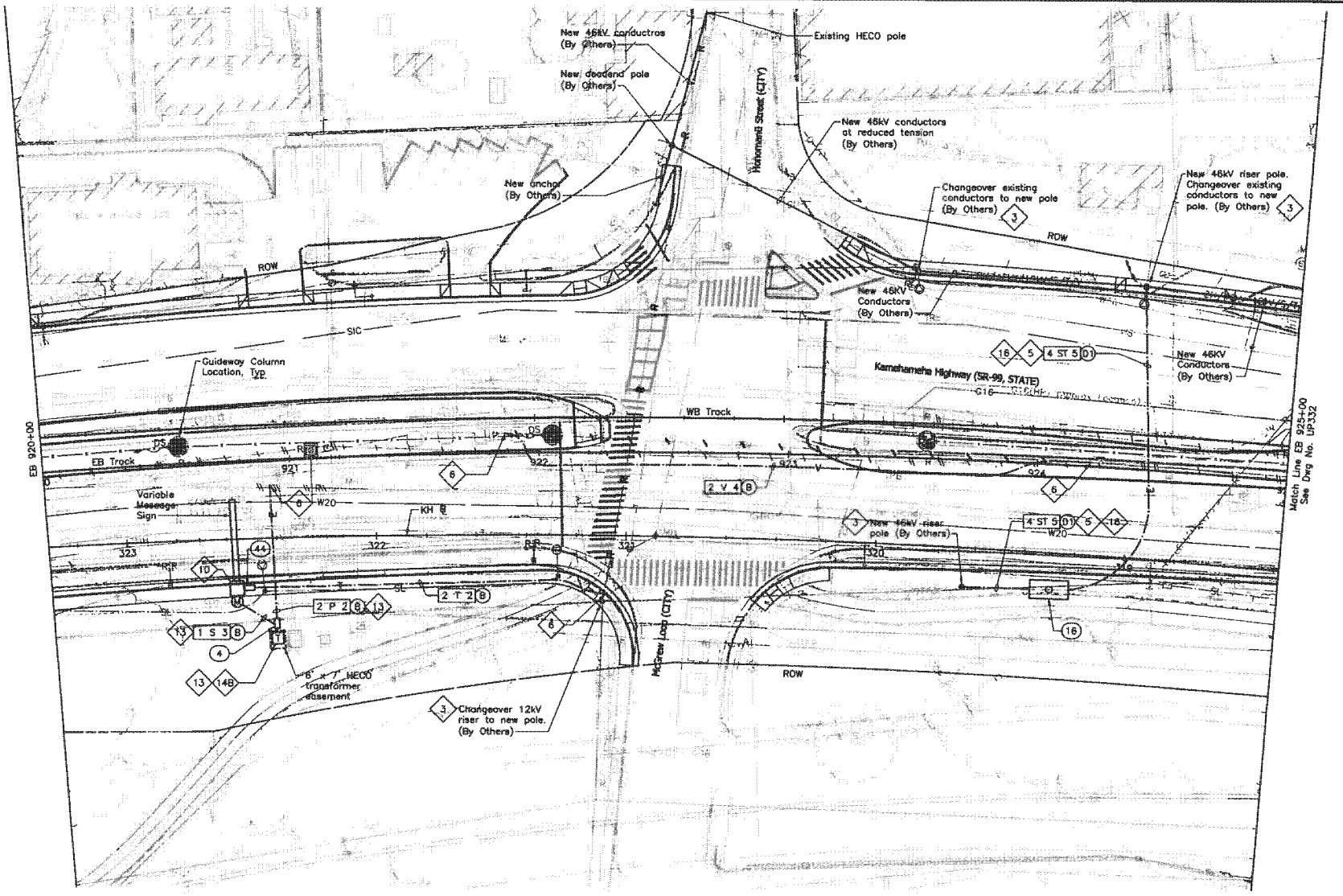

NOTES:

1a. See Dwg No. UG007 for General Notes and Symbols.

1b. Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. Coordinate the location of this future line with SIC to avoid potential conflicts. Inform the City of all coordination efforts.

3 Provide new self-sustaining metal pole (By Others).

5 Provide pole riser conduits in complement indicated up to applicable location on pole.

6 Install conduits into manhole, handhole, or pullbox under applicable utility company supervision. See Detail 3/UP401.

10 Hand-dig area around proposed column/pole location to locate and expose existing utility ducts. Protect ducts during column/pole installation and restore area upon completion of column/pole installation.

13 Preliminary new HECO service design only; coordinate with HECO for final plans.

14B Provide transformer concrete pad (transformer by HECO). See Detail 2/UP406.

16 See Detail 2/UP403.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: F Hirakami
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: MKengineers

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 920+00 TO EB 925+00

Contract No.: DB-320
CADD File: KHDB-D03-UP331
Drawing No: UP331 Rev. A
Scale: 1"=20'
Page No. 123 of 186

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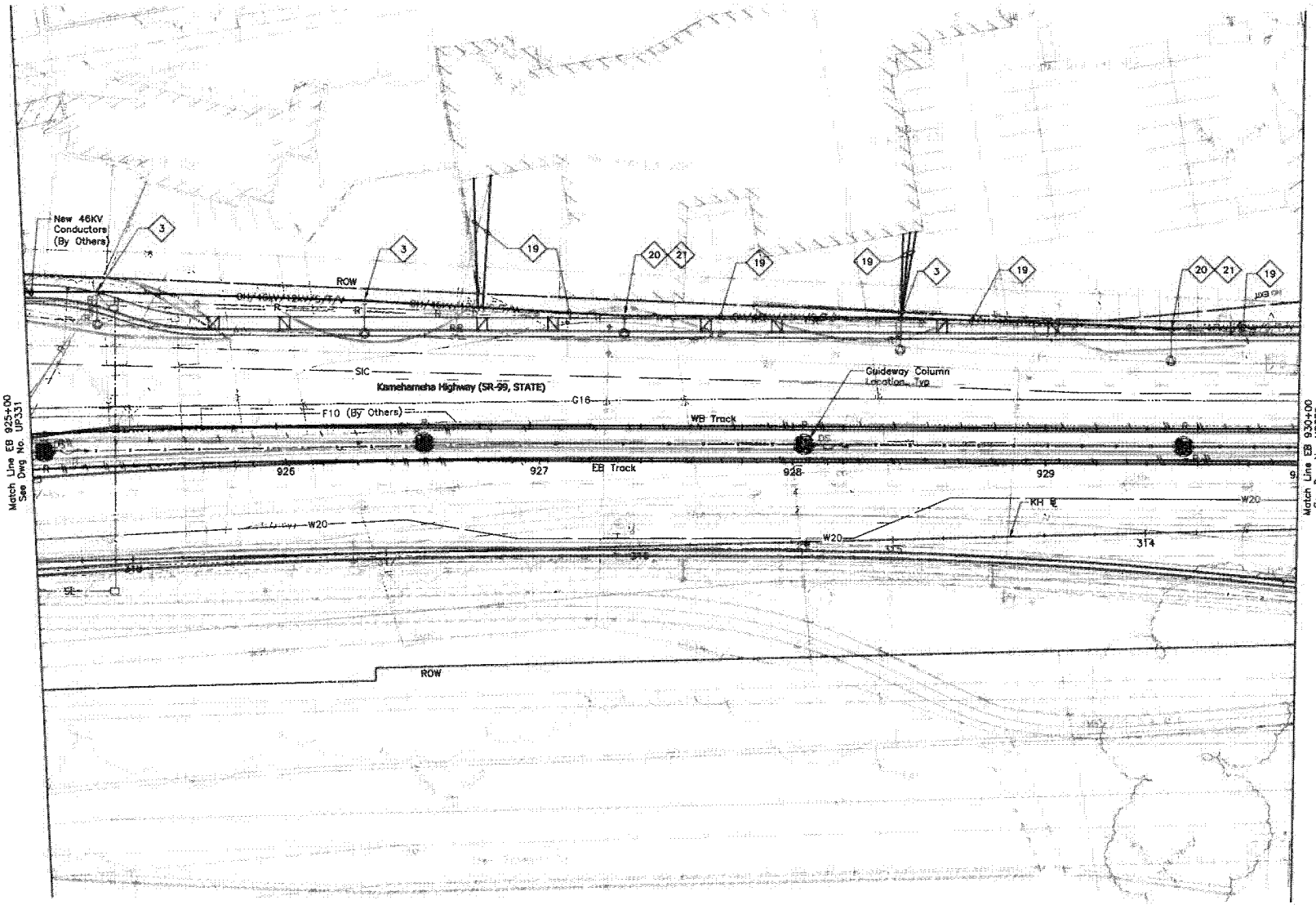

NOTES:

1a. See Dwg No. UG007 for General Notes and Symbols.

1b. Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. Coordinate the location of this future line with SIC to avoid potential conflicts. Inform the City of all coordination efforts.

3 Provide new self-sustaining metal pole (By Others).

19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: F Hirakomi
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: MKengineers
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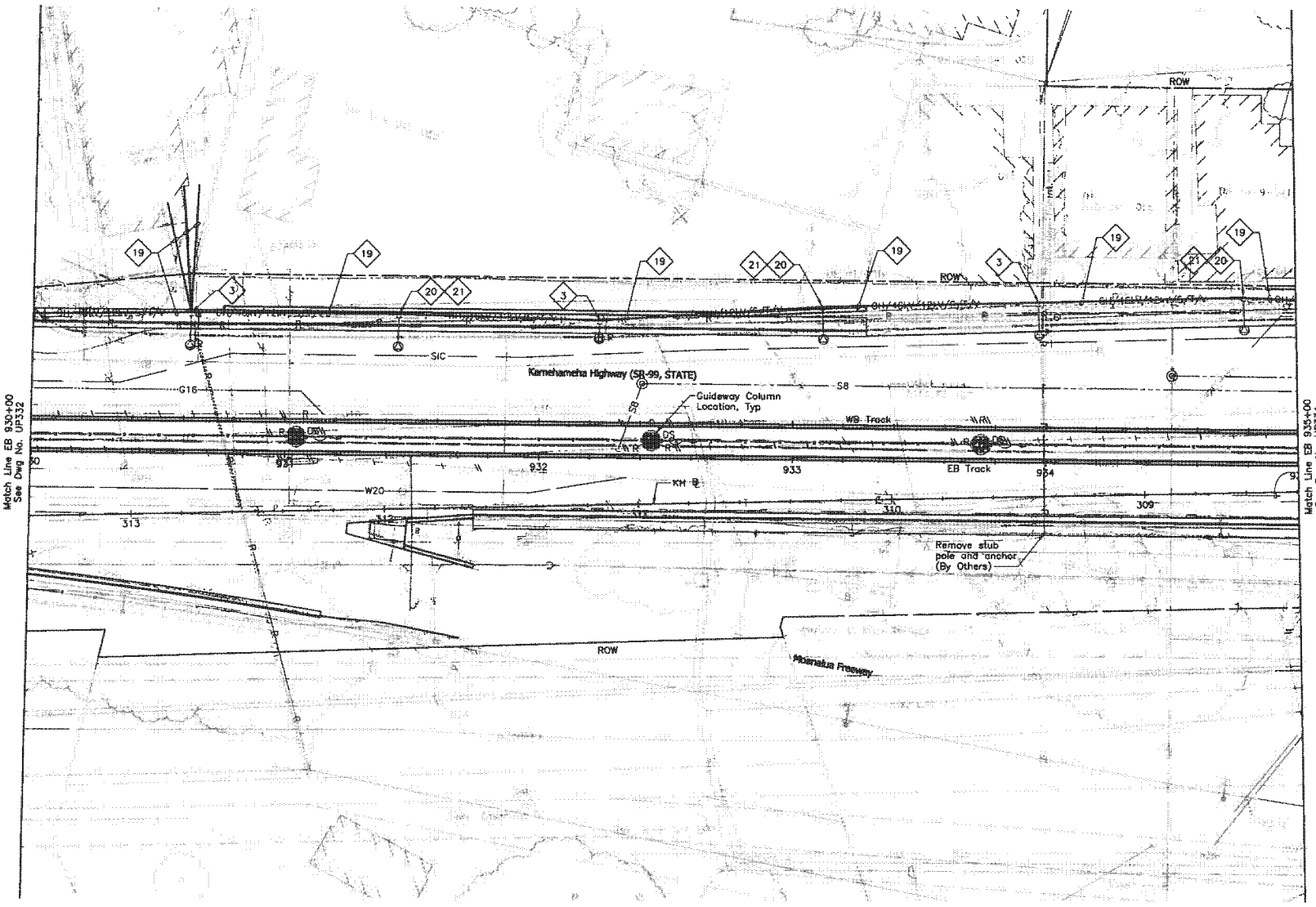
UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 925+00 TO EB 930+00

Contract No.: DB-320
CADD File: KHDB-D03-UP332
Drawing No: UP332 Rev. A
Scale: 1"=20'
Page No. 124 of 186

AR00077915



NOTES:

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3 Provide new self-sustaining metal pole (By Others).

19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT
NOT FOR CONSTRUCTION

Designed: F. Hirokami
Drawn: D. Saito
Checked: P. Uyeda
Approved: P. Uyeda
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: MKengineers
225 Hotel Street
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UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 930+00 TO EB 935+00

Contract No.: DB-320
CADD File: KHDB-D03-UP333
Drawing No: UP333 Rev. A
Scale: 1"=20'
Page No. 125 of 186

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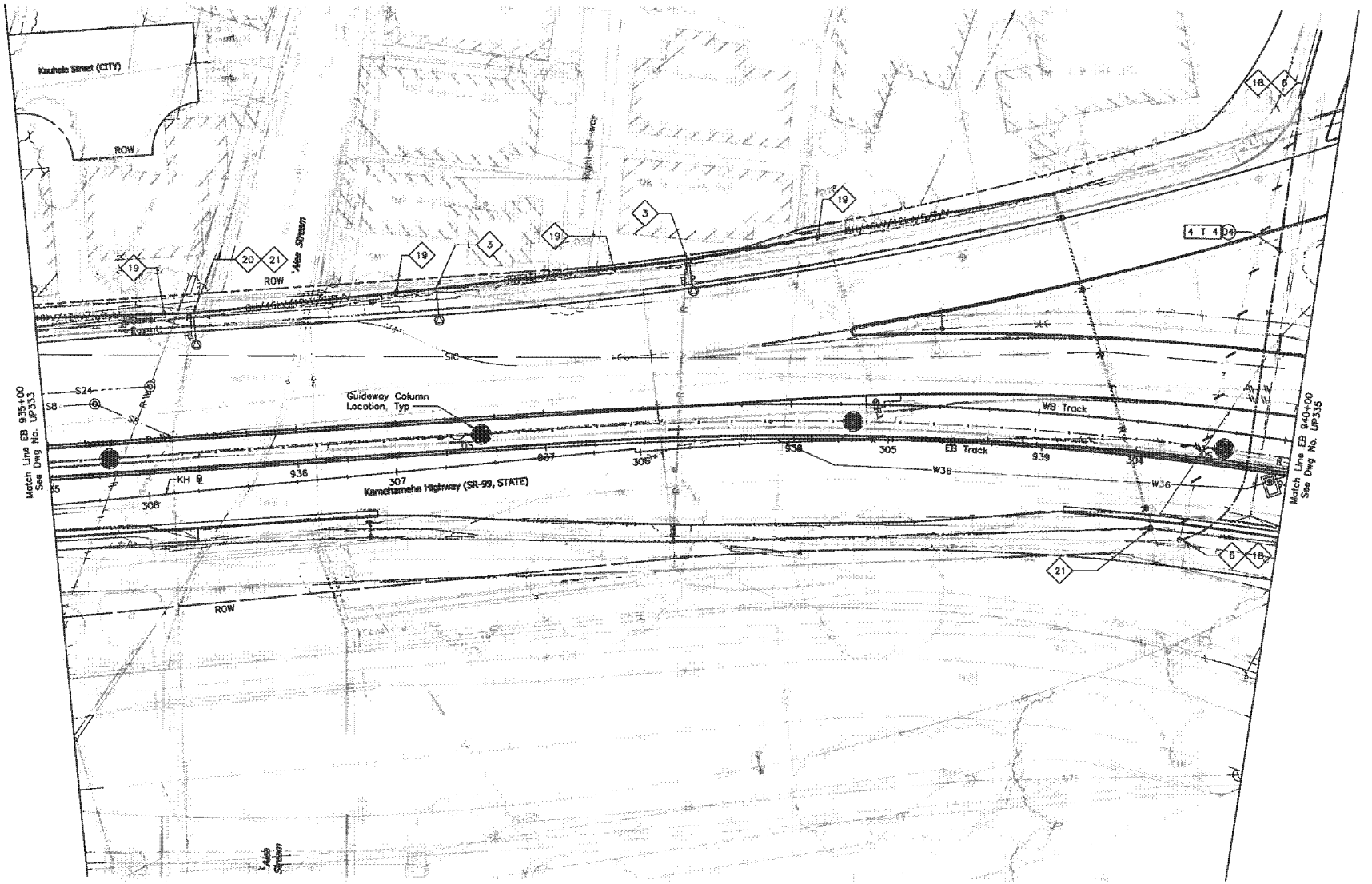

NOTES:

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1b. Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. Coordinate the location of this future line with SIC to avoid potential conflicts. Inform the City of all coordination efforts.

3 Provide new self-sustaining metal pole (By Others).

6 Install conduits into manhole, handhole, or pullbox under applicable utility company supervision. See Detail 3/UP401.

18 Enlarge existing manhole, handhole, or pullbox as indicated.

19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: F Hirakami
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: MKengineers

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 935+00 TO EB 940+00

Contract No.: DB-320
CADD File: KHDB-D03-UP334
Drawing No: UP334 Rev. A
Scale: 1"=20'
Page No. 126 of 186

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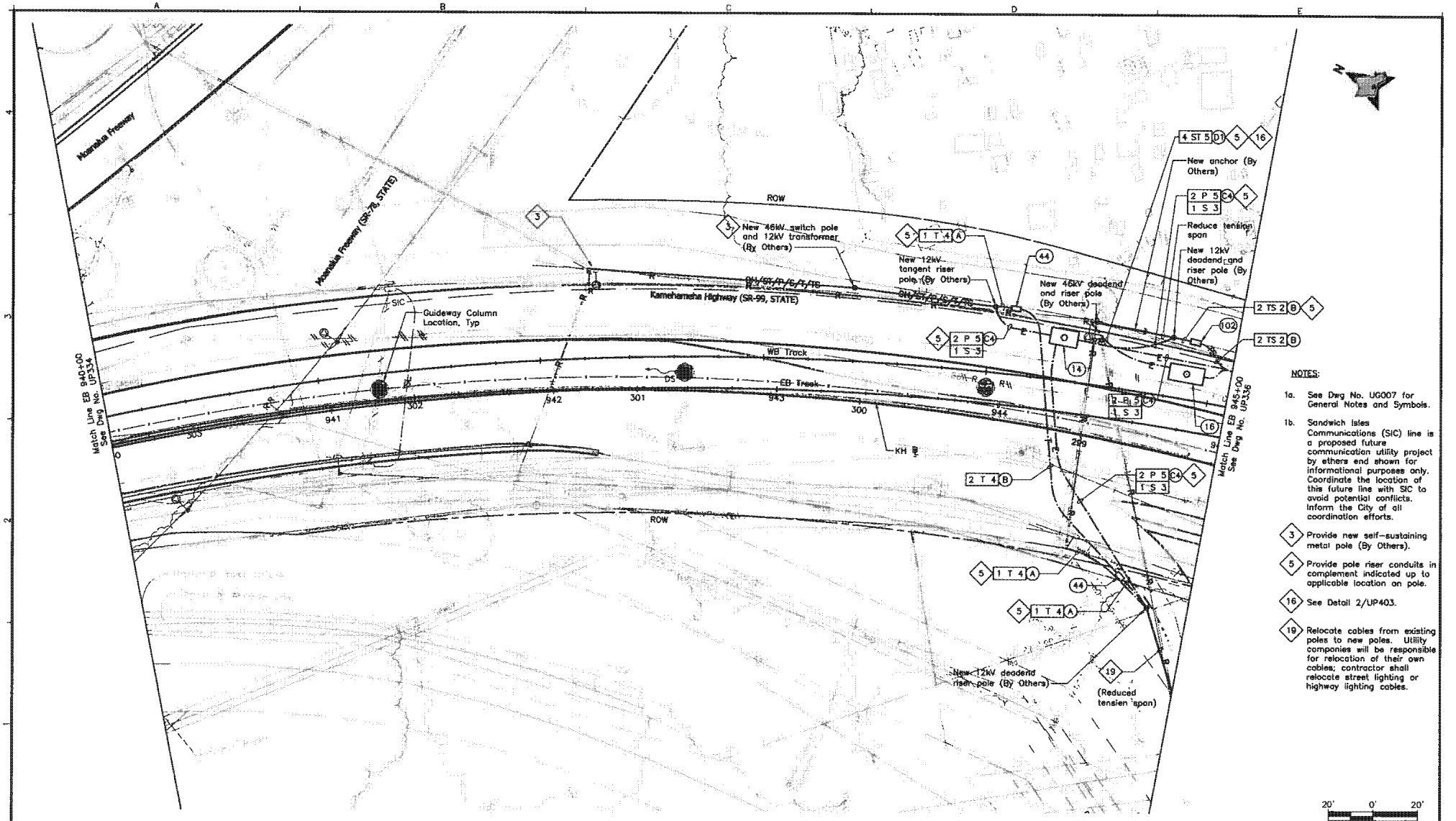

NOTES:

1a. See Dwg No. UG007 for General Notes and Symbols.

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3 Provide new self-sustaining metal pole (By Others).

5 Provide pole riser conduits in complement indicated up to applicable location on pole.

16 See Detail 2/UP403.

19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: F Hirakami
Drawn: D Saito
Checked: P Uyada
Approved: P Uyada
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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E-Mail: info@mkengineers.com

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION ELECTRICAL & COMMUNICATIONS

EB 940+00 TO EB 945+00

Contract No.: DB-320
CADD File: KHDB-D03-UP335
Drawing No: UP335
Rev. A
Scale: 1"=20'
Page No. 127 of 186

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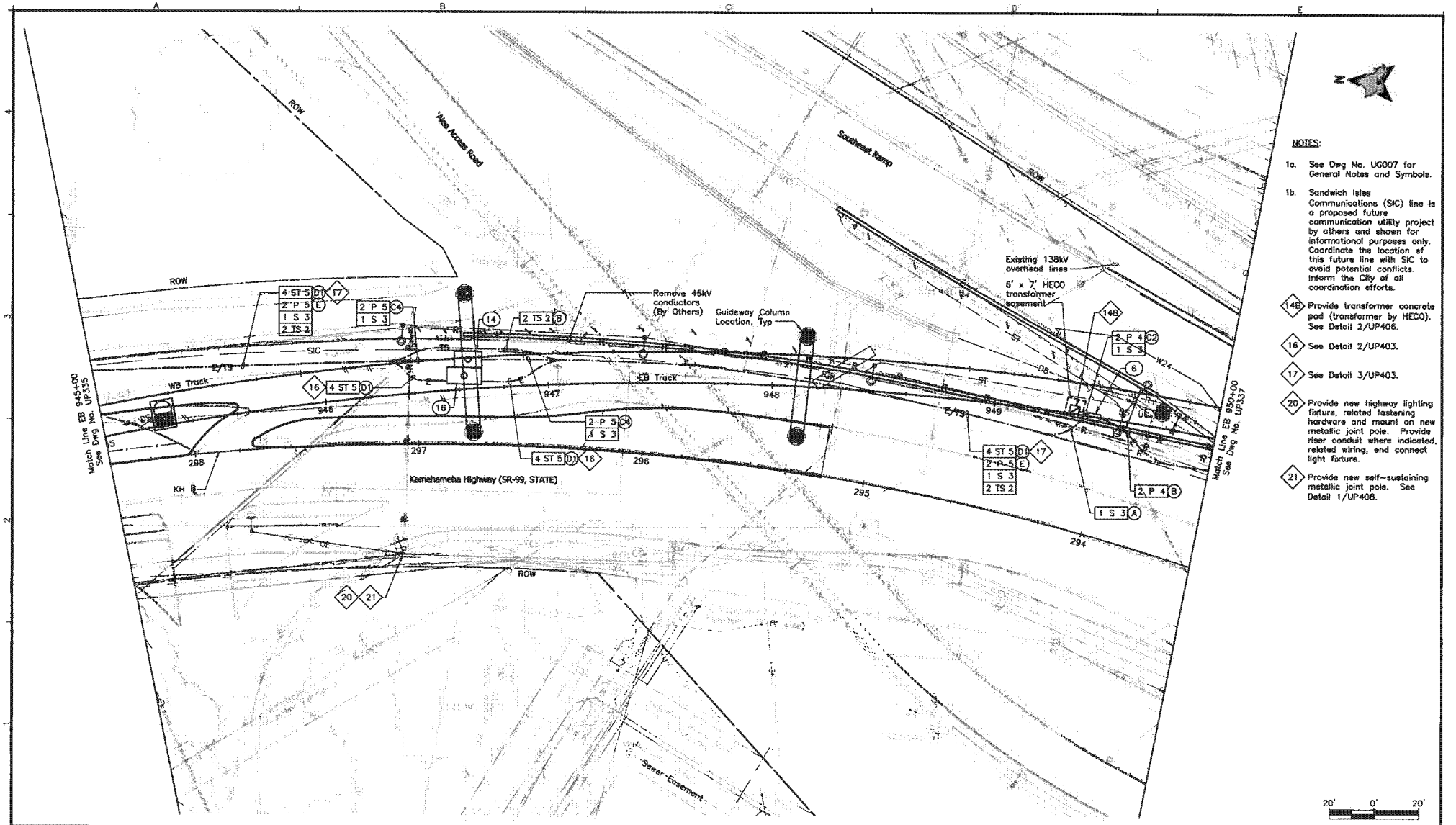

NOTES:

1a. See Dwg No. UG007 for General Notes and Symbols.

1b. Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. Coordinate the location of this future line with SIC to avoid potential conflicts. Inform the City of all coordination efforts.

14B Provide transformer concrete pad (transformer by HECO). See Detail 2/UP406.

16 See Detail 2/UP403.

17 See Detail 3/UP403.

20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: F Hirokami
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: MKengineers

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN ELECTRICAL & COMMUNICATIONS

EB 945+00 TO EB 950+00

Contract No.: DB-320
CADD File: KHDB-D03-UP336
Drawing No: UP336
Rev. A
Scale: 1"=20'
Page No. 128 of 186

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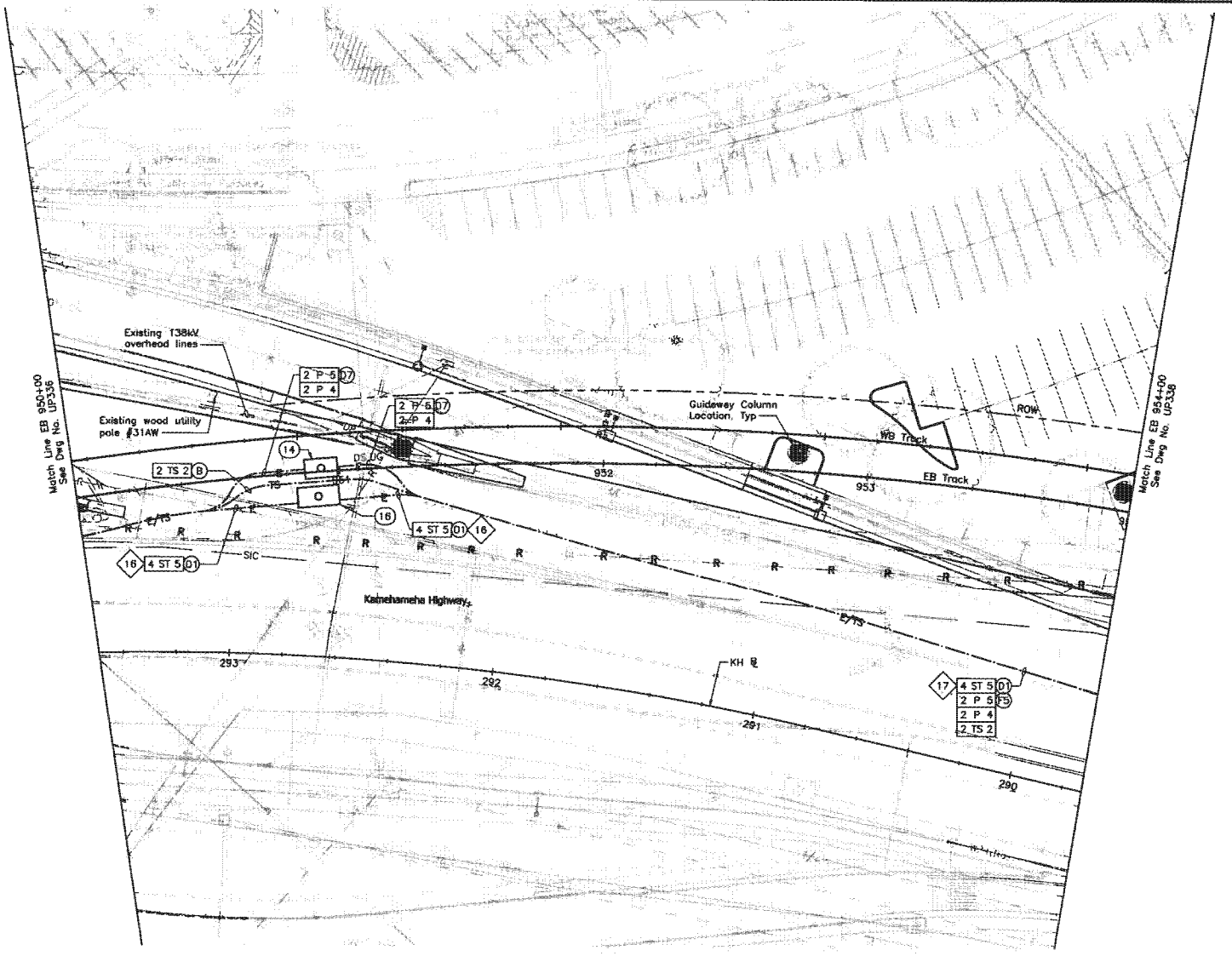

NOTES:

1a. See Dwg No. UG007 for General Notes and Symbols.

1b. Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. Coordinate the location of this future line with SIC to avoid potential conflicts. Inform the City of all coordination efforts.

7 Intercept existing duct line with new manhole, handhole, or pullbox as indicated. Demolish concrete jacket and duct within manhole, handhole, or pullbox as indicated and expose cables. Preserve cables during demolition of duct.

16 See Detail 2/UP403.

17 See Detail 3/UP403.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: F Hirakami
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Approved: P Uyeda
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: MKengineers

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION ELECTRICAL & COMMUNICATIONS

EB 950+00 TO EB 954+00

Contract No.: DB-320
CADD File: KHDB-D03-UP337
Drawing No: UP337 Rev. A
Scale: 1"=20'
Page No. 129 of 186

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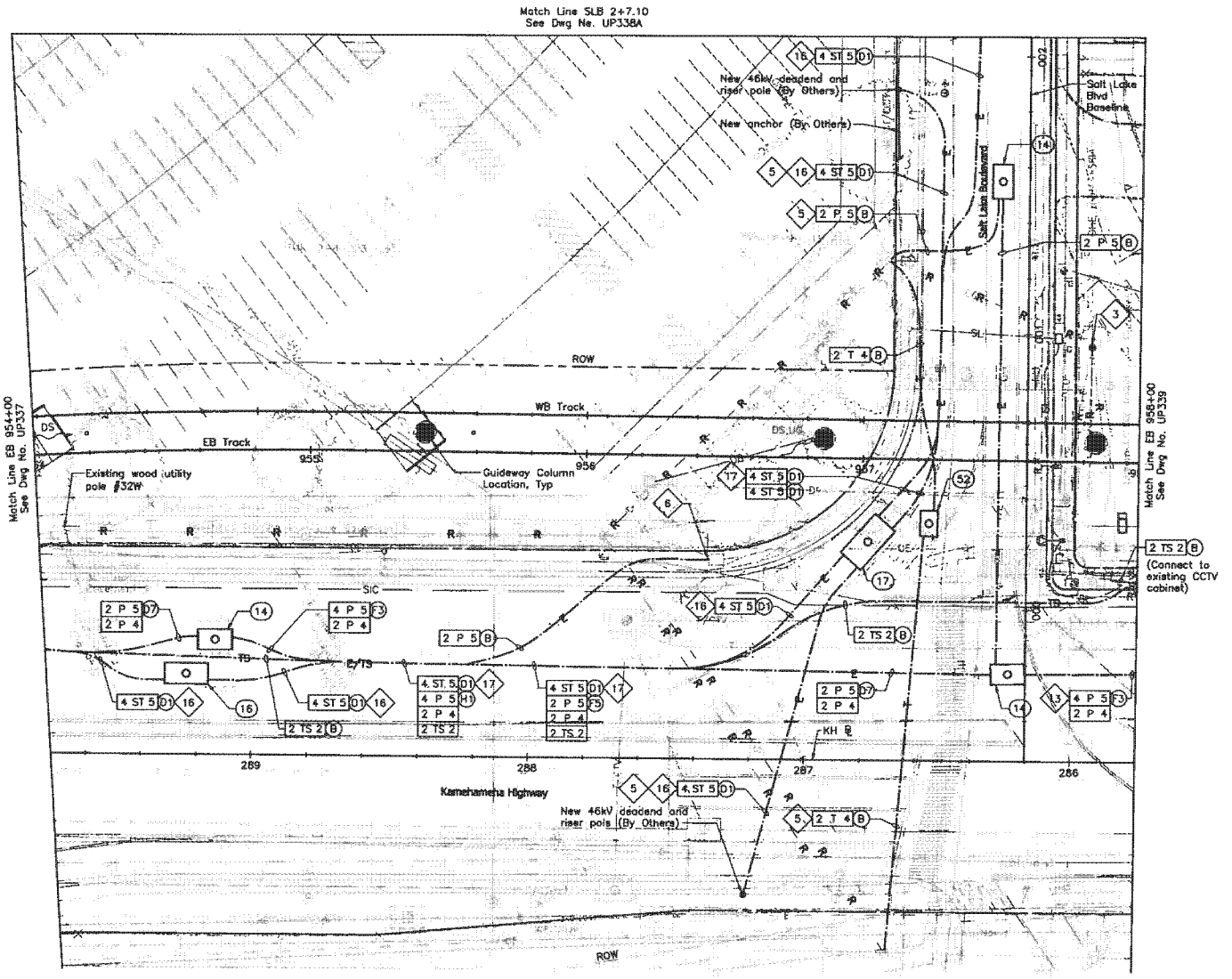

NOTES:

1a. See Dwg No. UG007 for General Notes and Symbols.

1b. Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. Coordinate the location of this future line with SIC to avoid potential conflicts. Inform the City of all coordination efforts.

3 Provide new self-sustaining metal pole (By Others).

5 Provide pole riser conduits in complement indicated up to applicable location on pole.

6 Install conduits into manhole, handhole, or pullbox under applicable utility company supervision. See Detail 3/UP401.

13 Preliminary new HECO service design only; coordinate with HECO for final plans.

16 See Detail 2/UP403.

17 See Detail 3/UP403.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: F Hirakami
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION ELECTRICAL & COMMUNICATIONS

EB 954+00 TO EB 958+00

Contract No.: DB-320
CADD File: KHDB-D03-UP338
Drawing No: UP338 Rev. A
Scale: 1"=20'
Page No. 130 of 186

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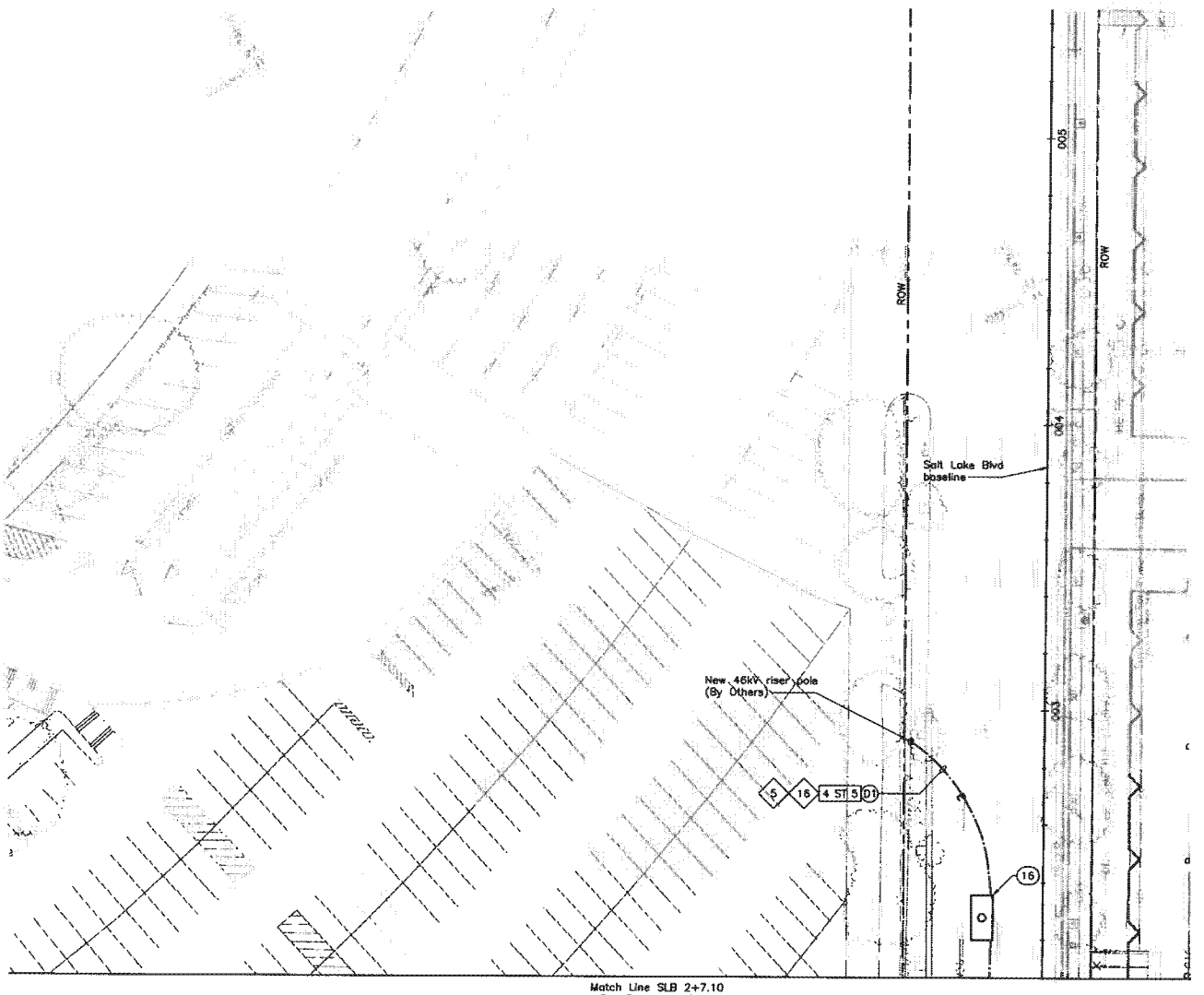

Match Line SLB 2+7.10
See Dwg No. UP338

NOTES:

1a. See Dwg No. UG007 for General Notes and Symbols.

5 Provide pole riser conduits in complement indicated up to applicable location on pole.

16 See Detail 2/UP403.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: F Hirakami
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: MKengineers

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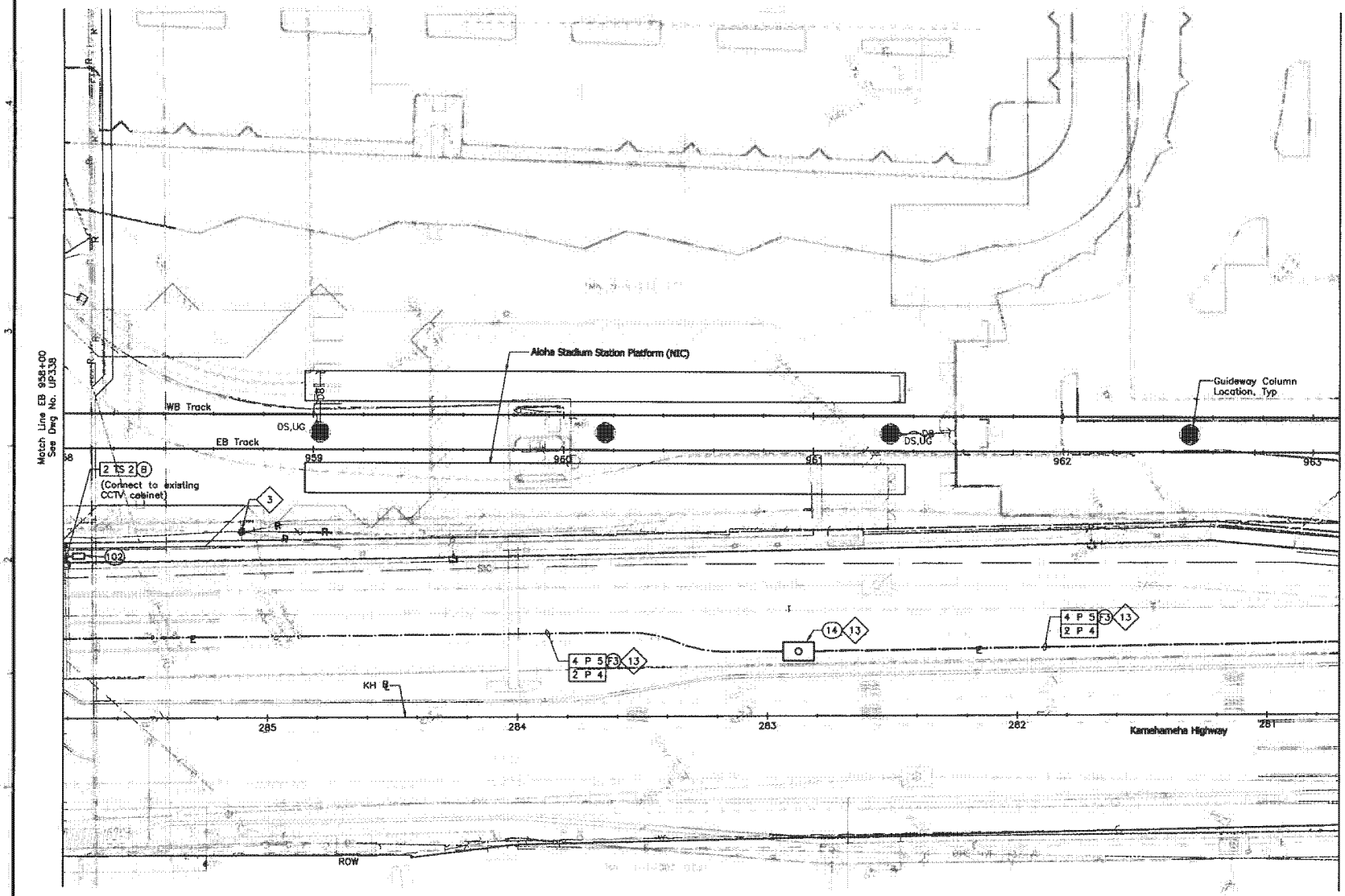
KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION ELECTRICAL & COMMUNICATIONS

SLB 2+7.10 TO END

Contract No.: DB-320
CADD File: KHDB-D03-UP338A
Drawing No.: UP338A
Rev.: A
Scale: 1"=20'
Page No. 131 of 186

AR00077922



NOTES:

1a. See Dwg No. UG007 for General Notes and Symbols.

1b. Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. Coordinate the location of this future line with SIC to avoid potential conflicts. Inform the City of all coordination efforts.

3 Provide new self-sustaining metal pole (By Others).

13 Preliminary new HECO service design only; coordinate with HECO for final plans.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT
NOT FOR CONSTRUCTION

Designed: F Hirakami
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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Subconsultant: MKengineers
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E-Mail: info@mkengineers.com

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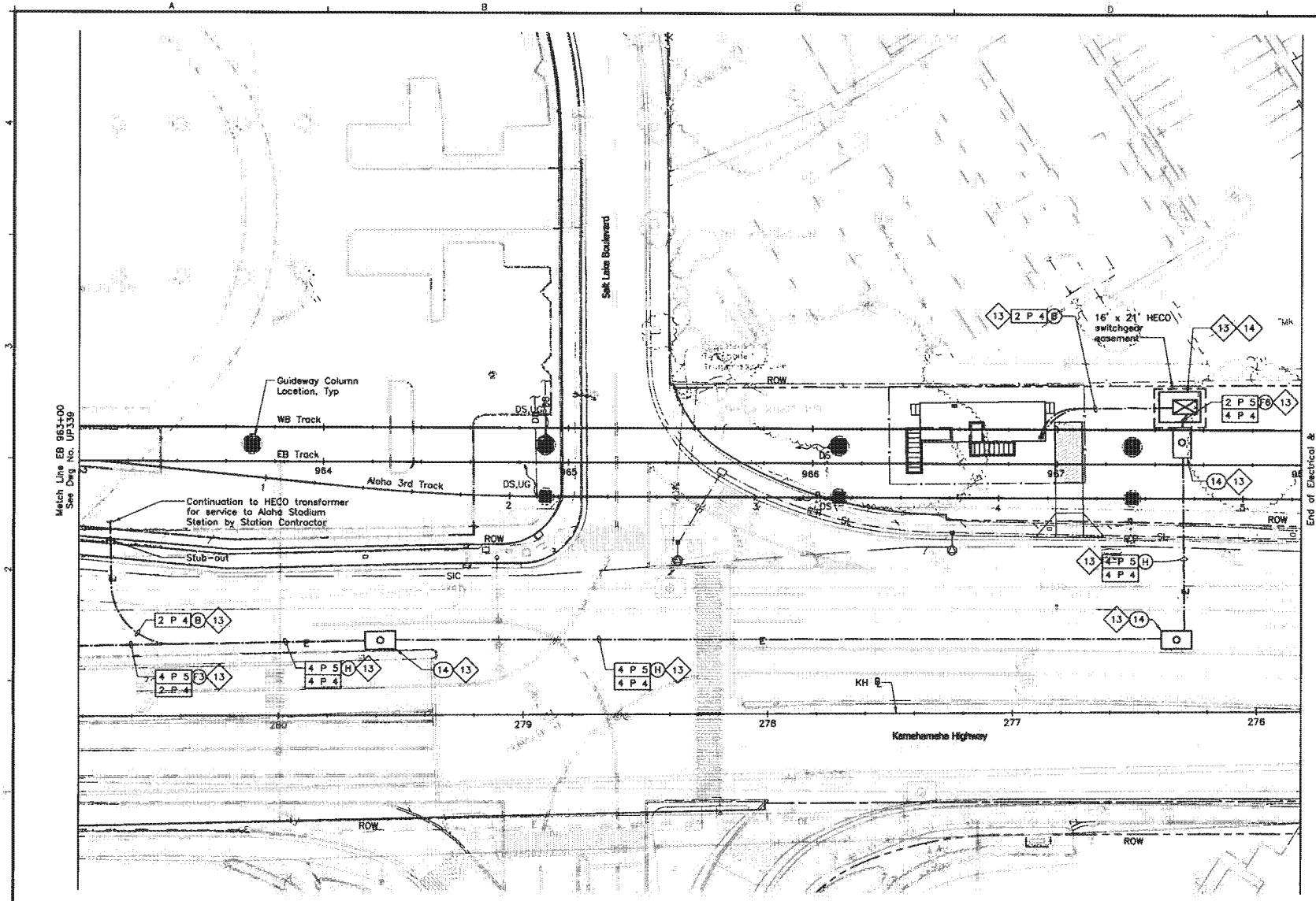
KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION
ELECTRICAL & COMMUNICATIONS

EB 958+00 TO EB 963+00

Contract No.: DB-320
CADD File: KHDB-D03-UP339
Drawing No: UP339
Rev. A
Scale: 1"=20'
Page No. 132 of 186

AR00077923



NOTES:

1a. See Dwg No. UG007 for General Notes and Symbols.

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13 Preliminary new HECO service design only; coordinate with HECO for final plans.

14 Provide switchgear concrete pad (switchgear by HECO). See Detail 1/UP405.

20' 0' 20'

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Date: 03-19-10

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UTILITY RELOCATION
ELECTRICAL & COMMUNICATIONS

EB 963+00 TO EB 968+00

Contract No.: DB-320
CADD File: KHDB-D03-UP340
Drawing No.: UP340
Rev.: A
Scale: 1"=20'
Page No. 133 of 186

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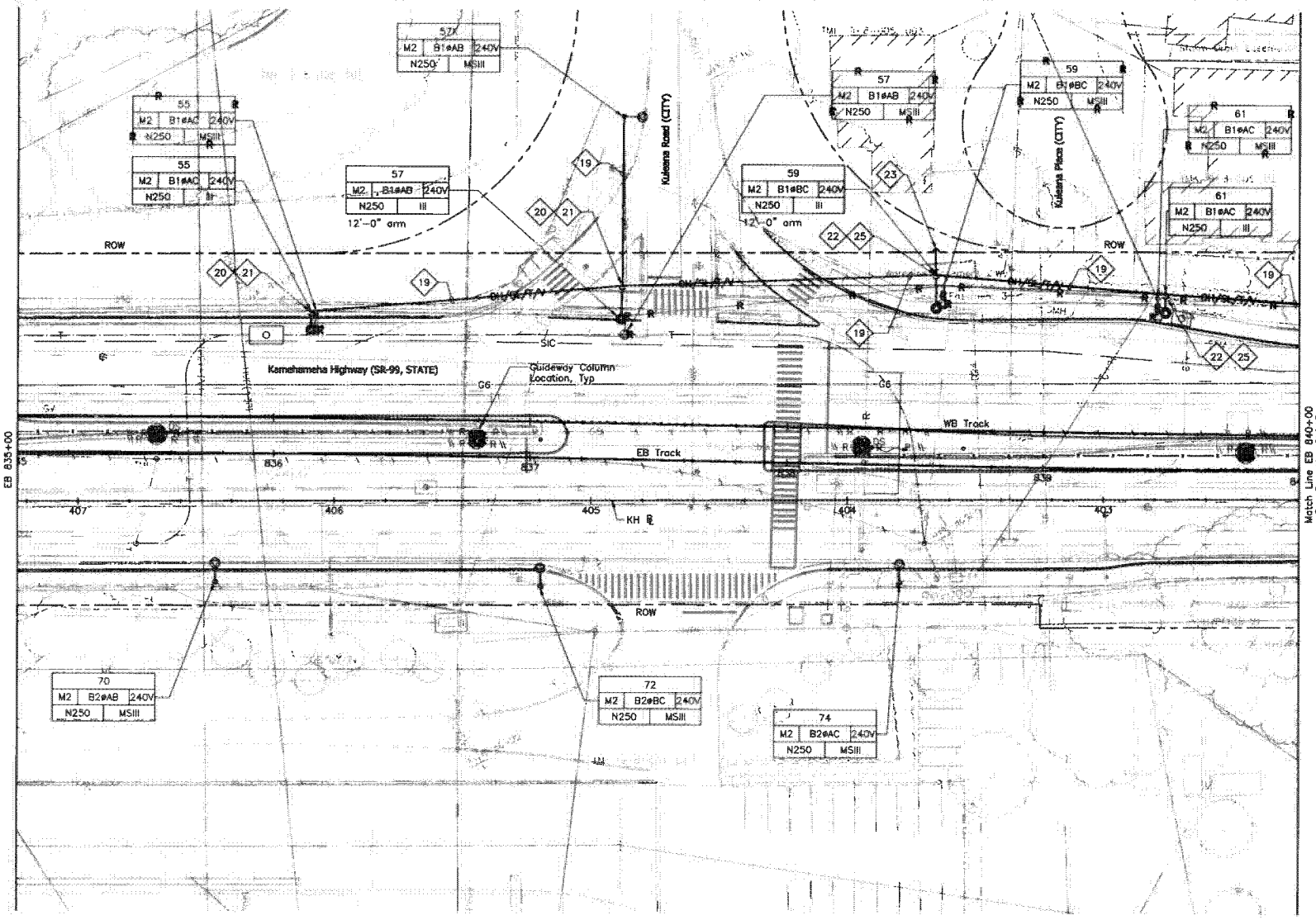

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19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

22 Provide new wood joint pole. See Detail 1/UP407.

23 Provide new anchor. See Detail 3/UP407.

25 Provide new highway lighting fixture and mount on new wood pole, and make connection to street lighting circuit. If power source is underground, provide conduit riser with weather head at street light level and make connections to lighting fixtures. Poles shall be designed and constructed to support telecom and related overhead cables. Coordinate design and construction with appropriate utility company.

20' 0' 20'

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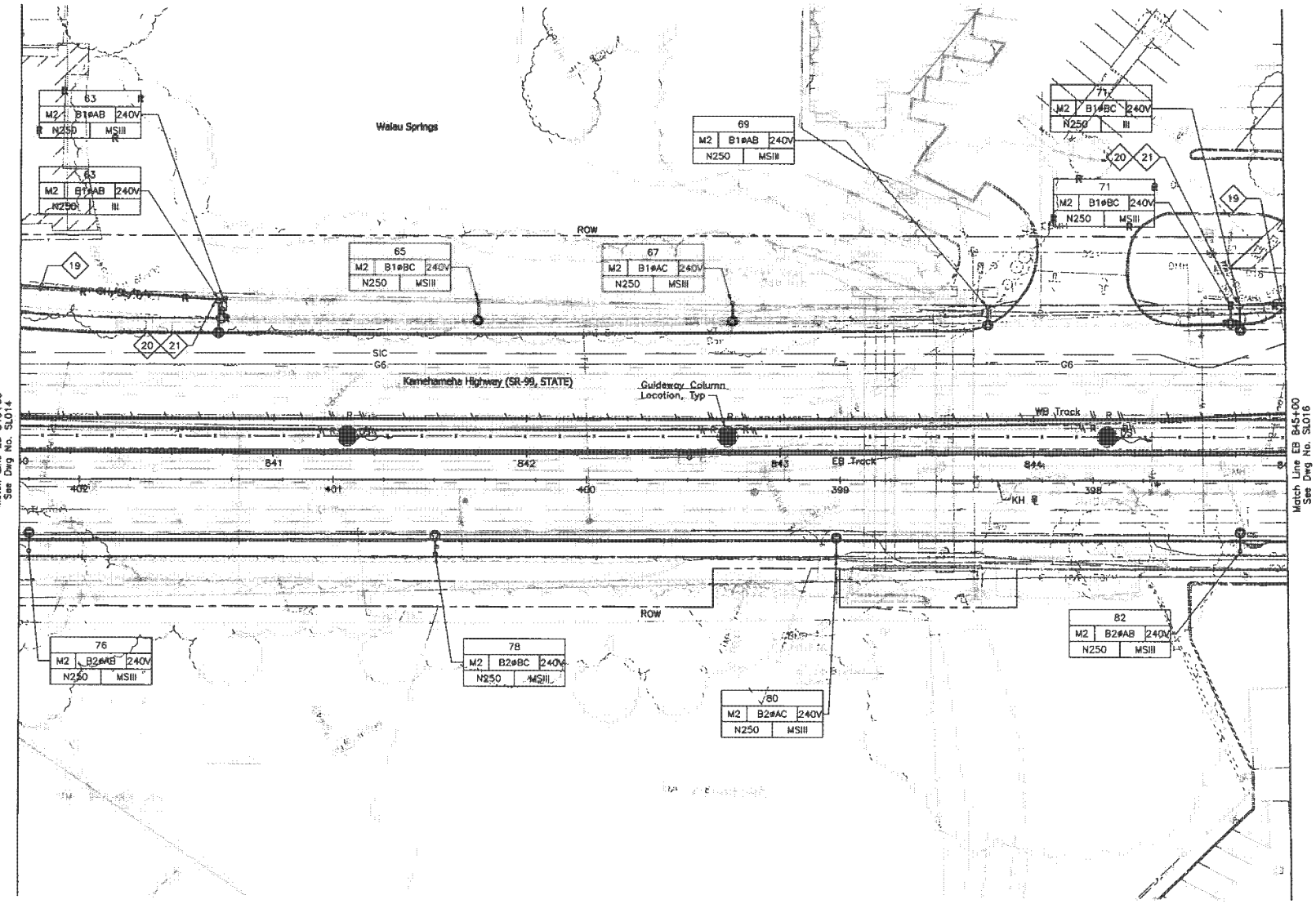
UTILITY RELOCATION PLAN
STREET LIGHTING

EB 835+00 TO EB 840+00

Contract No.: DB-320
CADD File: KHDB-D04-SL014
Drawing No: SL014 Rev. A
Scale: 1"=20'
Page No. 148 of 186



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21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

20' 0' 20'

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UTILITY RELOCATION PLAN STREET LIGHTING

EB 840+00 TO EB 845+00

Contract No.: DB-320
CADD File: KHDB-D04-SL015
Drawing No: SL015
Rev. A
Scale: 1"=20'
Page No. 149 of 186

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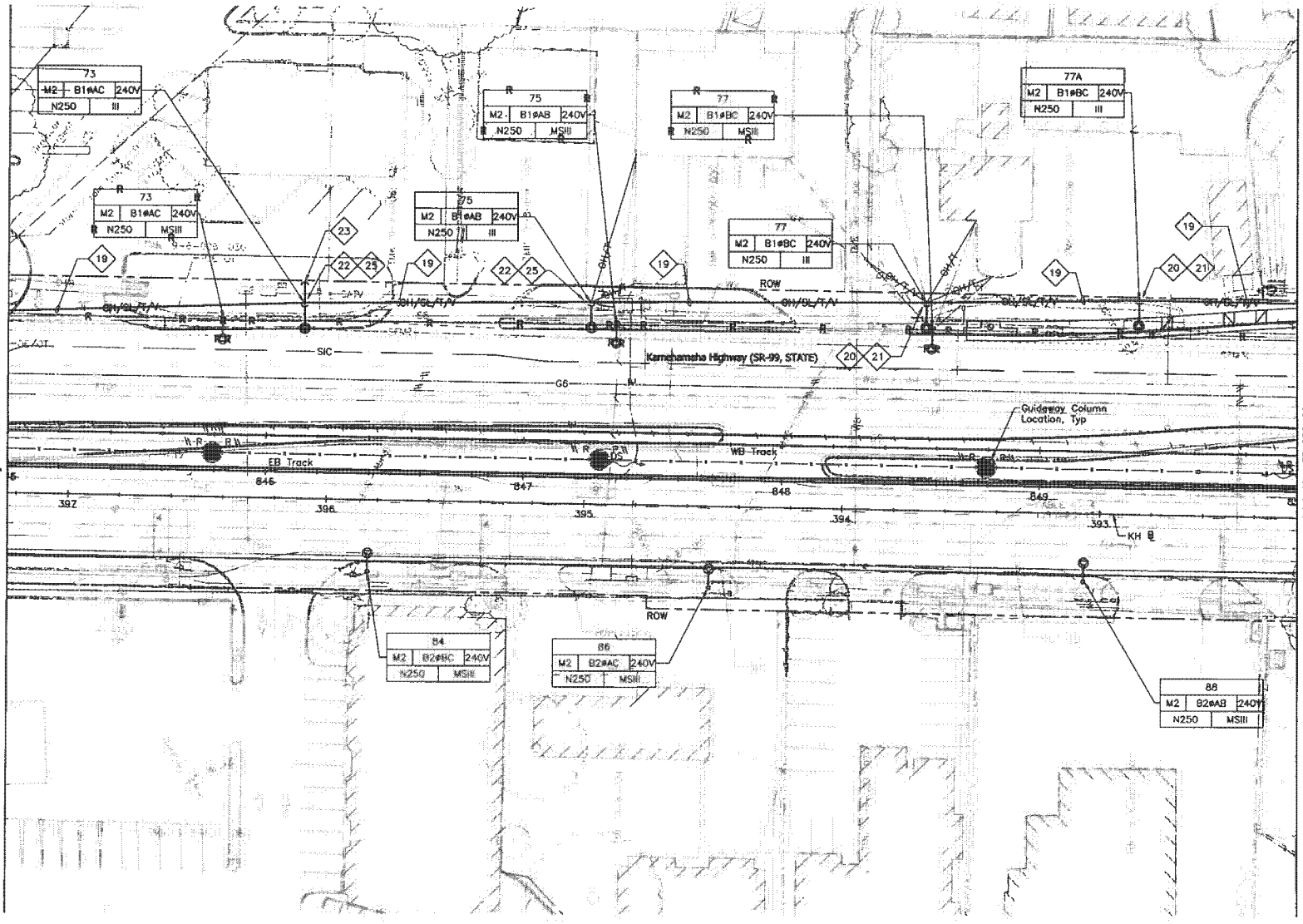

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20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

22 Provide new wood joint pole. See Detail 1/UP407.

23 Provide new anchor. See Detail 3/UP407.

25 Provide new highway lighting fixture and mount on new wood pole, and make connection to street lighting circuit. If power source is underground, provide conduit riser with weather head at street light level and make connections to lighting fixtures. Poles shall be designed and constructed to support telecom and related overhead cables. Coordinate design and construction with appropriate utility company.

20' 0' 20'

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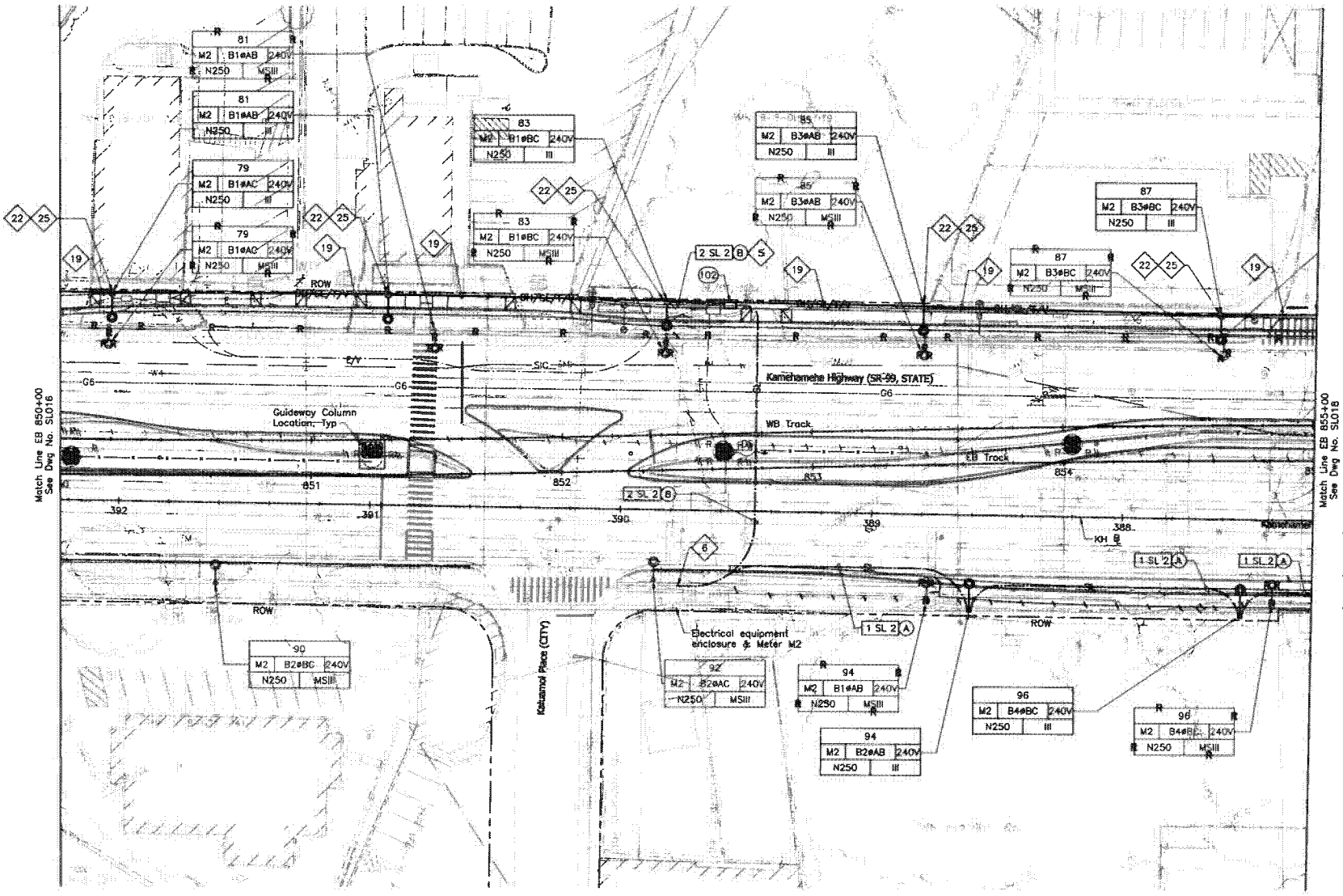
UTILITY RELOCATION PLAN
STREET LIGHTING

EB 845+00 TO EB 850+00

Contract No.: DB-320
CADD File: KHDB-D04-SL016
Drawing No: SL016
Rev. A
Scale: 1"=20'
Page No. 150 of 186



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5 Provide pole riser conduits in complement indicated up to applicable location on pole.

6 Install conduits into manhole, handhole, or pullbox under applicable utility company supervision. See Detail 3/UP401.

19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

22 Provide new wood joint pole. See Detail 1/UP407.

25 Provide new highway lighting fixture and mount on new wood pole, and make connection to street lighting circuit. If power source is underground, provide conduit riser with weather head at street light level and make connections ts lighting fixtures. Poles shall be designed and constructed to support telecom and related overhead cables. Coordinate design and construction with appropriate utility company.

20' 0' 20'

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Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2290 - Honolulu, HI 96813

Subconsultant: MKengineers

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UTILITY RELOCATION PLAN STREET LIGHTING

EB 850+00 TO EB 855+00

Contract No.: DB-320
CADD File: KHDB-D04-SL017
Drawing No: SL017 Rev. A
Scale: 1"=20'
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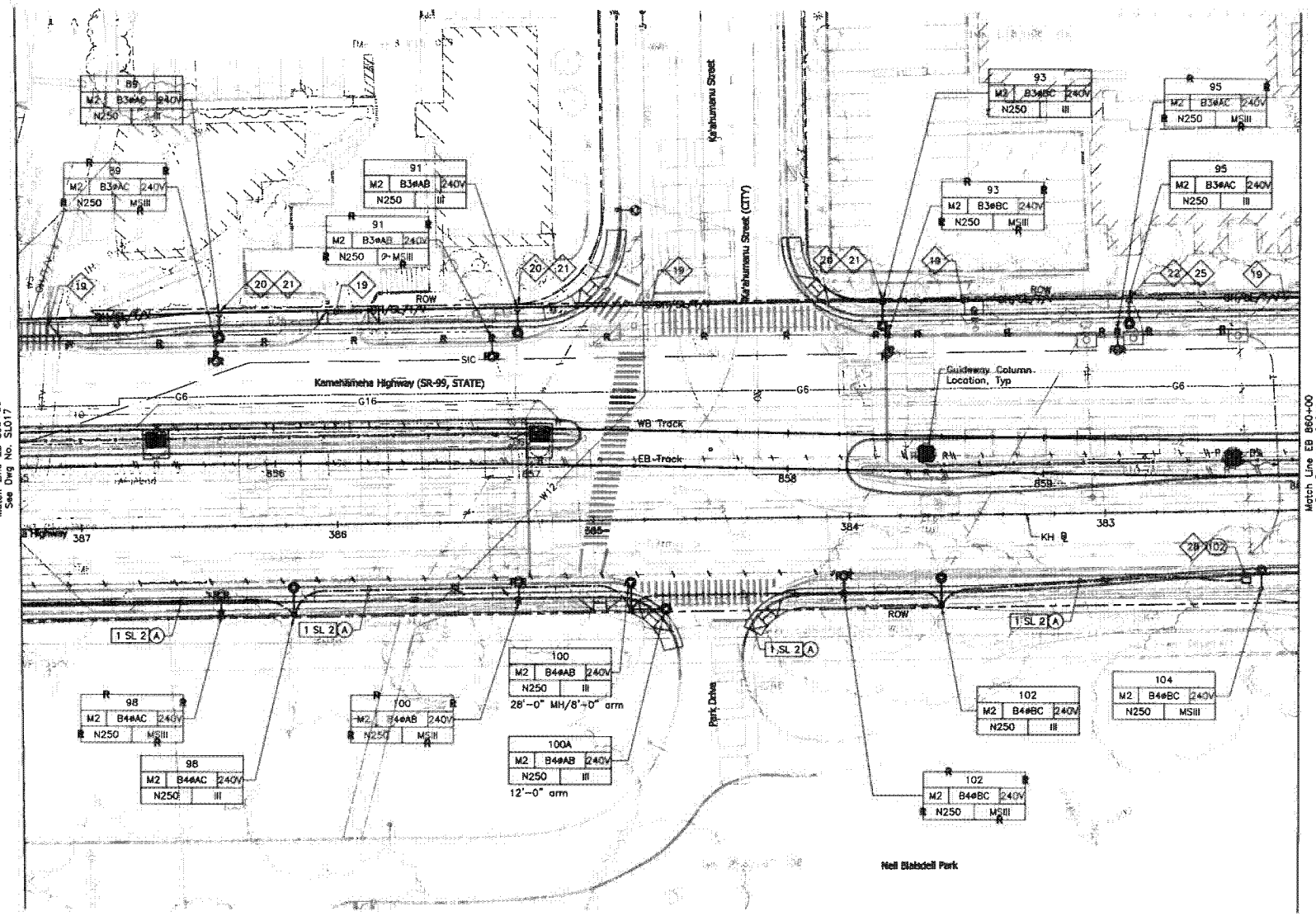

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21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

22 Provide new wood joint pole. See Detail 1/UP407.

25 Provide new highway lighting fixture and mount on new wood pole, and make connection to street lighting circuit. If power source is underground, provide conduit riser with weather head at street light level and make connections to lighting fixtures. Poles shall be designed and constructed to support telecom and related overhead cables. Coordinate design and construction with appropriate utility company.

28 Intercept existing street lighting conduit with new pull box and conduit/s indicated. Provide new wiring to restore circuit continuity that existed. Wire size and quantity shall as a minimum match what existed. Provide an equipment grounding conductor with new current carrying conductors.

20' 0' 20'

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: MKengineers

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UTILITY RELOCATION PLAN
STREET LIGHTING

EB 855+00 TO EB 860+00

Contract No.: DB-320
CADD File: KHDB-D04-SL018
Drawing No: SL018
Rev. A
Scale: 1"=20'
Page No. 152 of 186

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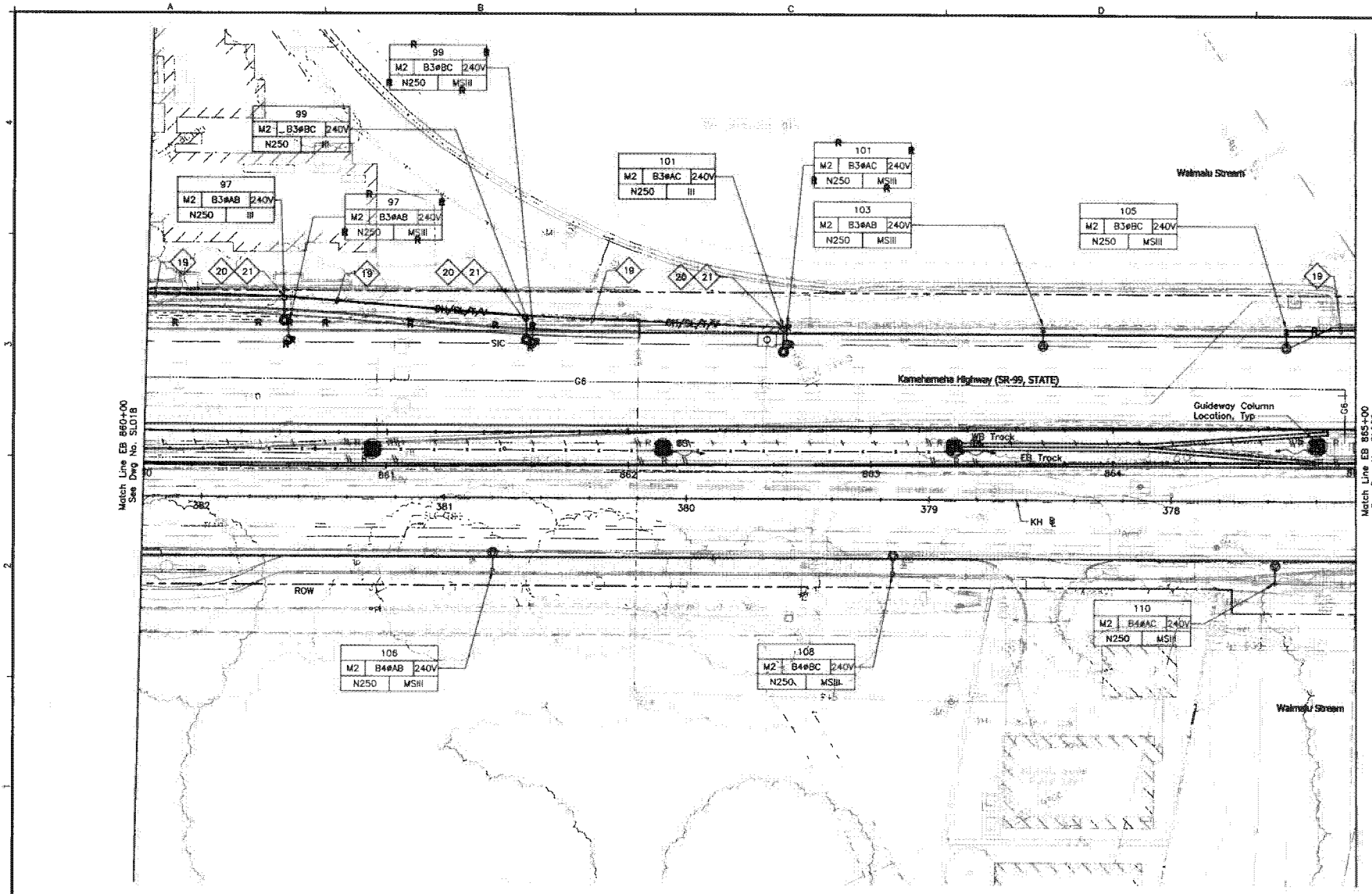

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21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

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1003 Bishop Street, Suite 2250 - Honolulu, HI 96813

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UTILITY RELOCATION PLAN
STREET LIGHTING

EB 860+00 TO EB 865+00

Contract No.: DB-320
CADD File: KHDB-D04-SL019
Drawing No: SL019
Rev. A
Scale: 1"=20'
Page No. 153 of 186

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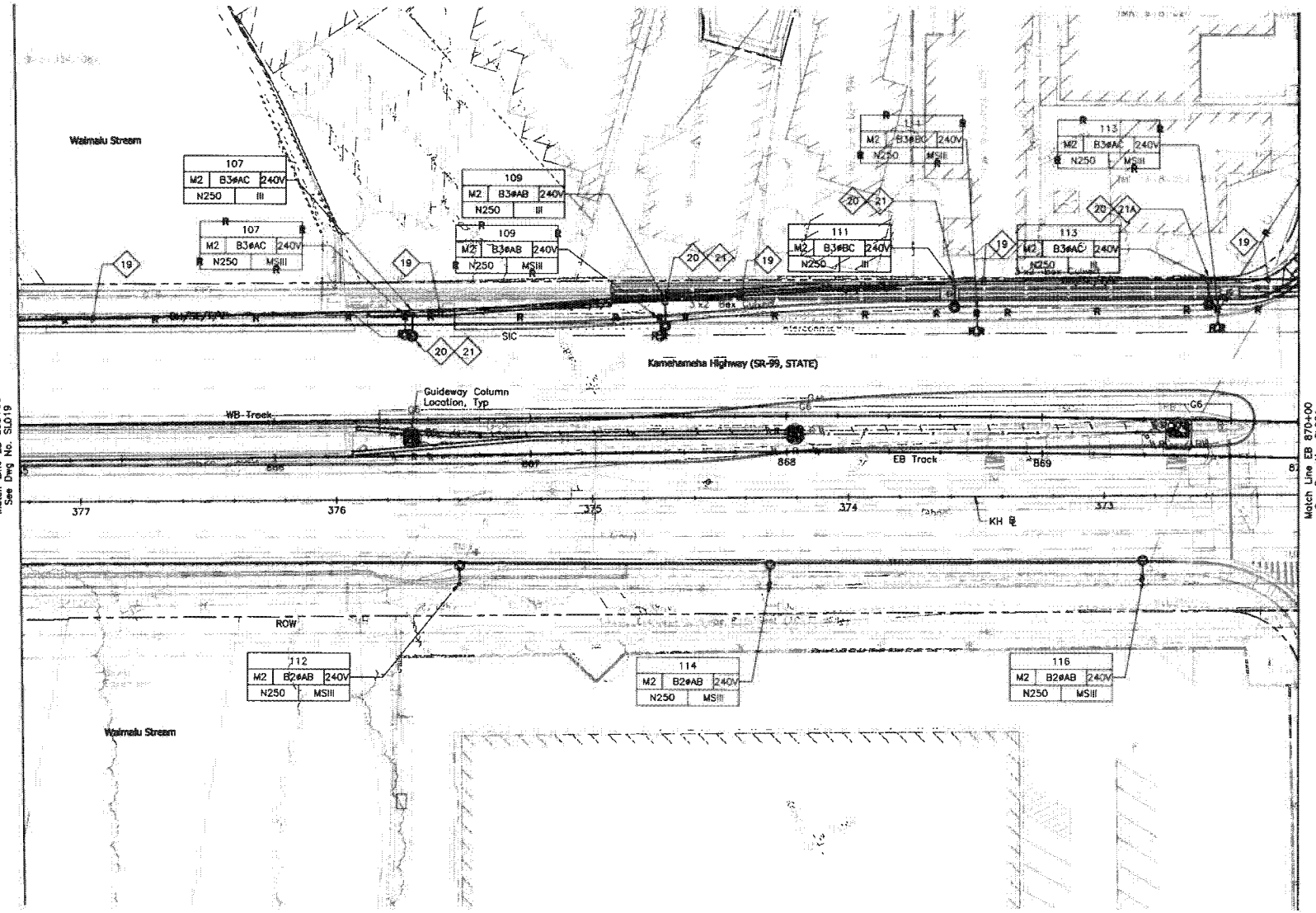

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21A Provide new self-sustaining metallic joint pole. (By Others).

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Subconsultant: MKengineers

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UTILITY RELOCATION PLAN
STREET LIGHTING

EB 865+00 TO EB 870+00

Contract No.: DB-320
CADD File: KHDB-D04-SL020
Drawing No.: SL020
Rev.: A
Scale: 1"=20'
Page No.: 154 of 186

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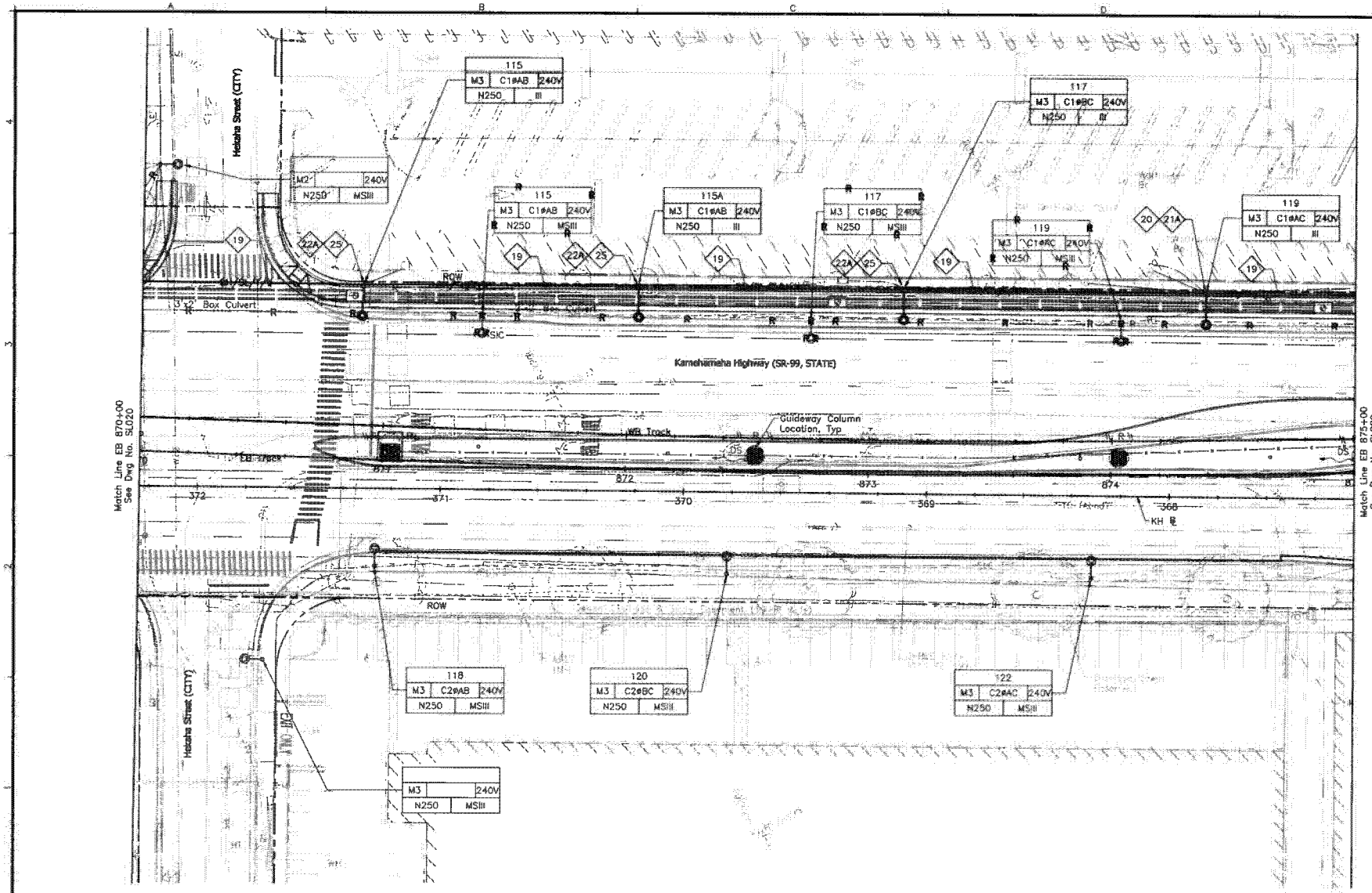

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22A Provide new wood joint pole. (By Others).

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20' 0' 20'

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UTILITY RELOCATION PLAN
STREET LIGHTING

EB 870+00 TO EB 875+00

Contract No.: DB-320
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Drawing No: SL021 Rev. A
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Page No. 155 of 186

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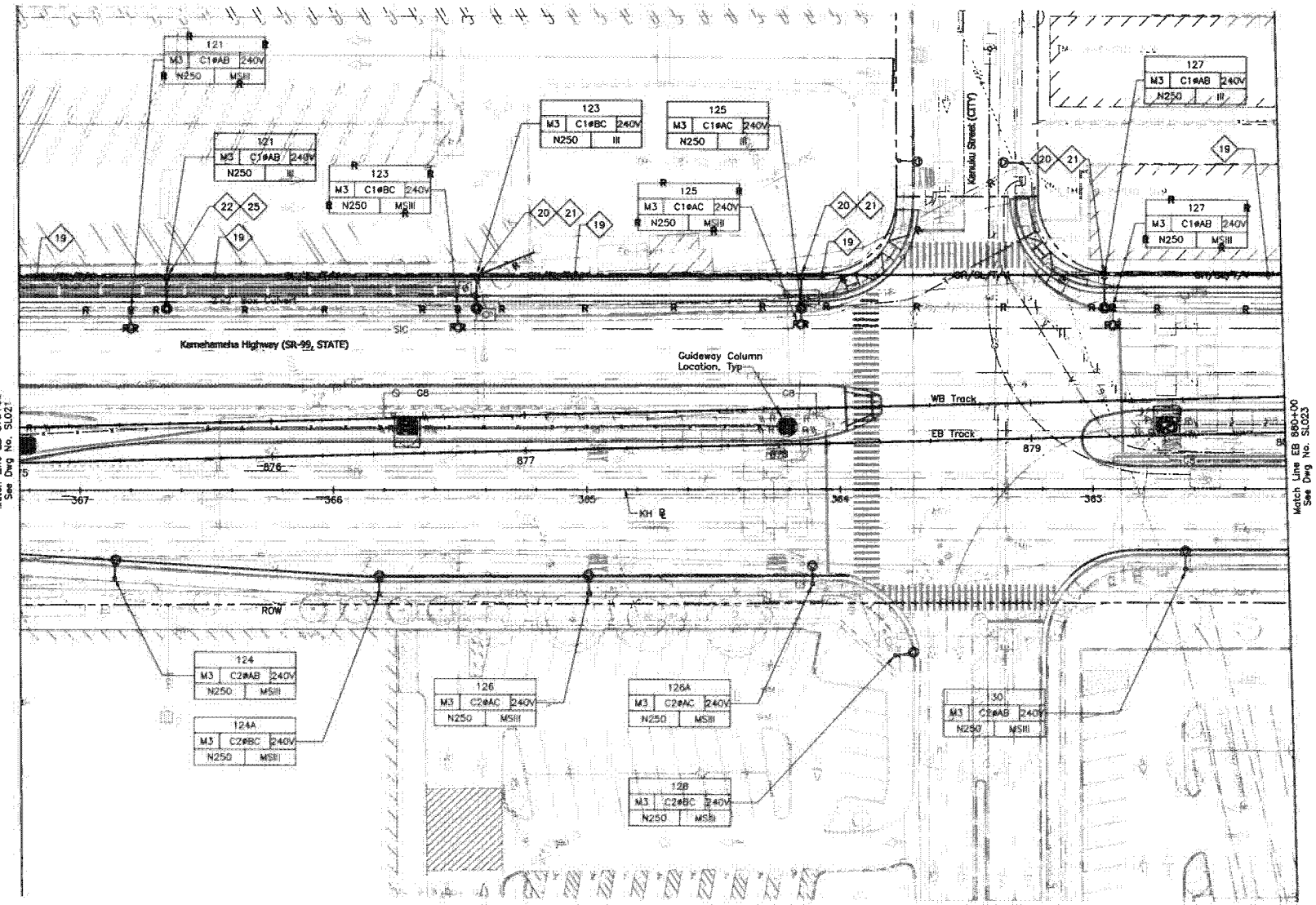

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UTILITY RELOCATION PLAN
STREET LIGHTING

EB 875+00 TO EB 880+00

Contract No.: DB-320
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Drawing No.: SL022
Rev.: A
Scale: 1"=20'
Page No. 156 of 186

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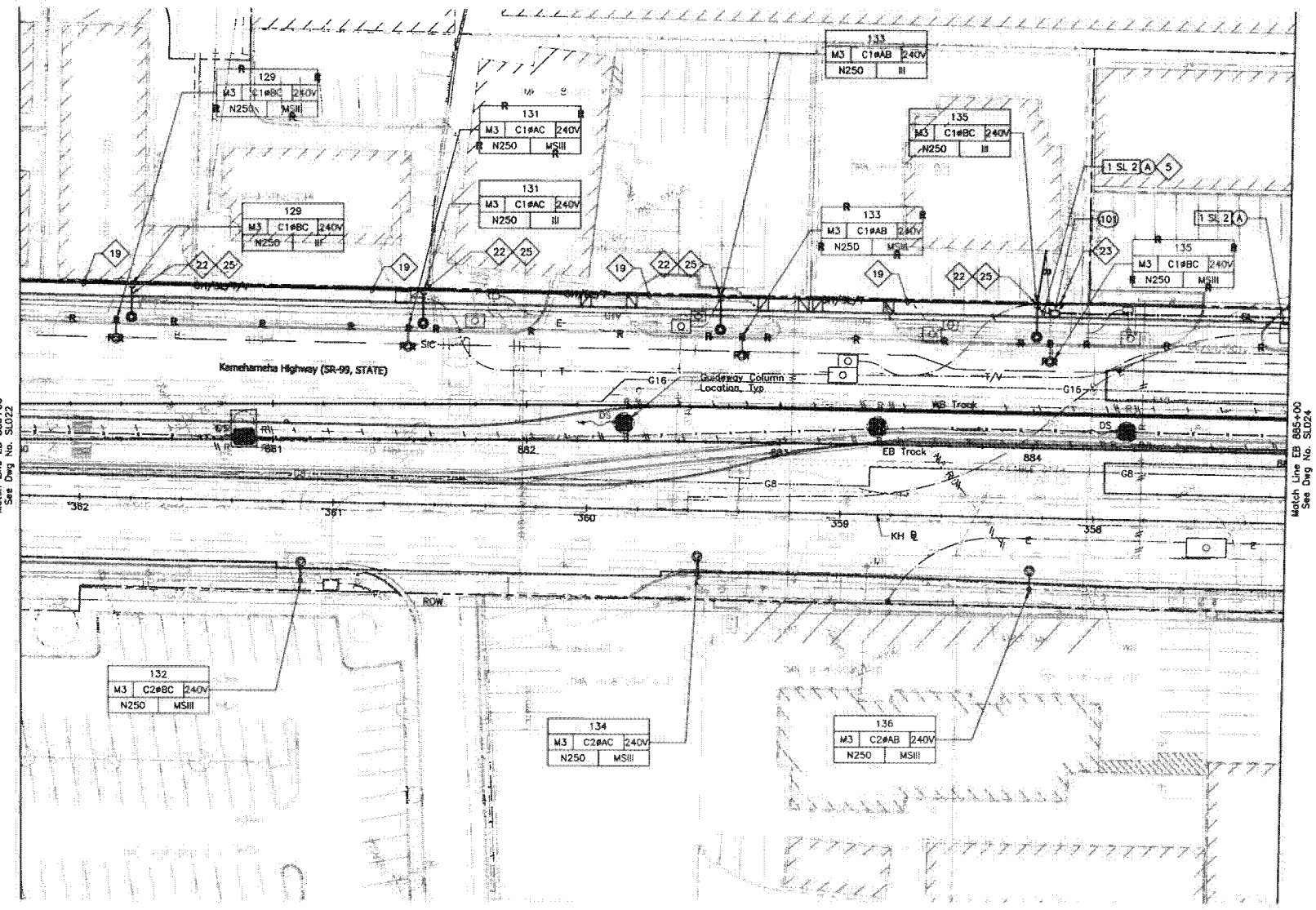

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20' 0' 20'

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Subconsultant: MKengineers

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UTILITY RELOCATION PLAN
STREET LIGHTING

EB 880+00 TO EB 885+00

Contract No.: DB-320
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Drawing No: SL023 Rev. A
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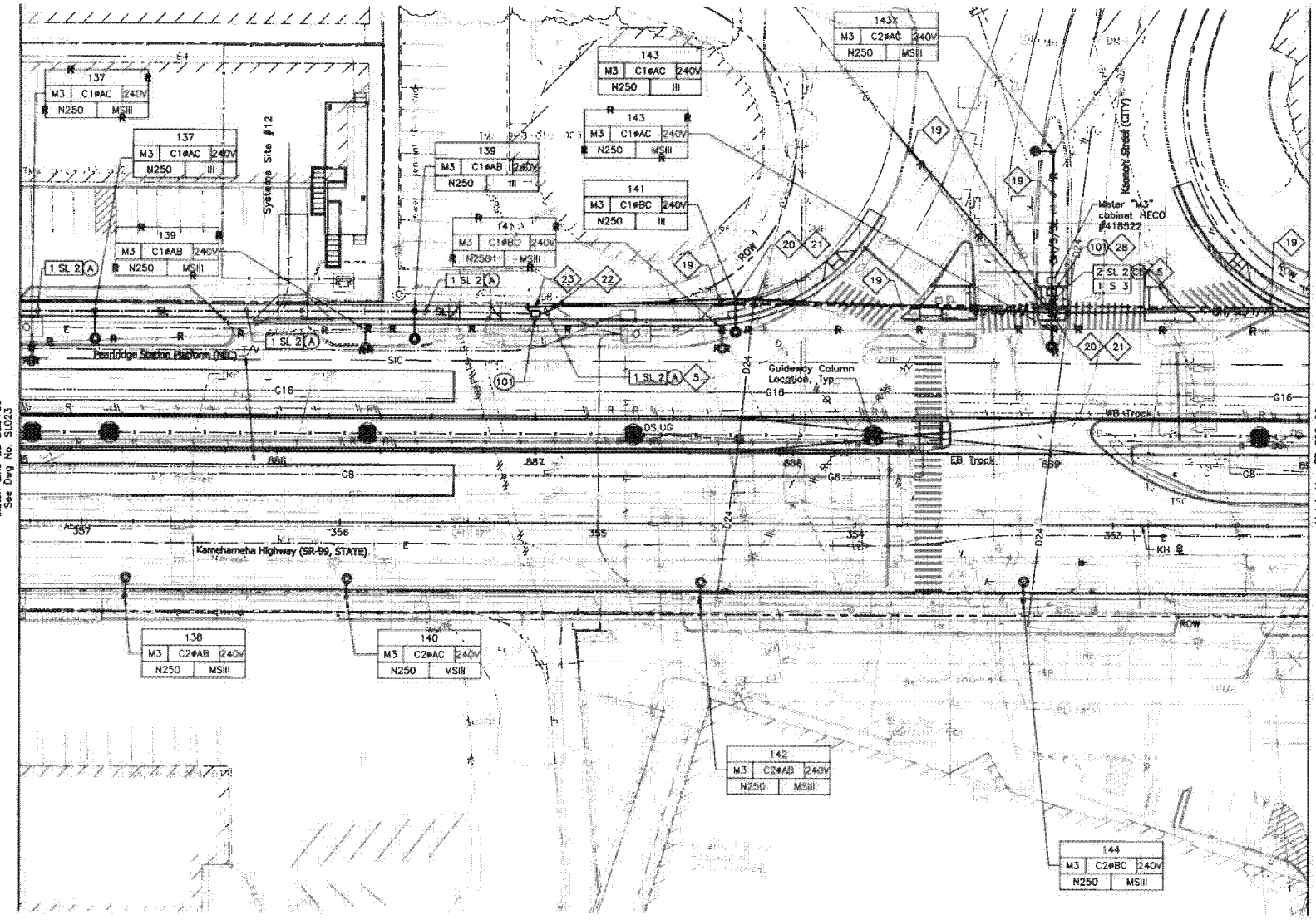

NOTES:

1a. See Dwg No. UG007 for General Notes and Symbols.

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5 Provide pole riser conduits in complement indicated up to applicable location on pole.

19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

22 Provide new wood joint pole. See Detail 1/UP407.

23 Provide new anchor. See Detail 3/UP407.

28 Intercept existing street lighting conduit with new pull box and conduit/s indicated. Provide new wiring to restore circuit continuity that existed. Wire size and quantity shall as a minimum match what existed. Provide an equipment grounding conductor with new current carrying conductors.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: R Katahara
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN STREET LIGHTING

EB 885+00 TO EB 890+00

Contract No.: DB-320
CADD File: KHDB-D04-SL024
Drawing No: SL024 Rev. A
Scale: 1"=20'
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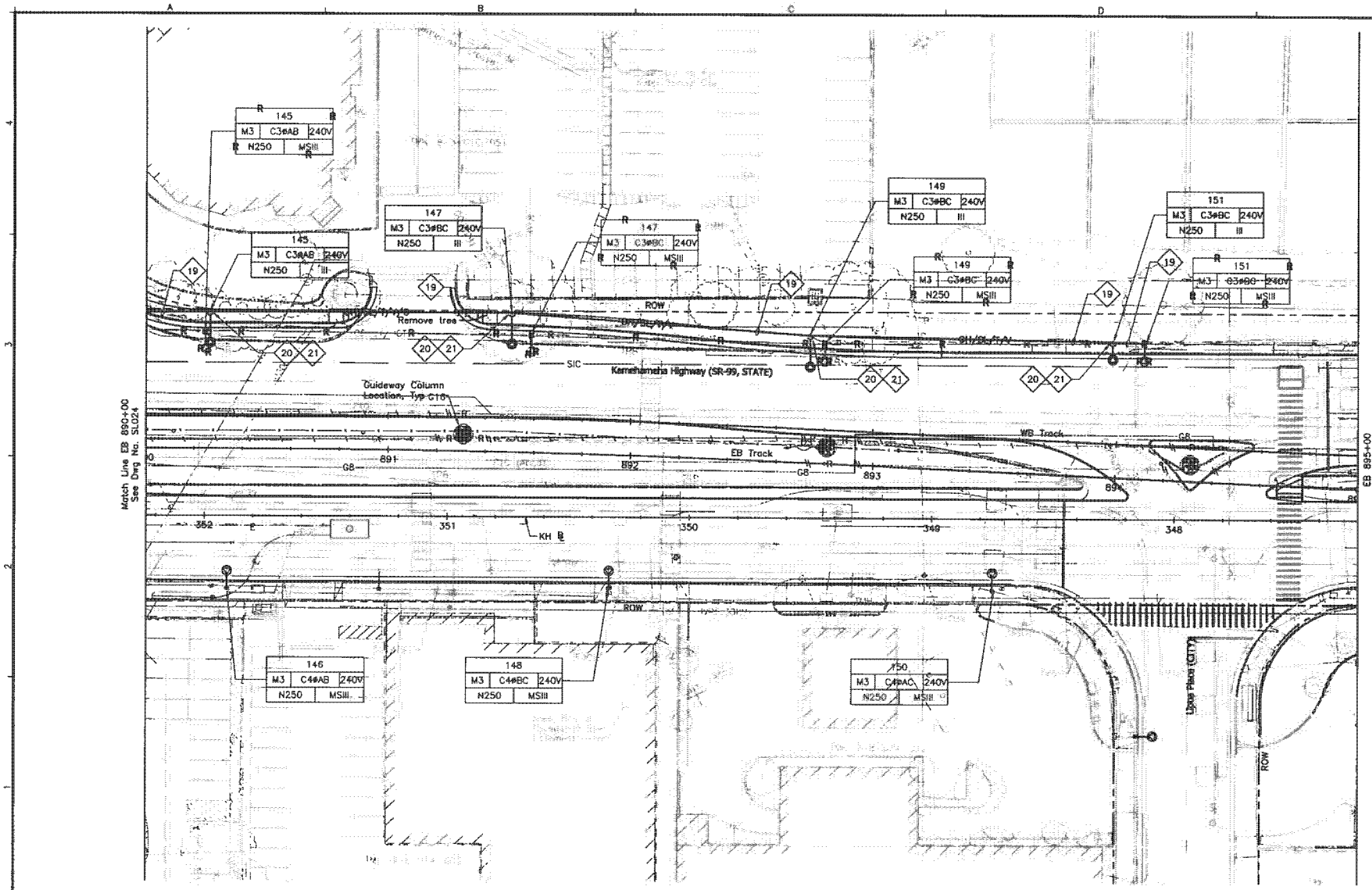

NOTES:

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19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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Subconsultant: MKengineers

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UTILITY RELOCATION PLAN STREET LIGHTING

EB 890+00 TO EB 895+00

Contract No.: DB-320
CADD File: KHDB-D04-SL025
Drawing No: SL025 Rev. A
Scale: 1"=20'
Page No. 159 of 186

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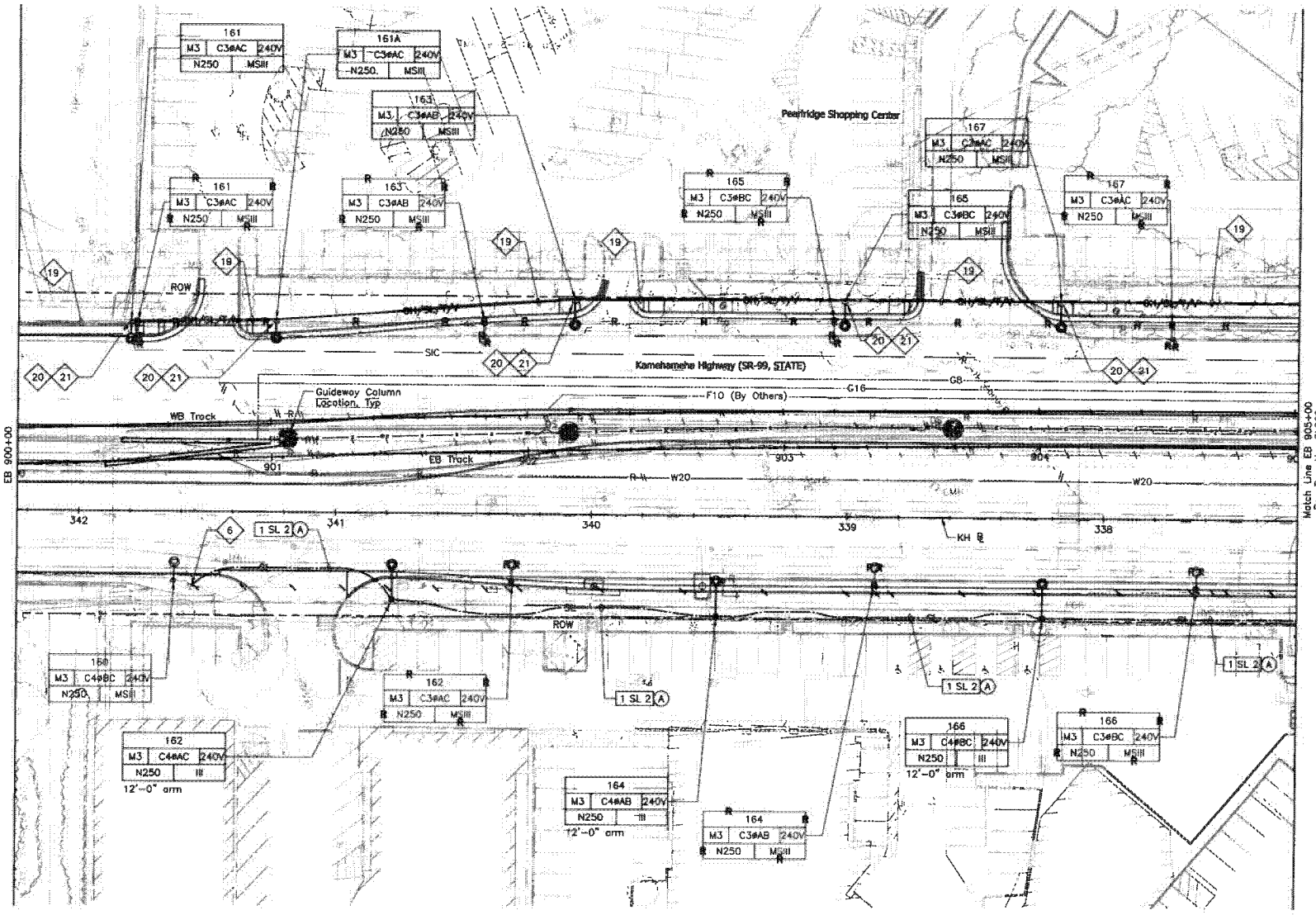

NOTES:

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6 Install conduits into manhole, handhole, or pullbox under applicable utility company supervision. See Detail 3/UP401.

19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

20' 0' 20'

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Approved: P. Uyeda
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
STREET LIGHTING

EB 900+00 TO EB 905+00

Contract No.: DB-320
CADD File: KHDB-D04-SL027
Drawing No: SL027
Rev. A
Scale: 1"=20'
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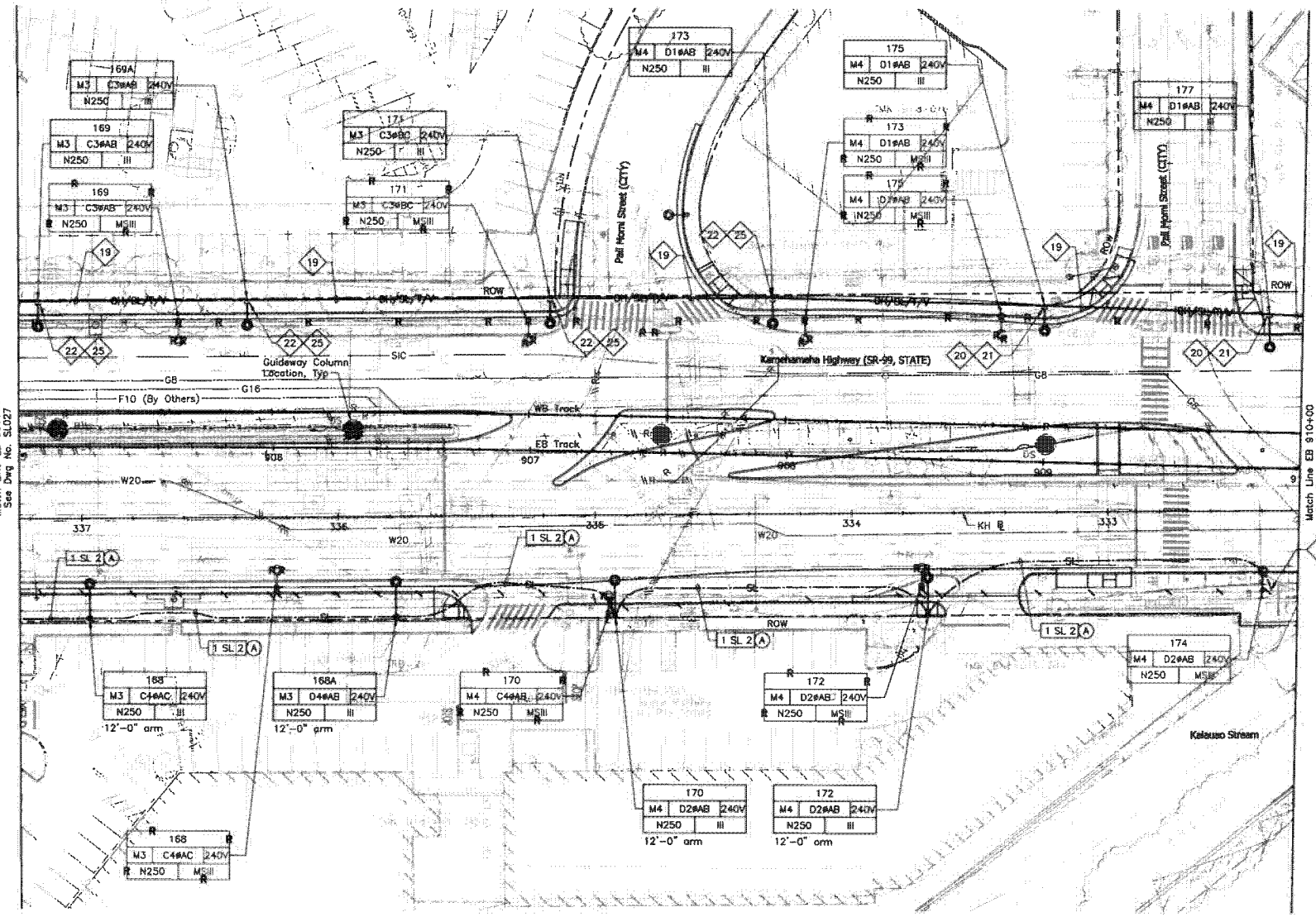

NOTES:

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6 Install conduits into manhole, handhole, or pullbox under applicable utility company supervision. See Detail 3/UP401.

19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

22 Provide new wood joint pole. See Detail 1/UP407.

25 Provide new highway lighting fixture and mount on new wood pole, and make connection to street lighting circuit. If power source is underground, provide conduit riser with weather head at street light level and make connections to lighting fixtures. Poles shall be designed and constructed to support telecom and related overhead cables. Coordinate design and construction with appropriate utility company.

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UTILITY RELOCATION PLAN
STREET LIGHTING

EB 905+00 TO EB 910+00

Contract No.: DB-320
CADD File: KHDB-D04-SL028
Drawing No.: SL028
Rev.: A
Scale: 1"=20'
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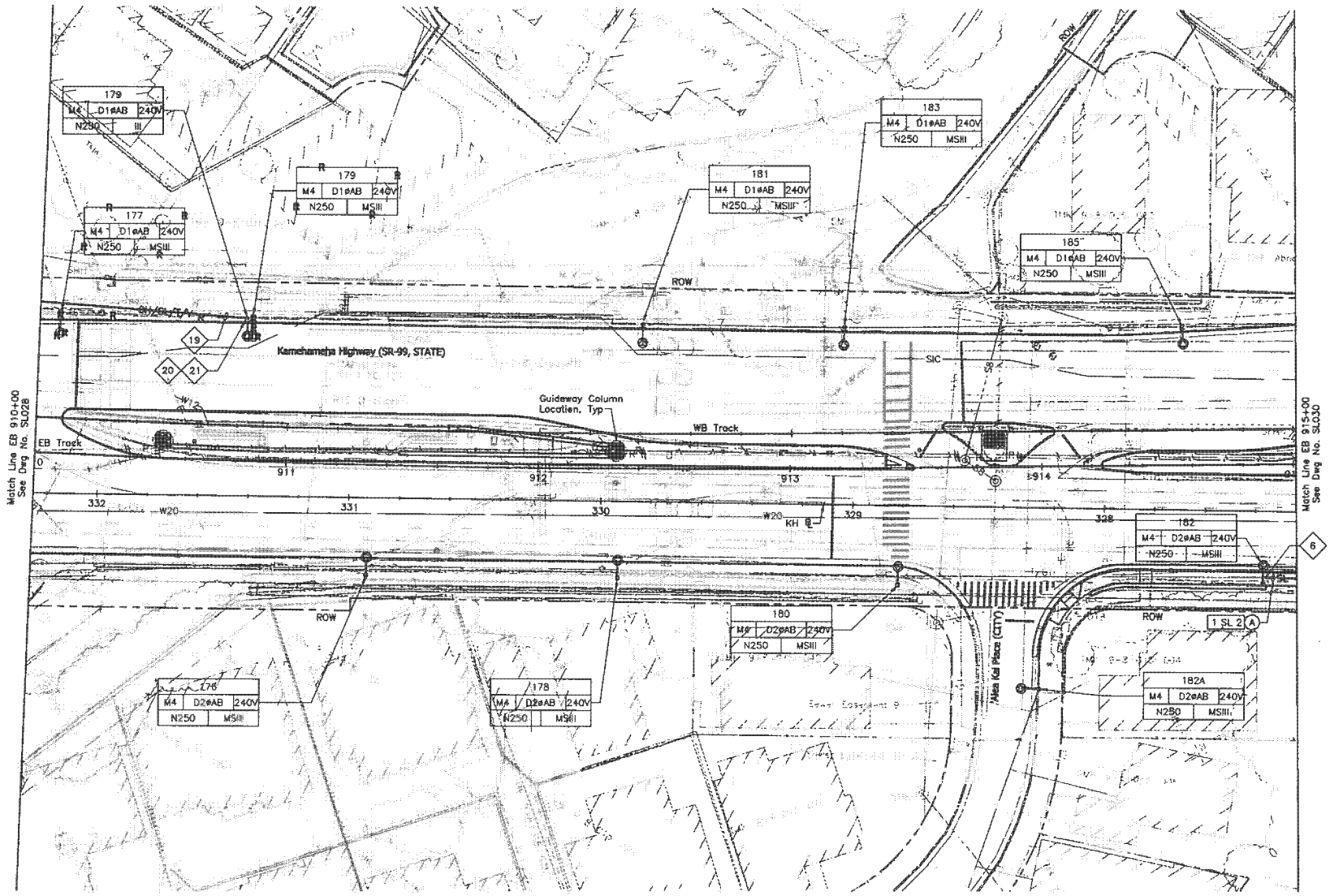

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20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

20' 0' 20'

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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UTILITY RELOCATION PLAN
STREET LIGHTING

EB 910+00 TO EB 915+00

Contract No.: DB-320
CADD File: KHDB-D04-SL029
Drawing No: SL029
Rev. A
Scale: 1"=20'
Page No. 162 of 186

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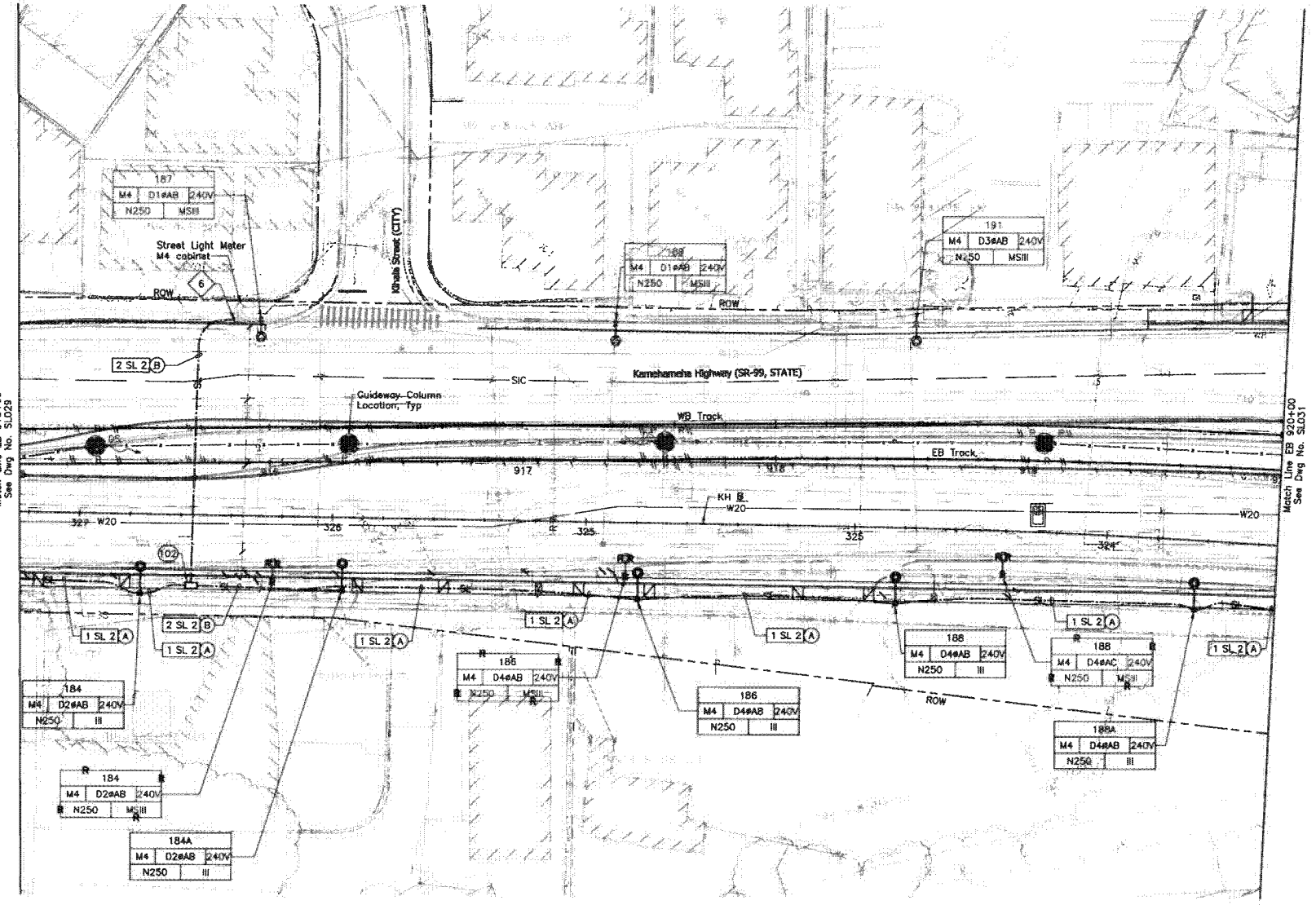

NOTES:

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6 Install conduits into manhole, handhole, or pullbox under applicable utility company supervision. See Detail 3/UP401.

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
STREET LIGHTING

EB 915+00 TO EB 920+00

Contract No.: DB-320
CADD File: KHDB-D04-SL030
Drawing No: SL030
Rev. A
Scale: 1"=20'
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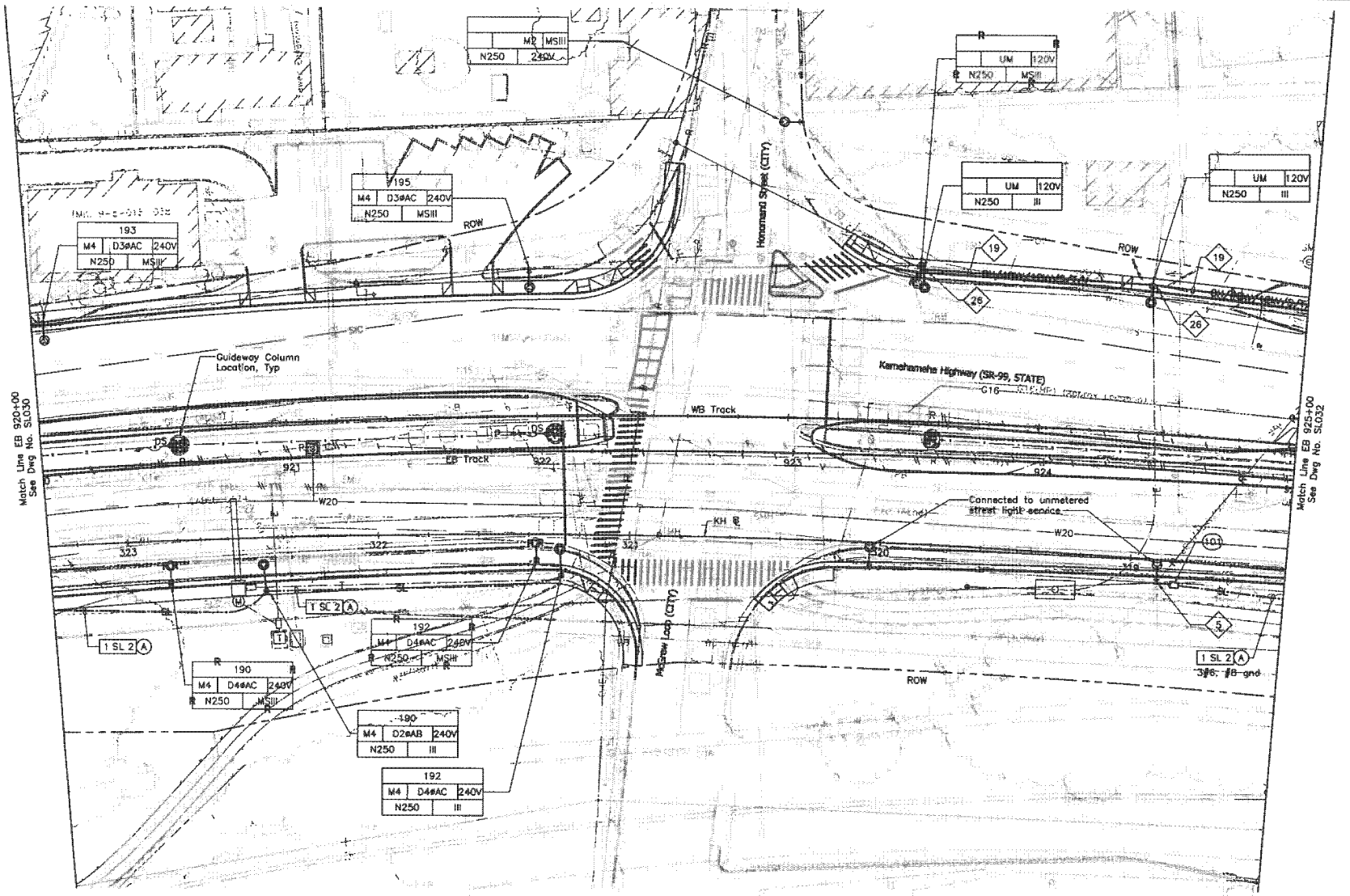

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5 Provide pole riser conduits in compliance indicated up to applicable location on pole.

19 Relocate cables from existing poles to new poles. Utility companies will be responsible for relocation of their own cables; contractor shall relocate street lighting or highway lighting cables.

26 Provide new highway lighting fixture on new joint steel pole provided by HECO. Unmetered final connection to HECO secondary system will be by HECO.

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: MKengineers

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UTILITY RELOCATION PLAN STREET LIGHTING

EB 920+00 TO EB 925+00

Contract No.: DB-320
CADD File: KHDB-D04-SL031
Drawing No: SL031 Rev. A
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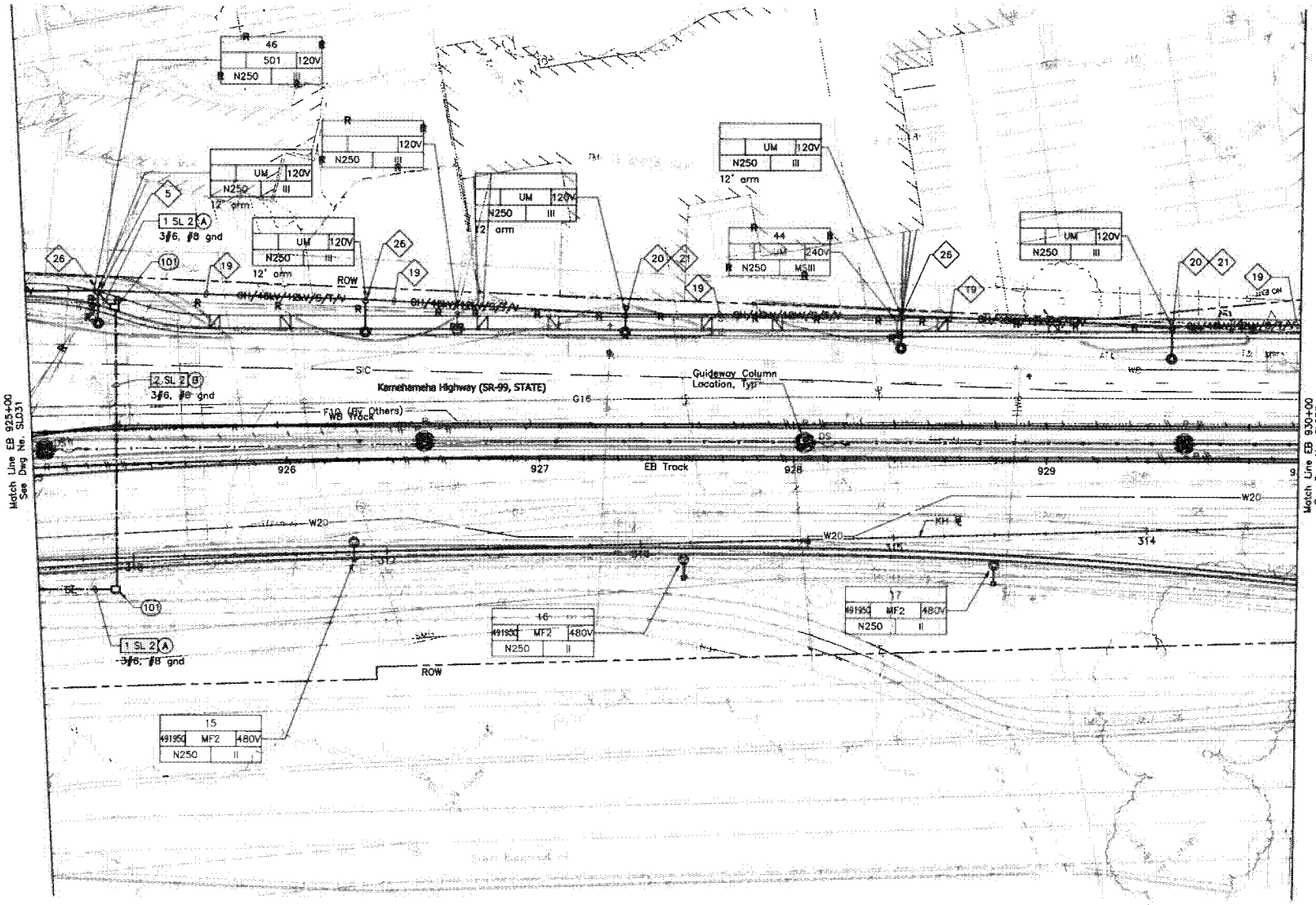
Page No. 164 of 186



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21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

26 Provide new highway lighting fixture on new joint steel pole provided by HECO. Unmetered final connection to HECO secondary system will be by HECO.

20' 0' 20'

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: MKengineers

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UTILITY RELOCATION PLAN
STREET LIGHTING

EB 925+00 TO EB 930+00

Contract No.: DB-320
CADD File: KHDB-D04-SL032
Drawing No: SL032 Rev. A
Scale: 1"=20'
Page No. 165 of 186

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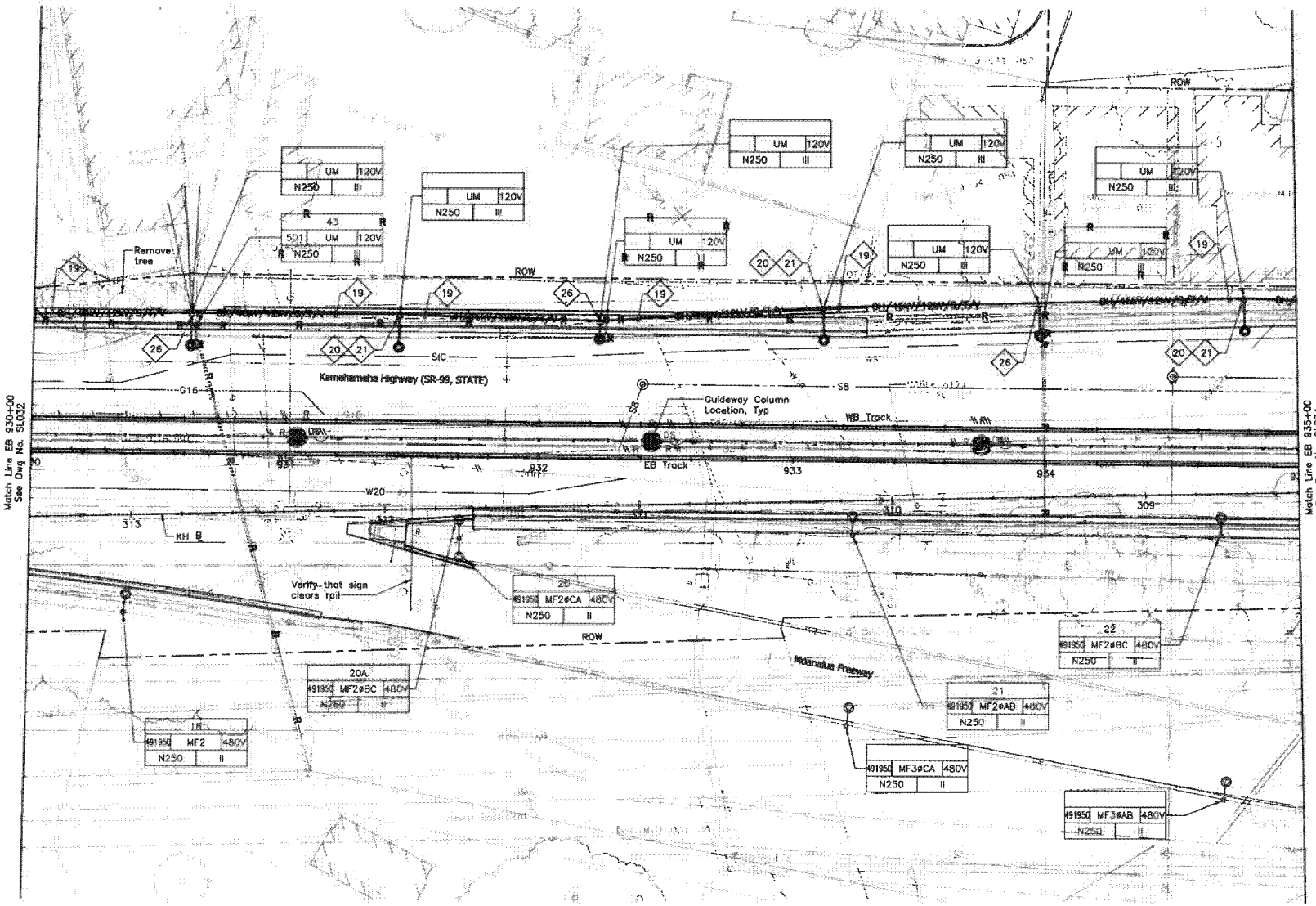

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21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

26 Provide new highway lighting fixture on new joint steel pole provided by HECO. Unmetered final connection to HECO secondary system will be by HECO.

20' 0' 20'

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
STREET LIGHTING

EB 930+00 TO EB 935+00

Contract No.: DB-320
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Page No. 166 of 186

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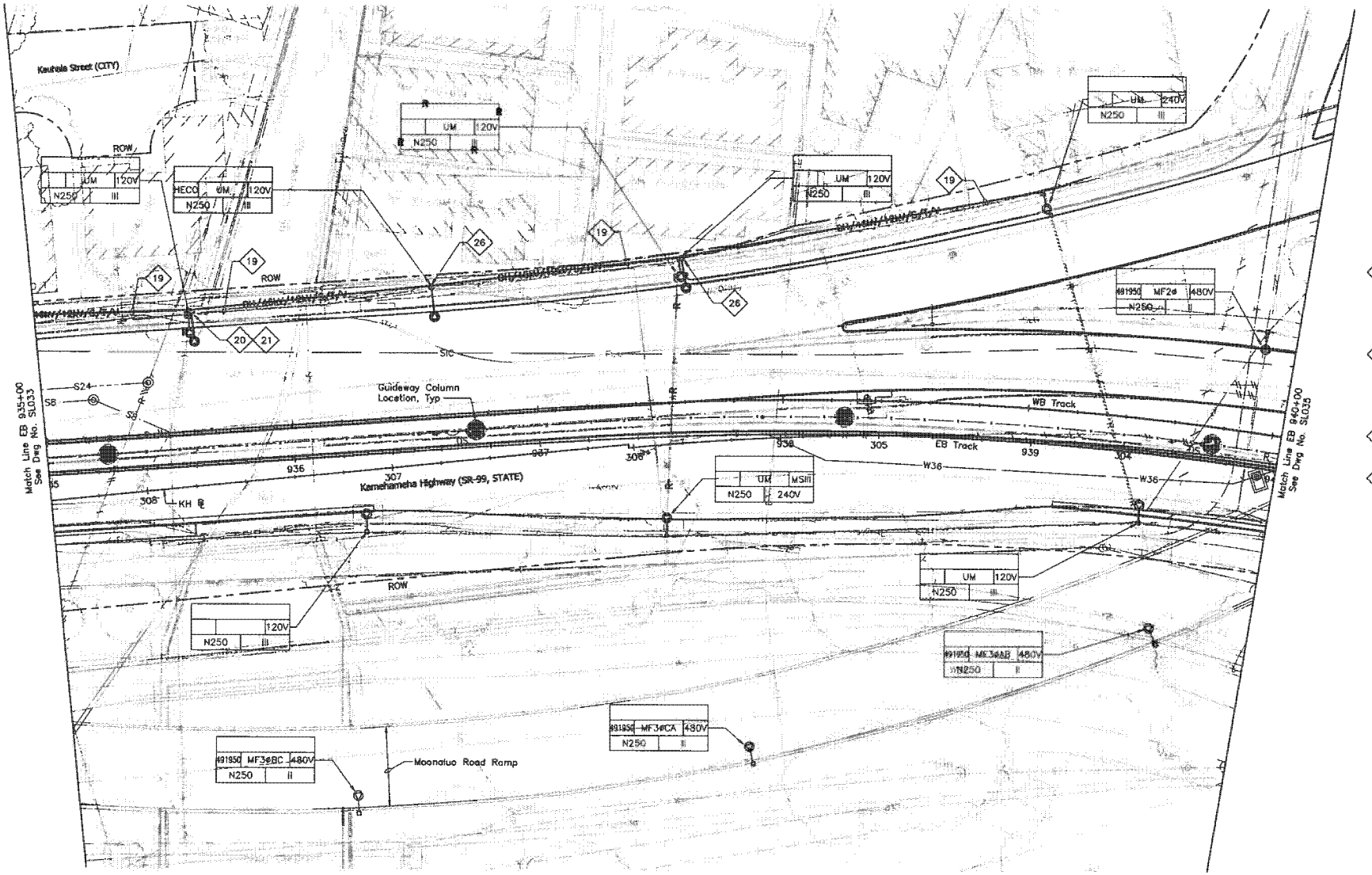

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20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

26 Provide new highway lighting fixture on new joint steel pole provided by HECO. Unmetered final connection to HECO secondary system will be by HECO.

20' 0' 20'

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN
STREET LIGHTING

EB 935+00 TO EB 940+00

Contract No.: DB-320
CADD File: KHDB-D04-SL034
Drawing No: SL034
Rev. A
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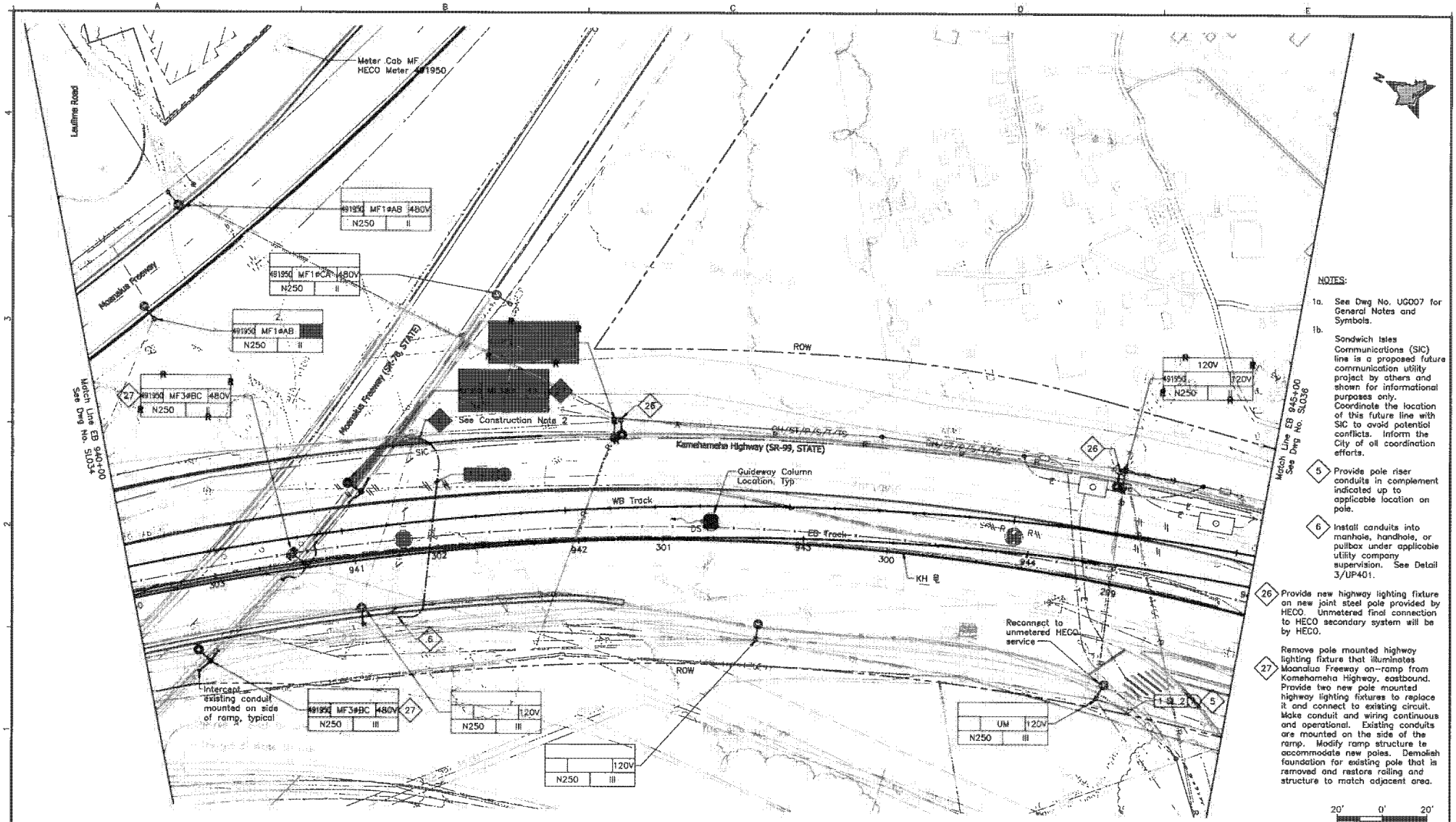

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5 Provide pole riser conduits in complement indicated up to applicable location on pole.

6 Install conduits into manhole, handhole, or pullbox under applicable utility company supervision. See Detail 3/UP401.

26 Provide new highway lighting fixture on new joint steel pole provided by HECO. Unmetered final connection to HECO secondary system will be by HECO.

27 Remove pole mounted highway lighting fixture that illuminates Moanalua Freeway on-ramp from Kamehameha Highway, eastbound. Provide two new pole mounted highway lighting fixtures to replace it and connect to existing circuit. Make conduit and wiring continuous and operational. Existing conduits are mounted on the side of the ramp. Modify ramp structure to accommodate new poles. Demolish foundation for existing pole that is removed and restore railing and structure to match adjacent area.

20' 0' 20'

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E-Mail: info@mkengineers.com

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UTILITY RELOCATION STREET LIGHTING

EB 940+00 TO EB 945+00

Contract No.: DB-320
CADD File: KHDB-D04-SL035
Drawing No: SL035 Rev. A
Scale: 1"=20'
Page No. 168 of 186

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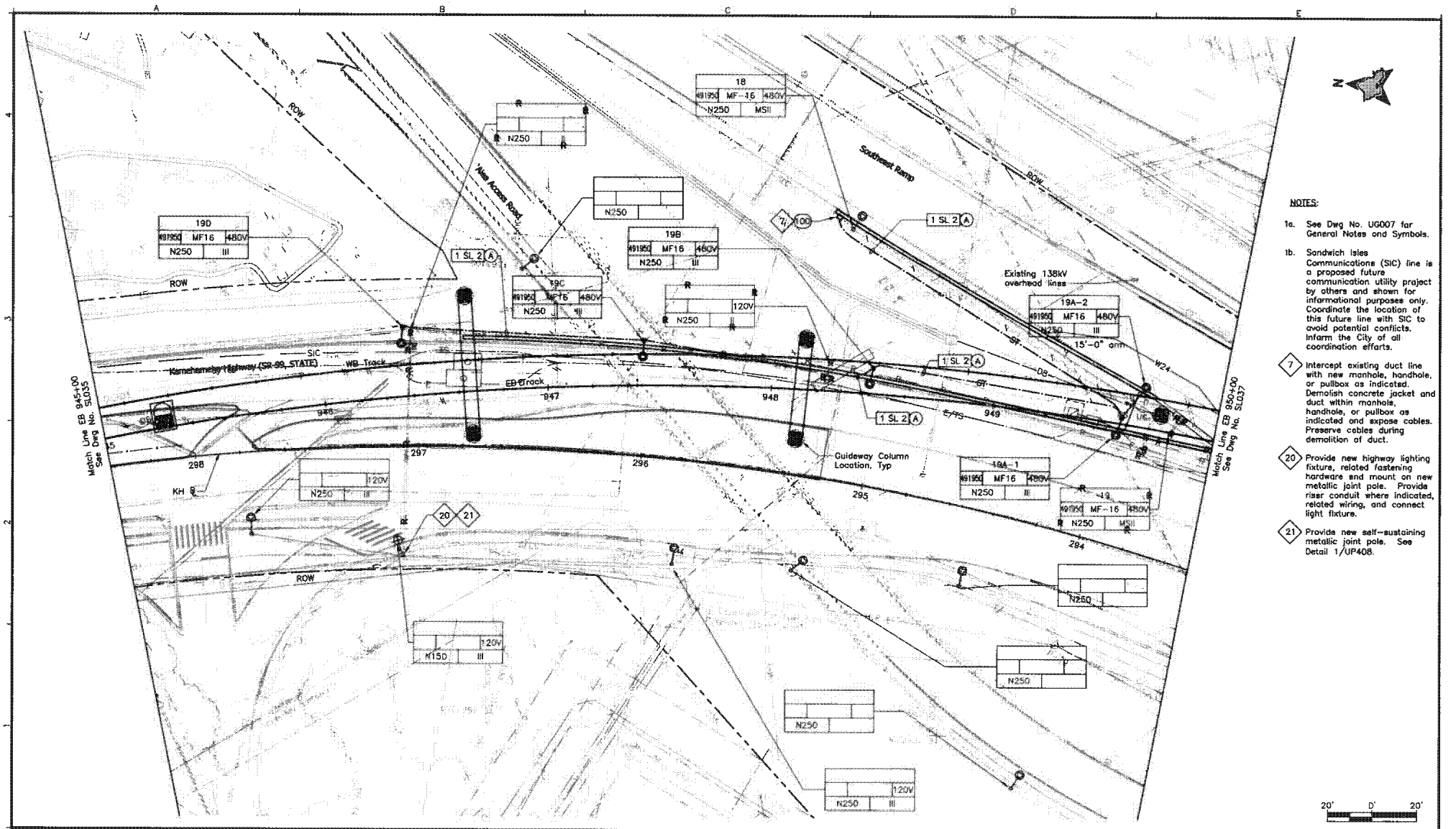

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7 Intercept existing duct line with new manhole, handhole, or pullbox as indicated. Demolish concrete jacket and duct within manhole, handhole, or pullbox as indicated and expose cables. Preserve cables during demolition of duct.

20 Provide new highway lighting fixture, related fastening hardware and mount on new metallic joint pole. Provide riser conduit where indicated, related wiring, and connect light fixture.

21 Provide new self-sustaining metallic joint pole. See Detail 1/UP408.

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION PLAN STREET LIGHTING

EB 945+00 TO EB 950+00

Contract No.: DB-320
CADD File: KHDB-D04-SL036
Drawing No: SL036 Rev. A
Scale: 1"=20'
Page No. 169 of 186

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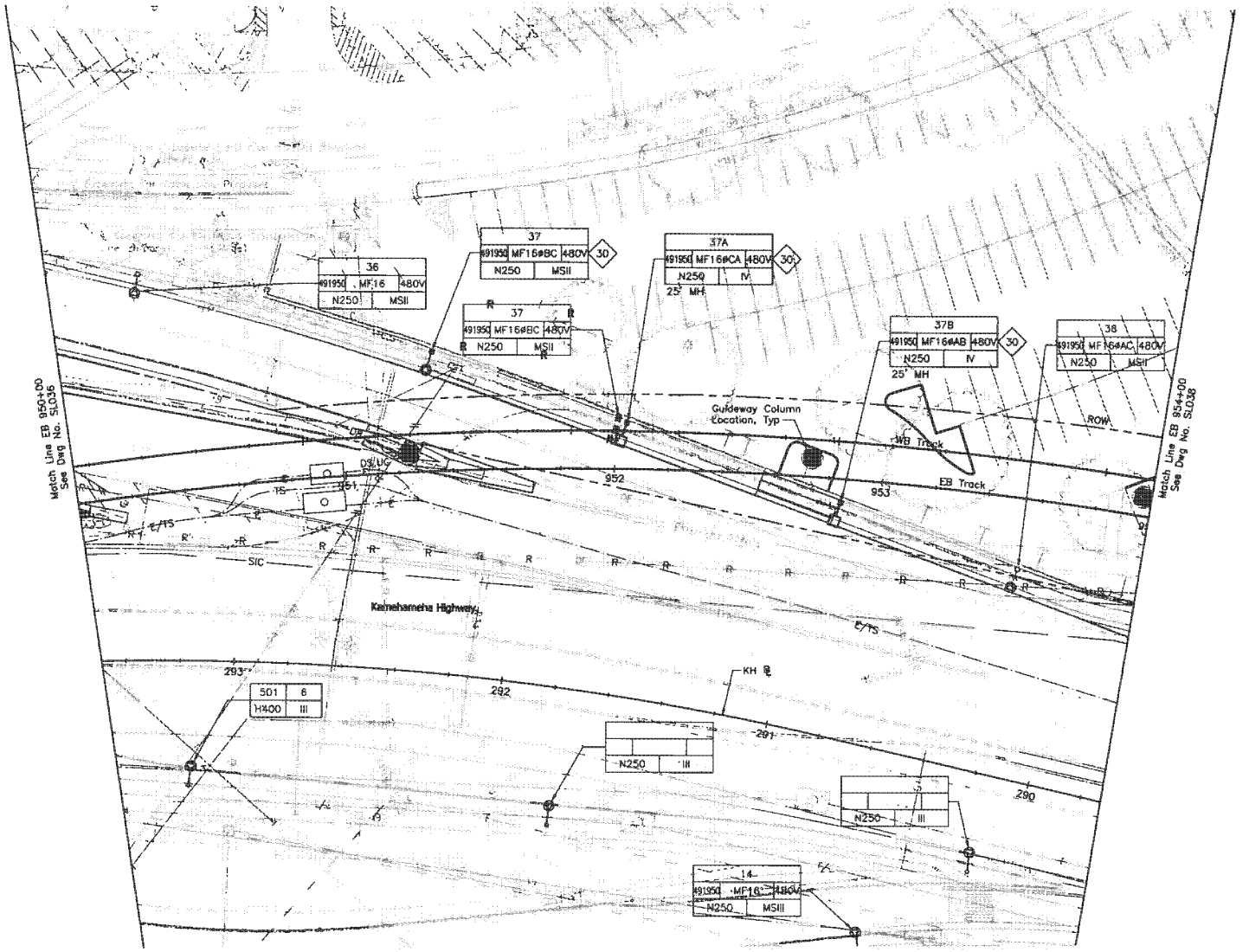

NOTES:

1a. See Dwg No. UG007 for General Notes and Symbols.

1b. Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. Coordinate the location of this future line with SIC to avoid potential conflicts. Inform the City of all coordination efforts.

30 Intercept existing ductline with new highway lighting fixture. Extend conduit into transformer base of new pole. Provide new 3#2, #6 ground to adjacent poles in both directions.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: R Katahara
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION STREET LIGHTING

EB 950+00 TO EB 954+00

Contract No.: DB-320
CADD File: KHDB-D04--SL037
Drawing No: SL037 Rev. A
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Page No. 170 of 186

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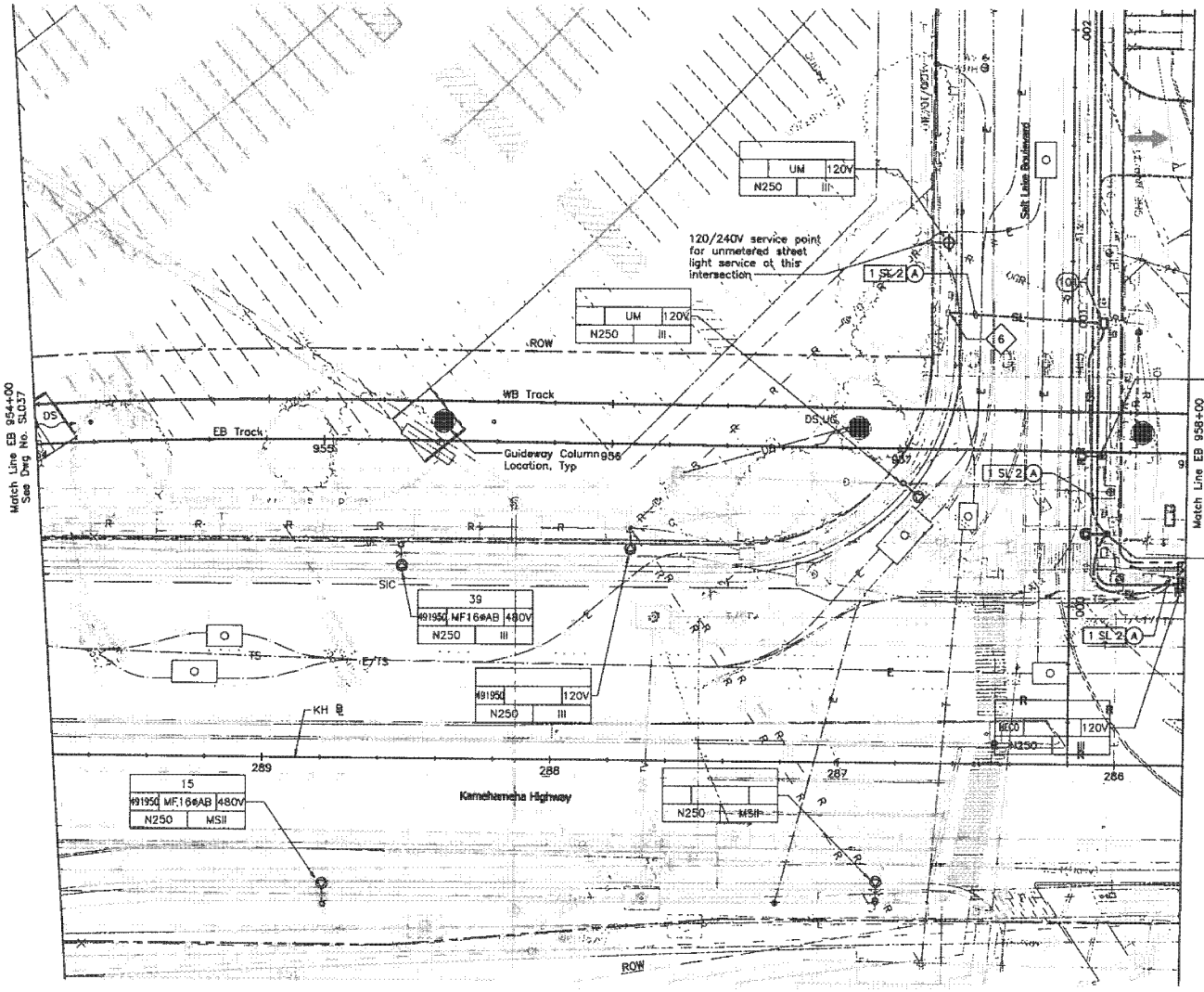

NOTES:

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6 Install conduits into manhole, handhole, or pullbox under applicable utility company supervision. See Detail 3/UP401.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

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Drawn: D Saito
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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PARSONS BRINCKERHOFF
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION STREET LIGHTING

EB 954+00 TO EB 958+00

Contract No.: DB-320
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Drawing No: SL038 Rev. A
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Page No. 171 of 186

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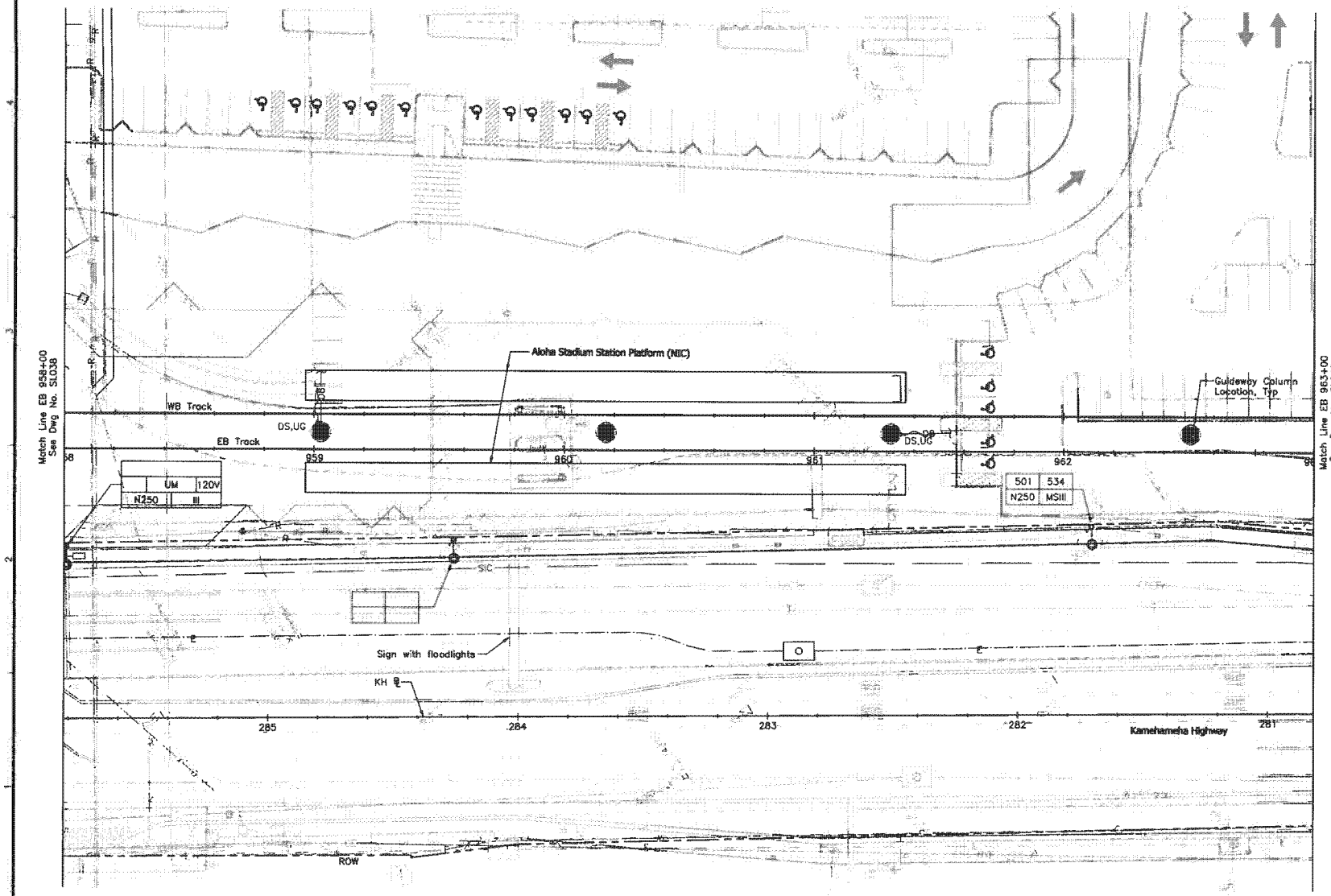

NOTES:

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20' 0' 20'

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Drawn: D Saito
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Approved: P Uyeda
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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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Subconsultant: MKengineers

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION
STREET LIGHTING

EB 958+00 TO EB 963+00

Contract No.: DB-320
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Drawing No: SL039
Rev: A
Scale: 1"=20'
Page No. 172 of 186

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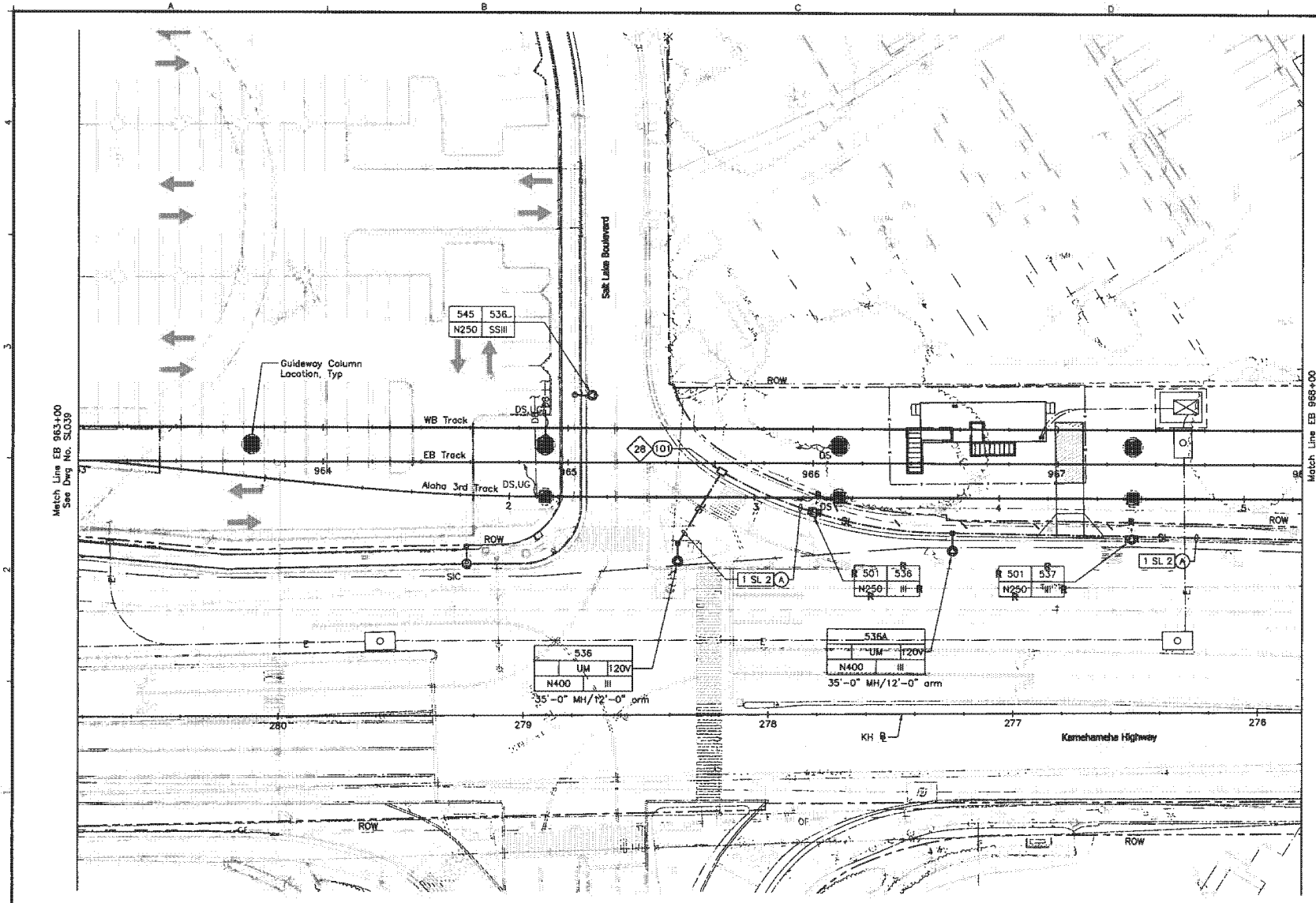

NOTES:

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1b. Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. Coordinate the location of this future line with SIC to avoid potential conflicts. Inform the City of all coordination efforts.

28 Intercept existing street lighting conduit with new pull box and conduit/s indicated. Provide new wiring to restore circuit continuity that existed. Wire size and quantity shall as a minimum match what existed. Provide an equipment grounding conductor with new current carrying conductors.

20' 0' 20'

Rev	By	Date	Description
A	PKU	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION
STREET LIGHTING

EB 963+00 TO EB 968+00

Contract No.: DB-320
CADD File: KHDB-D04-SL040
Drawing No: SL040
Rev. A
Scale: 1"=20'
Page No. 173 of 186

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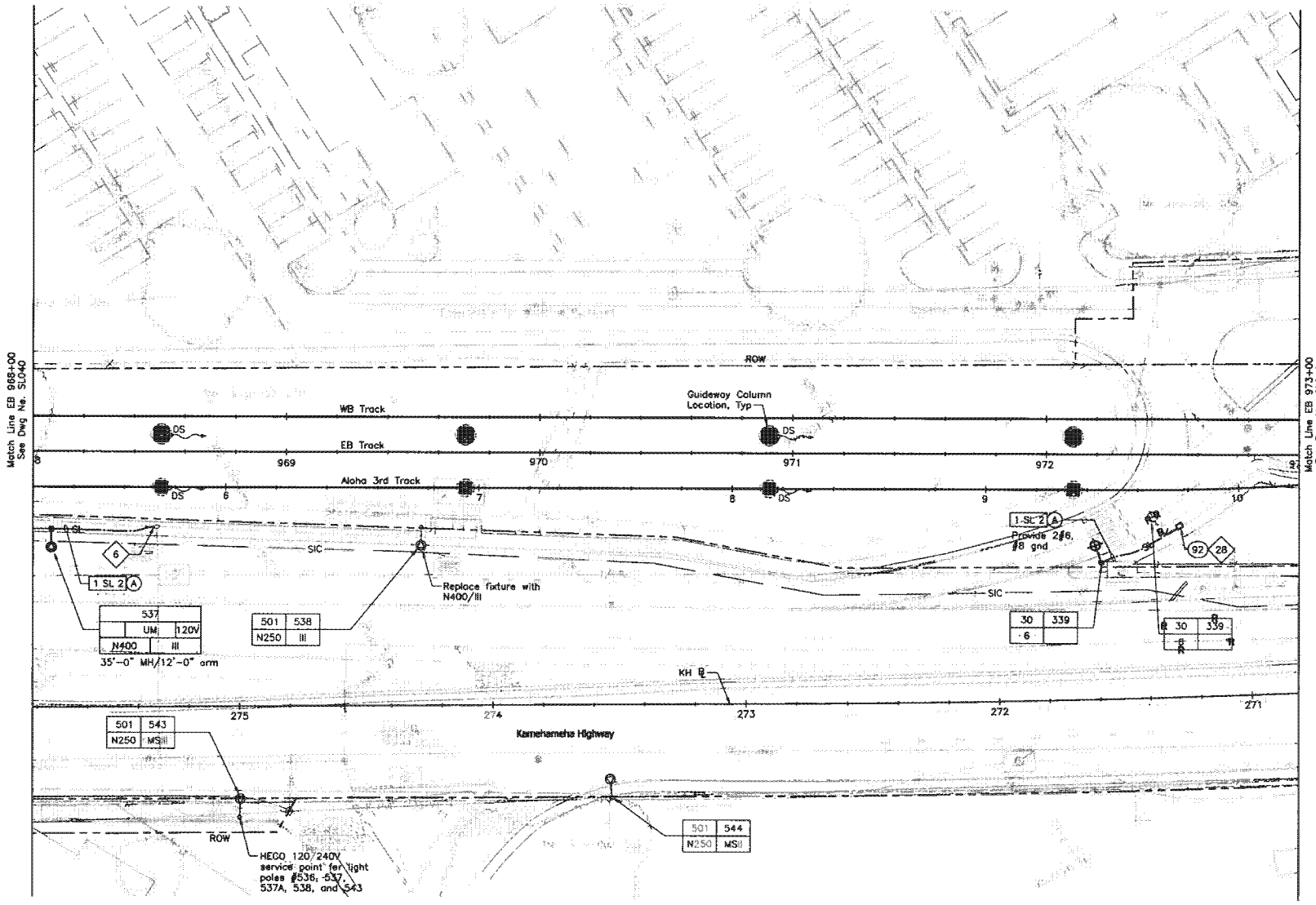

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20' 0' 20'

Rev	By	Date	Description
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Drawn: D Saito
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Approved: P Uyeda
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION
STREET LIGHTING

EB 968+00 TO EB 973+00

Contract No.: DB-320
CADD File: KHDB-D04-SL041
Drawing No: SL041
Rev. A
Scale: 1"=20'
Page No. 174 of 186

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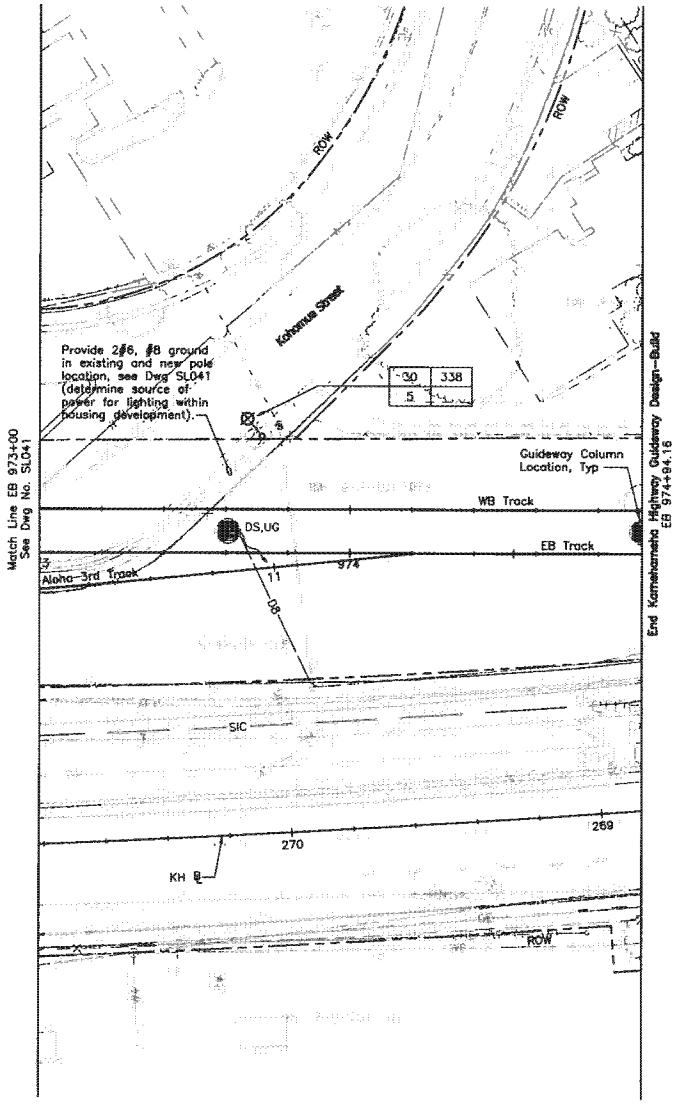

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20' 0' 20'

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PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

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Drawn: D Saito
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Approved: P Uyeda
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

UTILITY RELOCATION
STREET LIGHTING

EB 973+00 TO END

Contract No.: DB-320
CADD File: KHDB-D04-SL042
Drawing No: SL042
Rev. A
Scale: 1"=20'
Page No. 175 of 186

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GENERAL STRUCTURAL AND GEOTECHNICAL NOTES (continued)

9.12 The Design-Builder shall carefully review the drawings, to identify the extent of the scope of work. Visit the site to relate the scope of work to the existing conditions and determine the extent to which those conditions and physical surroundings will impact the work;

9.13 The Design-Builder shall resolve any conflicts on the project drawings with RTD before proceeding with the work;

9.14 Any deviation from the final RTD approved set of the Design-Builder's structural drawings shall be submitted to the RTD for review/approval before proceeding with the work. Substitutions of products or material specified on the Design-Builder's final construction documents are not allowed.

9.15 Complete structural and geotechnical calculations and drawings must be provided for all newly constructed elements and for existing elements within the zone of construction influence;

9.16 See Trackwork, Electrical, and Systems Drawings for the following:
- Track alignment information
- Pipe runs, sleeves, hangers, drainage inlets, and openings in the structural members;
- Electrical conduit runs, boxes, and outlets in structural members;
- Anchor bolts and inserts for equipment mounts;
- Size, weight, and location of equipment to be installed by others.

10.0 General Geotechnical Conditions Shown on Structural Drawings:

10.1 Geotechnical conditions implied by the Structural drawings shall be verified by the Design-Builder;

10.2 Locations shown are based on available data cited in the respective report;

10.3 References:

A. City-developed geotechnical data for the Contract limits is presented in "Geotechnical Data Report, HHCTCP – Kamehameha Highway Segment, Pearl City to Aiea; Ewa, Oahu, Hawaii" dated February 16, 2010, by Geolabs, Inc.

B. City-developed geotechnical information presented in "Geotechnical Engineering Exploration, Honolulu Rapid Transit Development Project; Addendum 4; Department of Transportation Services, City and County of Honolulu [Geolabs-Hawaii; March 15, 1991; W.O. 2366+00]" dated March 1991.

C. Reference document made available to the designer for information only: February 26, 2010; Fixed Guideway Foundation Technical Memorandum, HHCTCP – Kamehameha Highway Segment, Pearl City to Aiea; Ewa, Oahu, Hawaii W.O. 6000-20..

11.0 Minimum Material Strengths:

11.1 Unless otherwise approved by RTD, the following minimum material strengths shall be used for the construction of the guideway structural elements:

- For the precast concrete of span by span and balanced cantilever girder elements: f'c = 6000 psi;
- For guideway pier beams and columns, and prestressed concrete: f'c = 4000 psi;
- For all cast in drilled shaft foundations: f'c=4500 psi min;
- For all above ground reinforced concrete cast-in place structures not specified above, including columns, cap beams, and superstructure for aerial structures and bridges, columns, beams, slabs, foundations, and walls for the buildings: f'c=4000 psi min;
- For all building foundations, floor slabs, pits and other miscellaneous foundations at yards and shops, miscellaneous foundations other than those specified, and station platform foundations: f'c=3000 psi min;
- In certain cases, strengths of concrete other than those specified above might be required. These cases shall be as recommended by the designer of record and accepted by RTD.

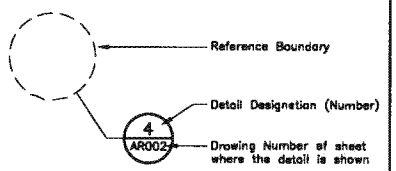
11.2 Reinforcing and Prestressing Steel:
- Reinforcing Steel: Primary reinforcement: ASTM A615/A615M Grade 60, Secondary reinforcement: ASTM A615/A615M Grade 40.
- Prestressing Steel: Stress Relieved Steel wire ASTM A421, Stress Relieved Steel Strand ASTM A416 (low relaxation), High Strength Steel bar ASTM A722

12.0 Seismic:

The seismic design for the guideway structures shall be 7 percent probability of exceedance in 75 years (Approximately a 1000 year return period). The Peak Ground Acceleration Coefficient is 0.18.

STRUCTURAL SYMBOLS

DETAILS



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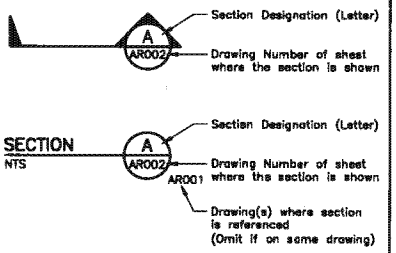
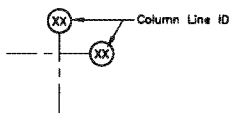


COLUMN LINE GRID INDICATOR



HATCH

- Station Platform Location (NIC)
- Concrete
- Composite Panel
- Earth
- Gravel/Rip-Rap
- Sand, Grout, Mortar

GENERAL SYMBOLS

&	And
@	At
#	Number
ø	Diameter
%	Percent
=	Equal to
>	Greater Than
<	Less Than
≥	Greater Than or Equal To
≤	Less Than or Equal To
±	Plus or Minus

CIVIL SYMBOLS

- Point of Vertical Intersection
- Point of Switch

STRUCTURAL SYMBOLS

- Semi-Square Pier Column with Drill Shaft
- Work Point

GEOTECHNICAL SYMBOLS

See General Notes 10.3 References:

- B-101 — Completed Geotechnical Boring; Ref A
- B-220 (SCPT) — Completed Seismic Cone Penetration Test; Ref A
- B-221 [2] — Boring Completed with Indicated Number of Vibrating Wire Piezometers; Ref A
- B-107 (SWVP) — Boring Completion included down-hole Seismic Shear Wave Velocity Profile; Ref A
- B-1 — Completed Geotechnical Boring; Ref B
- A — Completed Geotechnical Boring; Ref B

STRUCTURAL ABBREVIATIONS

Ah	Ahead
Approx.	Approximate, Approximately
Arch.	Architect, Architectural
ASCE	American Society of Civil Engineers
Ave	Avenue
℄	Baseline
Bk	Back
Bldg	Building
Blvd	Boulevard
℄	Centerline
C.G.	Center of Gravity
CIDH	Cast in Drilled Hole
CIP	Cast-in-Place
C.J.	Construction Joint
Clr	Clear, Clearance
Col	Column
Conc	Concrete
Dia	Diameter
Dwg	Drawing
E	East
EB	Eastbound, End of Bridge
EG	Existing Ground
El, Elev	Elevation
Ex, Exist	Existing
Exp	Expansion
FG	Finished Grade
Ft, ft	Feet, Foot
Galv	Galvanized
HHCTCP	Honolulu High-Capacity Transit Corridor Project
HSS	Hollow Structural Shape
Hwy	Highway
Jt	Joint
Max	Maximum
Min	Minimum
N	North
NB	Northbound
NE	Northeast
NIC	Not In Contract
No.	Number
Nos.	Numbers
O.C.	On Center
OH	Overhead
PS	Point on Switch
PVI	Point of Vertical Intersection
R	Radius
Rd	Road
RTD	Rapid Transit Division
Tot	Total
Typ	Typical
Var	Varies
WB	Westbound
WP	Work Point
w/	With

SPECIAL TERMS

Makai	Ocean
Mauka	Mountain

Rev	By	Date	Description
A	AB	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: D Yaversky
Drawn: T Cochran
Checked: T Kimura
Approved: A Borst
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

GENERAL STRUCTURAL NOTES, SYMBOLS AND ABBREVIATIONS

SHEET 2 OF 2

Contract No.: DB-320
CADD File: KHDB-G01-SG002
Drawing No: SG002 Rev. A
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Page No. 20 of 123

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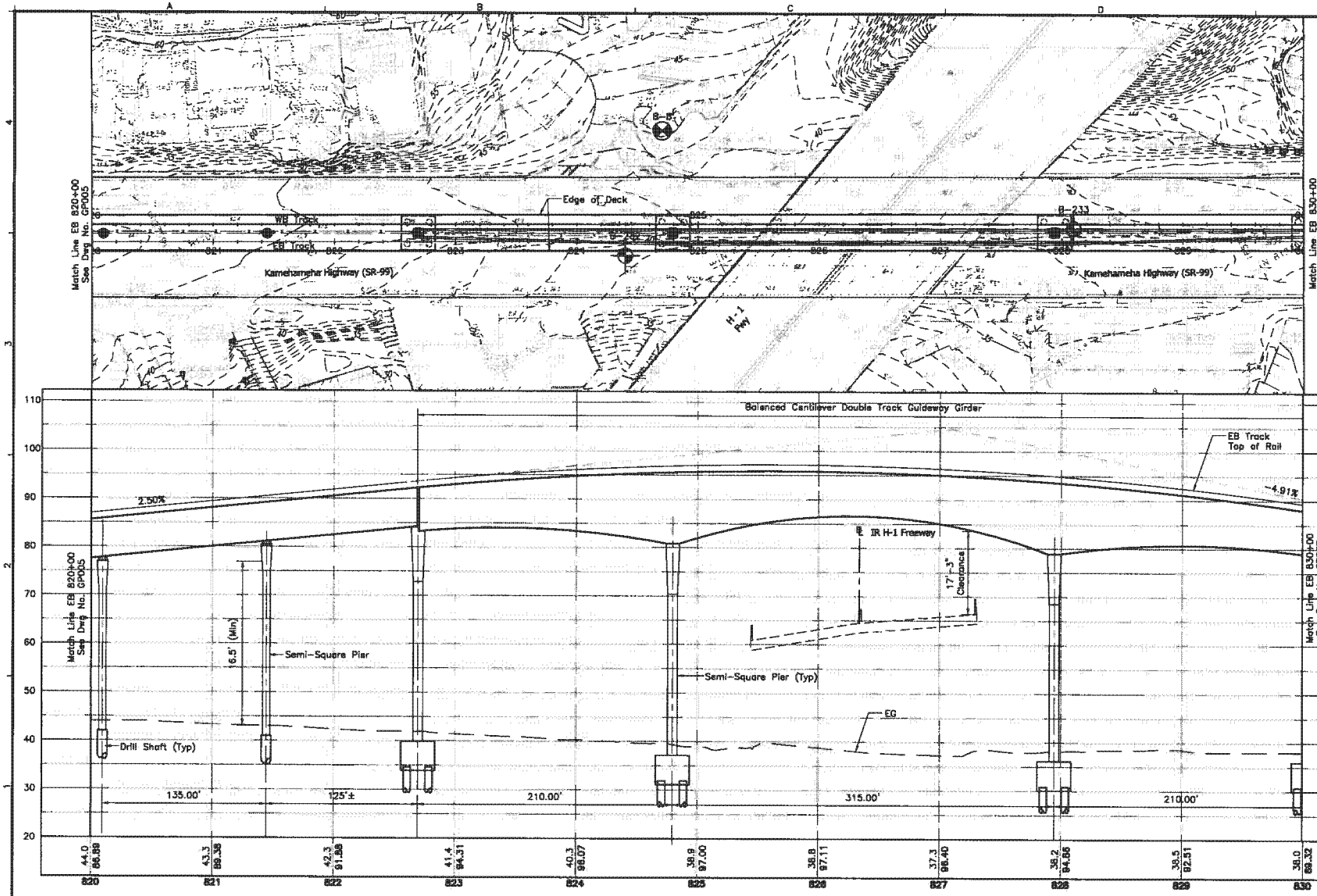

NOTES:

1. See Dwg Nos. SG001 and SG002 for Structural General Notes, Symbols and Abbreviations.
2. The configuration shown relative to NIC work and site condition is under development and subject to change.
3. Unless shown otherwise on the drawings, the semi-square columns, if used, shall not be less than 6-foot by 6-foot, and the associated drilled shafts shall not be less than 8-foot in diameter.
4. For Roadway Improvements, See Civil Roadway Construction Plans.
5. Vertical clearances shown over elevated roadways are given along the eastbound track centerline only. The location of the minimum vertical clearance depends on the roadway and guideway slopes and superelevations. Actual minimum vertical clearances shall be calculated by the final designer.

Rev	By	Date	Description
A	AB	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT
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Designed: D Yavorsky
Drawn: T Cochran
Checked: T Kimura
Approved: A Barst
Date: 03-19-10

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

STRUCTURAL PLAN AND PROFILE

EB 820+00 TO EB 830+00

Contract No.: DB-320
CADD File: KHDB-G04-GP006
Drawing No: GP006 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 26 of 123

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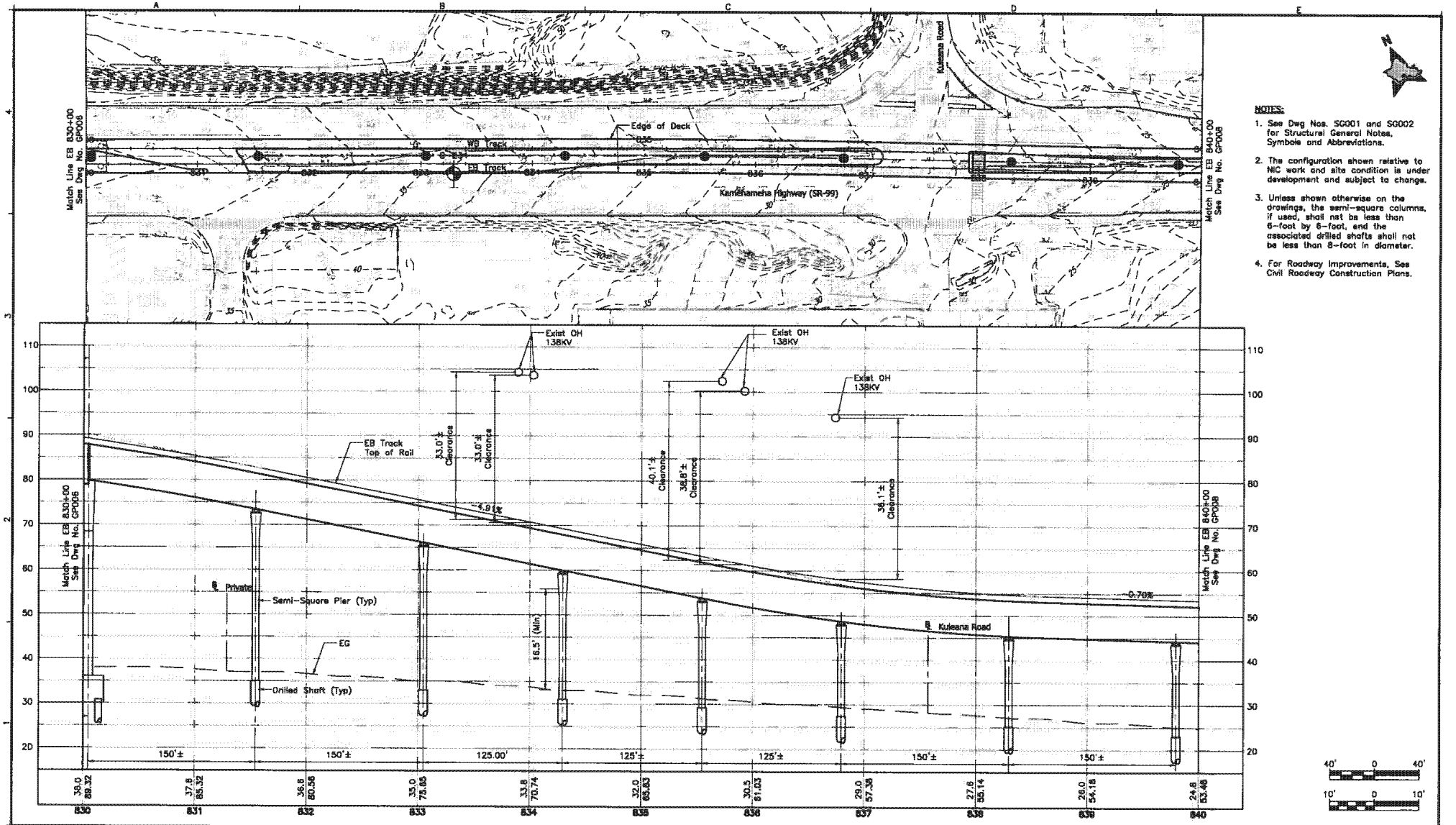

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

STRUCTURAL PLAN AND PROFILE

EB 830+00 TO EB 840+00

Contract No.: DB-320
CADD File: KHDB-G04-GP007
Drawing No: GP007 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 27 of 123

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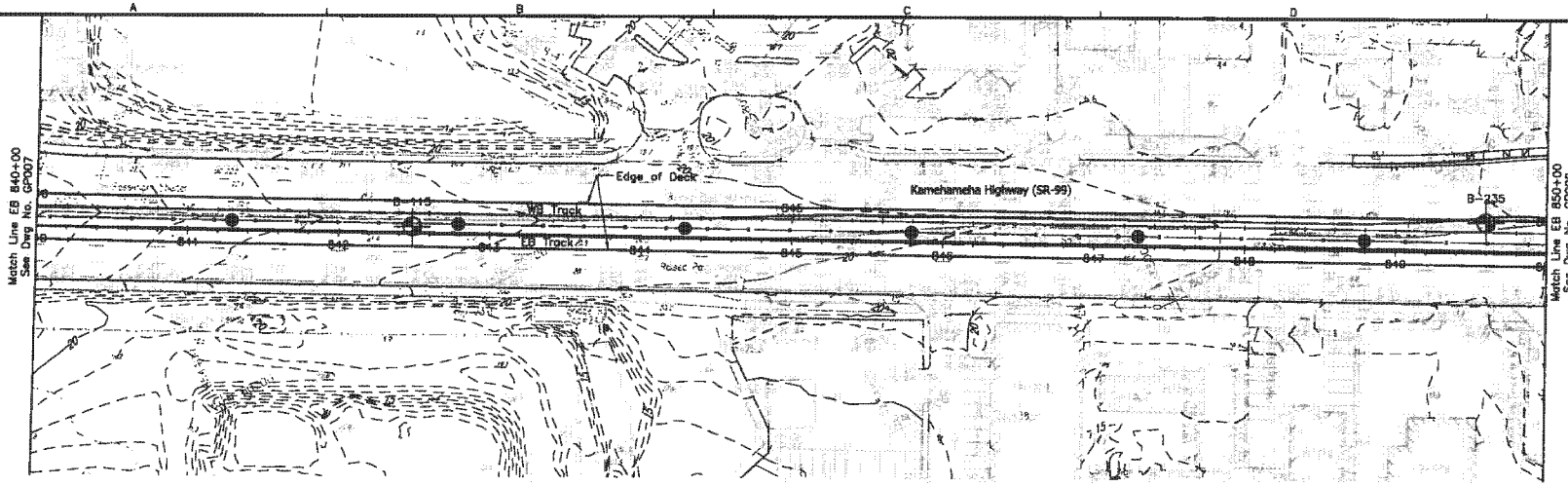

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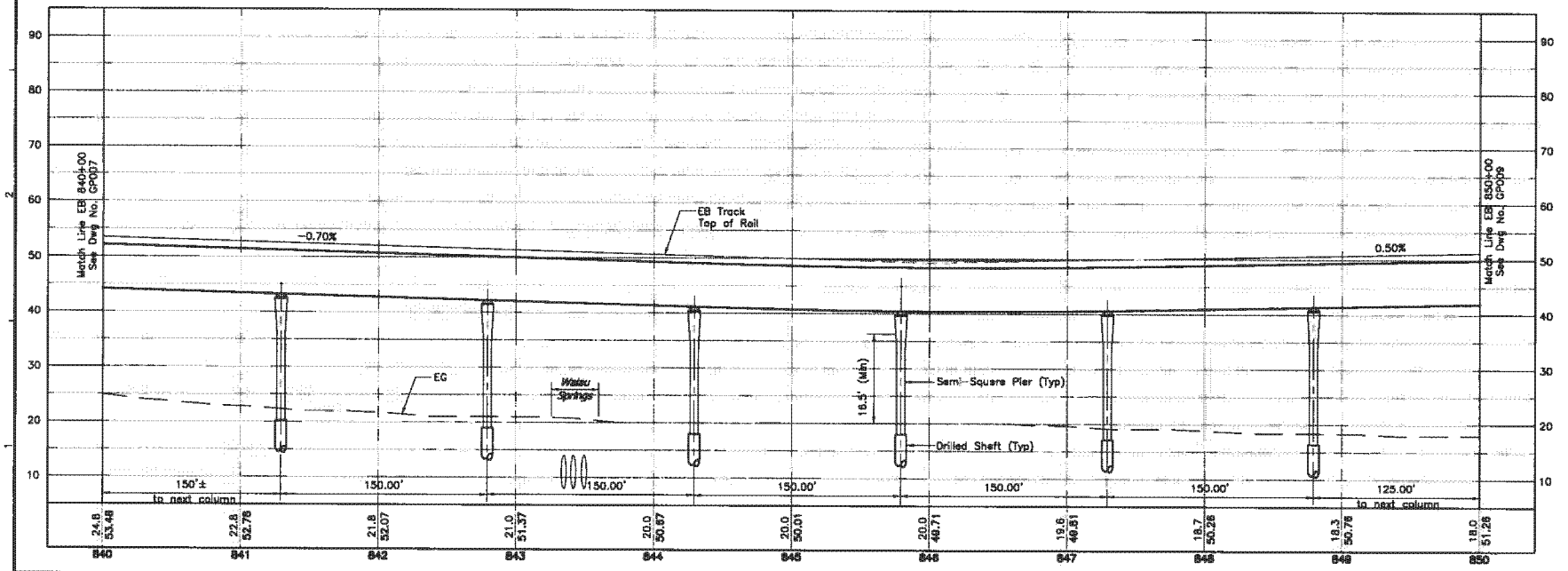

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

STRUCTURAL PLAN AND PROFILE

EB 840+00 TO EB 850+00

Contract No.: DB-320
CADD File: KHDB-G04-GP008
Drawing No: GP008 Rev. A
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Page No. 28 of 123

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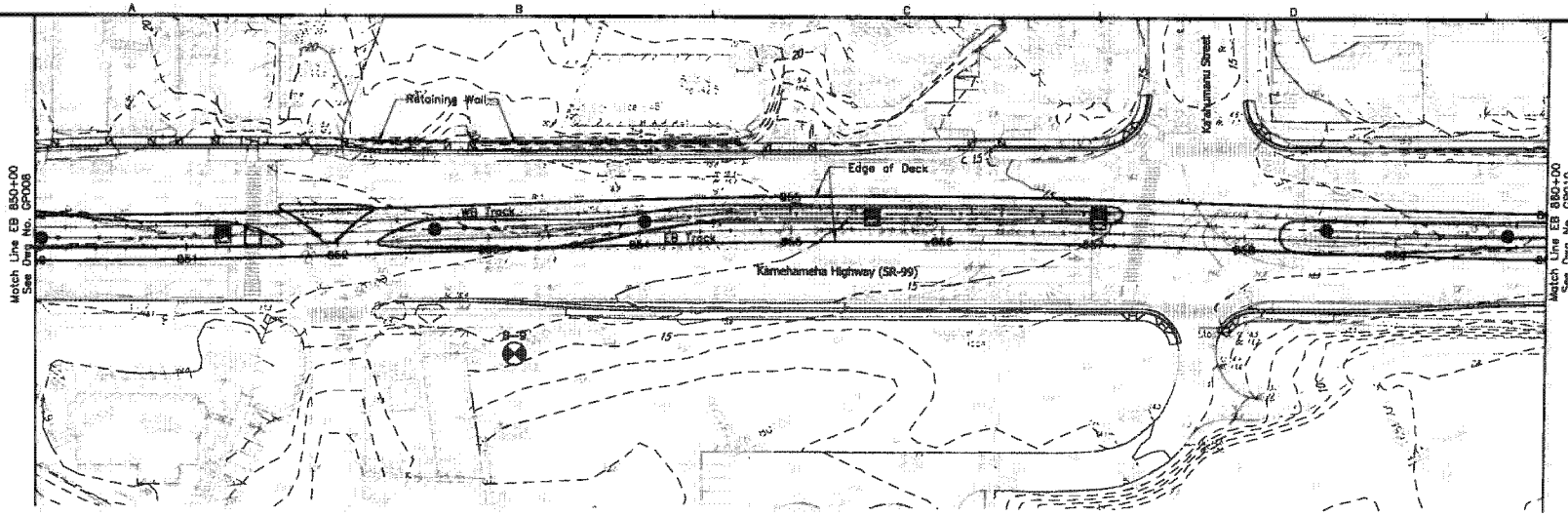

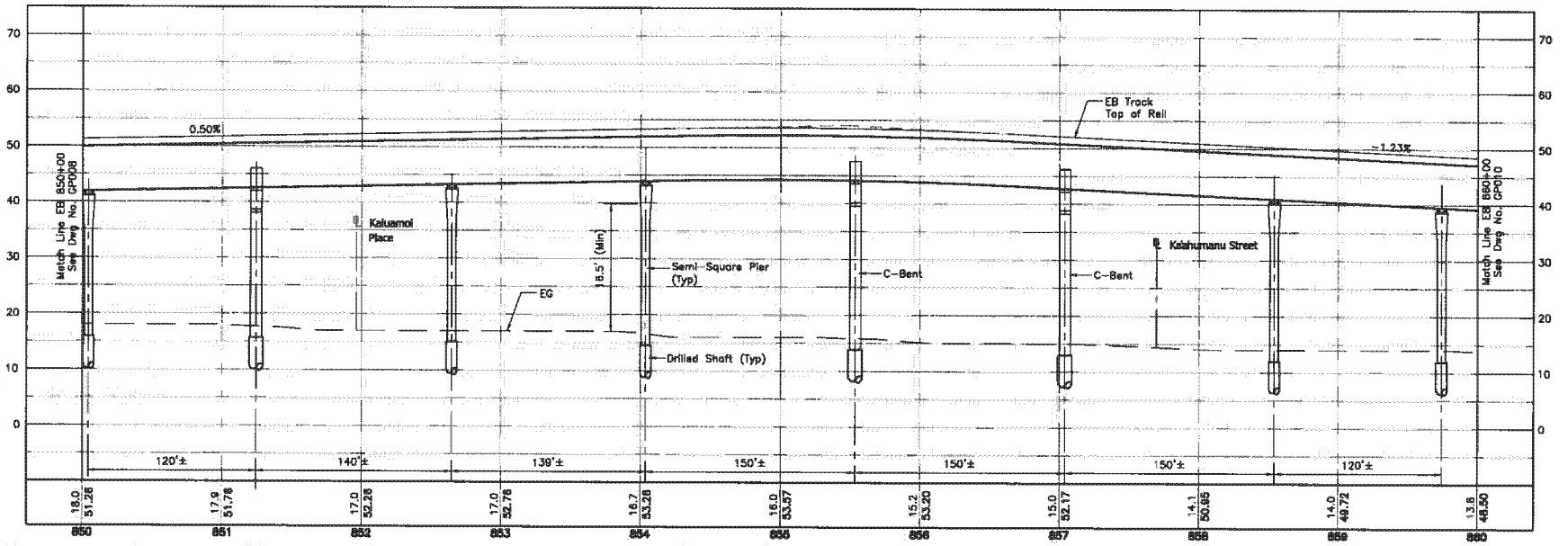

NOTES:

1. See Dwg Nos. SG001 and SG002 for Structural General Notes, Symbols and Abbreviations.
2. The configuration shown relative to NIC work and site condition is under development and subject to change.
3. Unless shown otherwise on the drawings, the semi-square columns, if used, shall not be less than 6-foot by 6-foot, and the associated drilled shafts shall not be less than 8-foot in diameter.
4. For Roadway Improvements, See Civil Roadway Construction Plans.

Rev	By	Date	Description
A	AB	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: D Yavorsky
Drawn: T Cochran
Checked: T Kimura
Approved: A Borst
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

STRUCTURAL PLAN AND PROFILE

EB 850+00 TO EB 860+00

Contract No.: DB-320
CADD File: KHDB-G04-GP009
Drawing No: GP009 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 29 of 123

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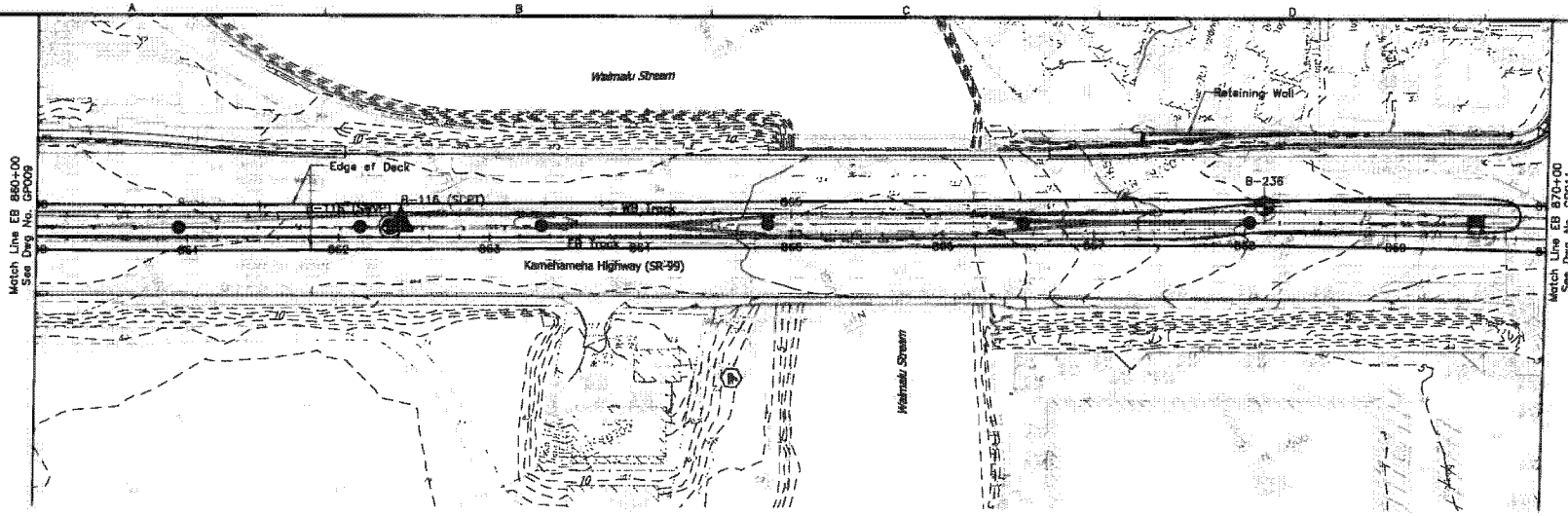

NOTES:

1. See Dwg Nos. SG001 and SG002 for Structural General Notes, Symbols and Abbreviations.
2. The configuration shown relative to NIC work and site condition is under development and subject to change.
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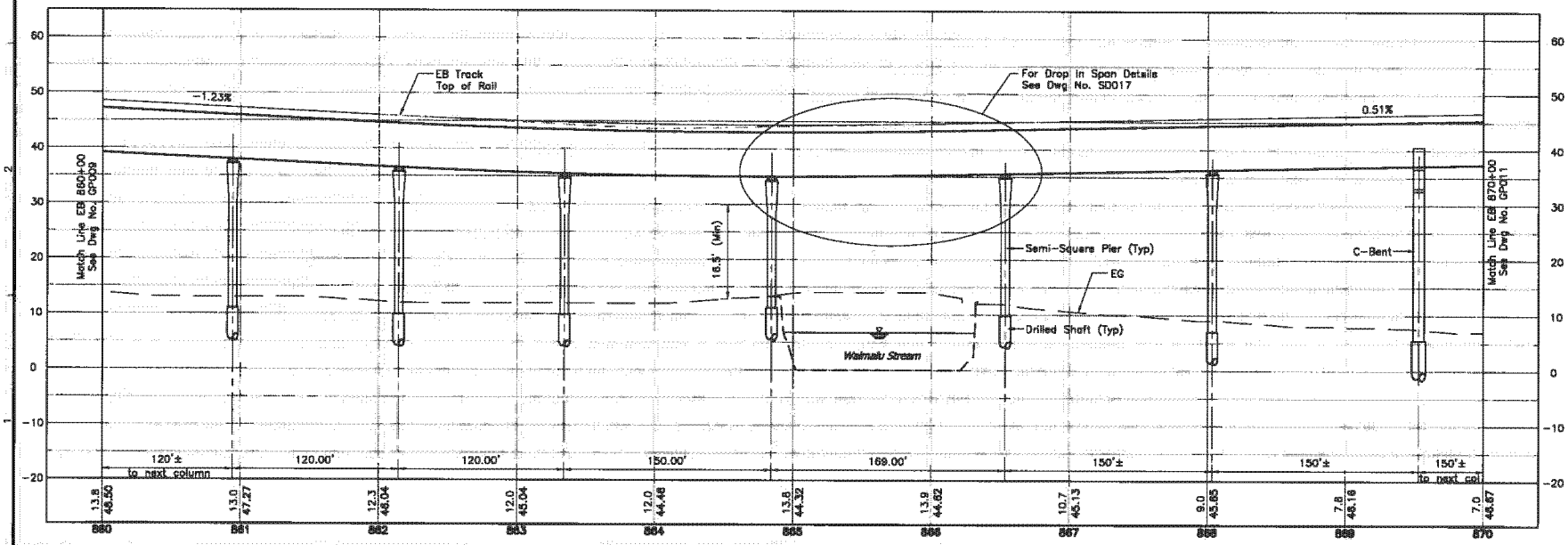

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Designed: D Yaversky
Drawn: T Cochran
Checked: T Kimura
Approved: A Barst
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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STRUCTURAL PLAN AND PROFILE

EB 860+00 TO EB 870+00

Contract No.: DB-320
CADD File: KHDB-G04-GP010
Drawing No: GP010 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 30 of 123

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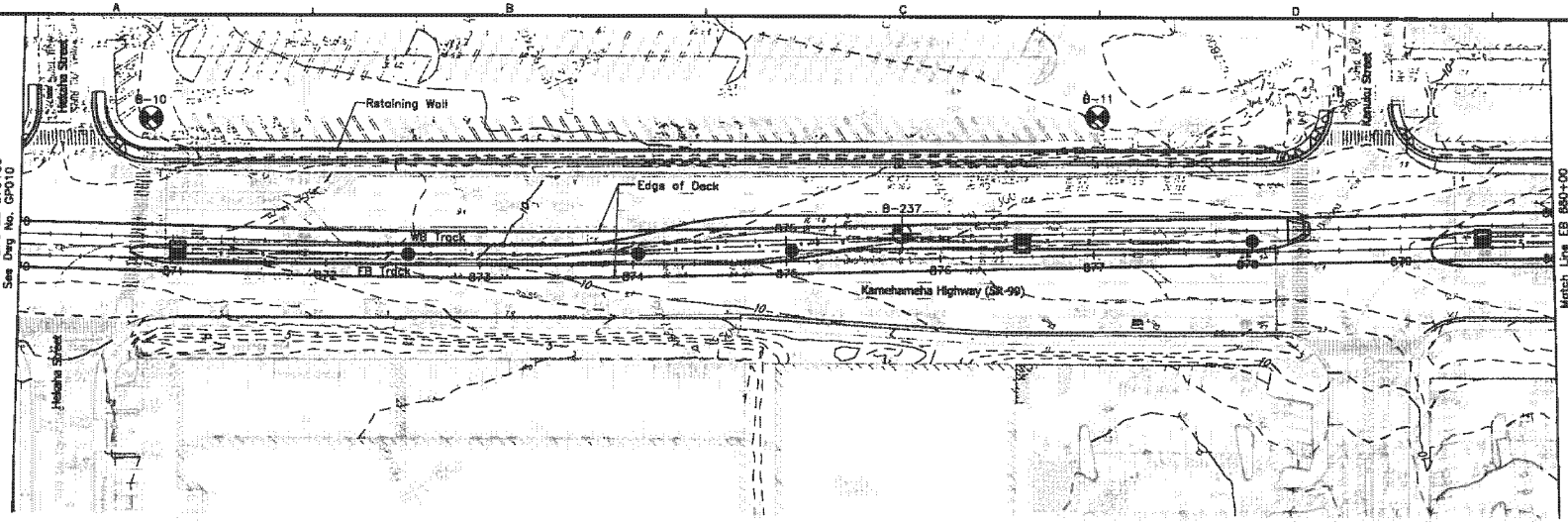

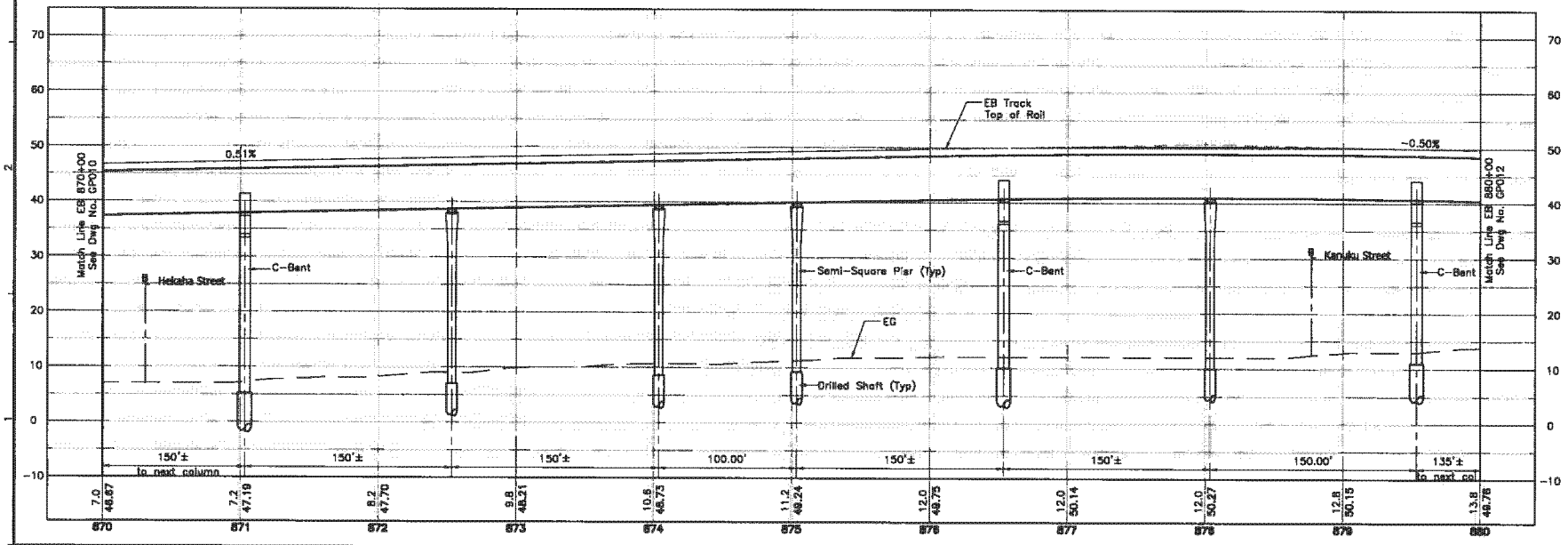

NOTES:

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4. For Roadway Improvements, See Civil Roadway Construction Plans.

Rev	By	Date	Description
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PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: D Yavorsky
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Approved: A Borst
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

STRUCTURAL PLAN AND PROFILE

EB 870+00 TO EB 880+00

Contract No.: DB-320
CADD File: KHDB-G04-GP011
Drawing No: GP011 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 31 of 123

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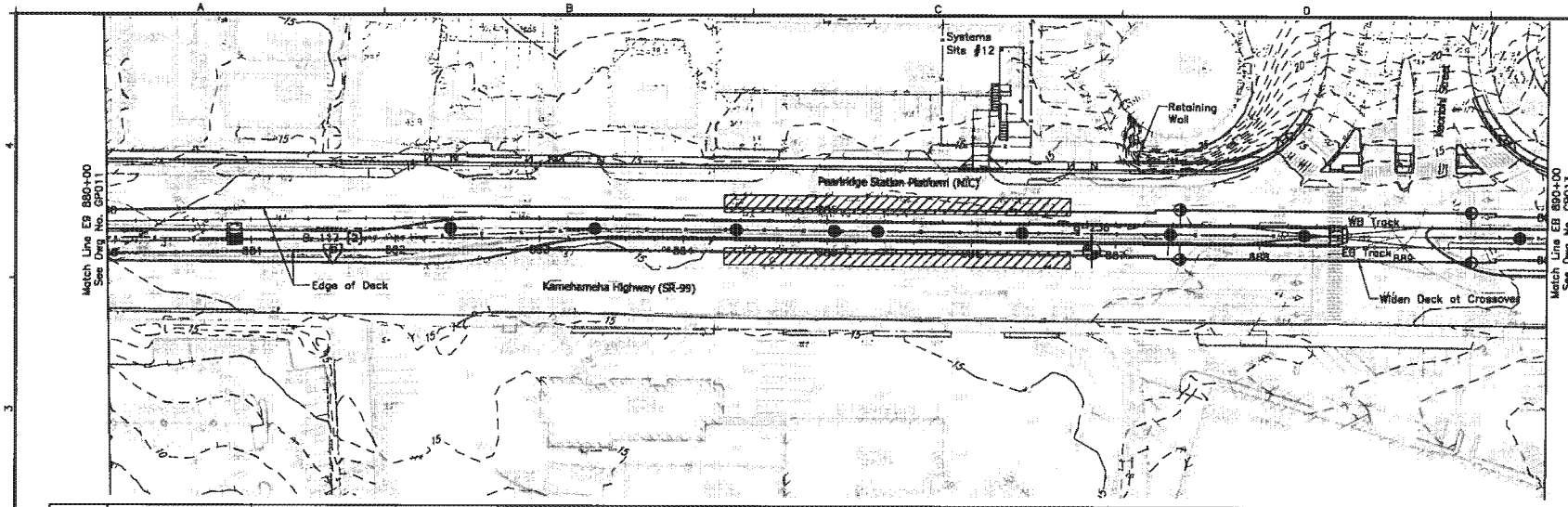

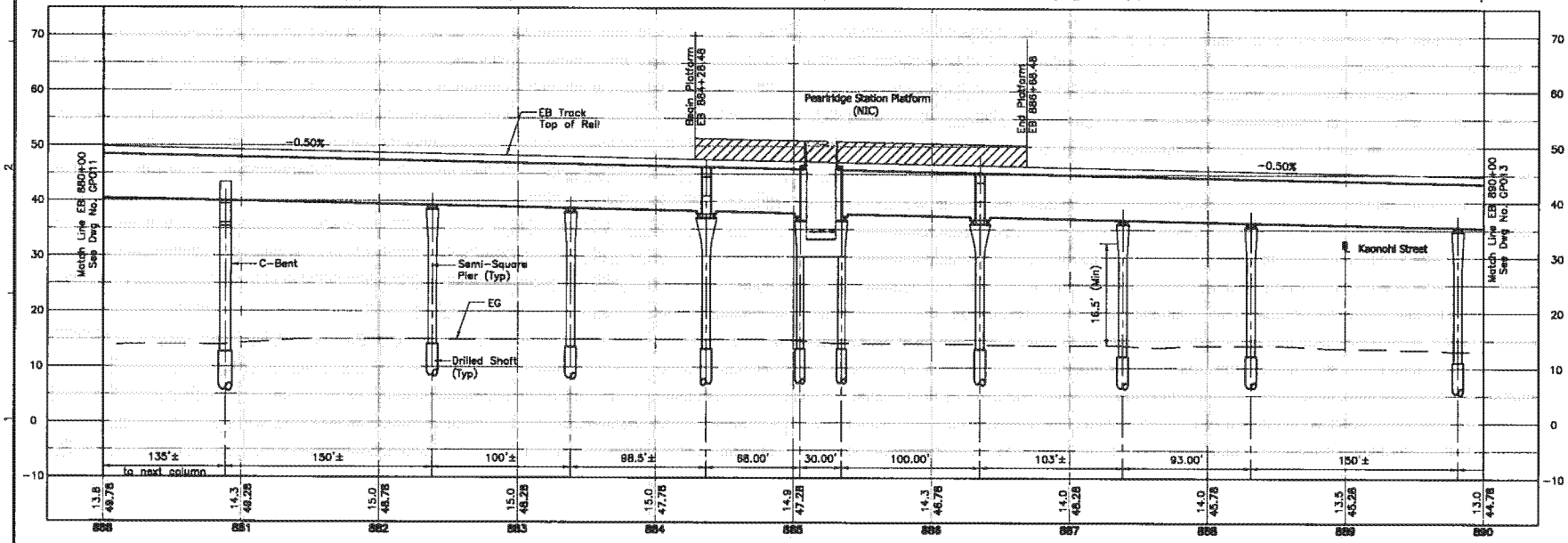

NOTES:

1. See Dwg Nos. SG001 and SG002 for Structural General Notes, Symbols and Abbreviations.
2. The configuration shown relative to NIC work and site condition is under development and subject to change.
3. Unless shown otherwise on the drawings, the semi-square columns, if used, shall not be less than 6-foot by 6-foot, and the associated drilled shafts shall not be less than 8-foot in diameter.
4. For Roadway Improvements, See Civil Roadway Construction Plans.
5. For Pearlridge Station details, See Dwg Nos. FP001 through FP009.

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

STRUCTURAL PLAN AND PROFILE

EB 880+00 TO EB 890+00

Contract No.: DB-320
CADD File: KHDB-G04-GP012
Drawing No: GP012 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 32 of 123

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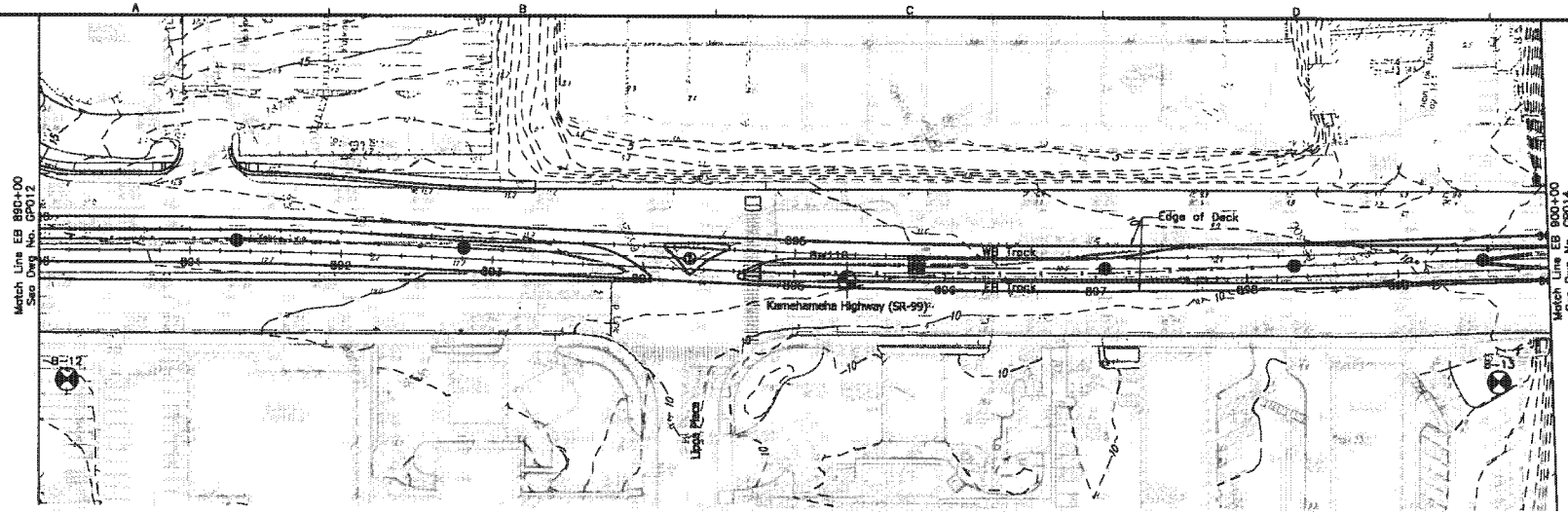

NOTES:

1. See Dwg Nos. SG001 and SG002 for Structural General Notes, Symbols and Abbreviations.
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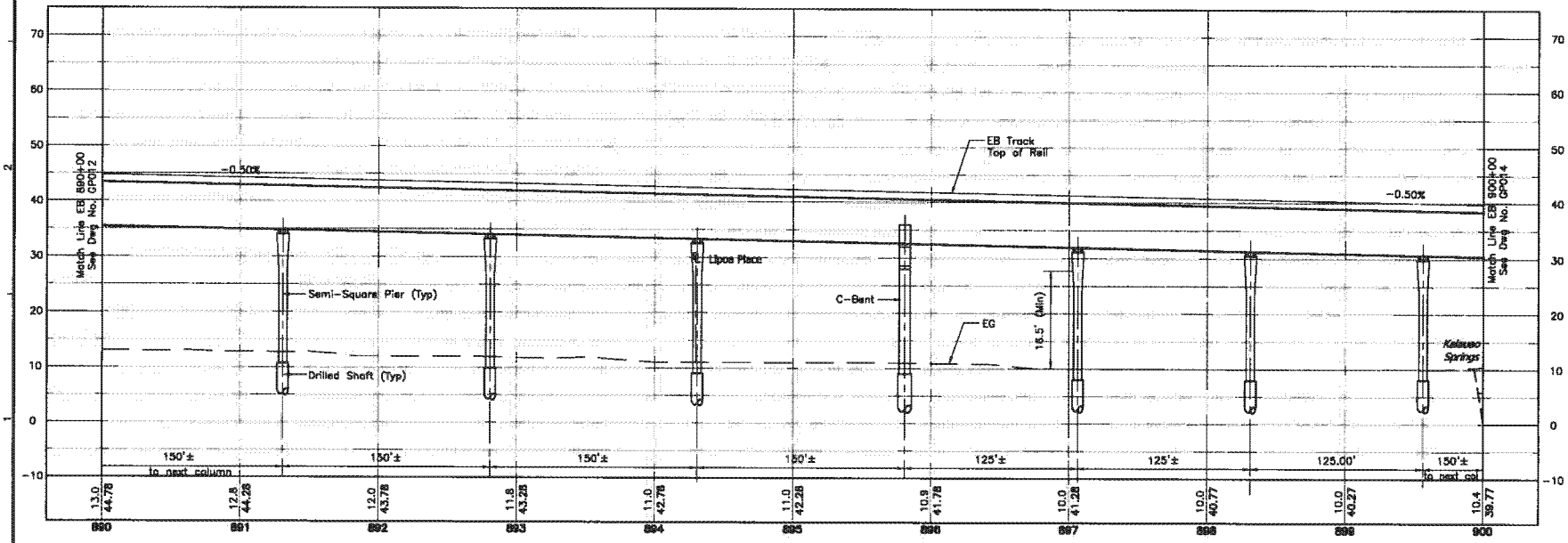

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Prime Consultant: PB PARSONS BRINCKERHOFF
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Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

STRUCTURAL PLAN AND PROFILE

EB 890+00 TO EB 900+00

Contract No.: DB-320
CADD File: KHDB-G04-GP013
Drawing No: GP013 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 33 of 123

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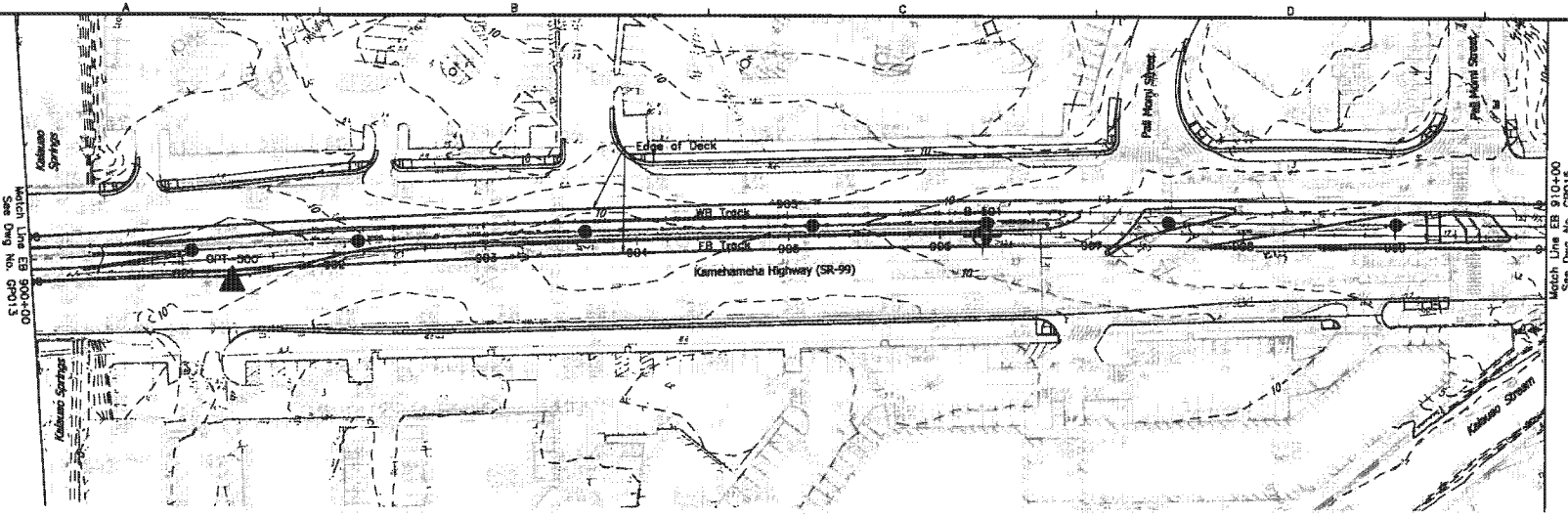

NOTES:

1. See Dwg Nos. SG001 and SG002 for Structural General Notes, Symbols and Abbreviations.
2. The configuration shown relative to NIC work and site condition is under development and subject to change.
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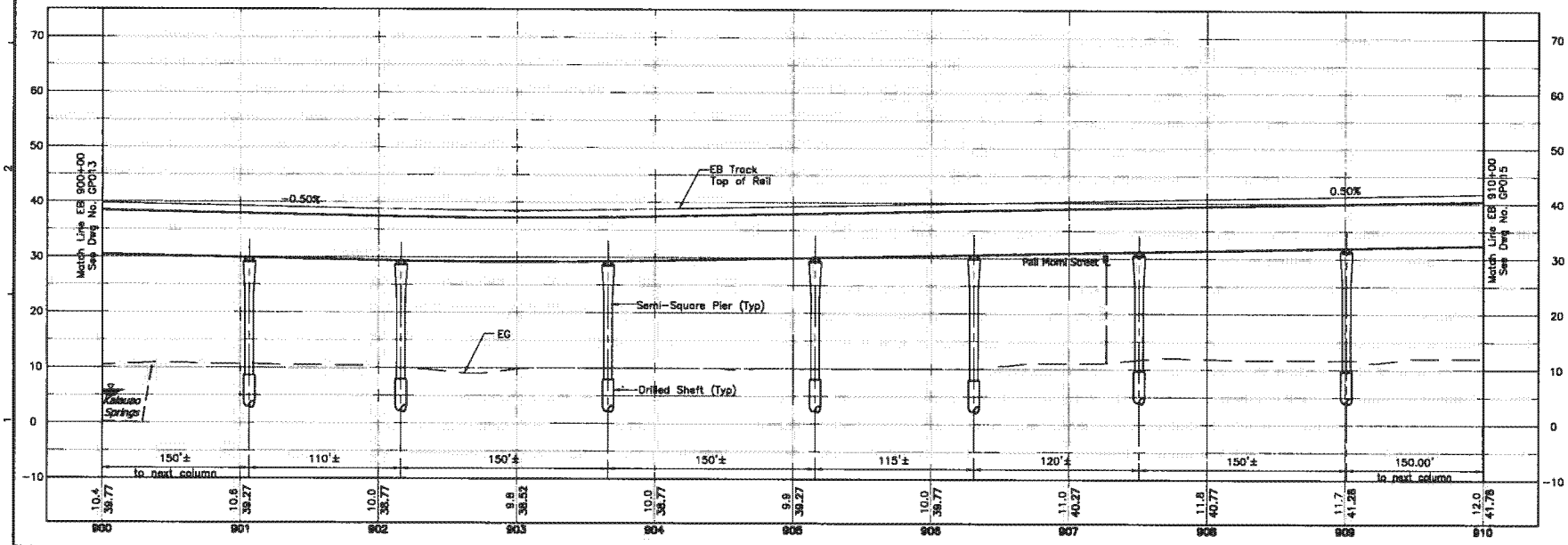
4. For Roadway Improvements, See Civil Roadway Construction Plans.



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A	AB	03-19-10	Issued for Preposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: D Yavarsky
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Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

STRUCTURAL PLAN AND PROFILE

EB 900+00 TO EB 910+00

Contract No.: DB-320
CADD File: KHDB-G04-GP014
Drawing No: GP014 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 34 of 123

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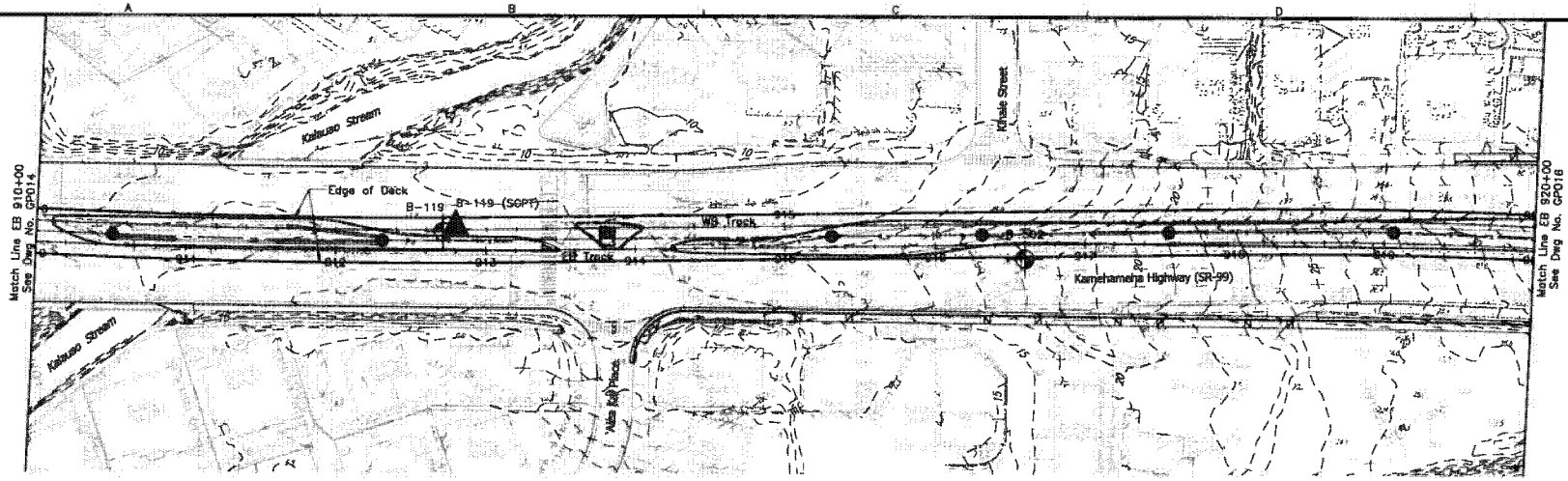

NOTES:

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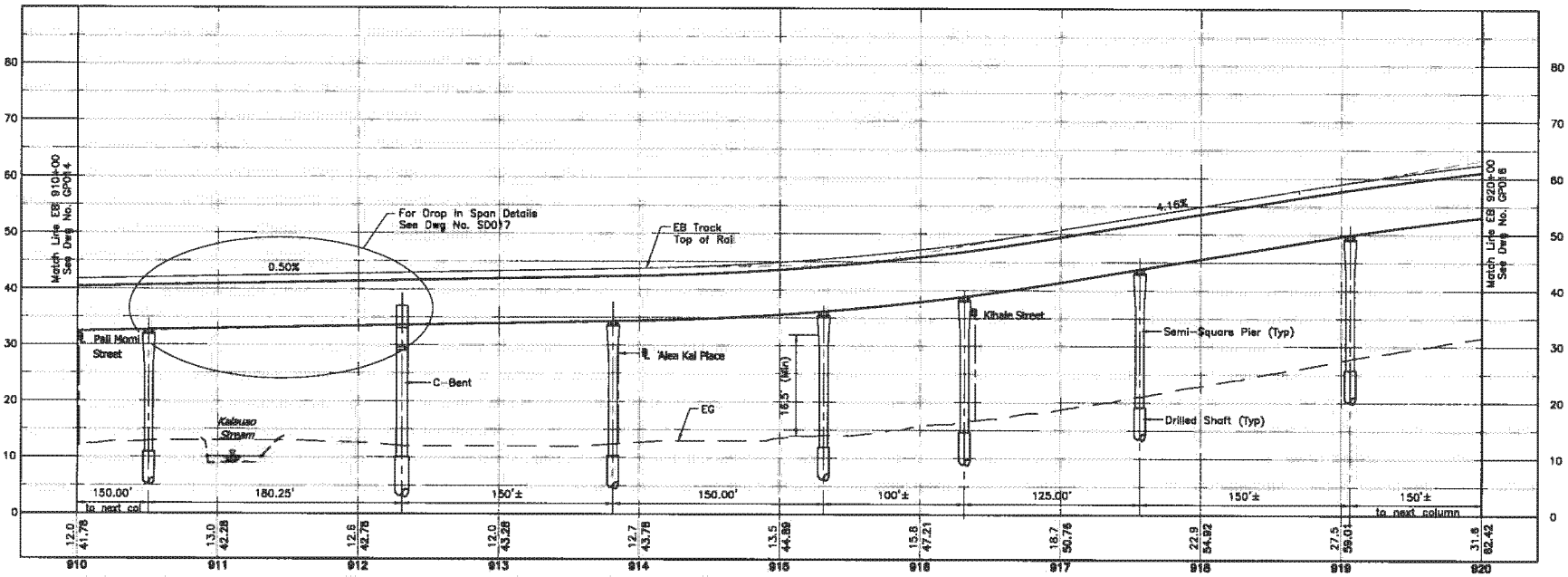
4. For Roadway Improvements, See Civil Roadway Construction Plans.



Rev	By	Date	Description
A	AB	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: D Yavorsky
Drawn: T Cochran
Checked: T Kimura
Approved: A Borst
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

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STRUCTURAL PLAN AND PROFILE

EB 910+00 TO EB 920+00

Contract No.: DB-320
CADD File: KHDB-G04-GP015
Drawing No: GP015 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 35 of 123

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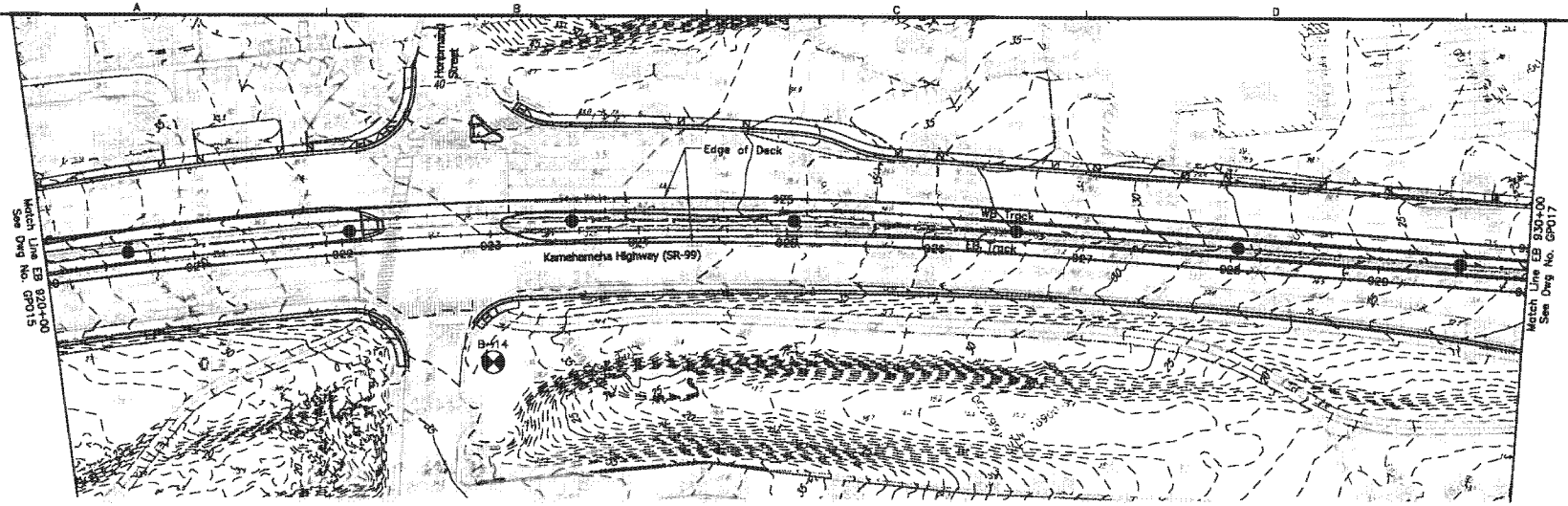

NOTES:

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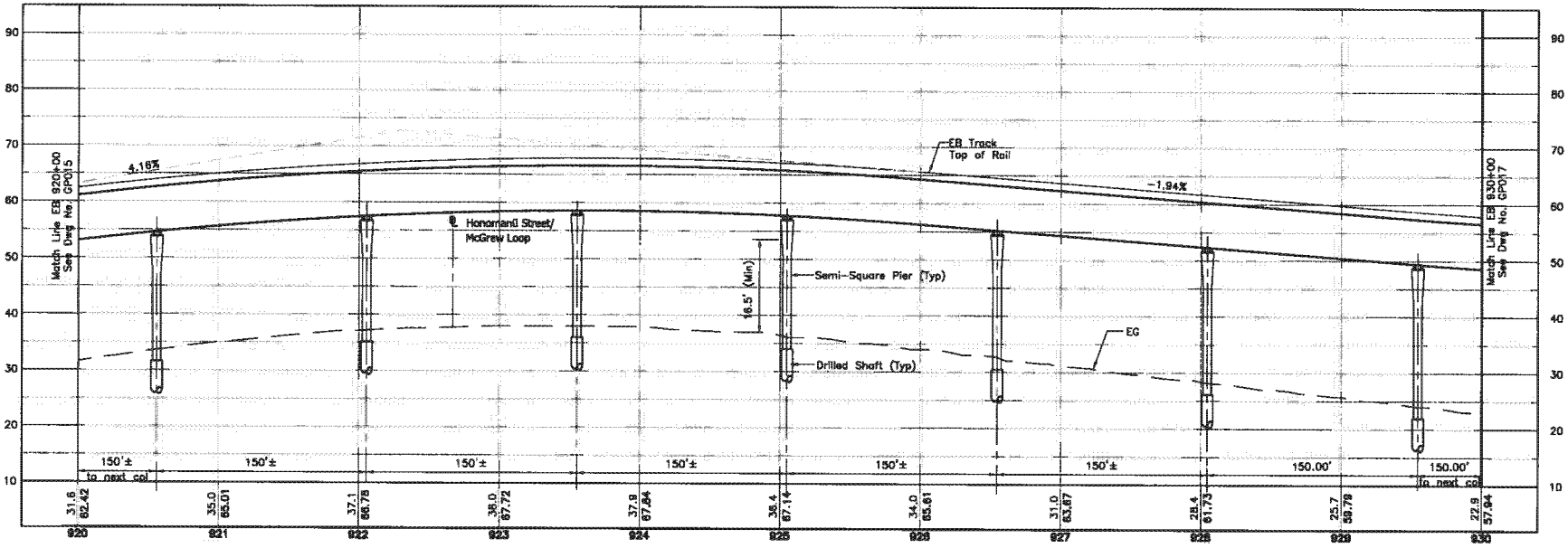
4. For Roadway Improvements, See Civil Roadway Construction Plans.



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HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

STRUCTURAL PLAN AND PROFILE

EB 920+00 TO EB 930+00

Contract No.: DB-320
CADD File: KHDB-G04-GP016
Drawing No: GP016 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 36 of 123

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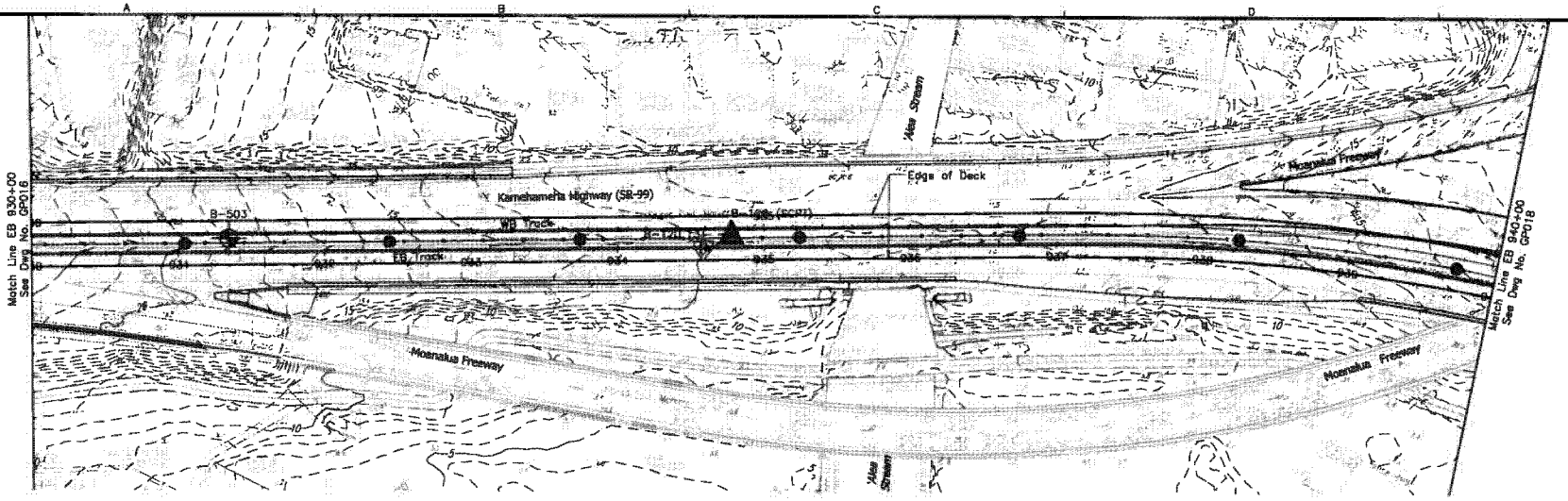

NOTES:

1. See Dwg Nos. SG001 and SG002 for Structural General Notes, Symbols and Abbreviations.
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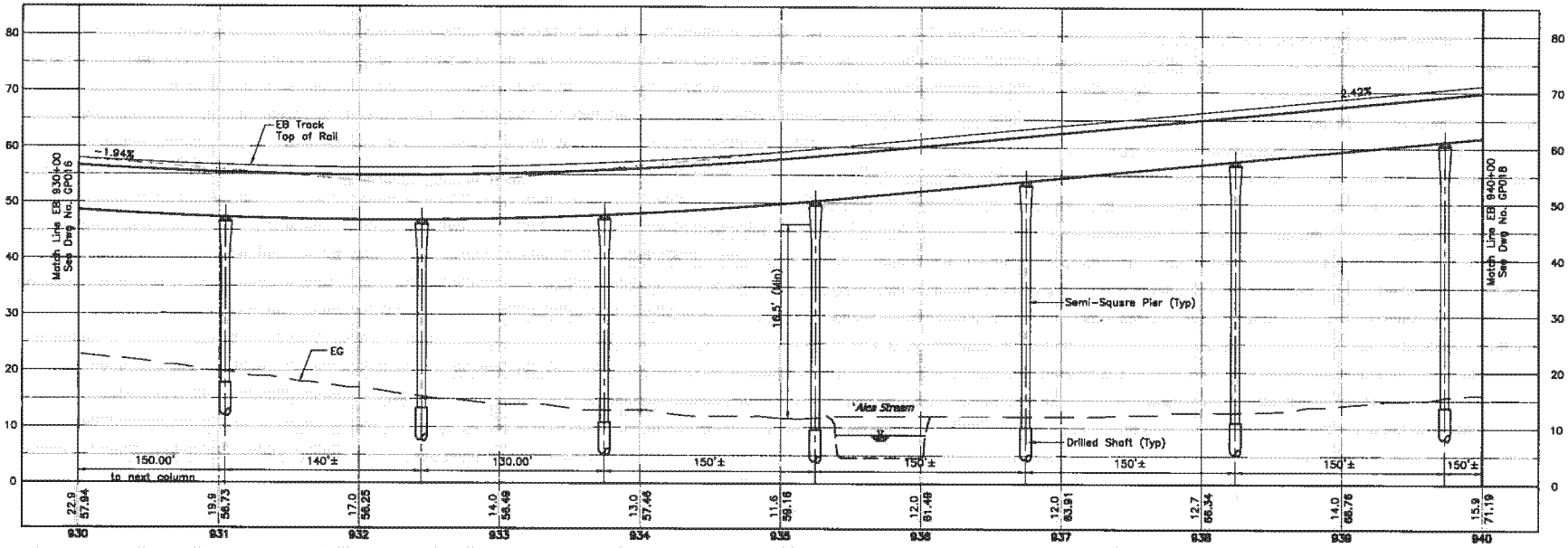
4. For Roadway Improvements, See Civil Roadway Construction Plans.



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HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

STRUCTURAL PLAN AND PROFILE

EB 930+00 TO EB 940+00

Contract No.: DB-320
CADD File: KHDB-G04-GP017
Drawing No: GP017 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 37 of 123

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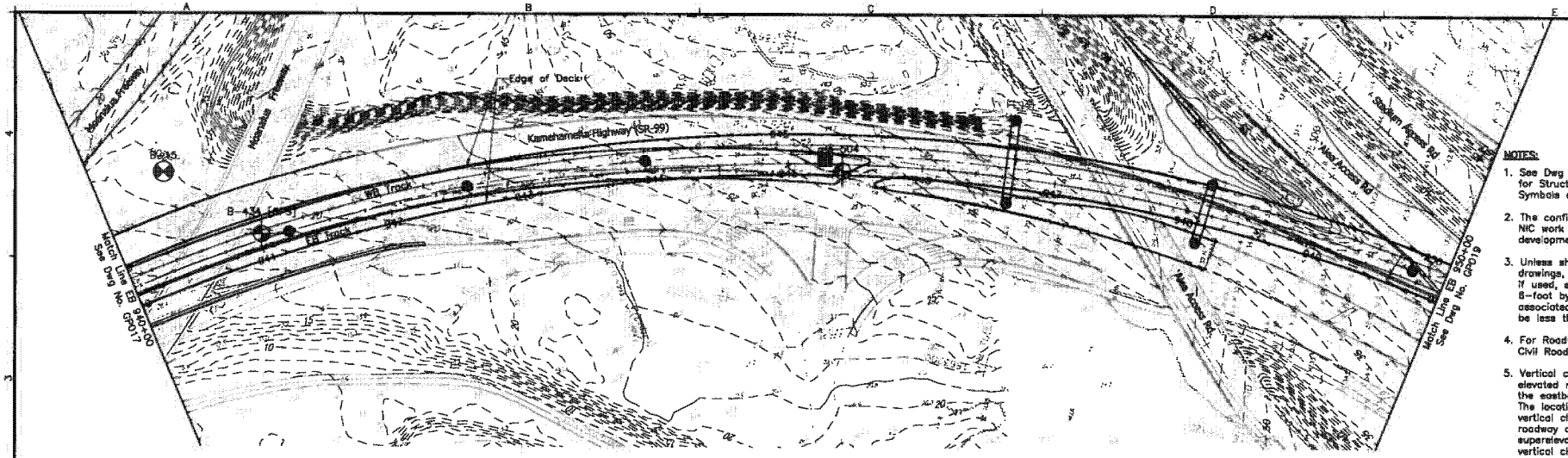
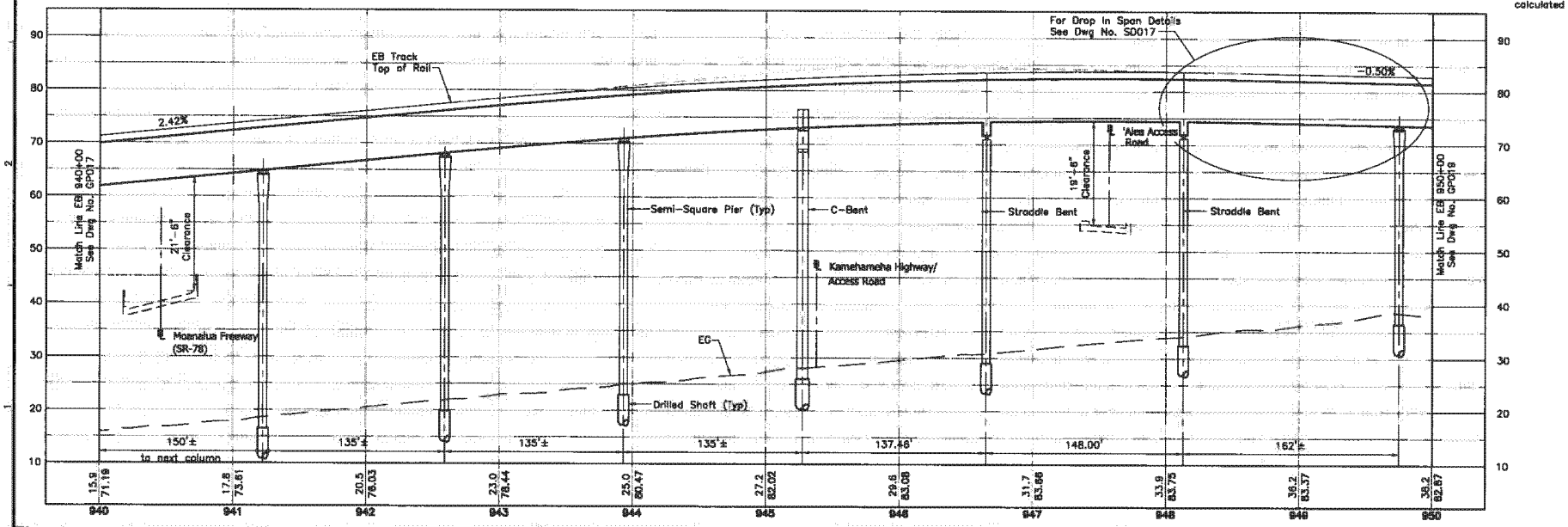


NOTES:

1. See Dwg Nos. SG001 and SG002 for Structural General Notes, Symbols and Abbreviations.
2. The configuration shown relative to NIC work and site condition is under development and subject to change.
3. Unless shown otherwise on the drawings, the semi-square columns, if used, shall not be less than 8-foot by 6-foot, and the associated drilled shafts shall not be less than 8-foot in diameter.
4. For Roadway Improvements, See Civil Roadway Construction Plans.
5. Vertical clearances shown over elevated roadways are given along the eastbound track centerline only. The location of the minimum vertical clearance depends on the roadway and guideway slopes and superelevations. Actual minimum vertical clearances shall be calculated by the final designer.



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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

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STRUCTURAL PLAN AND PROFILE

EB 940+00 TO EB 950+00

Contract No.: DB-320
CADD File: KHDB-G04-GP018
Drawing No.: GP018 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 38 of 123

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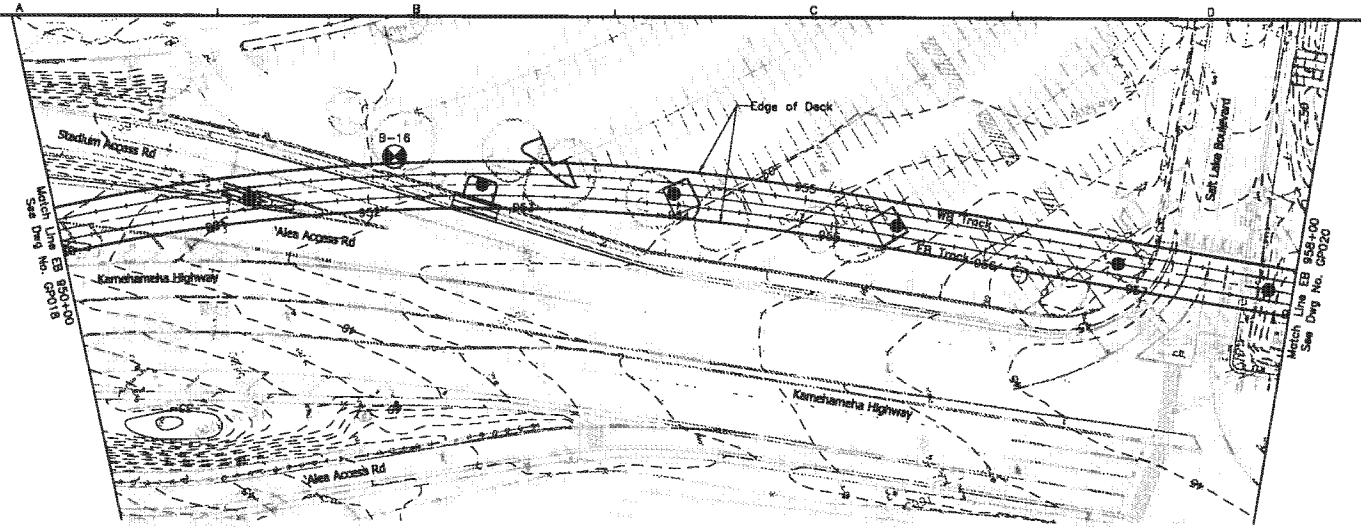

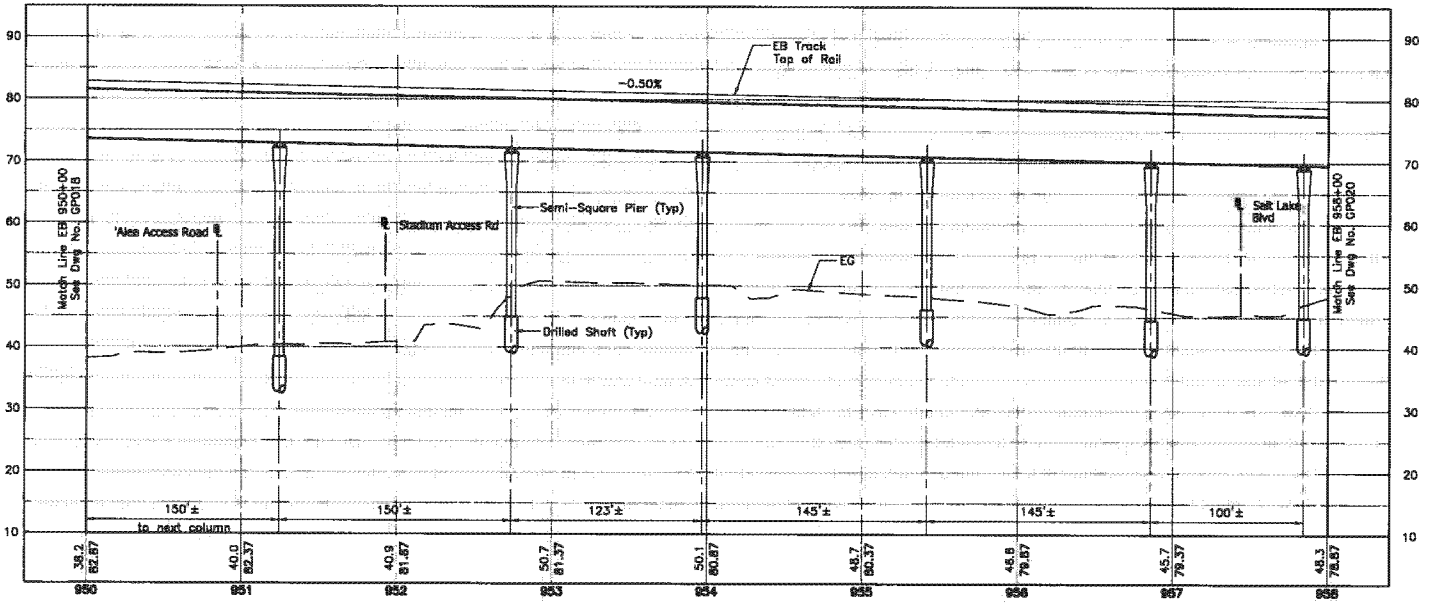

NOTES:

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40' 0 40'
10' 0 10'

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Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

STRUCTURAL PLAN AND PROFILE

EB 950+00 TO EB 958+00

Contract No.: DB-320
CADD File: KHDB-G04-GP019
Drawing No: GP019 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 39 of 123

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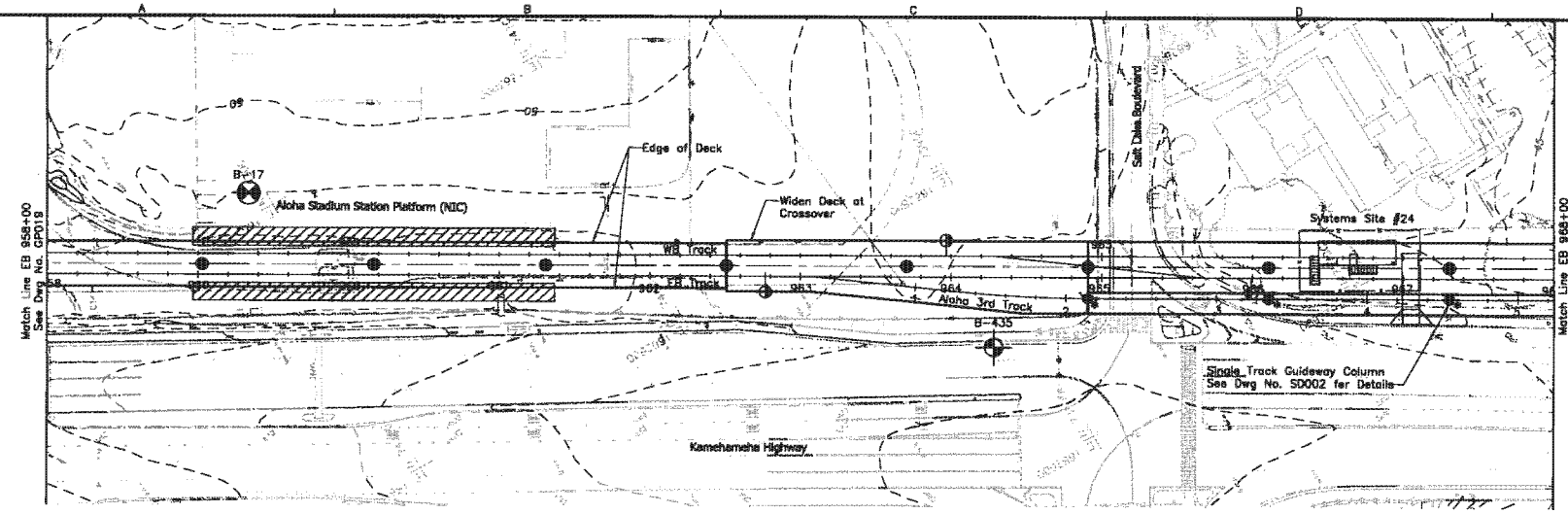

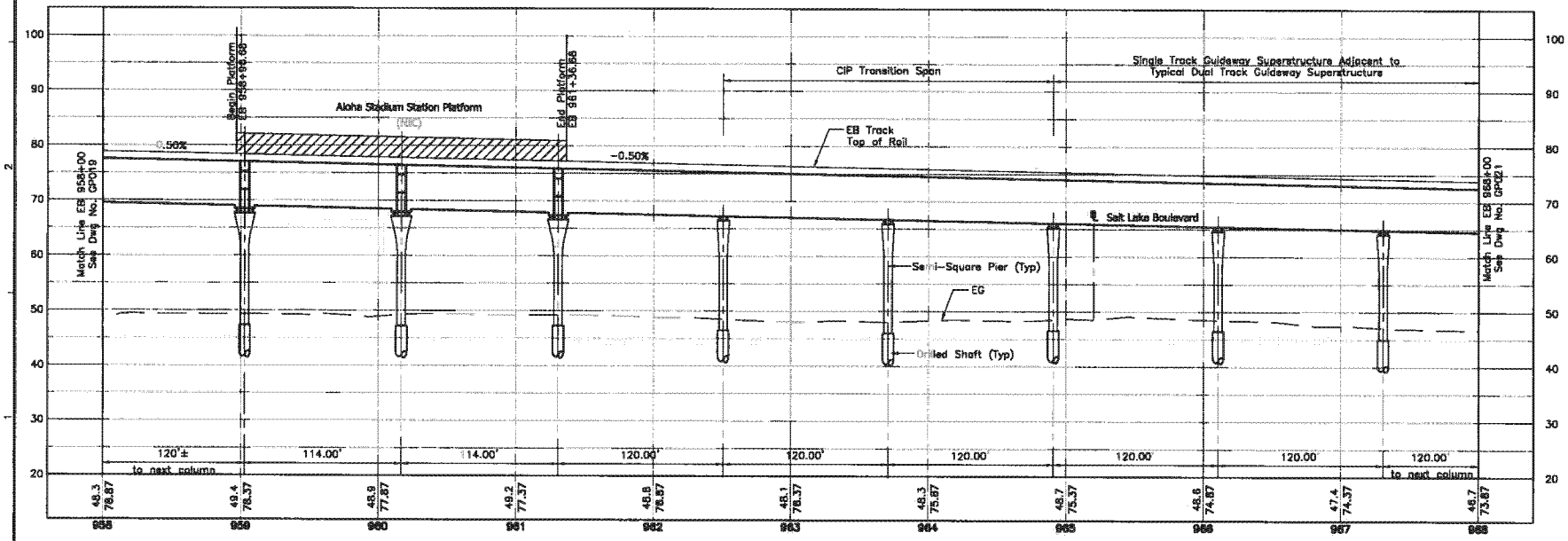

NOTES:

1. See Dwg Nos. SG001 and SG002 for Structural General Notes, Symbols and Abbreviations.
2. The configuration shown relative to NIC work and site condition is under development and subject to change.
3. Unless shown otherwise on the drawings, the semi-square columns, if used, shall not be less than 8-foot by 5-foot, and the associated drilled shafts shall not be less than 8-foot in diameter.
4. For Roadway Improvements, See Civil Roadway Construction Plans.
5. For Aloha Stadium Station details, See Dwg Nos. FP011 through FP018.

* Single Track Guideway Columns assumed to be 5-foot by 5-foot semi-square.

Rev	By	Date	Description
A	AB	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: D Yavorsky
Drawn: T Cochran
Checked: T Kimura
Approved: A Borst
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

STRUCTURAL PLAN AND PROFILE

EB 958+00 TO EB 968+00

Contract No.: DB-320
CADD File: KHDB-G04-GP020
Drawing No: GP020 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 40 of 123

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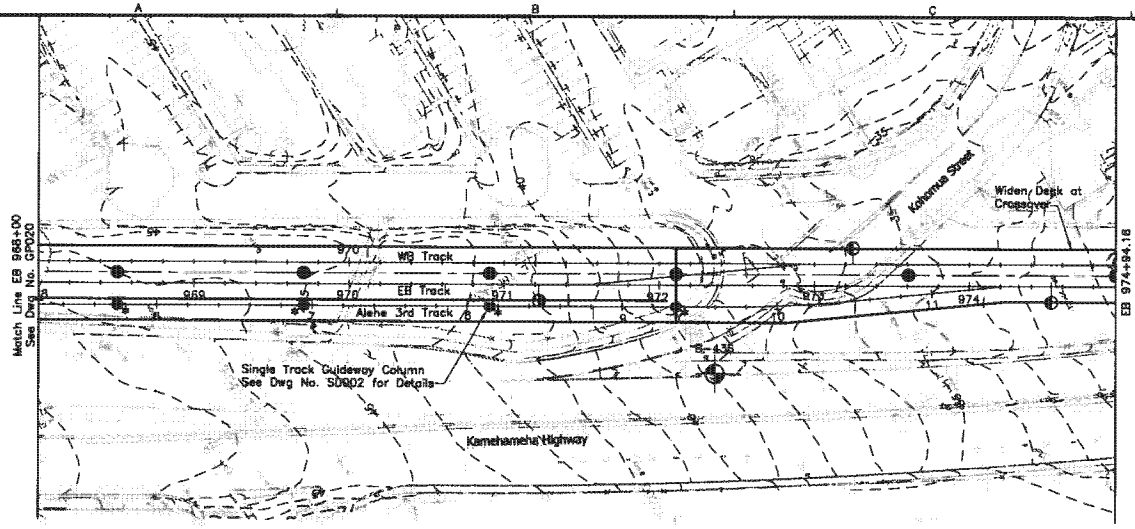

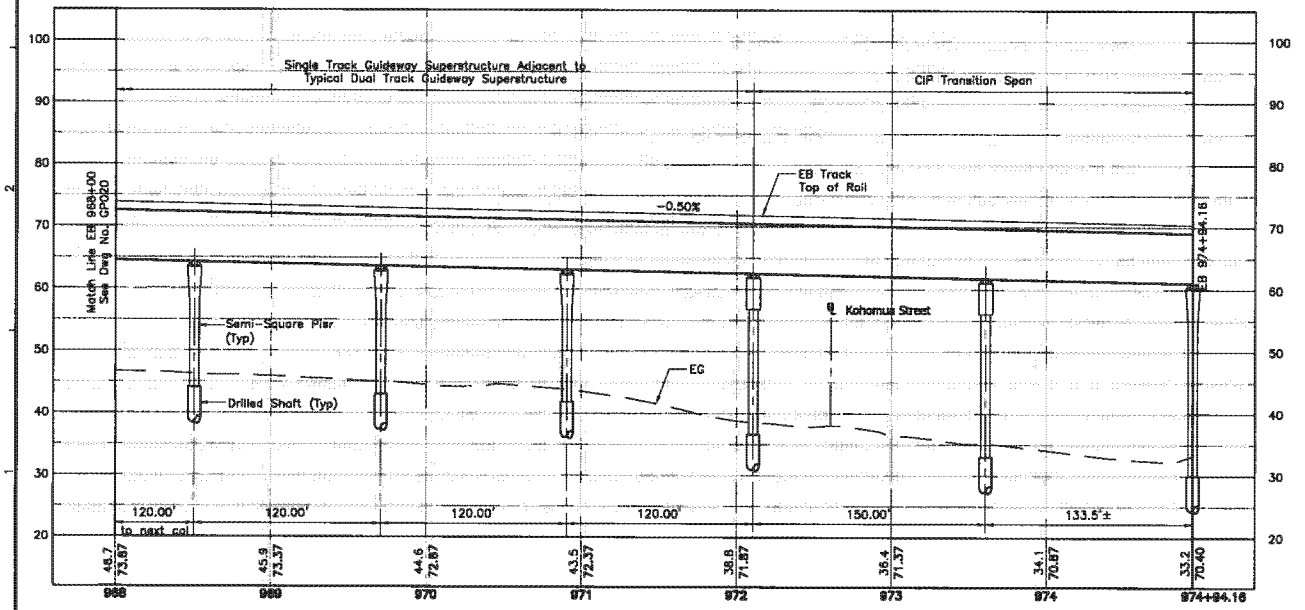

NOTES:

1. See Dwg Nos. SG001 and SG002 for Structural General Notes, Symbols and Abbreviations.
2. The configuration shown relative to NIC work and site condition is under development and subject to change.
3. Unless shown otherwise on the drawings, the semi-square columns, if used, shall not be less than 6-foot by 6-foot, and the associated drilled shafts shall not be less than 8-foot in diameter.
4. For Roadway Improvements, See Civil Roadway Construction Plans.

* Single Track Guideway Columns assumed to be 5-foot by 5-foot semi-square.

40' 0 40'

10' 0 10'

Rev	By	Date	Description
A	AB	03-19-10	Issued for Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: D Yavorsky
Drawn: T Cochran
Checked: T Kimura
Approved: A Borst
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

STRUCTURAL PLAN AND PROFILE

EB 968+00 TO EB 974+94.16

Contract No.: DB-320
CADD File: KHDB-G04-GP021
Drawing No: GP021 Rev. A
Scale: 1"=40' H, 1"=10' V
Page No. 41 of 123

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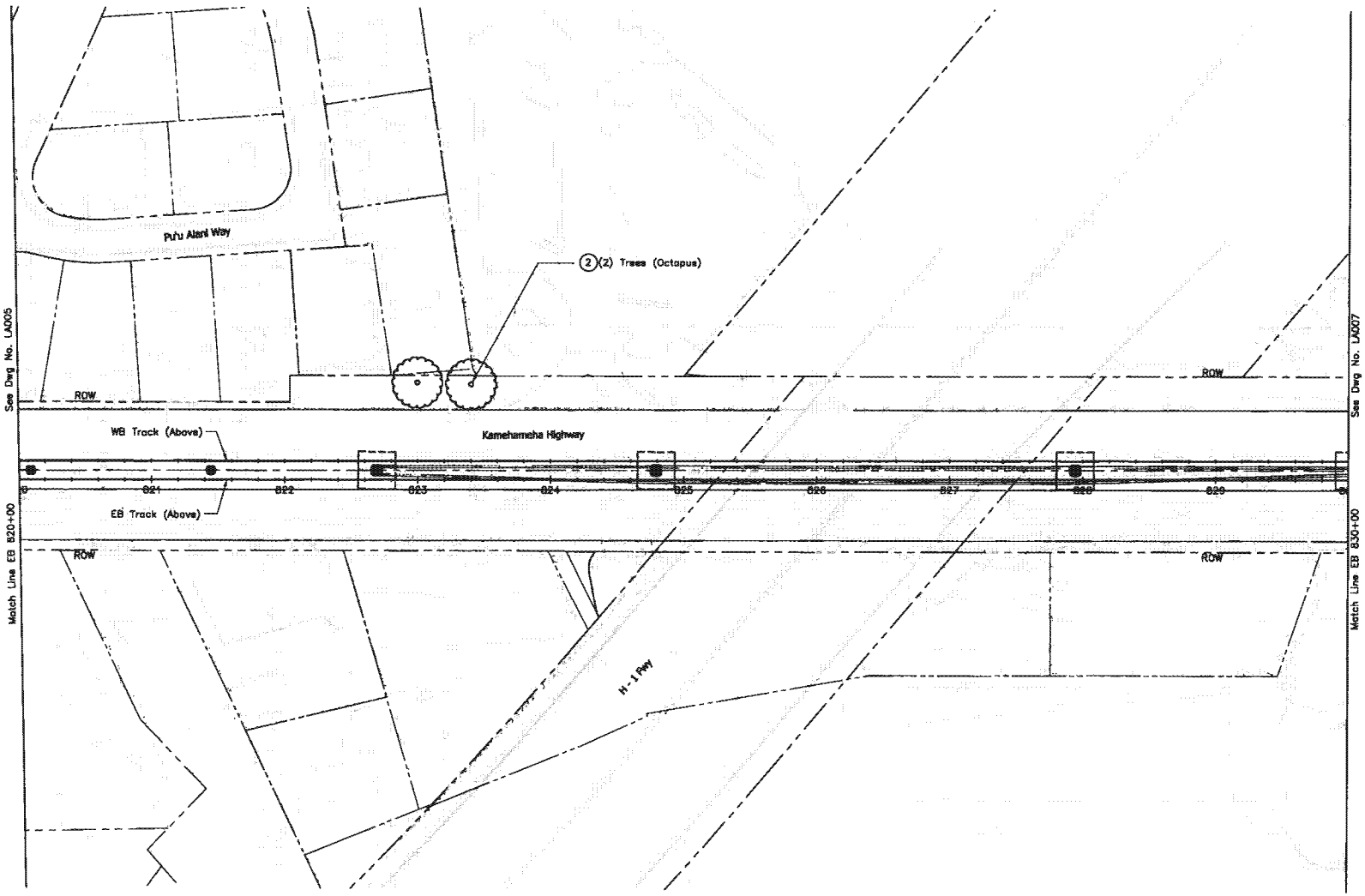

N

NOTE:

1. For General Landscape Notes, Symbols, and Abbreviations, see Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.
3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding.

LEGEND:

- Proposed Guideway Column
- Existing tree

CONSTRUCTION NOTES:

(2) Remove tree or palm including grinding stump 18" below finish grade.

(3) Protect tree or palm in place (See Detail 1–LA201). Prune per Arborist's instructions.

40' 0' 40'

Rev	By	Date	Description
A	AA	03–19–10	Issued For Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: C Hironaka
Drawn: L Kellice
Checked: D Easterday
Approved: A Akau
Date: 03–19–10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

LANDSCAPE DEMOLITION PLAN

EB 820+00 TO EB 830+00

Contract No.: SV–330
CADD File: KHDB–J02–LA006
Drawing No: LA006
Rev. A
Scale: 1"=40'
Page No. 95 of 123

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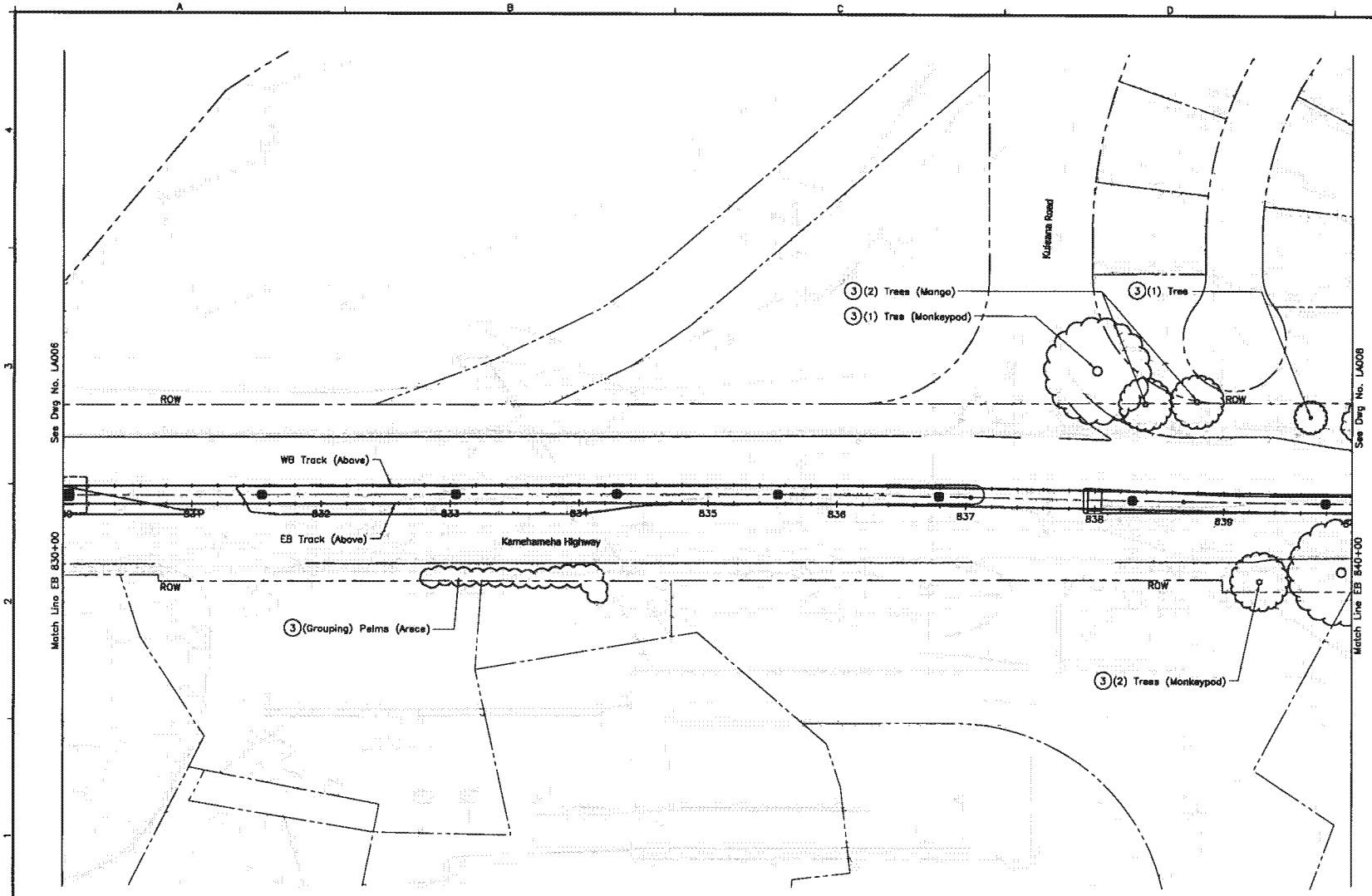

NOTE:

1. For General Landscape Notes, Symbols, and Abbreviations, see Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.
3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding.

LEGEND:

- Proposed Guideway Column
- Existing tree
- Existing vegetation

CONSTRUCTION NOTES:

(3) Protect tree or palm in place (See Detail 1-LA201). Prune per Arborists instructions.

40' 0' 40'

Rev	By	Date	Description
A	AA	03-19-10	Issued For Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: C Hiranaka
Drawn: L Kellee
Checked: D Easterday
Approved: A Akau
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: PLANNING • CIVIL ENGINEERING LANDSCAPE ARCHITECTURE ENVIRONMENTAL CONSULTING
Belt Collins Hawaii Ltd.
2153 North King Street, Suite 200
Honolulu, Hawaii 96819
T: 808.521.2201 • F: 808.521.7935
www.beltcollins.com

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

LANDSCAPE DEMOLITION PLAN

EB 830+00 TO EB 840+00

Contract No.: SV-330
CADD File: KHDB-J02-LA007
Drawing No: LA007
Rev. A
Scale: 1"=40'
Page No. 96 of 123

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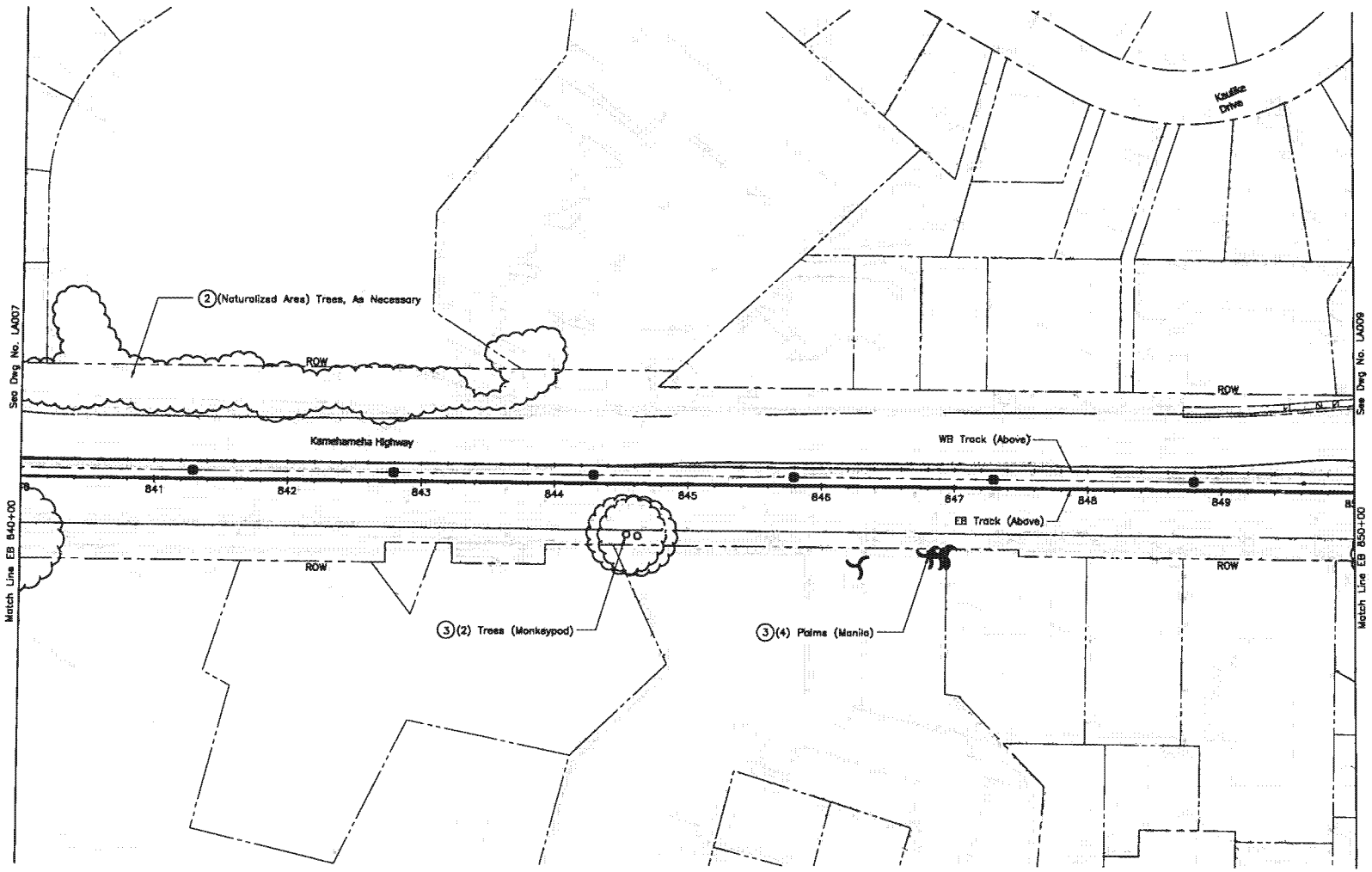

NOTE:

1. For General Landscape Notes, Symbols, and Abbreviations, see Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.
3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding.

LEGEND:

- Proposed Guideway Column
- Existing tree
- Existing tree or palm not identified in survey
- Existing palm
- Existing vegetation

CONSTRUCTION NOTES:

(2) Remove tree or palm including grinding stump 18" below finish grade.

(3) Protect tree or palm in place (See Detail 1-LA201). Prune per Arborists instructions.

40' 0' 40'

Rev	By	Date	Description
A	AA	03-19-10	Issued For Proposal

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PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: C Hironaka
Drawn: L Kelliaa
Checked: D Easterday
Approved: A Akau
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

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LANDSCAPE DEMOLITION PLAN

EB 840+00 TO EB 850+00

Contract No.: SV-330
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Drawing No: LA008 Rev. A
Scale: 1"=40'
Page No. 97 of 123

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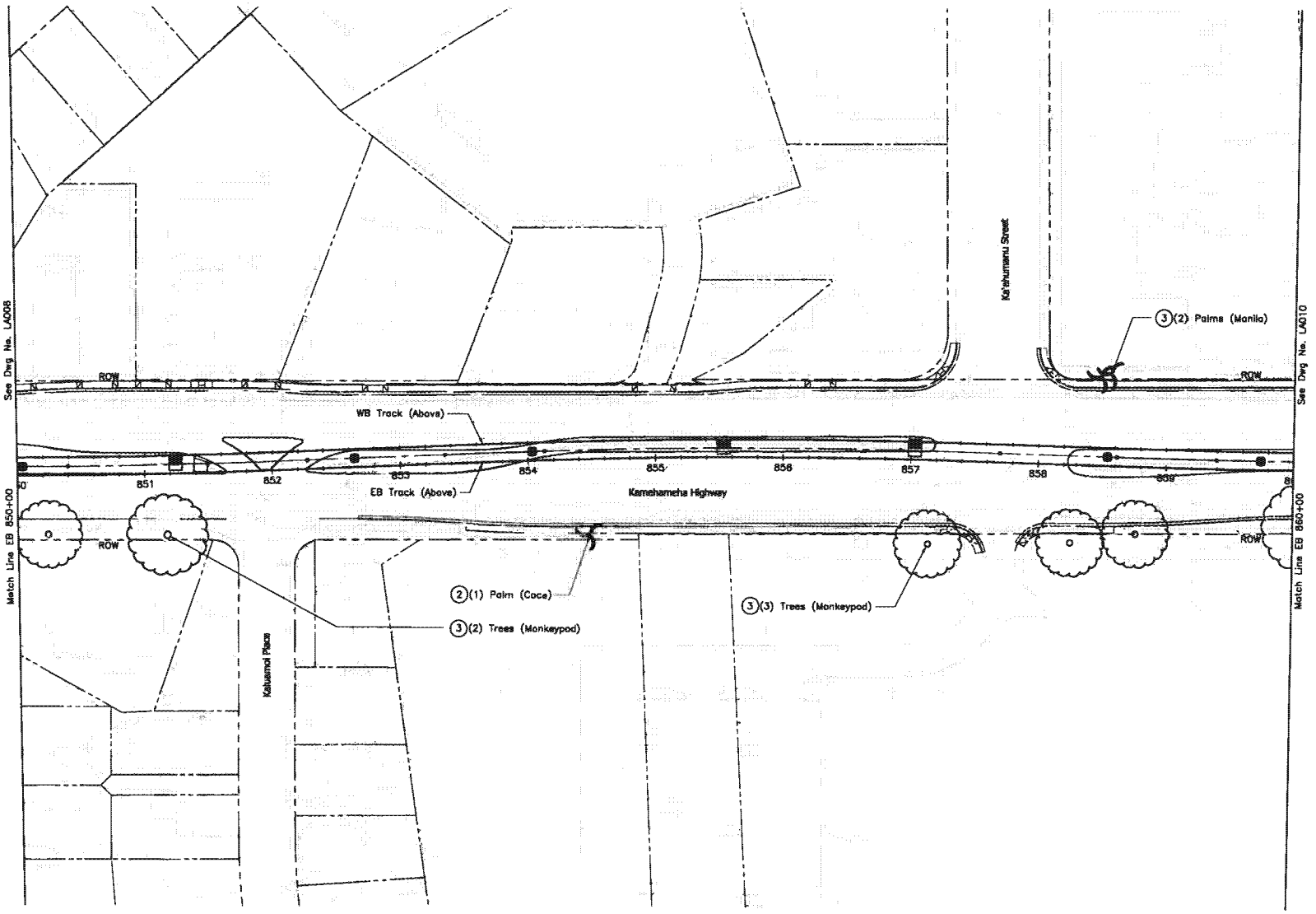

NOTE:

1. For General Landscape Notes, Symbols, and Abbreviations, see Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.
3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding.

LEGEND:

- Proposed Guideway Column
- Existing tree
- Existing palm

CONSTRUCTION NOTES:

(2) Remove tree or palm including grinding stump 18" below finish grade.

(3) Protect tree or palm in place (See Detail 1-LA201). Prune per Arborists instructions.

40' 0' 40'

Rev	By	Date	Description
A	AA	03-19-10	Issued For Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: C Hironaka
Drawn: L Kellioa
Checked: D Easterday
Approved: A Akau
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

LANDSCAPE DEMOLITION PLAN

EB 850+00 TO EB 860+00

Contract No.: SV-330
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Drawing No: LA009 Rev. A
Scale: 1"=40'
Page No. 98 of 123

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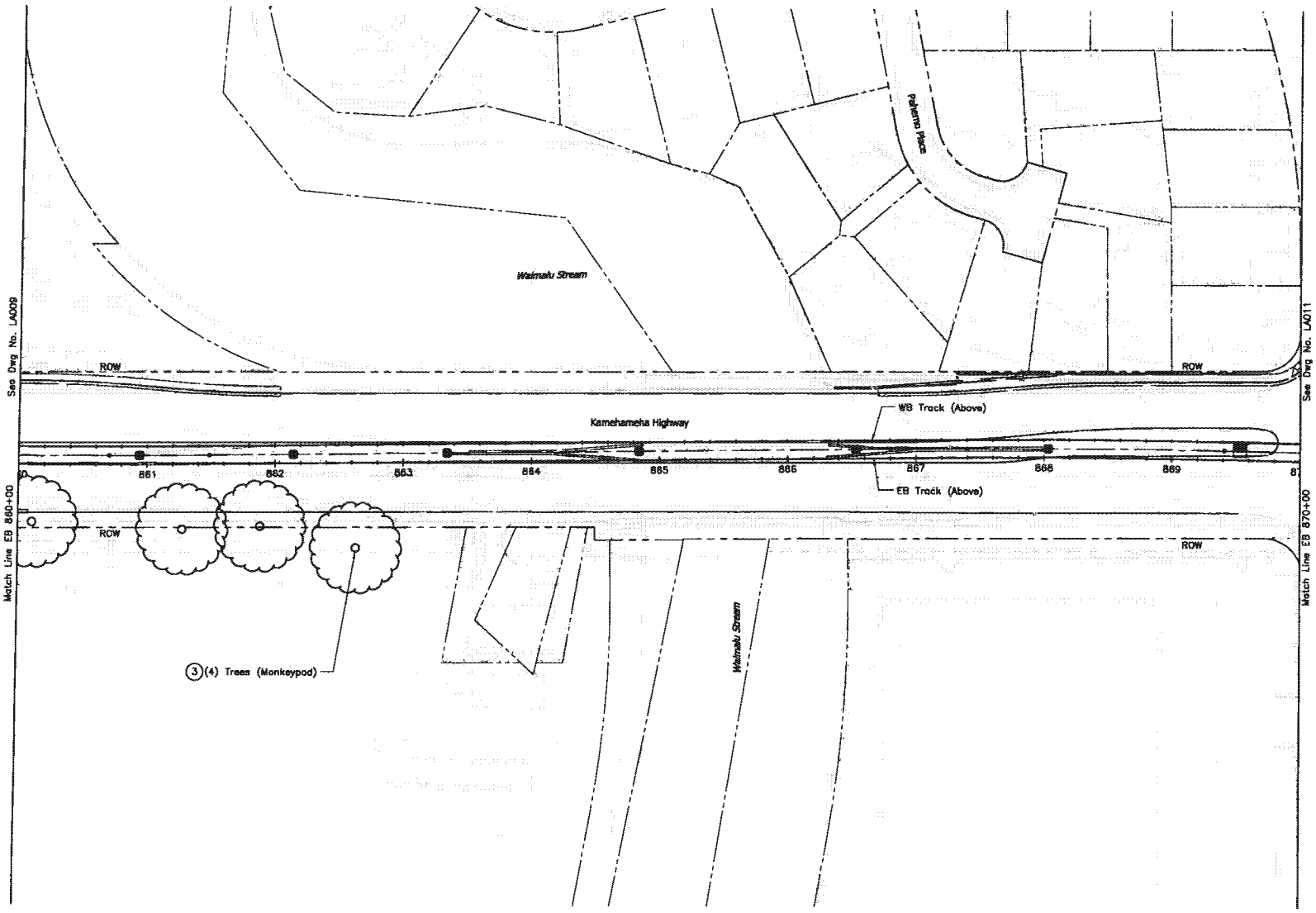

NOTE:

1. For General Landscape Notes, Symbols, and Abbreviations, see Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.
3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding.

LEGEND:

- Proposed Guideway Column
- Existing tree

CONSTRUCTION NOTES:

(3) Protect tree or palm in place (See Detail 1-LA201). Prune per Arborists instructions.

40' 0' 40'

Rev	By	Date	Description
A	AA	03-19-10	Issued For Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: C Hironaka
Drawn: L Kellioa
Checked: D Easterday
Approved: A Akau
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

LANDSCAPE DEMOLITION PLAN

EB 860+00 TO EB 870+00

Contract No.: SV-330
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Drawing No: LA010 Rev. A
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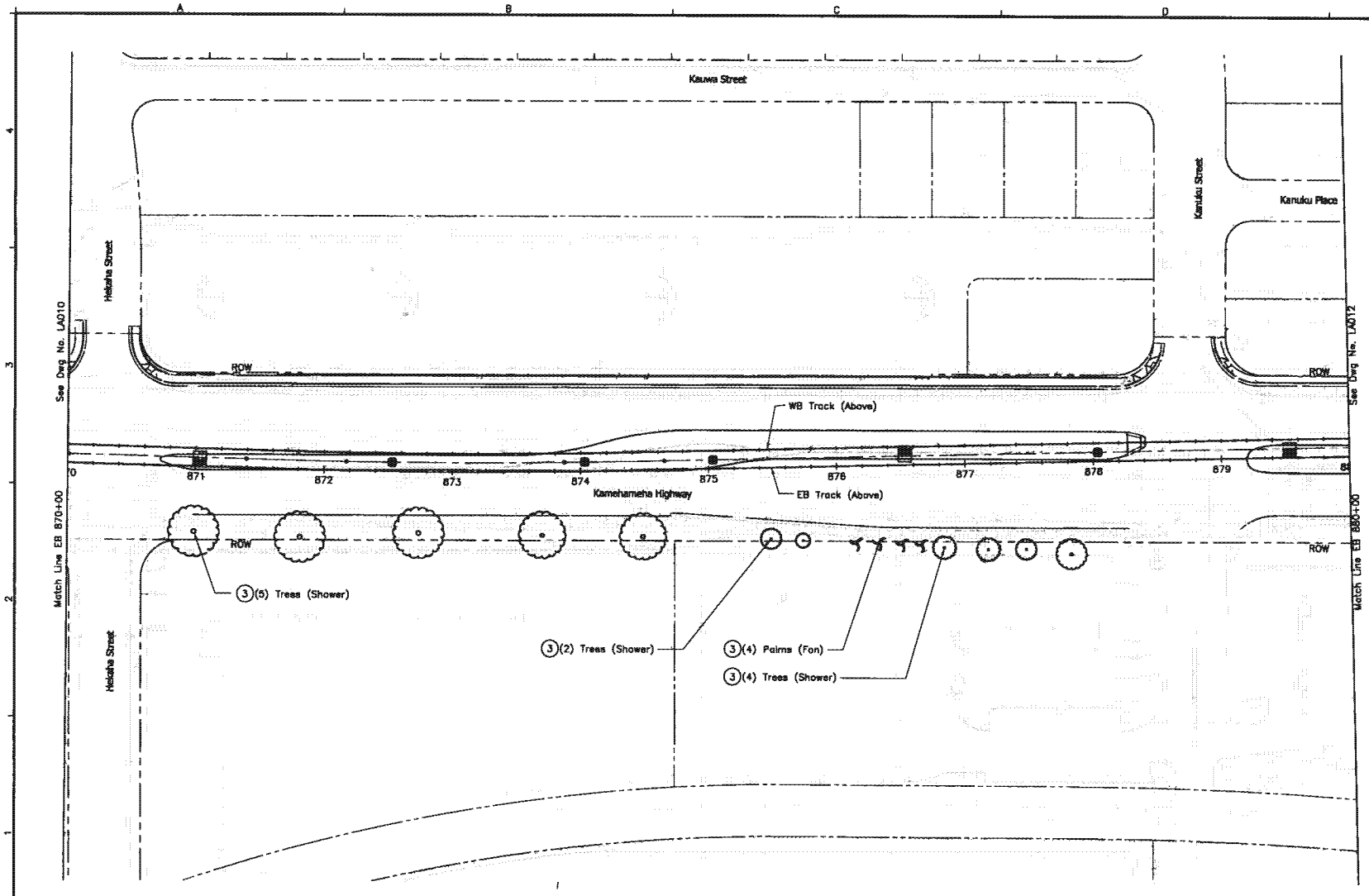

NOTE:

1. For General Landscape Notes, Symbols, and Abbreviations, see Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.
3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding.

LEGEND:

- Proposed Guideway Column
- Existing tree
- Existing palm

CONSTRUCTION NOTES:

(3) Protect tree or palm in place (See Detail 1-LA201). Prune per Arborists instructions.

40' 0' 40'

Rev	By	Date	Description
A	AA	03-19-10	Issued For Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: C Hironaka
Drawn: L Kellica
Checked: D Easterday
Approved: A Akau
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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KAMEHAMEHA GUIDEWAY AND UTILITIES

LANDSCAPE DEMOLITION PLAN

EB 870+00 TO EB 880+00

Contract No.: SV-330
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Drawing No: LA011 Rev. A
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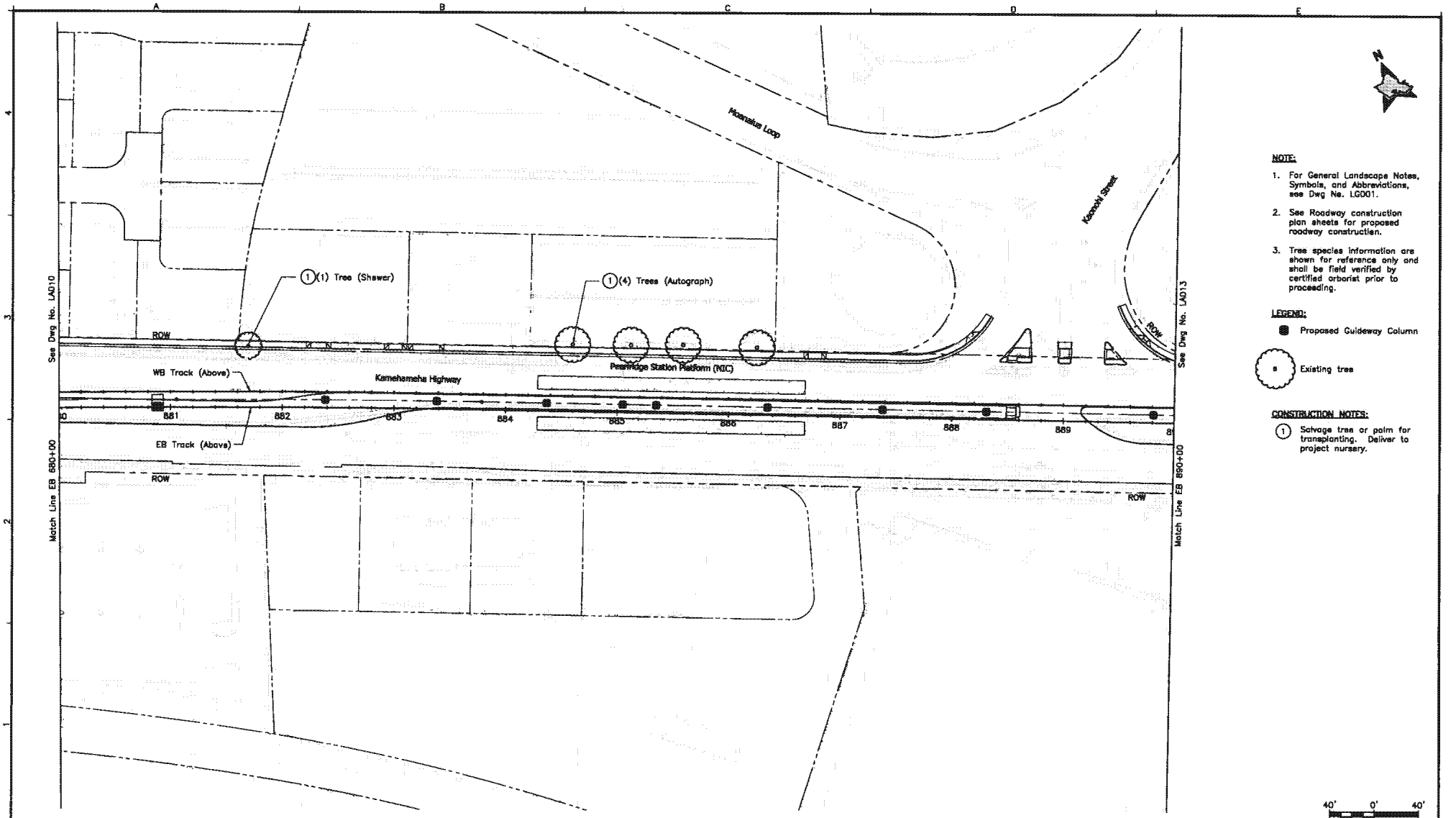

NOTE:

1. For General Landscape Notes, Symbols, and Abbreviations, see Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.
3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding.

LEGEND:

- Proposed Guideway Column
- Existing tree

CONSTRUCTION NOTES:

(1) Salvage tree or palm for transplanting. Deliver to project nursery.

Rev	By	Date	Description
A	AA	03-19-10	Issued For Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: C Hironaka
Drawn: L Kalloa
Checked: D Easterday
Approved: A Akau
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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LANDSCAPE DEMOLITION PLAN

EB 880+00 TO EB 890+00

Contract No.: SV-330
CADD File: KHDB-J02-LA012
Drawing No: LA012 Rev. A
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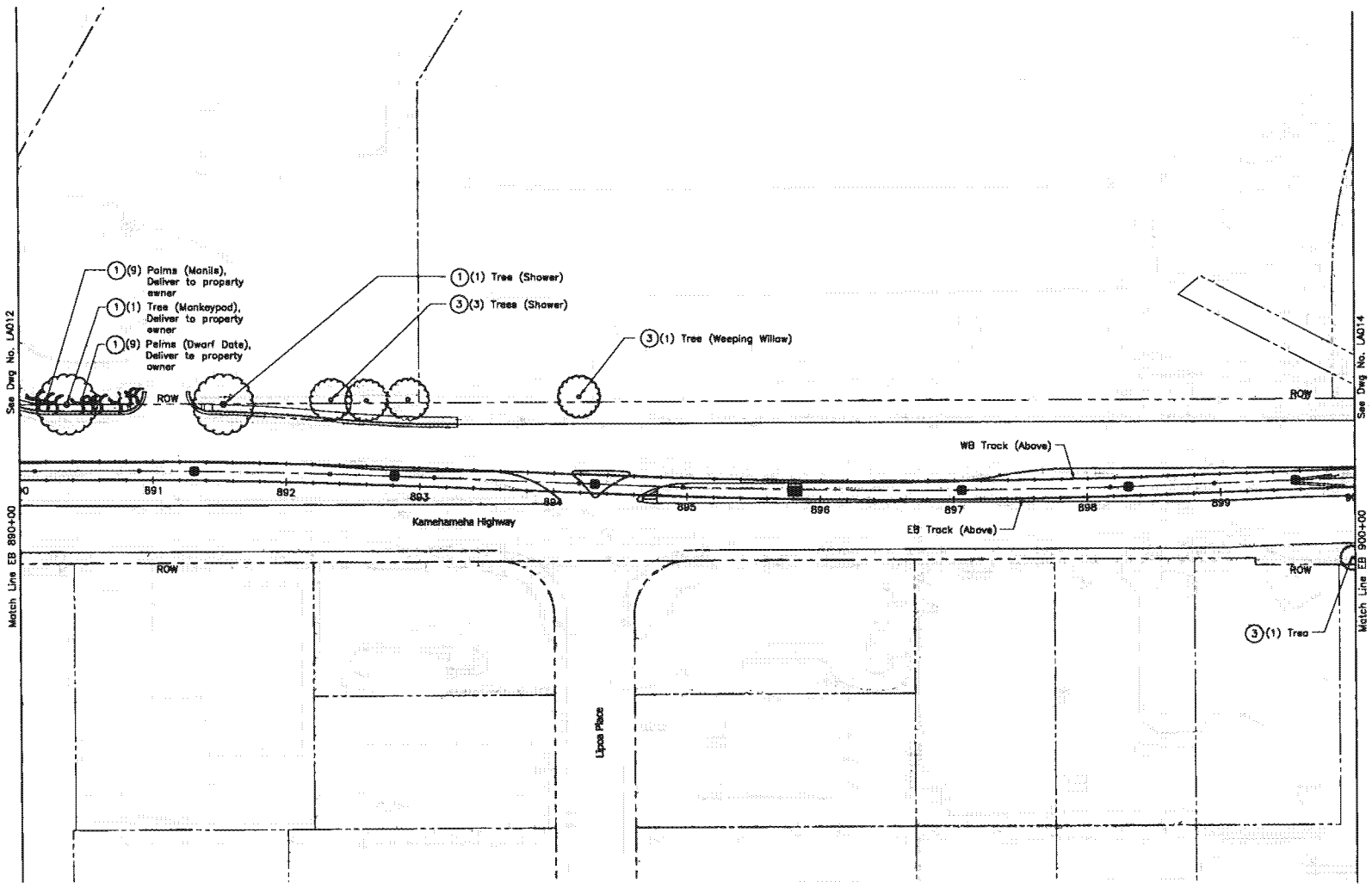

NOTE:

1. For General Landscape Notes, Symbols, and Abbreviations, see Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.
3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding.

LEGEND:

- Proposed Guideway Column
- Existing tree
- Existing palm

CONSTRUCTION NOTES:

(1) Salvage tree or palm for transplanting. Deliver to project nursery.

(3) Protect tree or palm in place (See Detail 1-LA201). Prune per Arborists instructions.

40' 0' 40'

Rev	By	Date	Description
A	AA	03-19-10	Issued For Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: C Hironaka
Drawn: L Kalliaa
Checked: D Easterday
Approved: A Akau
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

LANDSCAPE DEMOLITION PLAN

EB 890+00 TO EB 900+00

Contract No.: SV-330
CADD File: KHDB-J02-LA013
Drawing No: LA013 Rev. A
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Page No. 102 of 123

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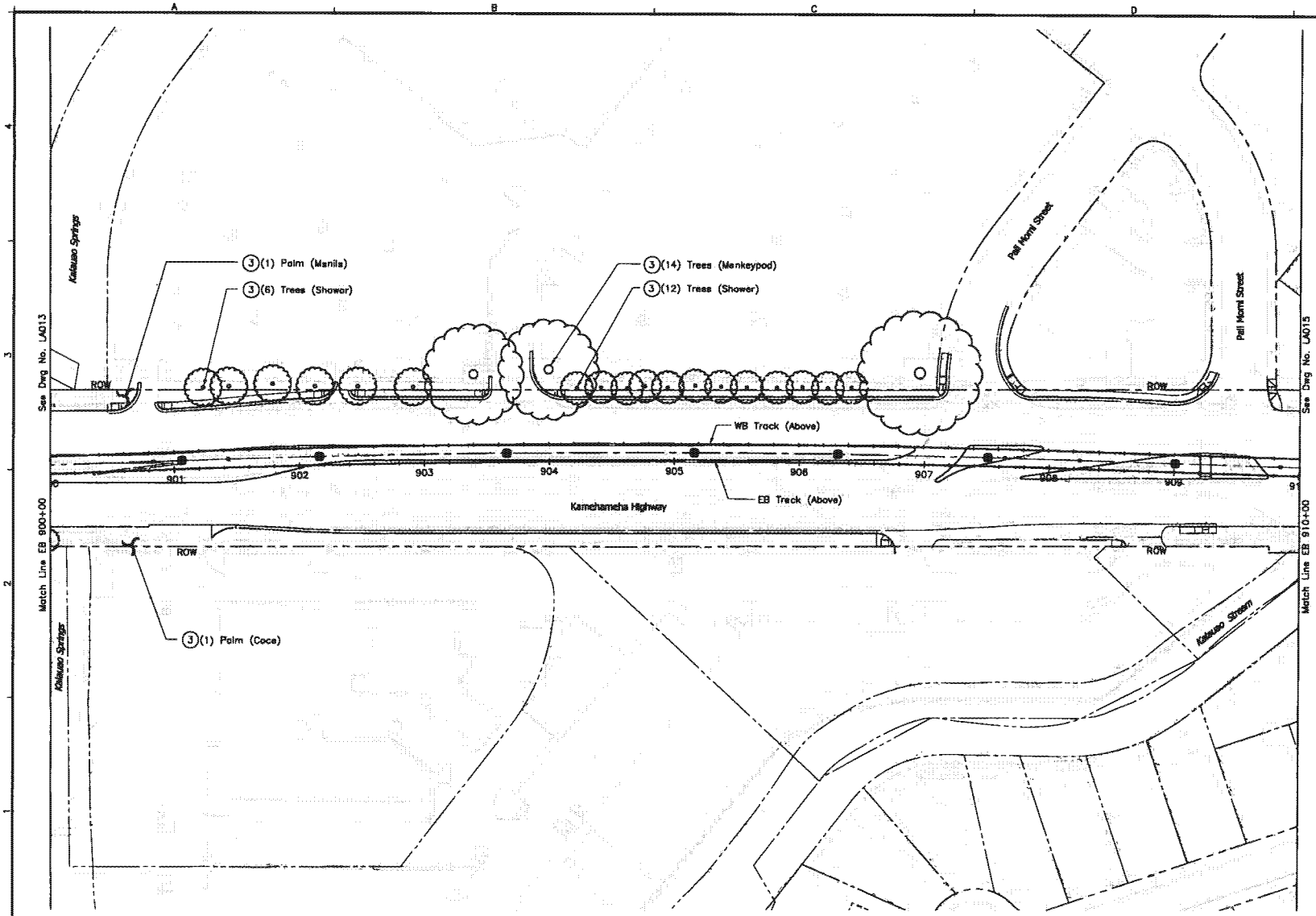

NOTE:

1. For General Landscape Notes, Symbols, and Abbreviations, see Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.
3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding.

LEGEND:

- Proposed Guideway Column
- Existing tree
- Existing palm

CONSTRUCTION NOTES:

(3) Protect tree or palm in place (See Detail 1-LA201). Prune per Arborists instructions.

40' 0' 40'

Rev	By	Date	Description
A	AA	03-19-10	Issued For Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: C Hironaka
Drawn: L Kalilca
Checked: D Easterday
Approved: A Akou
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

LANDSCAPE DEMOLITION PLAN

EB 900+00 TO EB 910+00

Contract No.: SV-330
CADD File: KHDB-J02-LA014
Drawing No: LA014 Rev. A
Scale: 1"=40'
Page No. 103 of 123

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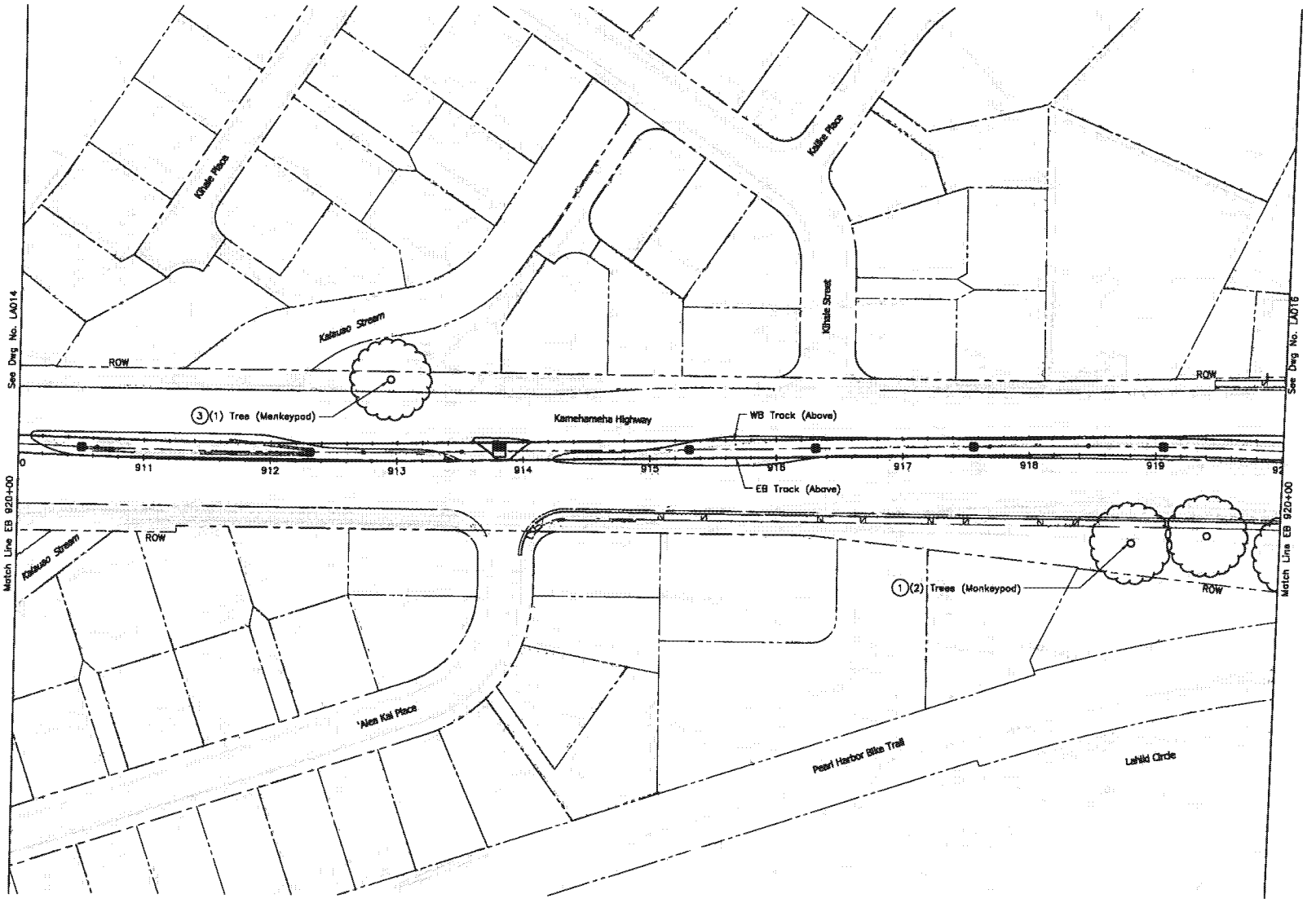

NOTE:

1. For General Landscape Notes, Symbols, and Abbreviations, see Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.
3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding.

LEGEND:

- Proposed Guideway Column
- Existing tree

CONSTRUCTION NOTES:

(1) Salvage tree or palm for transplanting. Deliver to project nursery.

(3) Protect tree or palm in place (See Detail 1–LA201). Prune per Arborists instructions.

40' 0' 40'

Rev	By	Date	Description
A	AA	03–19–10	Issued For Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: C Hironeka
Drawn: L Kelilaa
Checked: D Eastorday
Approved: A Akau
Date: 03–19–10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

LANDSCAPE DEMOLITION PLAN

EB 910+00 TO EB 920+00

Contract No.: SV–330
CADD File: KHDB–J02–LA015
Drawing No: LA015 Rev. A
Scale: 1"=40'
Page No. 104 of 123

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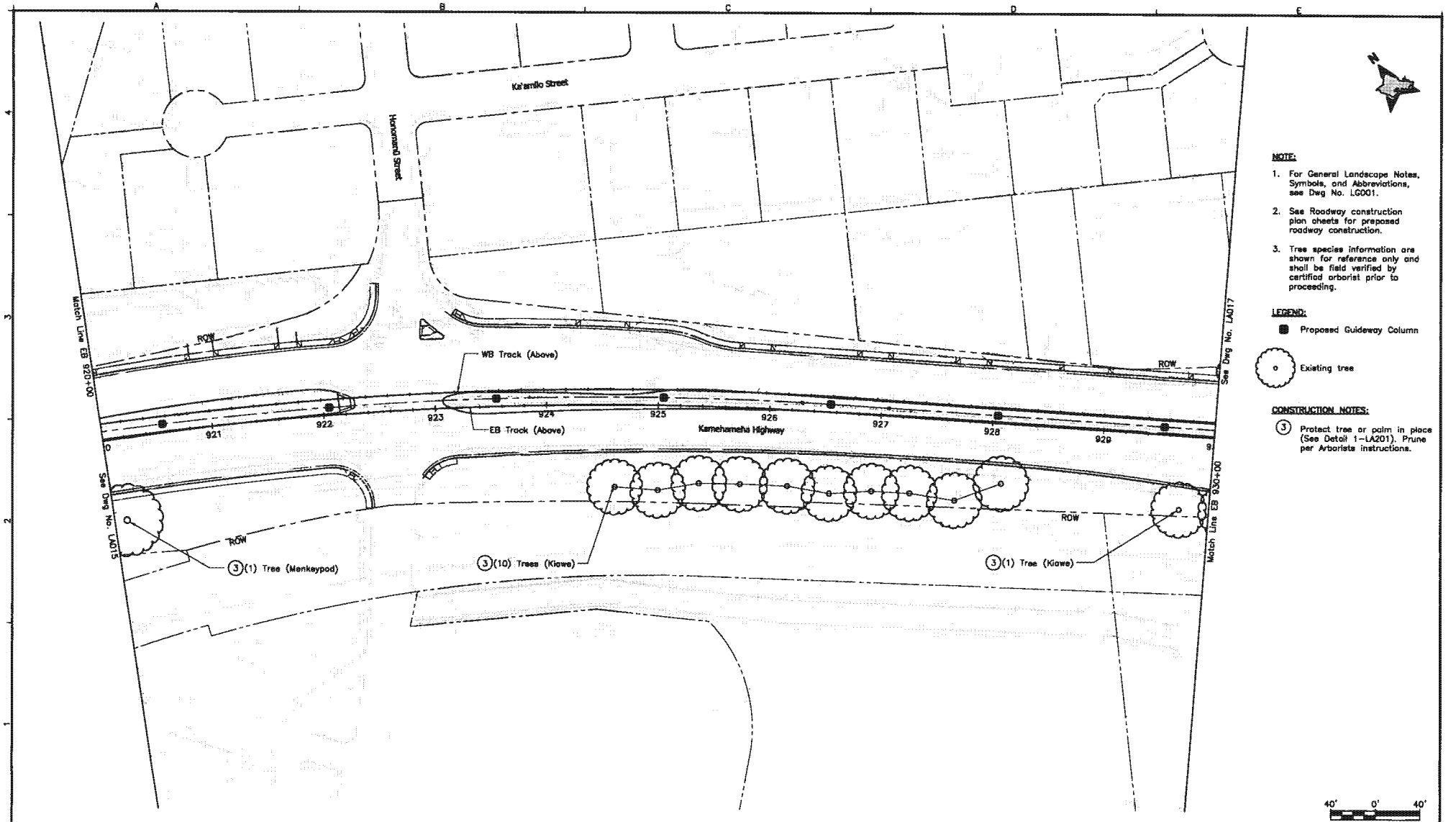

NOTE:

1. For General Landscape Notes, Symbols, and Abbreviations, see Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.
3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding.

LEGEND:

- Proposed Guideway Column
- Existing tree

CONSTRUCTION NOTES:

(3) Protect tree or palm in place (See Detail 1-LA201). Prune per Arborists instructions.

Rev	By	Date	Description
A	AA	03-19-10	Issued For Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: C Hironaka
Drawn: L Kalilca
Checked: D Easterday
Approved: A Akau
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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

KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

LANDSCAPE DEMOLITION PLAN

EB 920+00 TO EB 930+00

Contract No.: SV-330
CADD File: KHDB-J02-LA016
Drawing No: LA016
Rev. A
Scale: 1"=40'
Page No. 105 of 123

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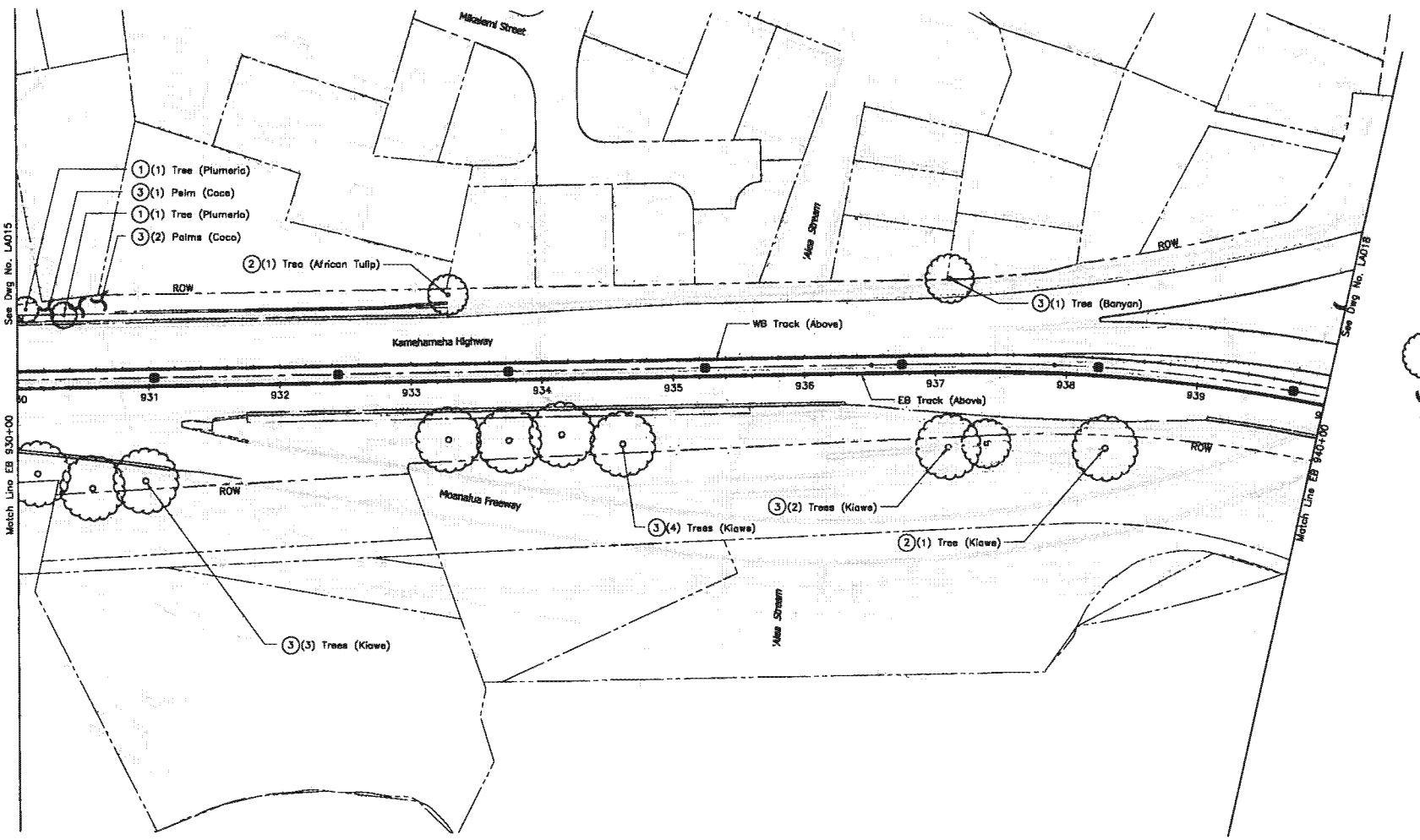

NOTE:

1. For General Landscape Notes, Symbols, and Abbreviations, see Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.
3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding.

LEGEND:

- Proposed Guideway Column
- Existing tree
- Existing palm

CONSTRUCTION NOTES:

1. Salvage tree or palm for transplanting. Deliver to project nursery.
2. Remove tree or palm including grinding stump 18" below finish grade.
3. Protect tree or palm in place (See Detail 1-LA201). Prune per Arborists instructions.

40' 0' 40'

Rev	By	Date	Description
A	AA	03-19-10	Issued For Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: C Hironaka
Drawn: L Kellica
Checked: D Easterday
Approved: A Akau
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

LANDSCAPE DEMOLITION PLAN

EB 930+00 TO EB 940+00

Contract No.: SV-330
CADD File: KHDB-J02-LA017
Drawing No: LA017
Rev. A
Scale: 1"=40'
Page No. 106 of 123

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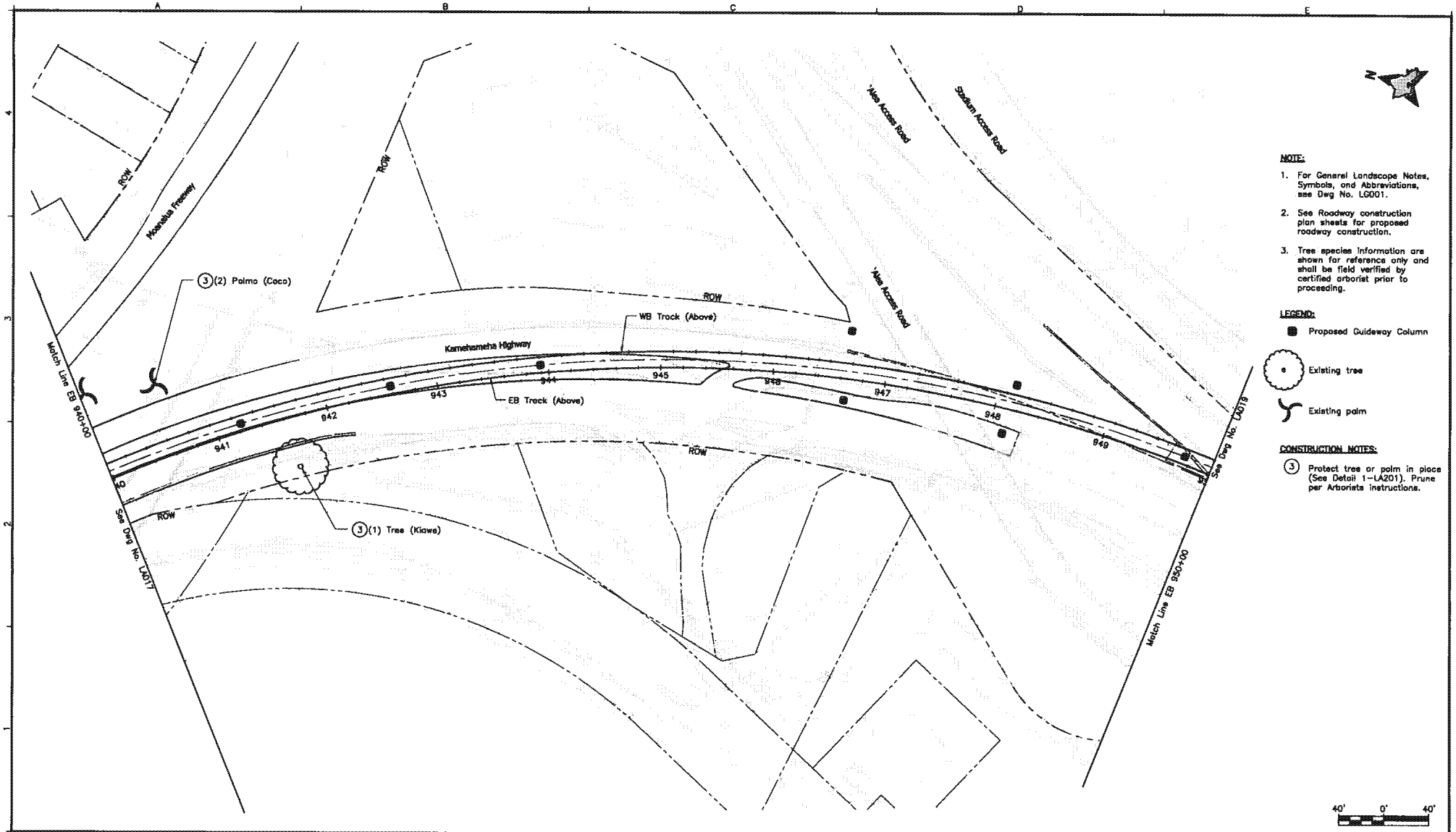

NOTE:

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LEGEND:

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- Existing palm

CONSTRUCTION NOTES:

(3) Protect tree or palm in place (See Detail 1-LA201). Prune per Arborists instructions.

Rev	By	Date	Description
A	AA	03-19-10	Issued For Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: C Hironaka
Drawn: L Kalilao
Checked: D Easterday
Approved: A Akau
Date: 03-19-10

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

LANDSCAPE DEMOLITION PLAN

EB 940+00 TO EB 950+00

Contract No.: SV-330
CADD File: KHDB-J02-LA018
Drawing No: LA018 Rev. A
Scale: 1"=40'
Page No. 107 of 123

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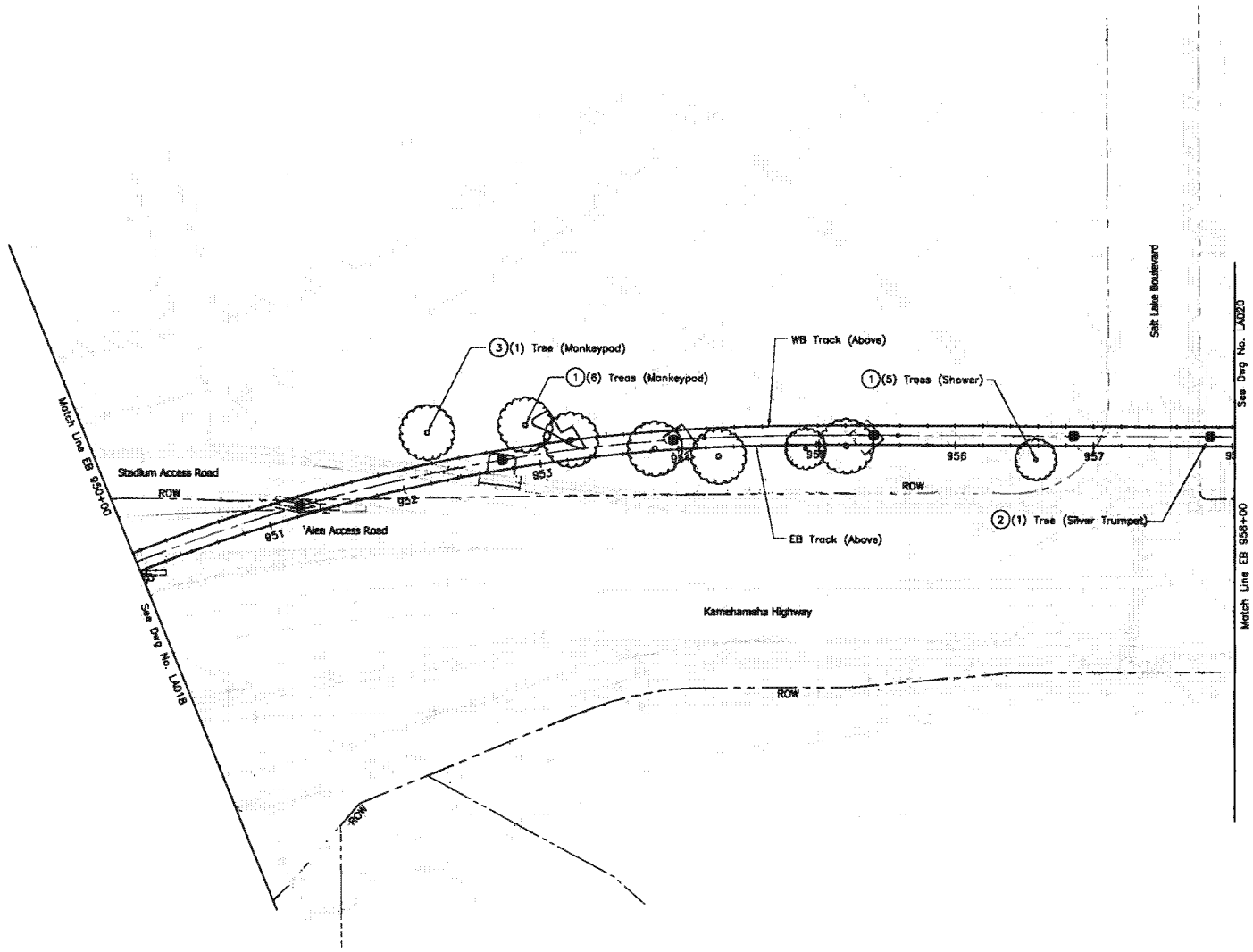

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3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding.

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40' 0' 40'

Rev	By	Date	Description
A	AA	03-19-10	Issued For Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: C Hironaka
Drawn: L Kelliaa
Checked: D Easterday
Approved: A Akau
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PARSONS BRINCKERHOFF
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Subconsultant:

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

LANDSCAPE DEMOLITION PLAN

EB 950+00 TO EB 958+00

Contract No.: SV-330
CADD File: KHDB-J02-LA019
Drawing No: LA019 Rev. A
Scale: 1"=40'
Page No. 108 of 123

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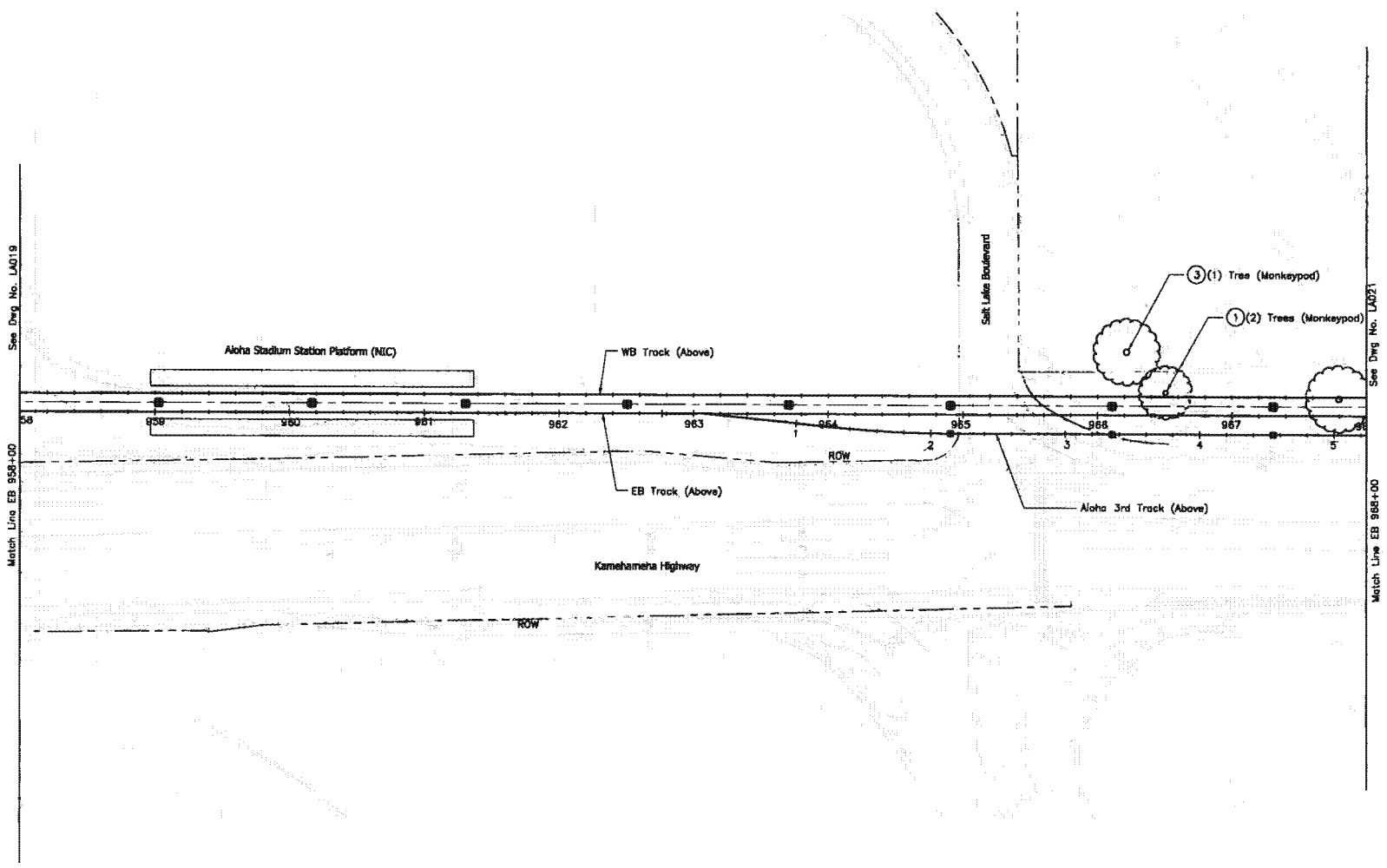

NOTE:

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2. See Roadway construction plan sheets for proposed roadway construction.
3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding.

LEGEND:

- Proposed Guideway Column
- Existing tree
- Existing palm

CONSTRUCTION NOTES:

1. Salvage tree or palm for transplanting. Deliver to project nursery.
2. Remove tree or palm including grinding stump 18" below finish grade.
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40' 0' 40'

Rev.	By	Date	Description
A	AA	03-19-10	Issued For Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: C Hironaka
Drawn: L Kelliaa
Checked: D Easterday
Approved: A Akau
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 - Honolulu, HI 96813
Subconsultant:
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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

LANDSCAPE DEMOLITION PLAN

EB 958+00 TO EB 968+00

Contract No.: SV-330
CADD File: KHDB-J02-LA020
Drawing No: LA020 Rev. A
Scale: 1"=40'
Page No. 109 of 123

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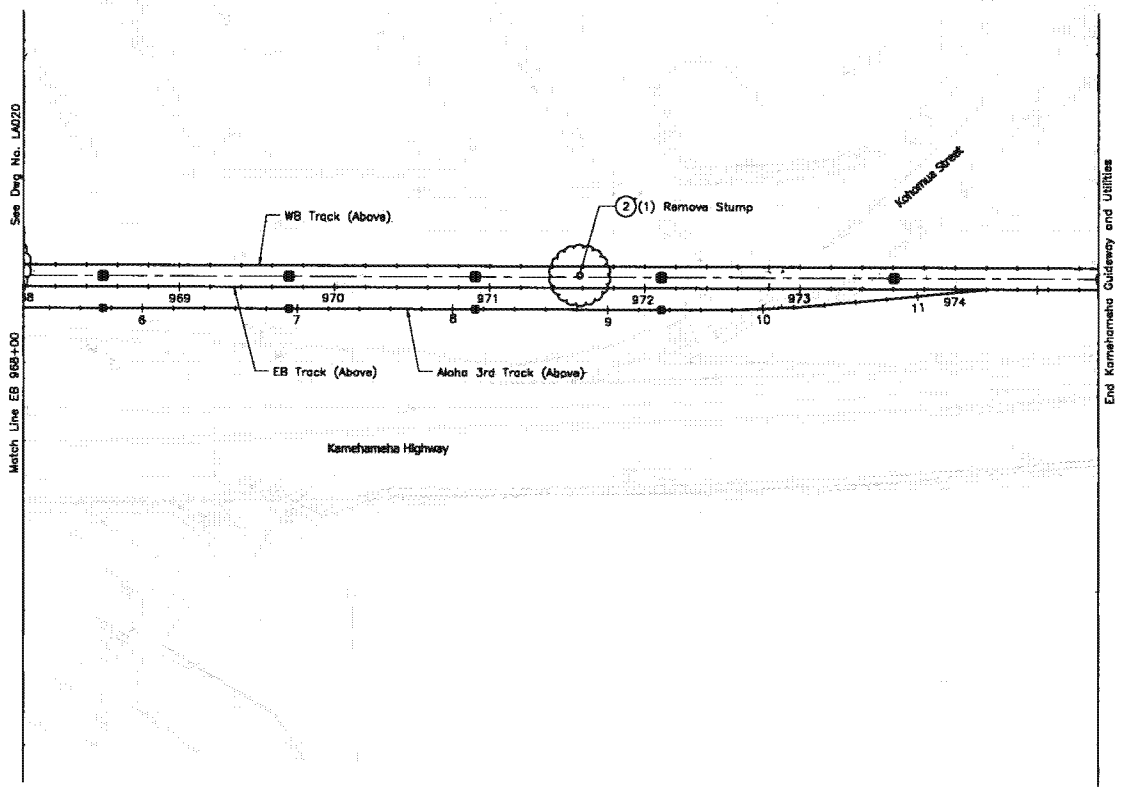

NOTE:

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2. See Roadway construction plan sheets for proposed roadway construction.
3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding.

LEGEND:

- Proposed Guideway Column
- Existing tree
- Existing palm

CONSTRUCTION NOTES:

(2) Remove tree or palm including grinding stump 18" below finish grade.

40' 0' 40'

Rev	By	Date	Description
A	AA	03-19-10	Issued For Proposal

PROPOSAL DOCUMENT NOT FOR CONSTRUCTION

Designed: C Hironaka
Drawn: L Kelilaa
Checked: D Easterday
Approved: A Akau
Date: 03-19-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: PSLLC

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KAMEHAMEHA HIGHWAY GUIDEWAY DESIGN-BUILD

LANDSCAPE DEMOLITION PLAN

EB 968+00 TO END

Contract No.: SV-330
CADD File: KHDB-J02-LA021
Drawing No: LA021 Rev. A
Scale: 1"=40'
Page No. 110 of 123

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City and County of Honolulu
Department of Transportation Services

Rapid Transit Division (RTD)

AIRPORT GUIDEWAY & UTILITIES

CONTRACT SV-430

October 1, 2010
Prepared for:
HHCTCP

Prepared by:
Parsons Brinckerhoff
General Engineering Consultant (GEC)

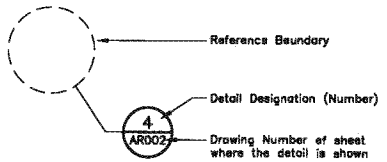
AR00077986

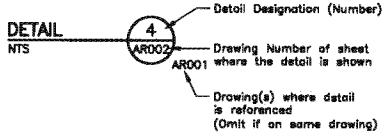
GENERAL NOTES

1. "EB Track" denotes the centerline of the Eastbound Track. "WB Track" denotes centerline of the Westbound Track.
2. Origin of Coordinates: Hawaii State Plane Coordinate Grid System, Zone III with the North American Datum of 83 High Accuracy Reference Network (NAD83 HARN).
3. Elevations shown on these plans are reference to Mean Sea Level (MSL).
4. The proposed WB Track alignment stationing equals to the proposed EB Track alignment stationing in all parallel tangent sections. Station equations are given at the endpoint of each westbound curve.
5. The top of rail profile shown represents the elevation of the top of low running rail.
6. Degree of Curve (Dc) values are expressed in arc definition.
7. All track points, except PI's are at centerline of proposed track, unless noted otherwise.
8. Underground facilities, poles, structures, and utilities have been plotted from available surveys and records. Their locations must be considered approximate only. There may be others, the existence of which is at present unknown. Verification of all the locations, shown or not shown, will be the responsibility of the contractor.
9. The existing conditions shown hereon are based on LIDAR data collected in September and October of 2007, supplemental ground surveys were performed between September of 2007 and December of 2008, and record information from various design projects either constructed, under construction or proposed. The selected design-build contractor is responsible for verifying existing conditions prior to supplying advanced design documents to the RTD.
10. Contact the Hawaii Department of Transportation (HDOT) and/or the City and County of Honolulu for additional plan sheet details not included in the Standard Details Summary and Standard Plans Summary plan sheets.
11. For Survey Control data see RTD Standard drawings.

SYMBOLS

DETAILS





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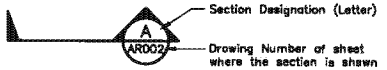
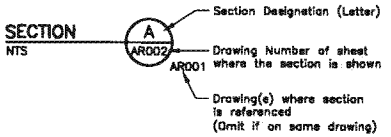
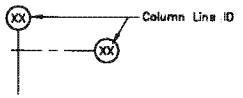




COLUMN LINE GRID INDICATOR



HATCH

Station Platform

SPECIAL TERMS

Makai	Ocean
Mauka	Mountain

231° 41' 18" South Azimuth

GENERAL SYMBOLS

&	And
@	At
#	Number
ø	Diameter
%	Percent
=	Equal to
>	Greater Than
<	Less Than
≥	Greater Than or Equal To
≤	Less Than or Equal To

CIVIL SYMBOLS

- Chain Link Fence
- CB10 — Track Curve Name
- Point of Intersection
- PVC
- Point of Switch
- SB10-B — Track Spiral Name
- Station Equation
- XX-X — Roadway Curve Number
- CUT — Limit of Cut Slope (Top of Slope)
- FILL — Limit of Fill Slope (Toe of Slope)
- Sawcut Line
- Wetland Boundary
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

ABBREVIATIONS

Aggr	Aggregate
Ahd, Ah	Ahead
AH	Ahead
Align	Alignment
Approx	Approximate
℄	Baseline
Bk, BK	Back
BT	Back Tangent
Bldg	Building
BVC	Begin Vertical Curve
BVCE	Begin Vertical Curve Elevation
BVCS	Begin Vertical Curve Station
℄	Centerline
CB	Catch Basin
CBMH	Catch Basin Manhole
CCTV	Closed Circuit Television Camera
Comm	Communications
Conc	Concrete
Const	Construction
CS	Curve to Spiral
DF	Direct Fixation
DI	Drainage Inlet
Dia	Diameter
Δ	Delta
DMH	Drainage Manhole
DS	Downspout
Dwg	Drawing
E	East
Ea	Actual Superelevation
Eu	Unbalanced Elevation
EB	Eastbound
EG	Existing Ground
El	Elevation
Elev	Elevation
Esmt	Easement
EVC	End Vertical Curve
EVCE	End Vertical Curve Elevation
EVCS	End Vertical Curve Station
Exist	Existing
FA	Fire Alarm
FEIS	Final Environmental Impact Statement
FG	Finish Grade
Fin	Finish, Finished
FOC	Face of Curb
Ft, ft	Foot, Feet
GB	Grade Break
GBS	Gas Breaker Station
GDI	Grated Drop Inlet
Gnd	Ground
H, Horiz	Horizontal
HWY	Highway
kV	Kilovolt
Jt(s)	Joint(s)
L	Length
Lc	Length of Curve
LH, L.H.	Left Hand
LIDAR	Light Detection and Ranging
Ls	Length of Spiral
LT	Left
LVC	Length of Vertical Curve
Max	Maximum
Mech	Mechanical
Min	Minimum
MHN	Manhole, Negative
MHP	Manhole, Positive
MPH	Miles Per Hour
N	North
N/A	Not Applicable
NB	Northbound
NIC	Not in Contract
N.I.C.	Not in Contract
No.	Number
OD	Outside Diameter
OH	Overhead
PB	Pullbox
PC	Point of Curve
PI	Point of Intersection
PITO	Point of Intersection of Turnout
POB	Point of Beginning
POC	Point on Curve
POE	Point of Ending
POT	Point on Tangent
POVC	Point on Vertical Curve
POVT	Point on Vertical Tangent
Prop	Proposed
PS	Point of Switch
PSI	Pounds Per Square Inch
PT	Point of Tangent
PVC	Point of Vertical Curvature Poly Vynyl Chloride
PVI	Point of Vertical Intersection
PVT	Point of Vertical Tangency
R	Radius
Reinf	Reinforce, Reinforcing
RH, R.H.	Right Hand
Rm	Room
ROW	Right-of-Way
RPM	Revolutions Per Minute
RT	Right
S	South
SB	Southbound
SC	Spiral to Curve
SDMH	Storm Drain Manhole
Shldr	Shoulder
Sht	Sheet
Sig	Signal
Sq	Square
St	Street
ST	Spiral to Tangent
Sta	Station
T	Tangent Distance
T&B	Top & Bottom
TCCR	Train Control & Communications Room
T.O.	Turnout
TOR	Top of Rail
TPSS	Traction Power Substation
TS	Tangent to Spiral
Typ	Typical
UPS	Uninterruptible Power Supply
UG	Underground
USACE	United States Army Corps of Engineers
V	Speed, Vertical
Vert	Vertical
W	West
WB	Westbound
w/	With

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: N/A
Drawn: T Cochran
Checked: J Davis
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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AIRPORT GUIDEWAY & UTILITIES

GENERAL CIVIL NOTES, SYMBOLS, AND ABBREVIATIONS

Contract No.: SV-430
CADD File: AP-B01-CG001
Drawing No: CG001 Rev.
Scale: N/A
Page No. 22 of 279

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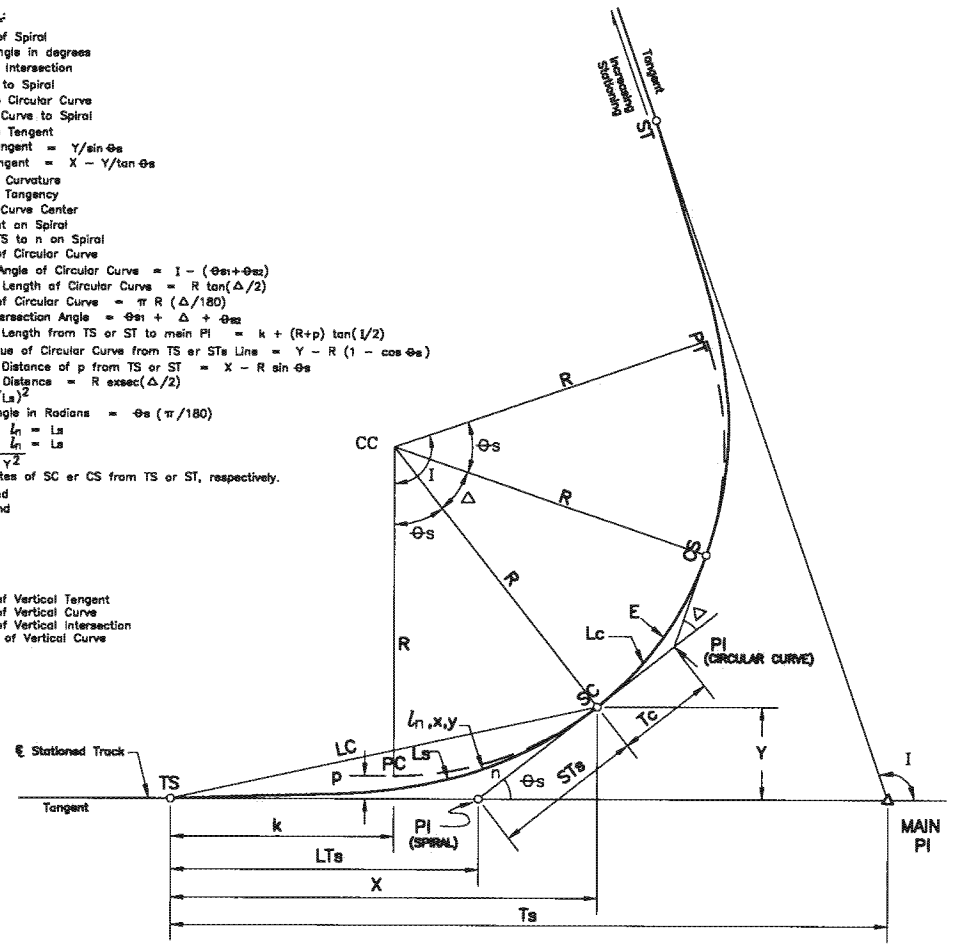
TRACK ALIGNMENT ABBREVIATIONS:

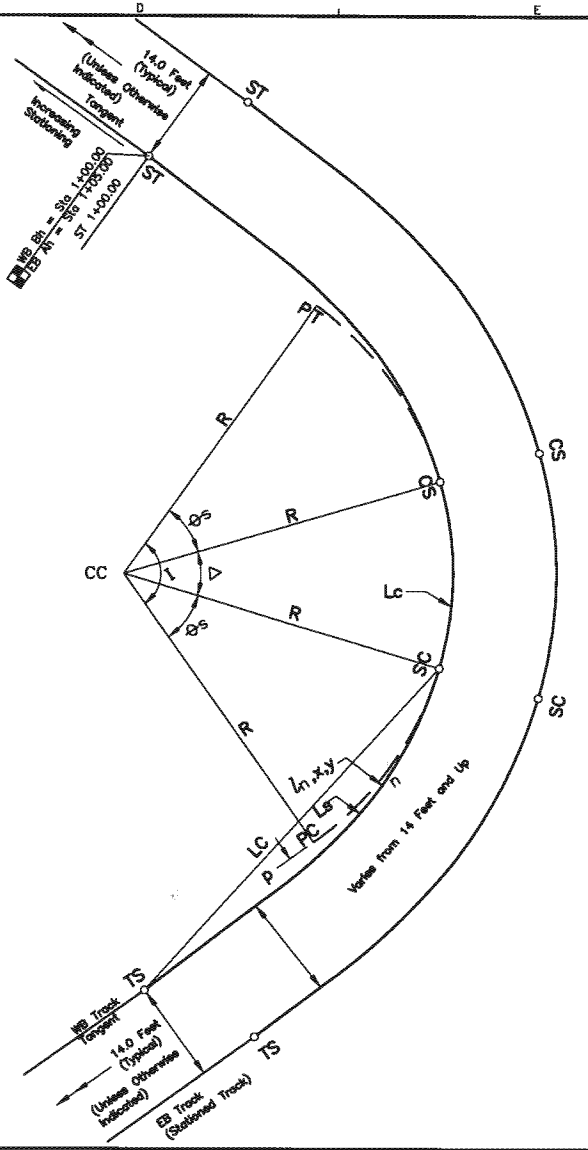
HORIZONTAL:

- Ls = Length of Spiral
- θs = Spiral Angle in degrees
- PI = Point of Intersection
- TS = Tangent to Spiral
- SC = Spiral to Circular Curve
- CS = Circular Curve to Spiral
- ST = Spiral to Tangent
- STs = Short Tangent = $Y/\sin\theta s$
- LTs = Long Tangent = $X - Y/\tan\theta s$
- PC = Point of Curvature
- PT = Point of Tangency
- CC = Circular Curve Center
- n = any Point on Spiral
- l_n = Length TS to n on Spiral
- R = Radius of Circular Curve
- Δ = Central Angle of Circular Curve = $I - (\theta s_1 + \theta s_2)$
- Tc = Tangent Length of Circular Curve = $R \tan(\Delta/2)$
- Lc = Length of Circular Curve = $\pi R (\Delta/180)$
- I = Total Intersection Angle = $\theta s_1 + \Delta + \theta s_2$
- Ts = Tangent Length from TS or ST to main PI = $k + (R+p)\tan(I/2)$
- p = Shift Value of Circular Curve from TS or STs Line = $Y - R(1 - \cos\theta s)$
- k = Tangent Distance of p from TS or ST = $X - R\sin\theta s$
- E = External Distance = $R\,\mathrm{exsec}(\Delta/2)$
- δn = $\delta s\,(l_n/Ls)^2$
- δs = Spiral Angle in Radians = $\theta s\,(\pi/180)$
- X = x, where l_n = Ls
- Y = y, where l_n = Ls
- LC = $\sqrt{X^2 + Y^2}$
- X & Y = Coordinates of SC or CS from TS or ST, respectively.
- EB = Eastbound
- WB = Westbound

VERTICAL:

- PVT = Point of Vertical Tangent
- PVC = Point of Vertical Curve
- PVI = Point of Vertical Intersection
- LVC = Length of Vertical Curve





Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: N/A
Drawn: R Nacien
Checked: E Liberman
Approved: A Borst
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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AIRPORT GUIDEWAY & UTILITIES

TRACK ALIGNMENT ABBREVIATIONS

Contract No.: SV-430
CADD File: AP-B01-CG002
Drawing No: CG002 Rev.
Scale: N/A
Page No. 23 of 279

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ROADWAY CONSTRUCTION NOTES:

1. Construct Concrete Curb.
2. Construct Concrete Curb and Gutter.
3. Construct Concrete Sidewalk.
4. Construct Reinforced Concrete Driveway.
5. Construct Concrete Curb Ramp.
6. Install Chain Link Fence with Toprail.
7. Install Chain Link Fence without Toprail.
8. Install Double Swing Chain Link Drive Gate.
9. Construct Concrete Barrier Rail.
10. Install Guardrail.
11. Install Guardrail End Treatment.
12. Construct Concrete Retaining Wall.
13. Construct PCC Bus Pad.
14. Construct Plantmix Bituminous Surface Overlay.
15. Construct Plantmix Bituminous Pavement.
16. Construct Concrete Median Island Paving.
17. Place Aggregate Base Surface.
18. Construct Gravel Driveway.
19. Construct Concrete Half Barrier Rail.
20. Construct Concrete Pavement.

ROADWAY CONSTRUCTION LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Proposed gravel pavement.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

GENERAL ROADWAY CONSTRUCTION NOTES:

1. See survey control plan sheets for references to horizontal and vertical control datums.
2. See structural plan and profile sheets for proposed guideway column details.
3. See landscaping plan sheets for proposed landscaping details.
4. See ROW plan sheets for proposed ROW details.
5. See utility plan sheets for proposed modifications and/or improvements to existing above and below ground utility systems.
6. See drainage plans sheets for proposed modifications and/or improvements to existing storm drainage facilities and piping.
7. See traffic signal plan sheets for proposed modifications and/or improvements to existing traffic signal systems.
8. See systems site plan sheets for proposed TPSS and GBS details.
9. See track alignment plan and profile for proposed track alignment details.
10. See station plan sheets for proposed station details.

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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AIRPORT GUIDEWAY & UTILITIES

ROADWAY CONSTRUCTION NOTES AND LEGEND

Contract No.: SV-430
CADD File: AP-B01-CG003
Drawing No: CG003 Rev.
Scale: NTS
Page No. 24 of 279

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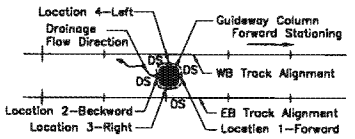
GENERAL DRAINAGE CONSTRUCTION NOTES:

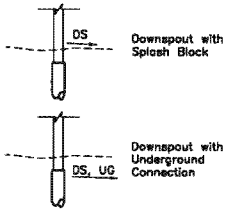
1. See Dwg No. CG001 for General Civil Notes, Symbols, and Abbreviations.
2. See Dwg No. GD101 for Downspout Locations and Discharge Conditions.
3. See Utility Relocation Plans for Proposed Drainage Structures Shown in Guideway Drainage Plans.
4. See Track Alignment Plan and Profile Sheets for Proposed Track Alignment Information.
5. See System Site Plans for System Site Information.
6. See Structural Plan and Profile Sheets for Proposed Guideway Details.
7. See Landscaping Plans for Proposed Landscaping Details.
8. All Downspouts within Guideway Columns shall be 8" Minimum Nominal Pipe Size.

DRAINAGE CONSTRUCTION LEGEND:

LEGEND:



DOWNSPOUT(DS) LOCATION OPTIONS



PROFILE

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: P Fujii
Drawn: T Cochran
Checked: K Wong
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 · Honolulu, HI 96813

Subconsultant:

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AIRPORT GUIDEWAY & UTILITIES

DRAINAGE NOTES AND LEGEND

Contract No.: SV-430
CADD File: AP-B01-CG004
Drawing No: CG004 Rev.
Scale: N/A
Page No. 25 of 279

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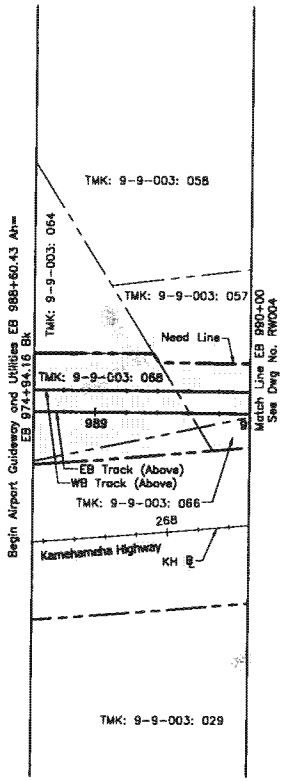

NOTES:

1. ROW acquisition may be in the form of an aerial easement; an easement allowing joint use; subdivision of property with transfer of title; transfer of title for the entire parcel; or some other form to be documented by Land Court registration.
2. Construction easements should be defined during the final design phase and are not reflected on plans.
3. See Dwg No. CG001 for general civil notes, legend and abbreviations.

Tax Map Key Number	Parcel Acquisitions	House Number	Street Name	Land Use
9-9-003:057	Partial	–	–	Public
9-9-003:066	Partial	–	–	Private Roadway
9-9-003:068	Full	–	–	Private Roadway

LEGEND

- Right-of-Way (ROW) / Parcel Need
- Access Permitted
- No Vehicle Access Permitted
- No Access Permitted
- Limited Access as noted on Plan
- ROW Line
- Property Line
- Easement Line

40' 0 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: L Karametsu
Drawn: L Karametsu
Checked: K Wang
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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AIRPORT GUIDEWAY & UTILITIES

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 988+60.43 TO EB 990+00

Contract No.:
CADD File: AP-B04-RW003
Drawing No: RW003 Rev.
Scale: 1"=40'
Page No. 26 of 279

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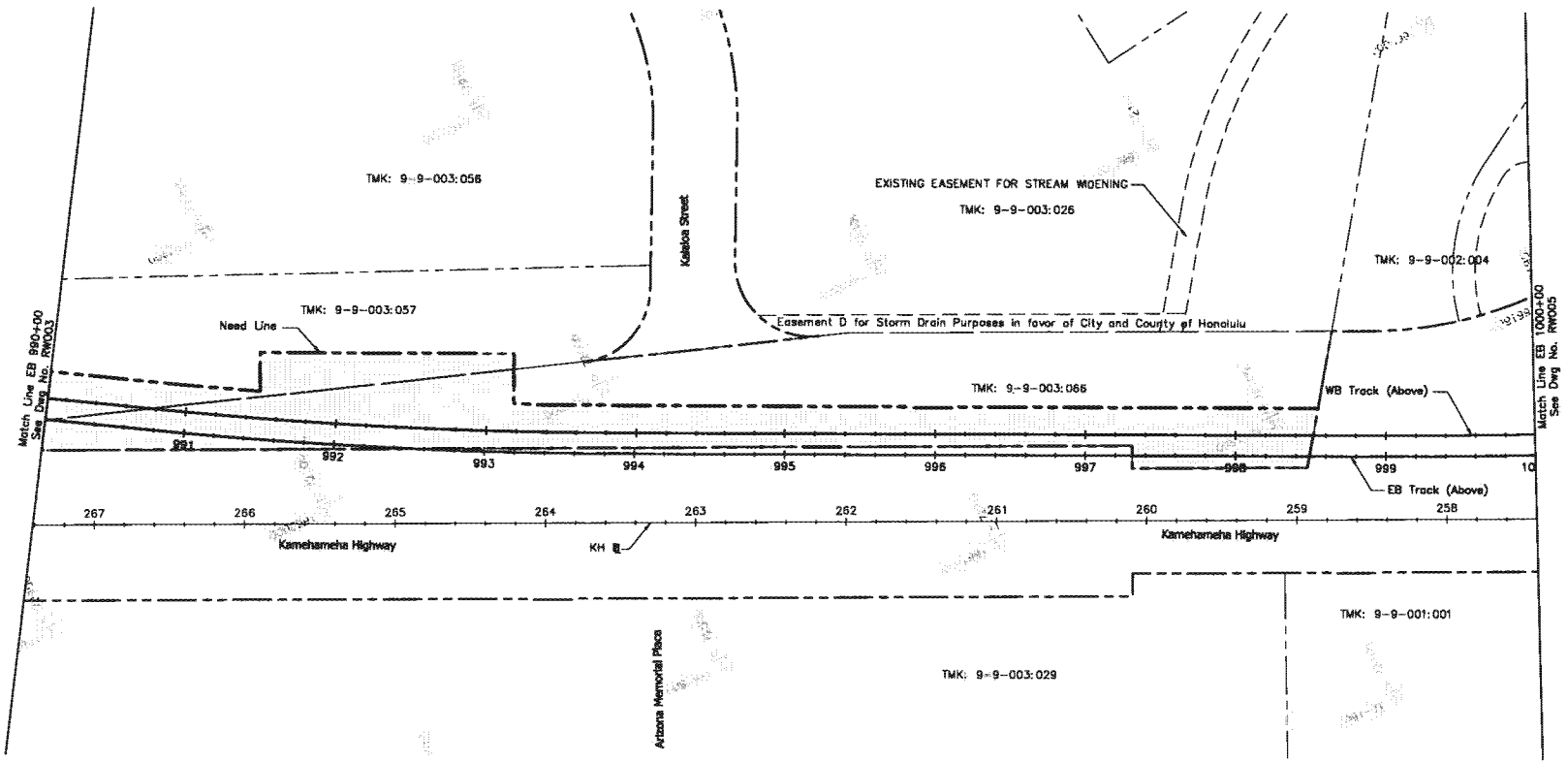

NOTES:

1. ROW acquisition may be in the form of an aerial easement; an easement allowing joint use; subdivision of property with transfer of title; transfer of title for the entire parcel; or some other form to be documented by Land Court registration.
2. Construction easements should be defined during the final design phase and are not reflected on plans.
3. See Dwg No. CG001 for general civil notes, legend and abbreviations.
4. See Dwg No. RW003 for Right-of-Way legend.

Tax Map Key Number	Parcel Acquisitions	House Number	Street Name	Land Use
9-1-003:057	Partial	–	–	Public
9-1-003:066	Partial	–	–	Private Roadway

40' 0 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: G Tom
Drawn: N Chan
Checked: J Yamamoto
Approved: G Takahashi
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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AIRPORT GUIDEWAY & UTILITIES

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 990+00 TO EB 1000+00

Contract No.: SV-430
CADD File: AP-B04-RW004
Drawing No: RW004 Rev.
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Page No. 27 of 279

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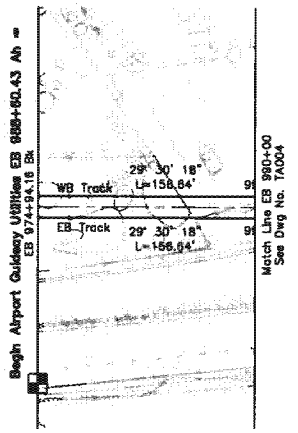

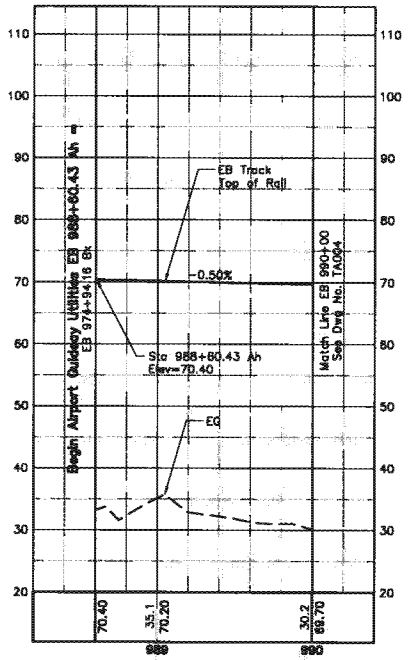

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Track Alignment Abbreviations, see Dwg No. CG002.

H 40' 0' 40'

V 10' 0' 10'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: B Wardell
Drawn: R Nacion
Checked: E Liberman
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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AIRPORT GUIDEWAY AND UTILITIES

TRACK ALIGNMENT PLAN & PROFILE

EB 988+60.43 TO EB 990+00

Contract No.: SV-430
CADD File: AP-B05-TA003
Drawing No: TA003 Rev.
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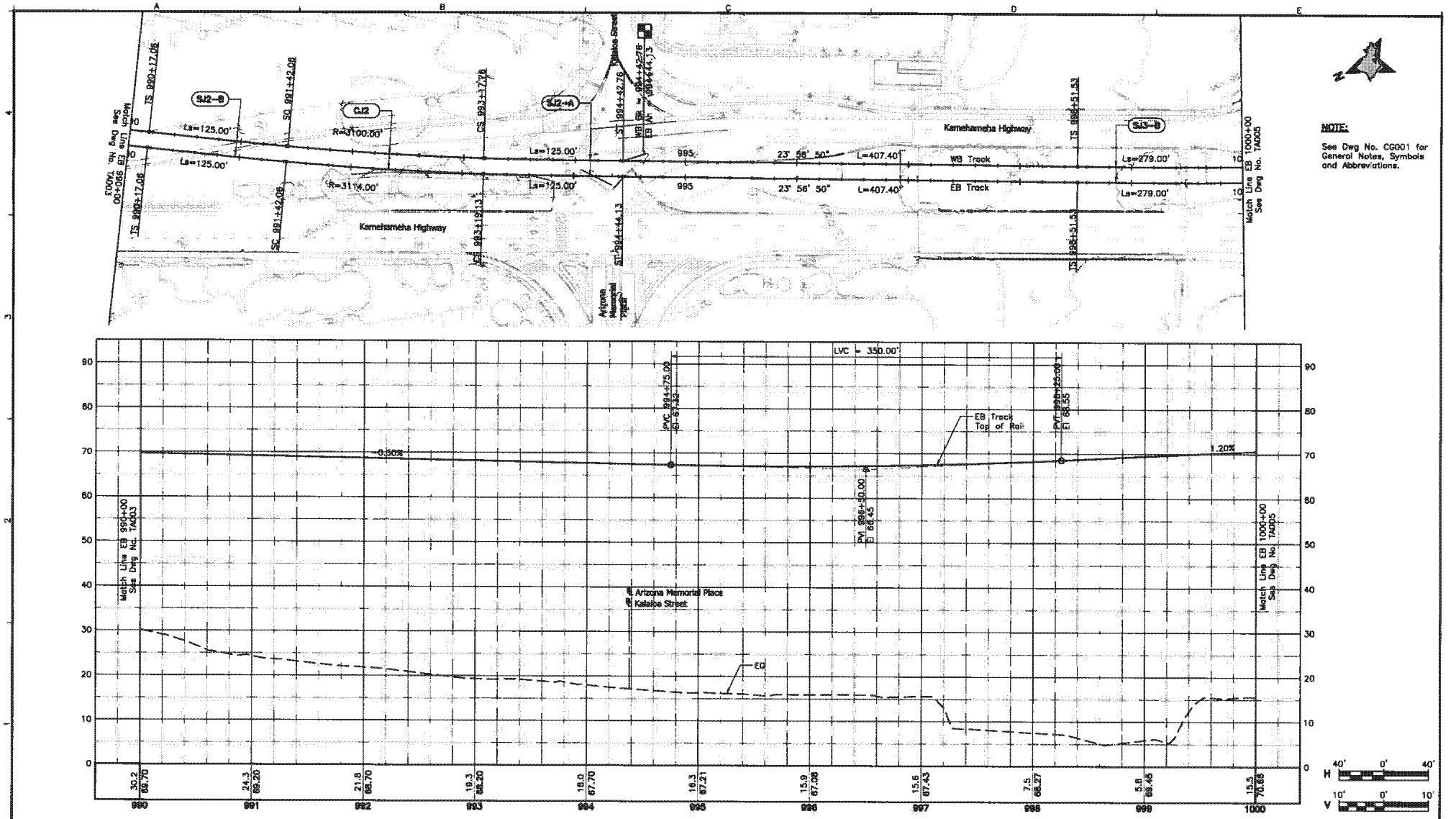

NOTE:

See Dwg No. CG001 for General Notes, Symbols and Abbreviations.

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: G Tom
Drawn: N Chan
Checked: J Yamamota
Approved: G Takahashi
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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AIRPORT GUIDEWAY & UTILITIES

TRACK ALIGNMENT PLAN & PROFILE

EB 990+00 TO EB 1000+00

Contract No.: SV-430
CADD File: AP-B05-TA004
Drawing No: TA004
Rev.
Scale: 1"=40' H, 1"=10' V
Page No. 56 of 279

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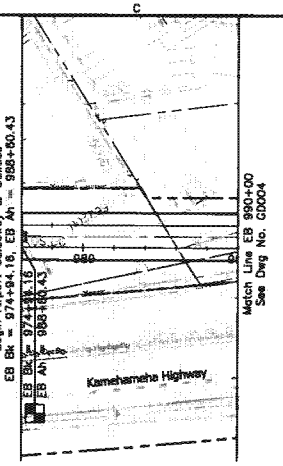

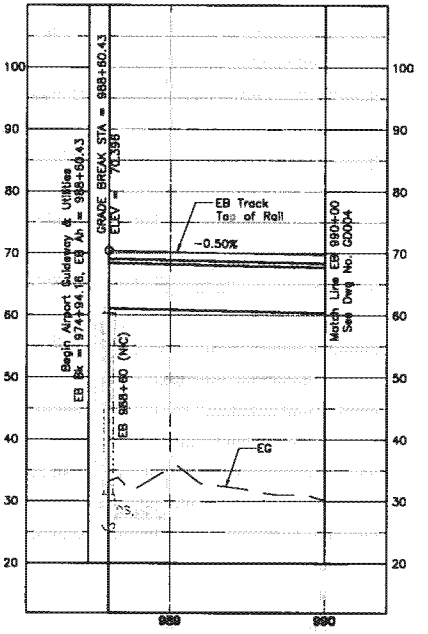

NOTES:

1. See Dwg No. CG004 for General Drainage Construction Notes and Legend.
2. For Downspout locations and discharge conditions, See Schedule on Dwg No. GD101.

40' 0 40'

10' 0 10'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: P Fujii
Drawn: T Cochran
Checked: K Wong
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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AIRPORT GUIDEWAY & UTILITIES

GUIDEWAY DRAINAGE LAYOUT PLAN & PROFILE

EB 988+60.43 TO EB 990+00

Contract No.: SV-430
CADD File: AP-B16-GD003
Drawing No: GD003
Rev.
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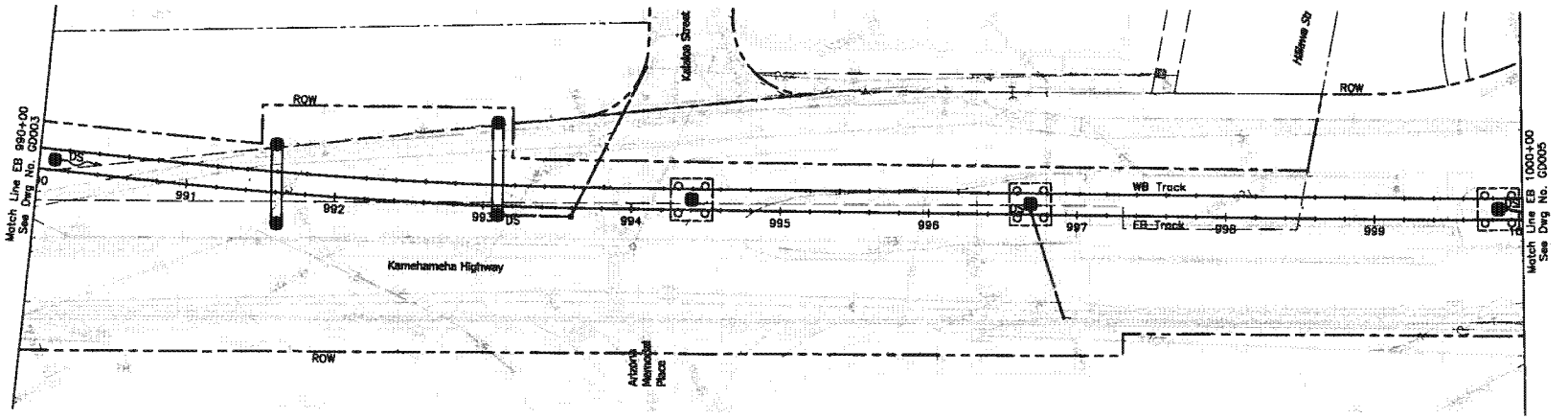

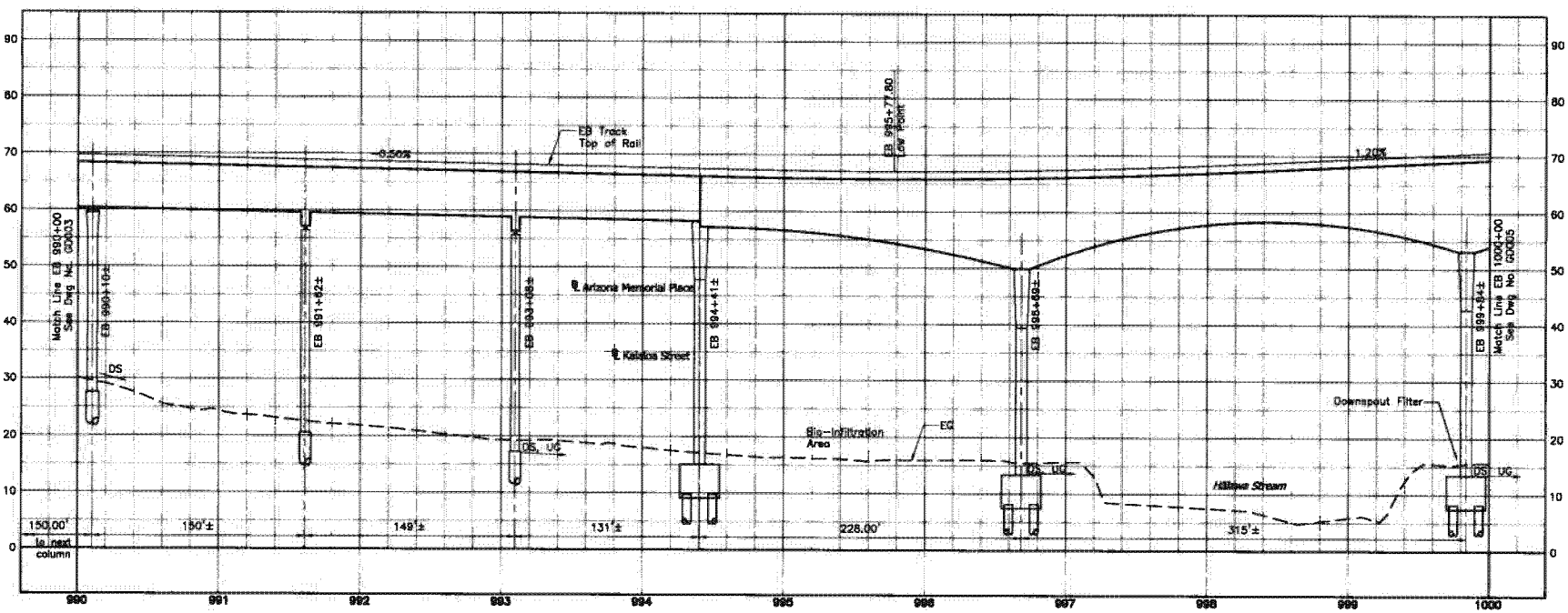

NOTES:

See Dwg No. GD001 for General Notes, Legend, Symbols and Abbreviations.

Rev.	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: G Tom
Drawn: N Chon
Checked: J Yamamoto
Approved: G Takahashi
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: R.M. TOWILL CORPORATION

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AIRPORT GUIDEWAY & UTILITIES

GUIDEWAY DRAINAGE LAYOUT PLAN & PROFILE

EB 990+00 TO EB 1000+00

Contract No.: SV-430
CADD File: AP-B16-GD004
Drawing No: GD004
Rev.
Scale: 1"=40' H, 1"=10' V
Page No. 140 of 279

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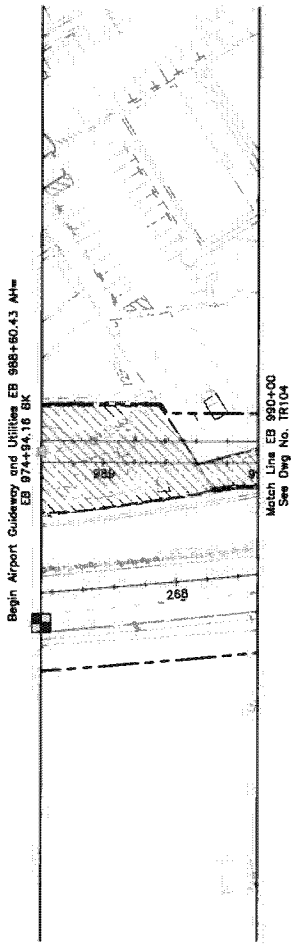

NOTES

1. For general notes, see Dwg No. TG001.

LEGEND

	Work Zone
	Bus Pullout Area
	Concrete Barrier
	Proposed Traffic Control
SYL	Temporary Solid Yellow Line
SWL	Temporary Solid White Line
BWL	Temporary Broken White Line
DWL	Temporary Dashed White Line
	Flow of Traffic
	Guideway Column Location
	Attenuator
	Existing Sign
FOC	Face of Curb
EP	Edge of Pavement

40' 0 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: B Wardell
Drawn: J Derosier
Checked: M Jewell
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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AIRPORT GUIDEWAY & UTILITIES

MAINTENANCE OF TRAFFIC PLAN

EB 988+60.43 TO EB 990+00

Contract No.: SV-430
CADD File: AP-C03-TR103
Drawing No: TR103 Rev.
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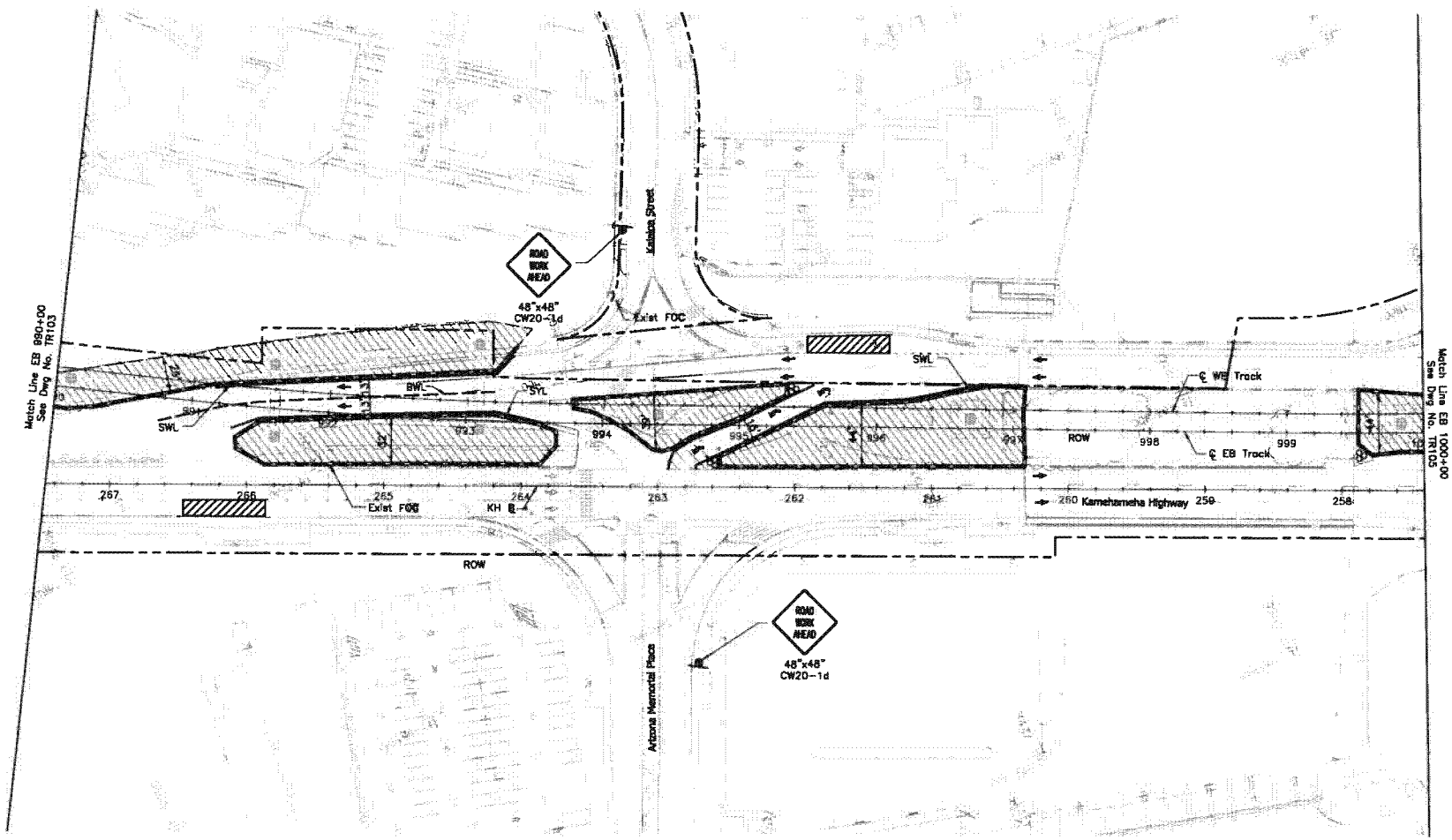

N

NOTES

1. For general notes, see Dwg No. TG001.

LEGEND

- Work Zone
- Bus Pullout Area
- Concrete Barrier
- Proposed Traffic Control
- SYL Temporary Solid Yellow Line
- SWL Temporary Solid White Line
- BWL Temporary Broken White Line
- DWL Temporary Dashed White Line
- Flow of Traffic
- Guideway Column Location
- Attenuator
- Existing Sign
- FOC Face of Curb
- EP Edge of Pavement

40' 0 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: G Tom
Drawn: N Chan
Checked: J Yamomoto
Approved: G Takahashi
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: R. M. TOWILL CORPORATION

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AIRPORT GUIDEWAY & UTILITIES

MAINTENANCE OF TRAFFIC PLAN

EB 990+00 TO EB 1000+00

Contract No.: SV-430
CADD File: AP-C03-TR104
Drawing No: TR104 Rev.
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Page No. 204 of 279

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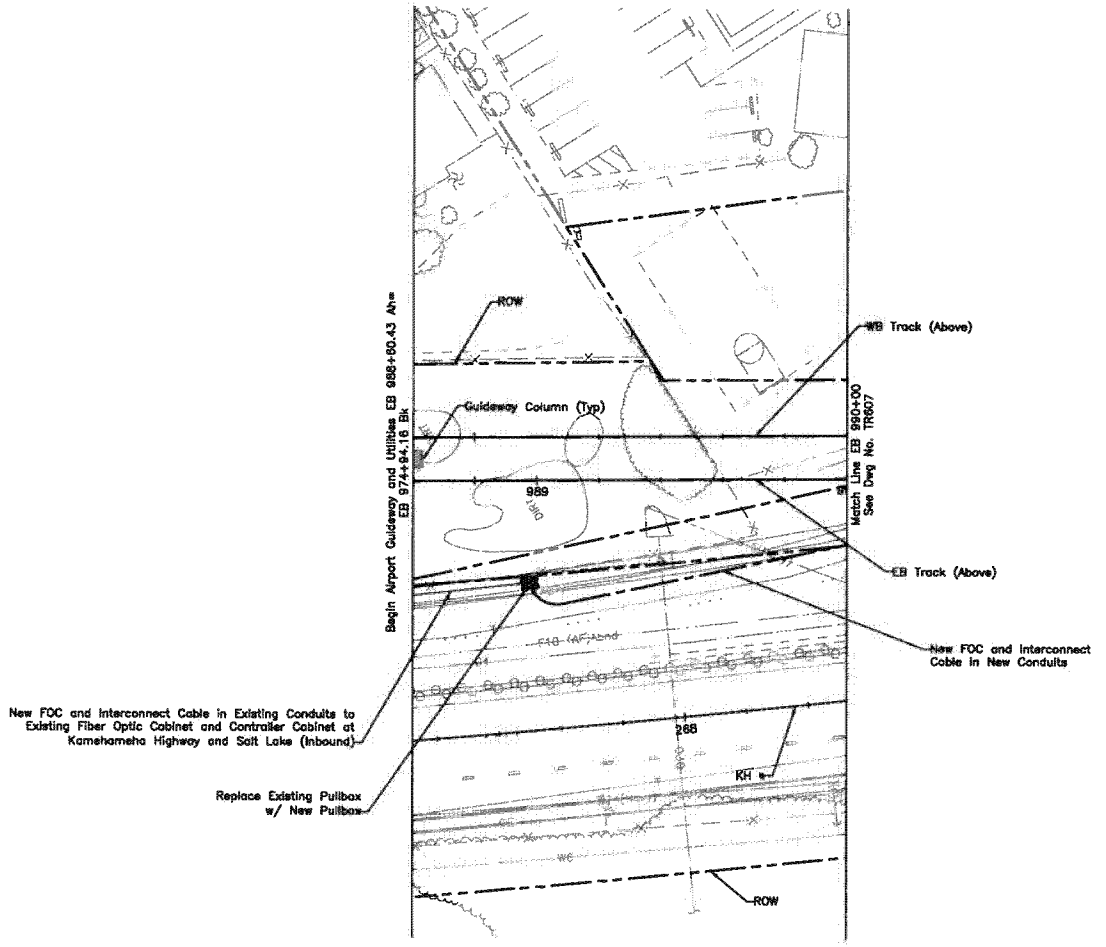

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

20' 0 20'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: K Okazaki
Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiya
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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AIRPORT GUIDEWAY AND UTILITIES

FIBER OPTIC & TRAFFIC SIGNAL INTERCONNECT PLAN

EB 988+60.43 TO EB 990+00

Contract No.: SV-430
CADD File: AP-C04-TR606
Drawing No: TR606
Rev.
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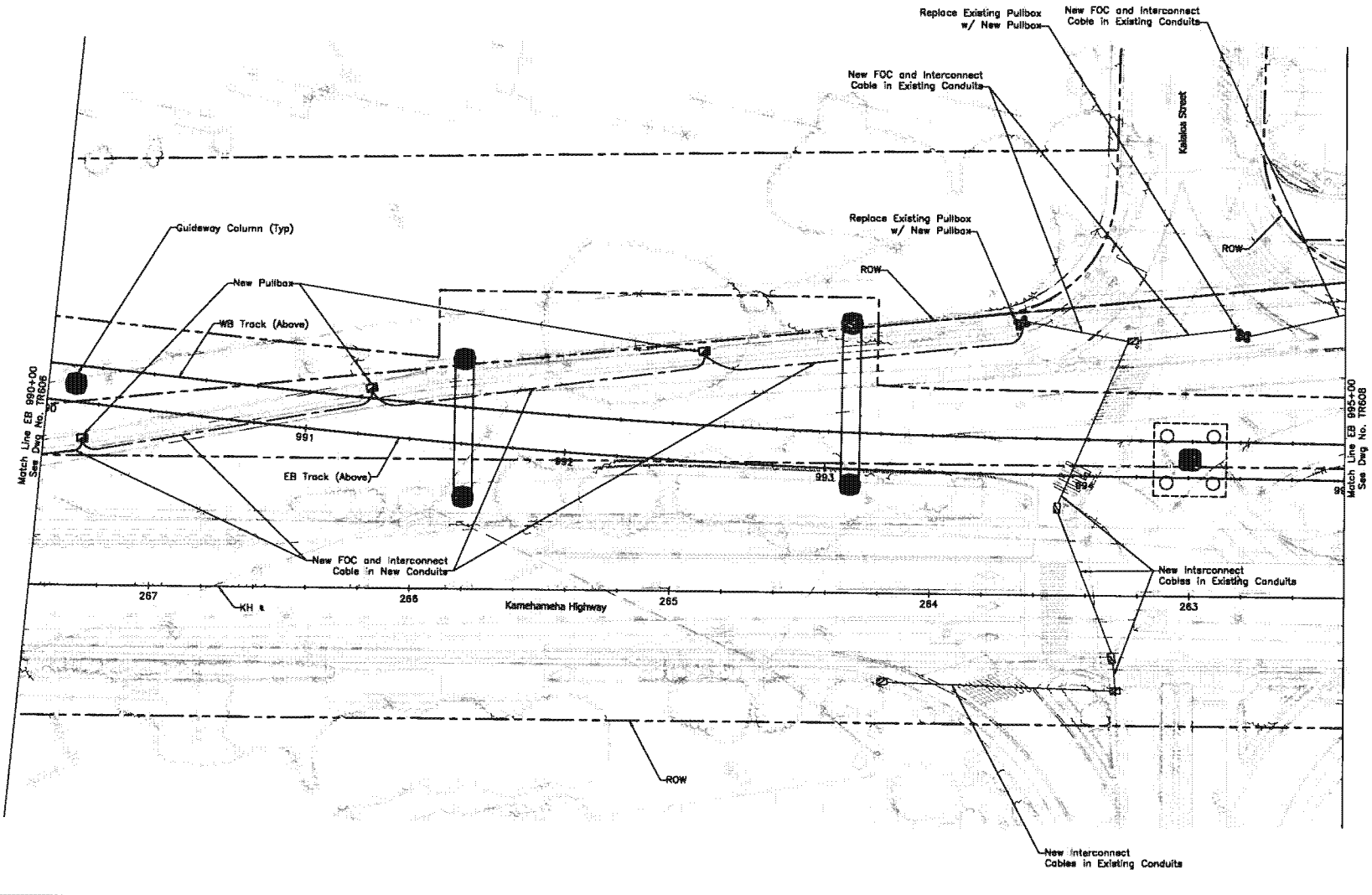

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG008.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.
3. For Traffic Signal Plan, see Dwg No. TR504.

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: K Okazaki
Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiya
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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AIRPORT GUIDEWAY AND UTILITIES

FIBER OPTIC & TRAFFIC SIGNAL INTERCONNECT PLAN

EB 990+00 TO EB 995+00

Contract No.: SV-430
CADD File: AP-C04-TR607
Drawing No: TR607 Rev.
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Page No. 248 of 279

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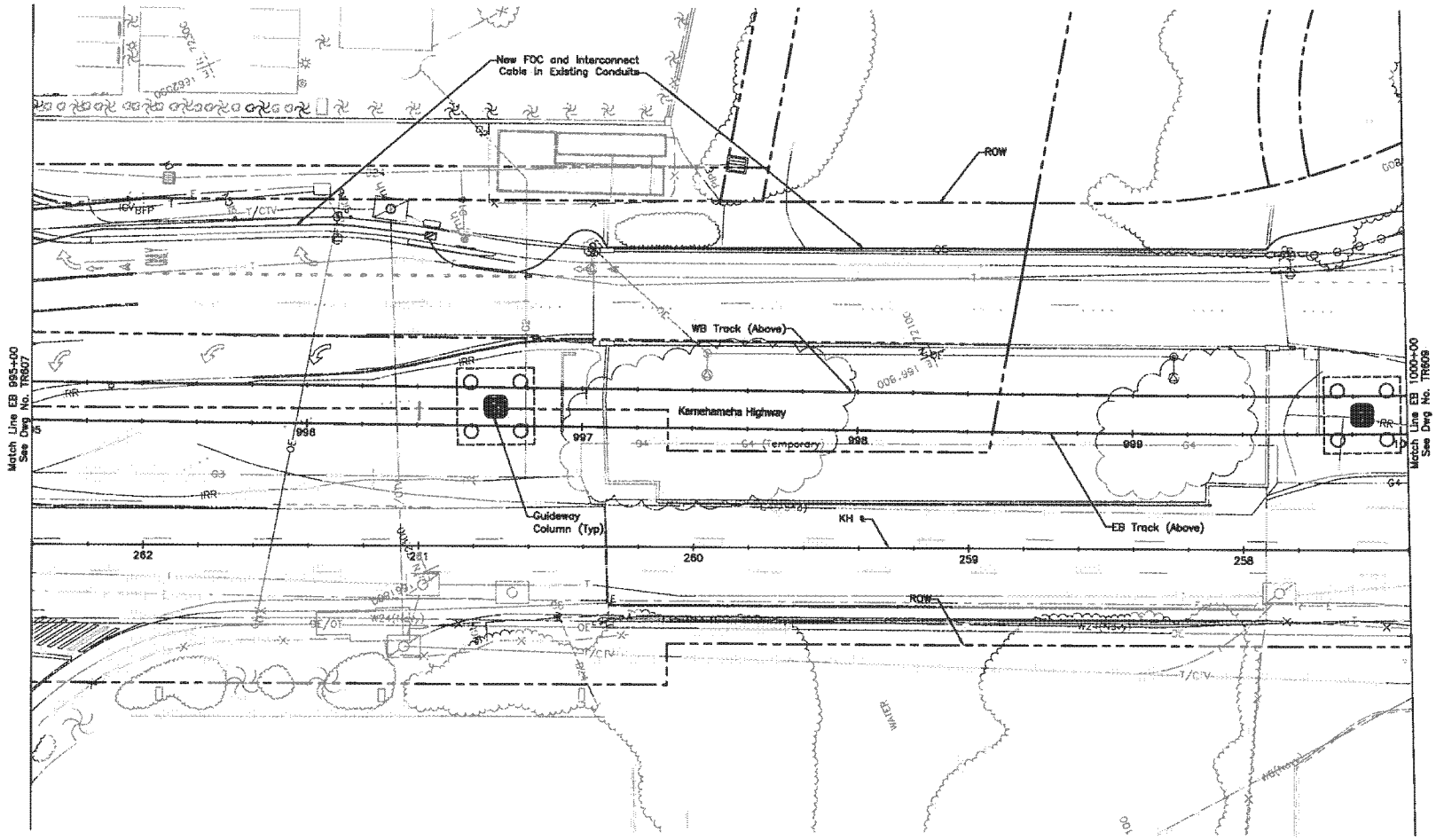

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG008.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

20' 0 20'

Rev	By	Date	Description

2010-08-18 8:03 AM X:\2007\07-099\Segment J\DWG\After May 17th\AP-C04-TR608.dwg

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: K Okazaki
Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiya
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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AIRPORT GUIDEWAY AND UTILITIES

FIBER OPTIC & TRAFFIC SIGNAL INTERCONNECT PLAN

EB 995+00 TO EB 1000+00

Contract No.: SV-430
CADD File: AP-C04-TR608
Drawing No: TR608 Rev.
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Page No. 249 of 279

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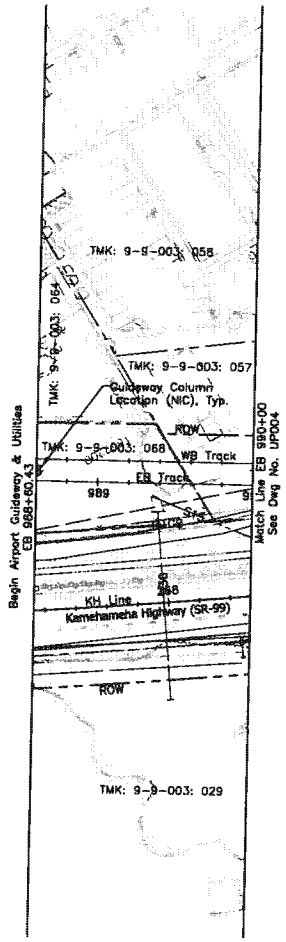

40' 0' 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: G Tom
Drawn: D Lee
Checked: H Andrews
Approved: J Yamamoto
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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AIRPORT GUIDEWAY & UTILITIES

COMPOSITE PLAN EXISTING UTILITIES

EB 988+60.43 TO EB 990+00

Contract No.: SV-430
CADD File: AP-D02-UP003
Drawing No: UP003 Rev.
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Page No. 33 of 222

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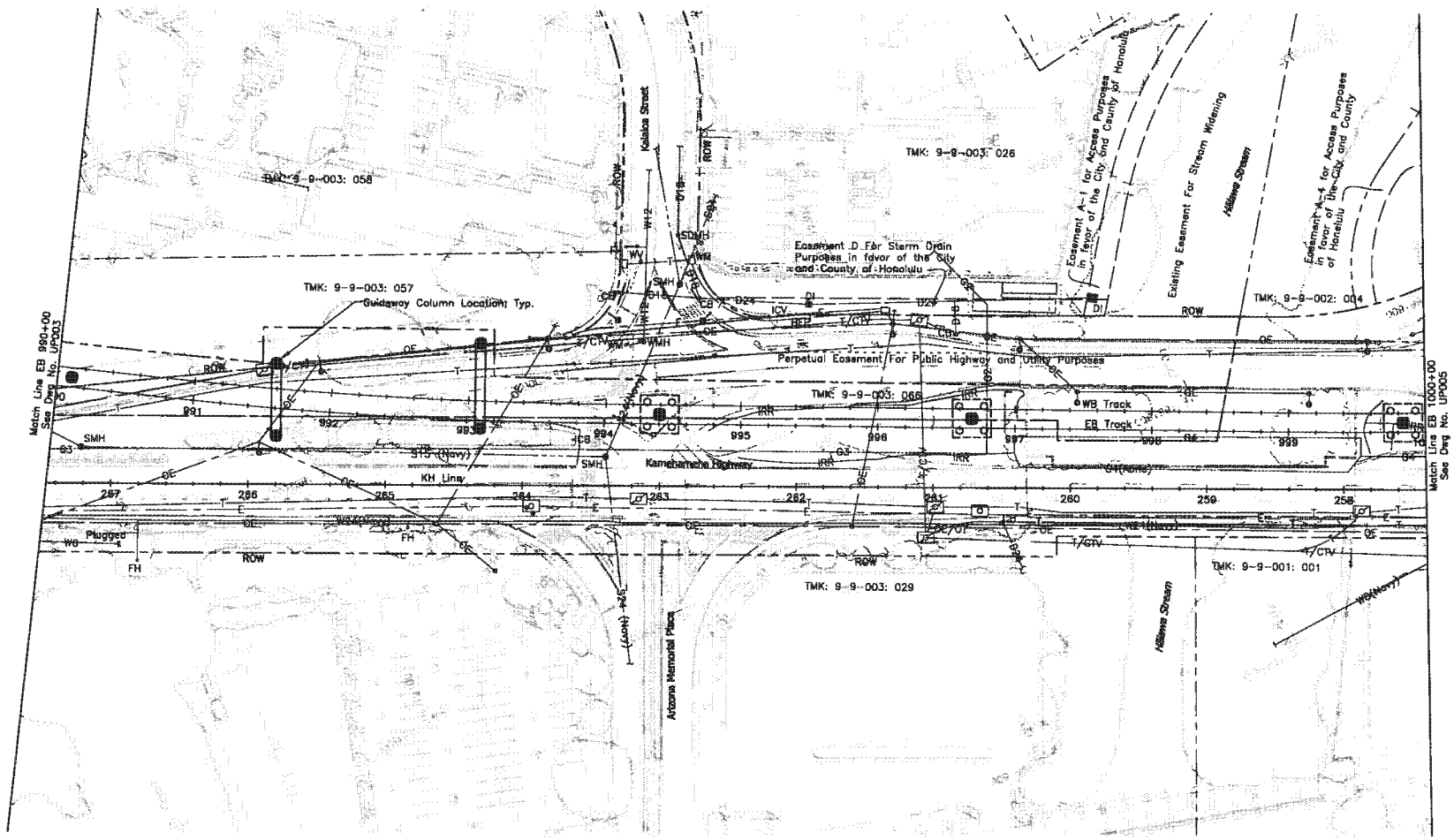

40' 0' 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: G Tern
Drawn: N Chan
Checked: J Yamamoto
Approved: G Takahashi
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: R. M. TOWILL CORPORATION

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AIRPORT GUIDEWAY & UTILITIES

COMPOSITE PLAN EXISTING UTILITIES

EB 990+00 TO EB 1000+00

Contract No.: SV-430
CADD File: AP-D02-UP004
Drawing No: UP004 Rev.
Scale: 1"=40'
Page No. 34 of 222

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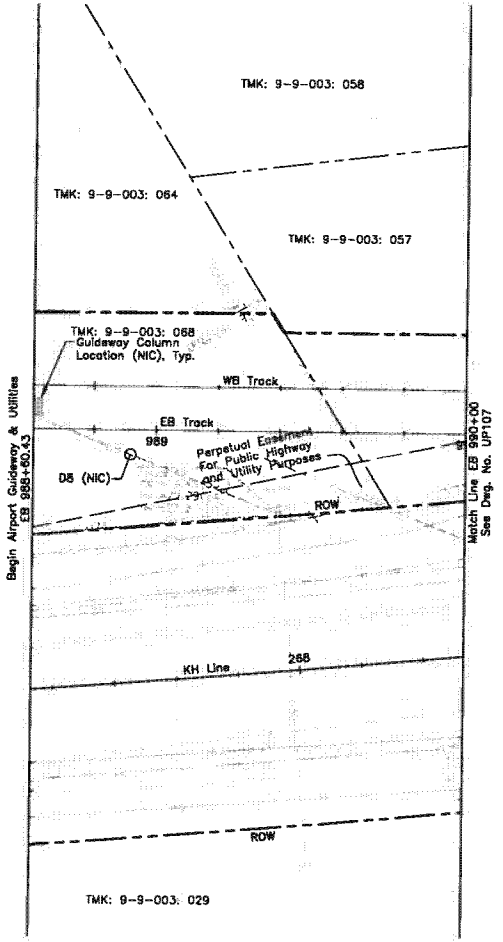

20' 0 20'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: G Tom
Drawn: O Lee
Checked: H Andrews
Approved: J Yamamote
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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

AIRPORT GUIDEWAY & UTILITIES

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 988+60.43 TO EB 990+00

Contract No.: SV-430
CADD File: AP-D03-UP106
Drawing No: UP106 Rev.
Scale: 1"=20'
Page No. 62 of 222

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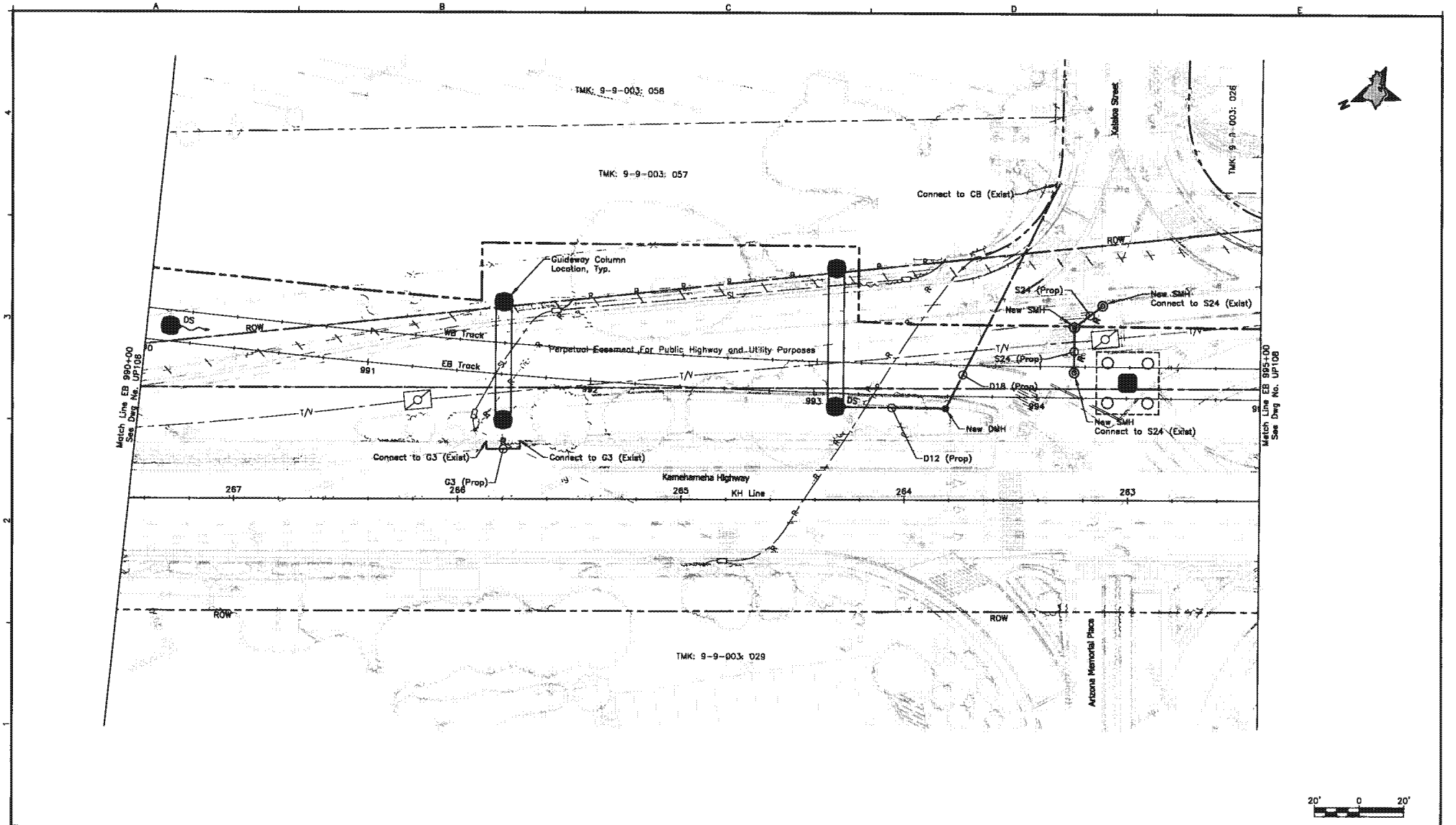

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: G Tom
Drawn: N Chan
Checked: J Yamamoto
Approved: G Takahashi
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: R. M. TOWILL CORPORATION

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

AIRPORT GUIDEWAY & UTILITIES

UTILITY RELOCATION PLAN WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 990+00 TO EB 995+00

Contract No.: SV-430
CADD File: AP-D03-UP107
Drawing No: UP107
Rev.
Scale: 1"=20'
Page No. 63 of 222

2010-01-12 9:05 AM K:\chl\21132 Honolulu Transit Corridor\Segment J\dwg\SJ_Sheets\Vol2 – G3 Utility Relocations\AP-D03-UP101-UP122.dwg

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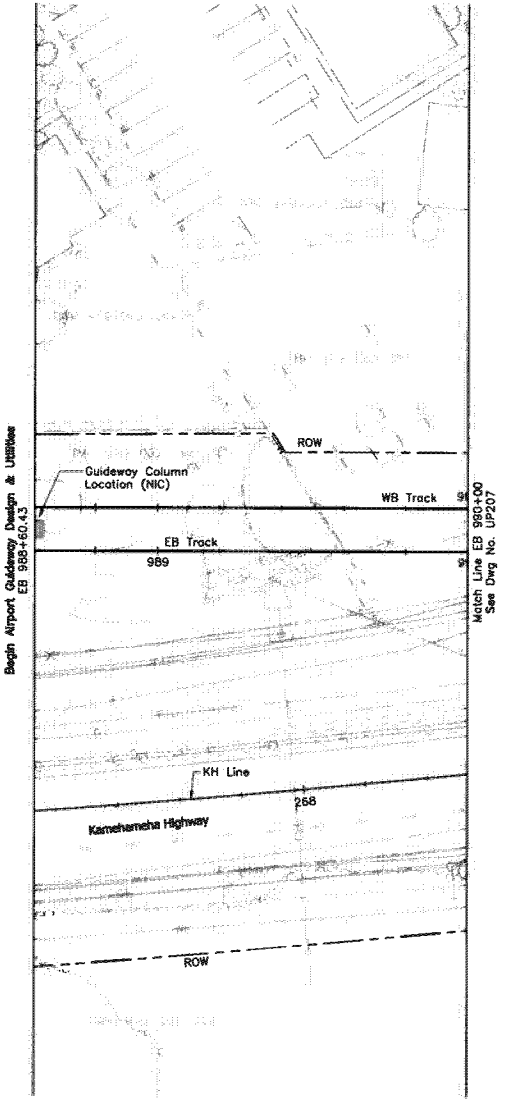

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: F Hirakami
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: MKengineers
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Honolulu, Hawaii 96813
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Fax: (808) 848-2874
E-mail: info@mkengineers.com

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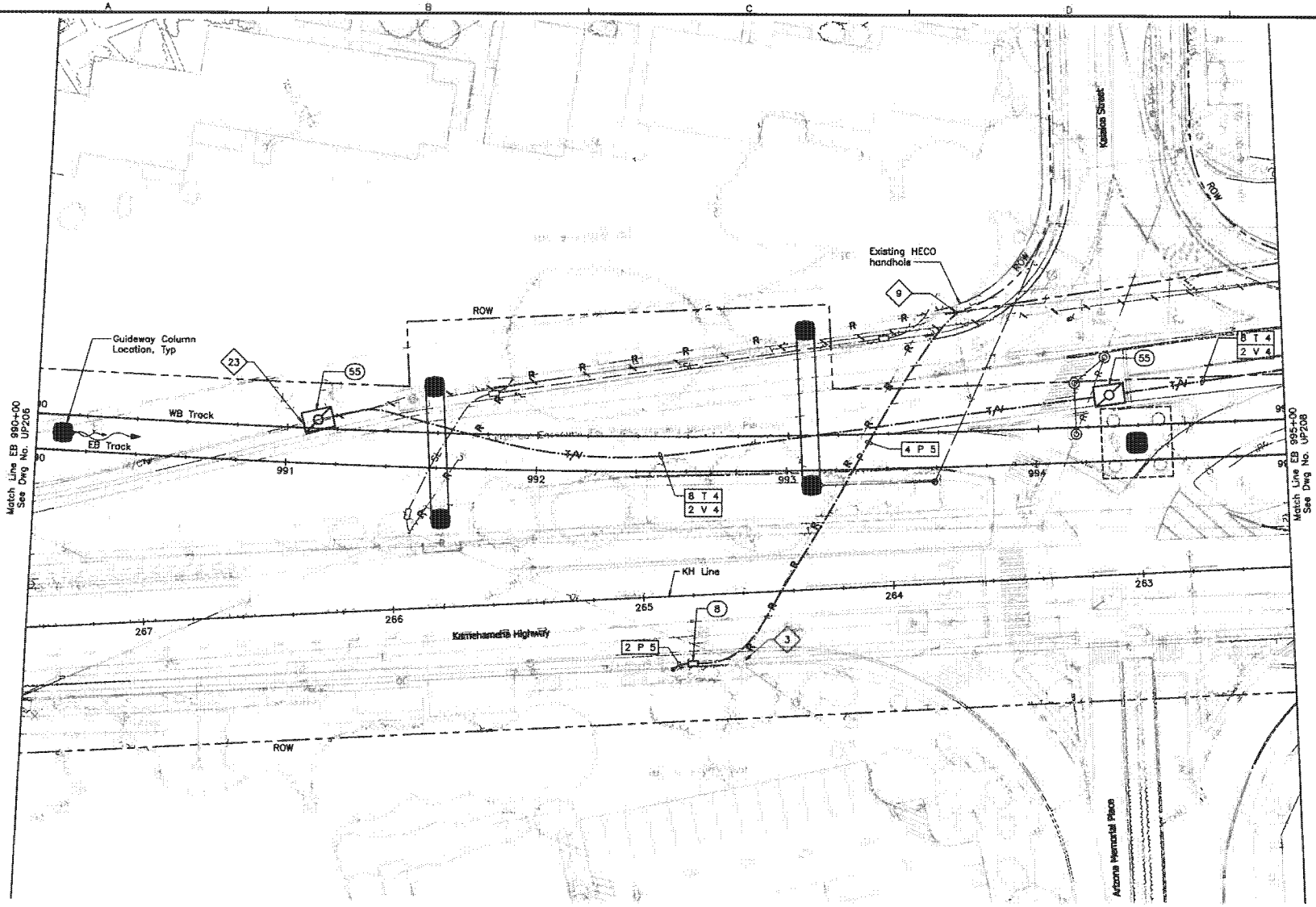
AIRPORT GUIDEWAY & UTILITIES

UTILITY RELOCATION PLAN ELECTRICAL & COMMUNICATIONS

EB 988+60.43 TO EB 990+00

Contract No.: SV-430
CADD File: AP-D03-UP206
Drawing No: UP206
Rev.
Scale: 1"=20'
Page No. 122 of 222

20' 0 20'



NOTES:

3 HECO will replace wood pole with self-sustaining pole.

9 Penetrate and patch existing HECO handhole.

23 Intercept existing HT/OTWC ductline with new manhole.

20' 0 20'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: F. Hirakami
Drawn: D. Saito
Checked: P. Uyeda
Approved: P. Uyeda
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

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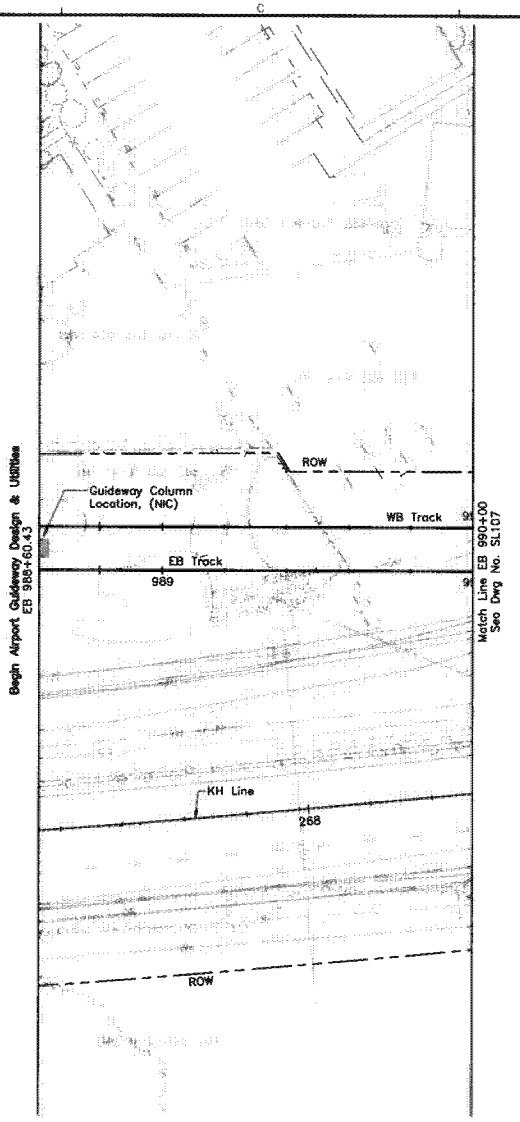
For reduced prints, original page size in inches: 0 1 2 3 4

AIRPORT GUIDEWAY & UTILITIES

UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 990+00 TO EB 995+00

Contract No.: SV-430
CADD File: AP-D03-UP207
Drawing No: UP207
Rev.
Scale: 1"=20'
Page No. 123 of 222



20' 0 20'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: R Katahara
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: MKengineers

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

AIRPORT GUIDEWAY & UTILITIES

STREET LIGHTING PLAN

EB 988+60.43 TO EB 990+00

Contract No.: SV-430
CADD File: AP-D04-SL006
Drawing No: SL006 Rev.
Scale: 1"=20'
Page No. 178 of 222

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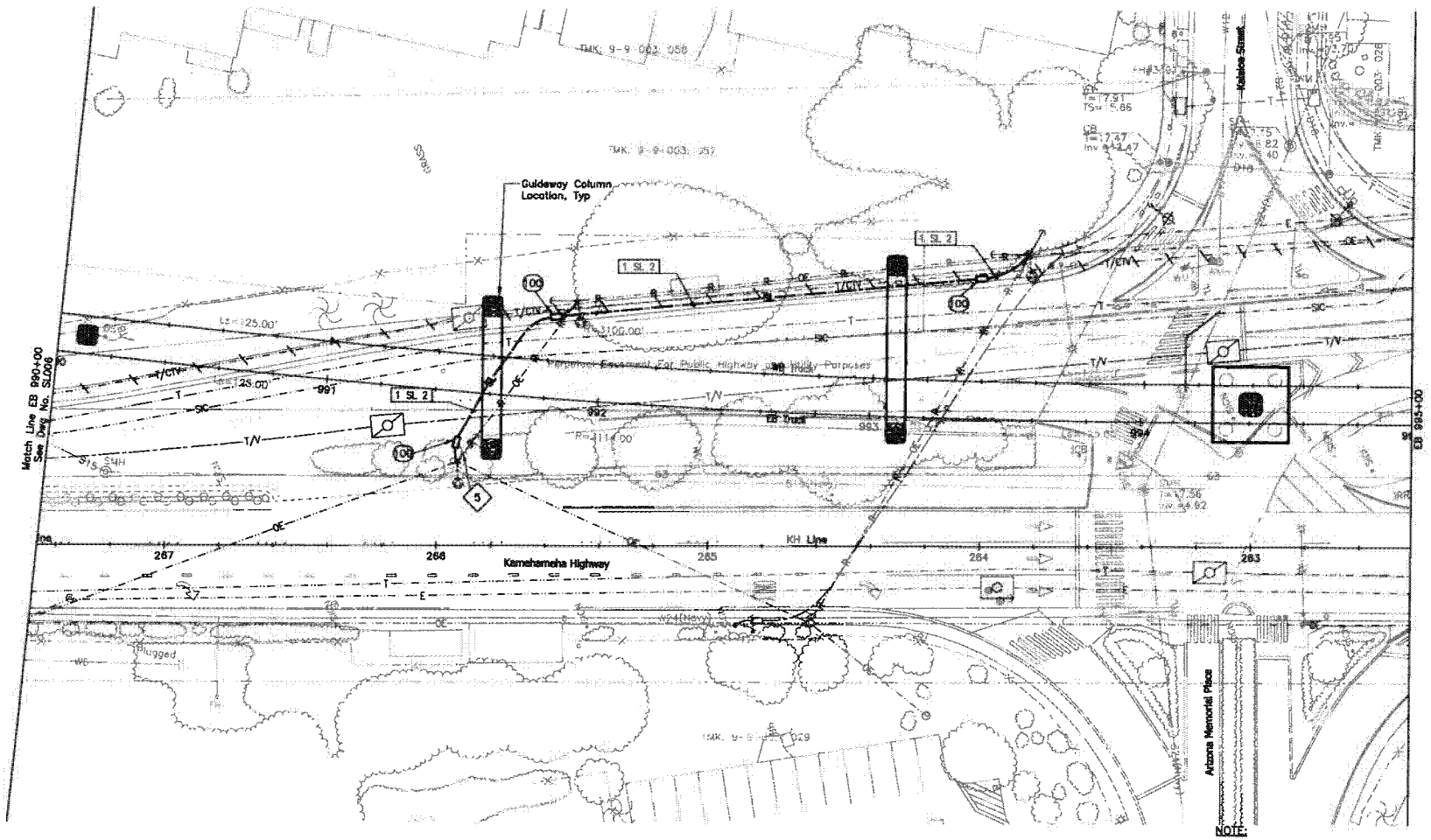

NOTES:

5 HECO will provide anchor and guy-wire.

NOTE:

Sandwich Isles Communications (SIC) line is a proposed future communication utility project by others and shown for informational purposes only. Coordinate the location of this future line with SIC to avoid potential conflicts. Inform the city of all coordination efforts.

20' 0 20'

Rev	By	Date	Description

1/19/10-12:08 Y:\080\080.184\80-184 AP-D04-SL001-SL022.501.dwg

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: T Higa
Drawn: I Pascua
Checked: L Nishimura
Approved: L Nishimura
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: ECS, INC. 615 PIIKOI ST., SUITE 207 HONOLULU, HI 96814

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AIRPORT GUIDEWAY & UTILITIES

STREET LIGHTING PLAN

EB 990+00 TO EB 995+00

Contract No.: SV-430
CADD File: AP-D04-SL007
Drawing No: SL007
Rev.
Scale: 1"=20'
Page No. 179 of 222

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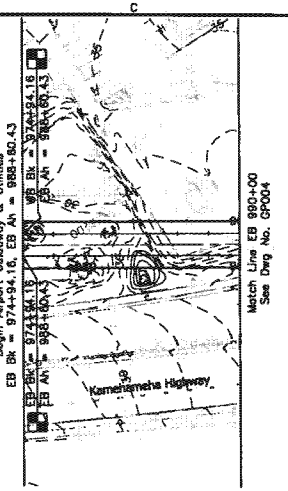

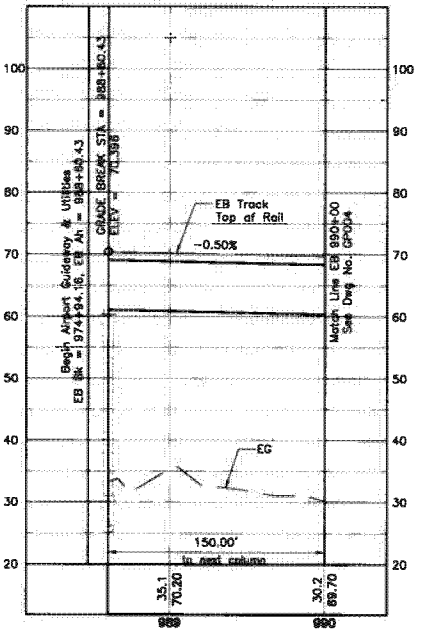

NOTES:

1. See Dwg Nos. SG001 and SG002 for Structural General Notes, Symbols and Abbreviations.
2. The Structural Facilities information on the drawings represents current knowledge without guarantee of accuracy.
3. Drawings shall not be scaled. Facilities dimensions, elevations, and relationship to project stationing are approximate and shall be verified by the Designer.
4. Unless shown otherwise on the drawings, the semi-square columns, if used, shall not be less than 6-foot by 6-foot, and the associated drilled shafts shall not be less than 8-foot in diameter.

40' 0 40'

10' 0 10'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: D Yavorsky
Drawn: T Cochran
Checked: T Kimura
Approved: A Borst
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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AIRPORT GUIDEWAY & UTILITIES

STRUCTURAL PLAN AND PROFILE

EB 988+60.43 TO EB 990+00

Contract No.: SV-430
CADD File: AP-G04-GP003
Drawing No: GP003
Rev.
Scale: 1"=40' H, 1"=10' V
Page No. 24 of 193

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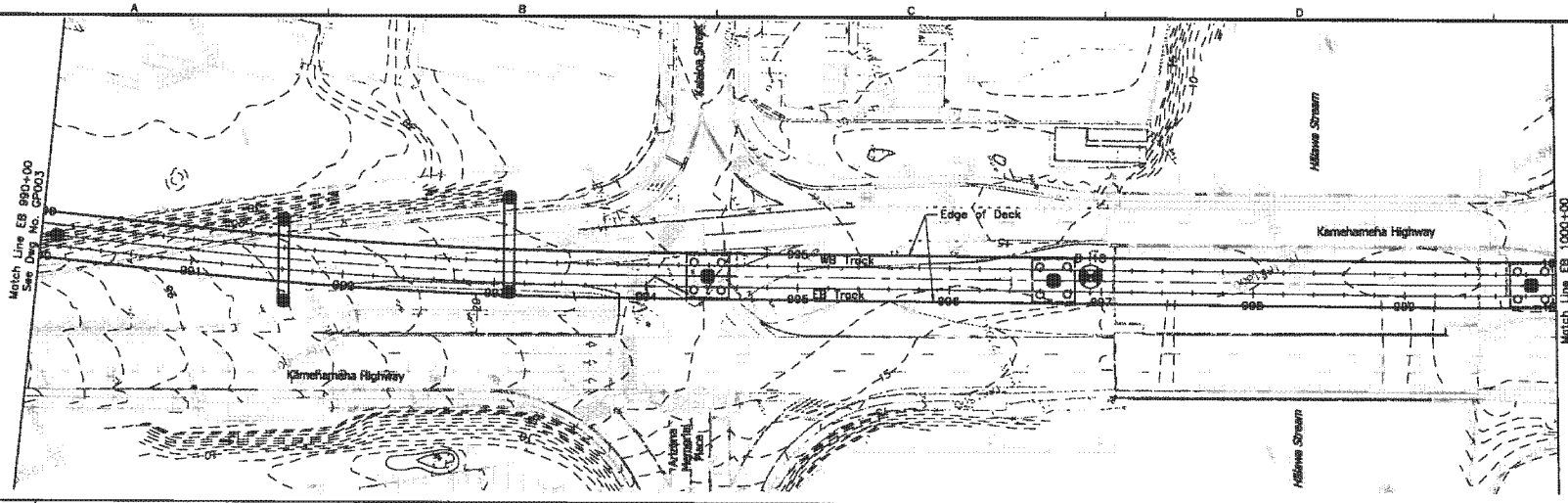

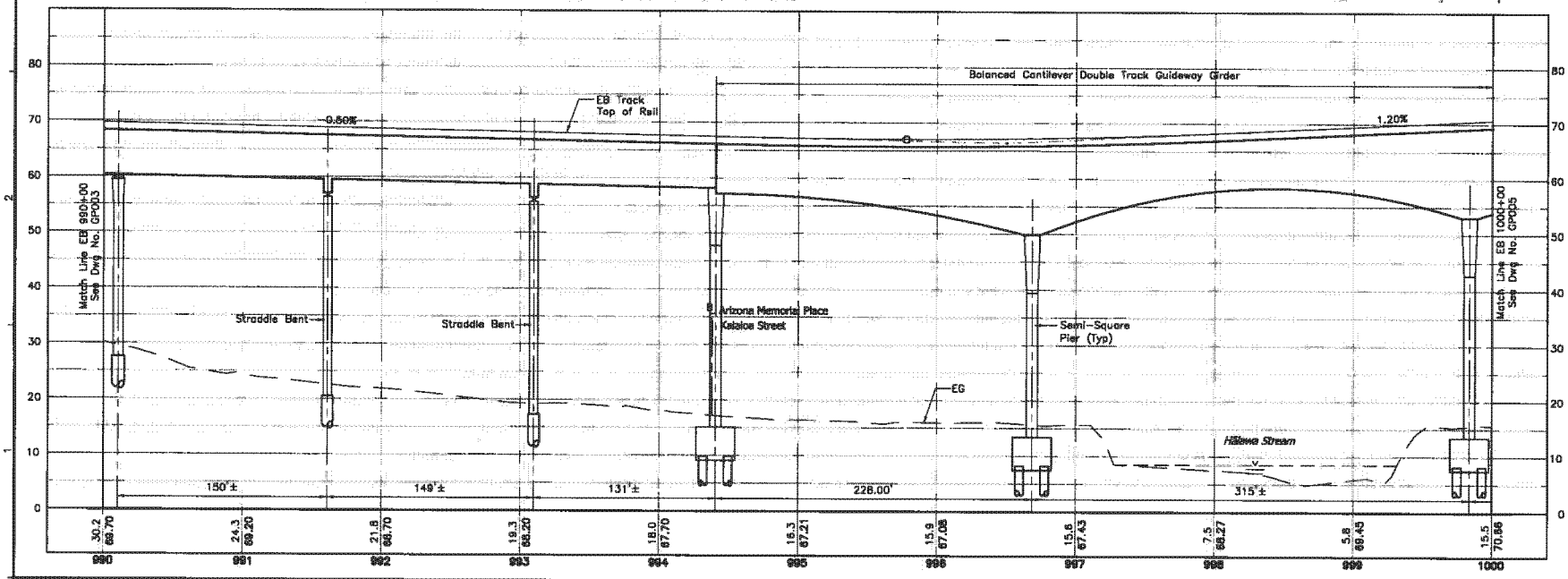

NOTES:

1. See Dwg Nos. SG001 and SG002 for Structural General Notes, Symbols and Abbreviations.
2. The Structural Facilities information on the drawings represents current knowledge without guarantee of accuracy.
3. Drawings shall not be scaled. Facilities dimensions, elevations, and relationship to project stationing are approximate and shall be verified by the Designer.
4. Unless shown otherwise on the drawings, the semi-square columns, if used, shall not be less than 6-foot by 6-foot, and the associated drilled shafts shall not be less than 8-foot in diameter.

Rev	By	Date	Description

2010-08-27 9:03 AM K:\CADD\08 Structural\Segment J_Airport\AP-G04-GP001.dwg

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: O Yavorsky
Drawn: T Cochran
Checked: T Kimura
Approved: A Borst
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

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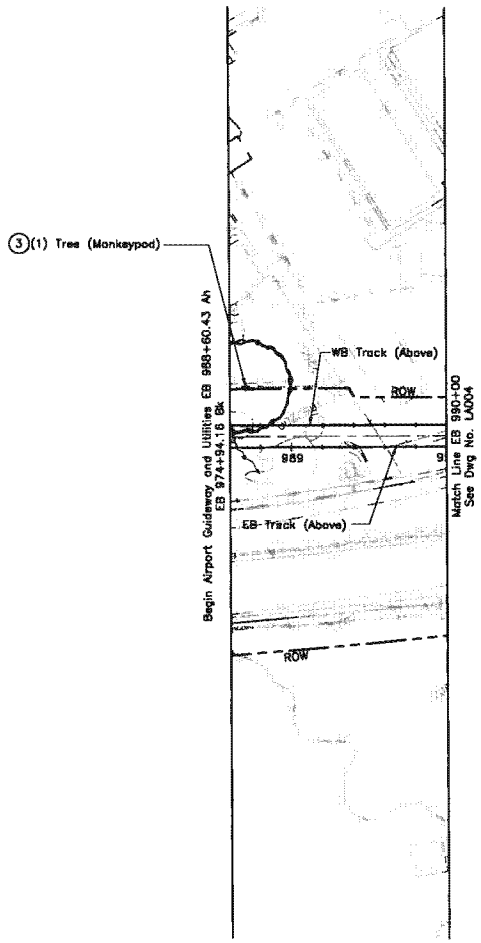
AIRPORT GUIDEWAY & UTILITIES

STRUCTURAL PLAN AND PROFILE

EB 990+00 TO EB 1000+00

Contract No.: SV-430
CADD File: AP-G04-GP004
Drawing No: GP004 Rev.
Scale: 1"=40' H, 1"=10' V
Page No. 25 of 193



NOTES:

1. For General Landscape Notes, Symbols, and Abbreviations, see Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.
3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding.

LEGEND:

- Proposed Guideway Column
- Existing tree

CONSTRUCTION NOTES:

1. Salvage tree or palm for transplanting. Deliver to project nursery.
2. Remove tree or palm including grinding stump 18" below finish grade.
3. Protect tree or palm in place (See Detail 1–LA201). Prune per Arborists Instructions.

40' 0 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: C Hironaka
Drawn: B Tanimura
Checked: L Keliiae
Approved: A Akau
Date: 10–01–10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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AIRPORT GUIDEWAY AND UTILITIES

LANDSCAPE DEMOLITION PLAN

EB 988+60.43 TO EB 990+00

Contract No.: SV–430
CADD File: AP–J02–LA003
Drawing No.: LA003 Rev.
Scale: 1"=40'
Page No. 99 of 193

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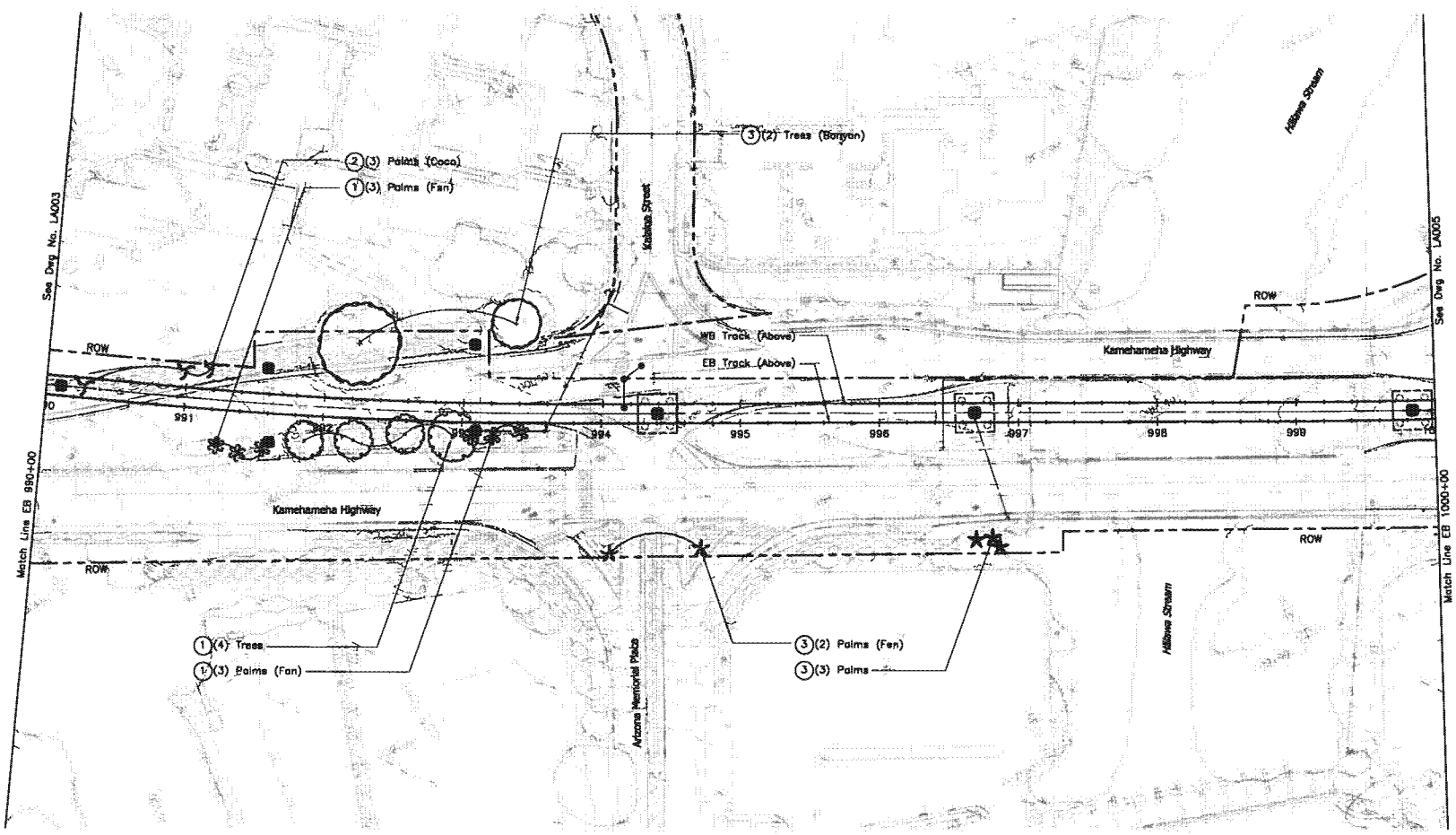

NOTE:

1. See Dwg No. LG001 for General Notes, Symbols and Abbreviations.
2. See Roadway construction plan sheets for proposed roadway construction.
3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding with demolition.

LEGEND:

Existing trees

Existing palms

CONSTRUCTION NOTES:

(1) Salvage tree or palm for transplanting. Deliver to project nursery.

(2) Remove tree or palm including grinding stump 18" below finish grade.

(3) Protect tree or palm in place. (See Detail 1-LA201). Prune per Arborists instructions.

40' 0 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: K Fishman
Drawn: K Fishman
Checked: R Higo
Approved: R S Duncan
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: Land Planning, Landscape Architecture, Environmental Studies, Graphic Design
1001 Bishop Street, Suite 650 Honolulu, HI 96813
PBR HAWAII

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AIRPORT GUIDEWAY AND UTILITIES

LANDSCAPE DEMOLITION PLAN

EB 990+00 TO EB 1000+00

Contract No.: SV-430
CADD File: AP-J02-LA004
Drawing No: LA004 Rev.
Scale: 1"=40'
Page No. 100 of 193

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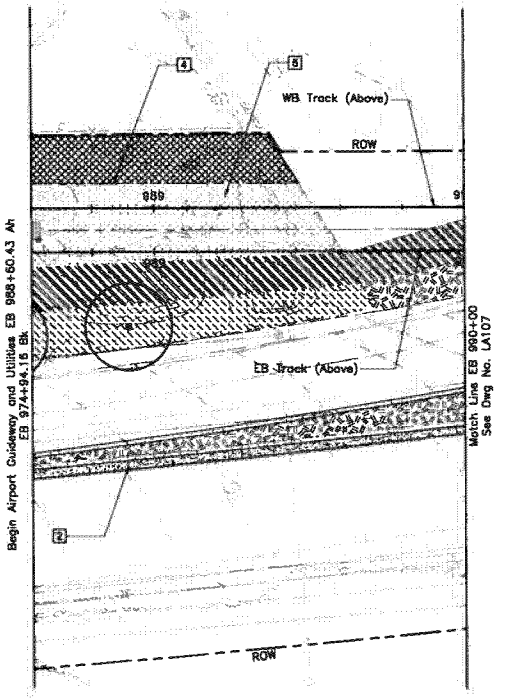

NOTES:

1. For General Landscape Notes, Symbols, and Abbreviations, see Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.

PLANT SCHEDULE LA106

RELOCATED TREE	BOTANICAL/COMMON
•	Relocated Tree Medium / Relocated Tree

SHRUB AREAS	BOTANICAL/COMMON
	Scaevola sericea / Naupaka Kahakai

GROUND COVERS	BOTANICAL/COMMON
	Myoporum sandwicense 'Papa' / Naio Papa
	Osteomeles anthyllidifolia / 'Ulei
	Plumbago zeylanica / 'Ilie'a
	Syngonium auritum / Five Fingers Syngonium

GROUND COVERS (CONT.)	BOTANICAL/COMMON
	Vitex rotundifolia / Pohinahina

SOD/SEED	BOTANICAL/COMMON
	Stenotaphrum secundatum / St. Augustine Grass

REFERENCE NOTES SCHEDULE LA106

SYMBOL	DESCRIPTION
2	Decorative Concrete Paving Equivalent to L.M. Scofield Company's: Chromix Admixture Porcelain Gray 3987; Lithotex Pavecrafters Sculptured Granite Pattern; Lithochrome Antiquing Release Blue Smoke 1138-S; Cementone Clear Sealer
4	Recycled Composite Header Equivalent to: Epic Plastics Epic Edge
8	Gravel Mulch: 3in Layer Crushed Gravel Over Landscape Weed Barrier Fabric

20' 0 20'

Rev	By	Date	Description

2010-09-28 9:32 PM L:\2008710100_HHCTCP\CAD\Blocks\Airport\AP-J04-LA106.dwg

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: C Hironaka
Drawn: B Tanimura
Checked: L Kelliaa
Approved: A Akau
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
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AIRPORT GUIDEWAY AND UTILITIES

LANDSCAPE PAVING AND PLANTING PLAN

EB 988+60.43 TO EB 990+00

Contract No.: SV-430
CADD File: AP-J04-LA106
Drawing No: LA106 Rev.
Scale: 1"=20'
Page No. 127 of 193

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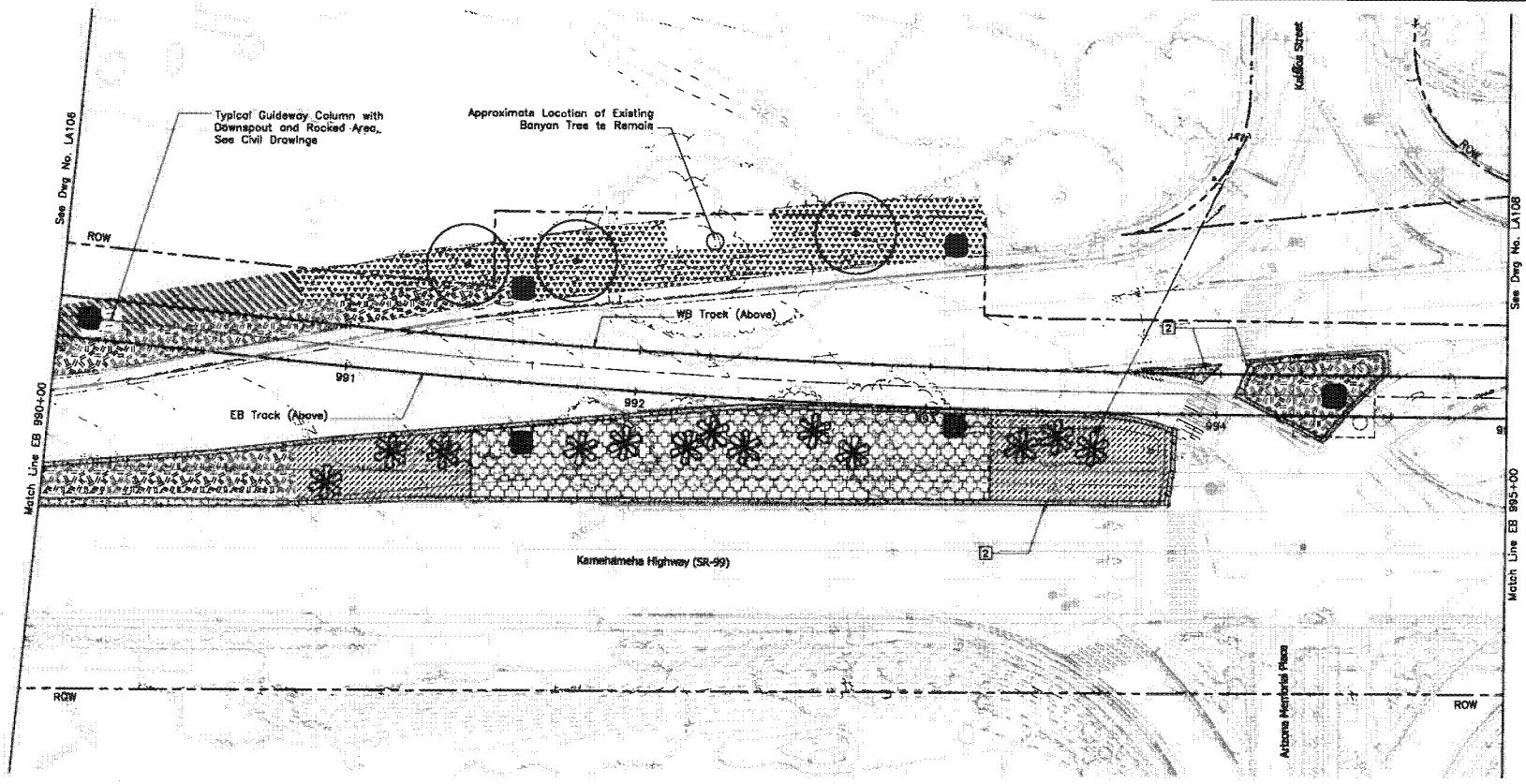

NOTES:

1. See Dwg No. LG001 for General Notes, Symbols and Abbreviations.
2. See Roadway construction plan sheets for proposed roadway construction

PLANT SCHEDULE LA107

RELOCATED PALMS	BOTANICAL/COMMON
✱	Relocated Palm / Relocated Palm

RELOCATED TREE	BOTANICAL/COMMON
•	Relocated Tree Medium / Relocated Tree

SHRUB AREAS	BOTANICAL/COMMON
	Carissa macrocarpa 'Prostrata' / Prostrata Natal Plum

GROUND COVERS	BOTANICAL/COMMON
	Myoporum sandwicense 'Pepa' / Naio Papa
	Osteomeles anthyllidifolia / 'Ulei

GROUND COVERS (CONT.)	BOTANICAL/COMMON
	Plumbago zeylanica / 'Ilie'e
	Vitex rotundifolia / Pohinahina

REFERENCE NOTES SCHEDULE LA107

SYMBOL	DESCRIPTION
2	Decorative Concrete Paving Equivalent to L.M. Scofield Company's: Chromix Admixture Porcelain Gray 3987; Lithotex Pavecrafters Sculptured Granite Pattern; Lithochrome Antiquing Release Blue Smoke 1138-S; Cementone Clear Sealer

20' 0 20'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: K Fishman
Drawn: M McMillen
Checked: M Shimotsu
Approved: R S Duncan
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU · DEPARTMENT OF TRANSPORTATION SERVICES · RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: Land Planning, Landscape Architecture, Environmental Studies, Graphic Design
1001 Bishop Street, Suite 650 Honolulu, HI 96813
PBR HAWAII

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AIRPORT GUIDEWAY AND UTILITIES

LANDSCAPE PAVING AND PLANTING PLAN

EB 990+00 TO 995+00

Contract No.: SV-430
CADD File: AP-J04-LA107
Drawing No: LA107 Rev.
Scale: 1"=20'
Page No. 128 of 193

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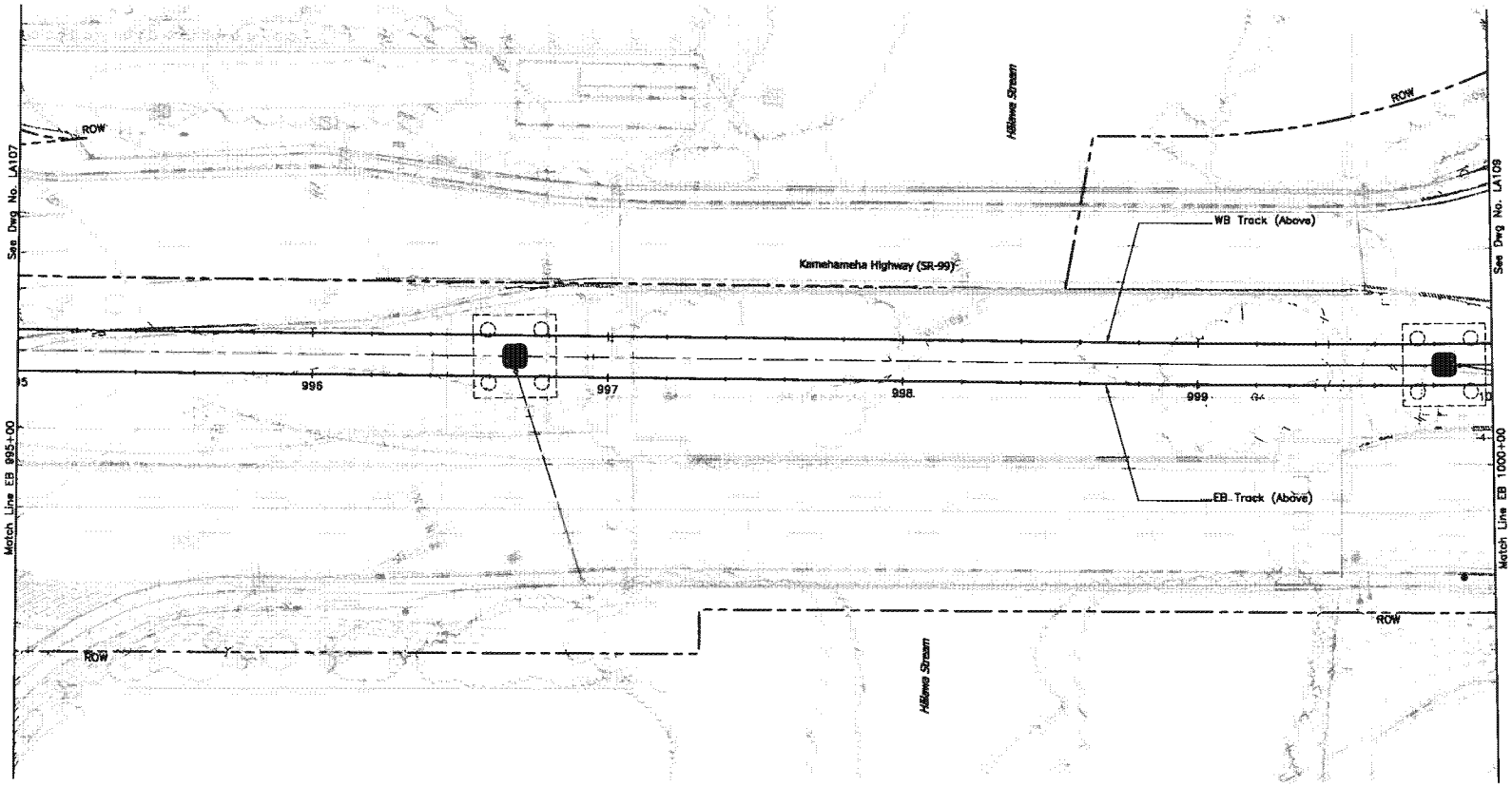

NOTES:

1. See Dwg No. LG001 for General Notes, Symbols and Abbreviations.
2. See Roadway construction plan sheets for proposed roadway construction

20' 0 20'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: K Fishman
Drawn: M McMillen
Checked: M Shimatsu
Approved: R S Duncan
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: Land Planning, Landscape Architecture, Environmental Studies, Graphic Design
1001 Bishop Street, Suite 850 Honolulu, HI 96813
PBR HAWAII & ASSOCIATES, INC.

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AIRPORT GUIDEWAY AND UTILITIES

LANDSCAPE PAVING AND PLANTING PLAN

EB 995+00 TO EB 1000+00

Contract No.: SV-430
CADD File: AP-J04-LA108
Drawing No: LA108 Rev.
Scale: 1"=20'
Page No. 129 of 193

2009-11-20 5:54 PM P:\PROJECTS\OAHU\HHCTCP\PBR Working File\Segment J\Block Submittal\AP-J04-LA101 to LA129.dwg

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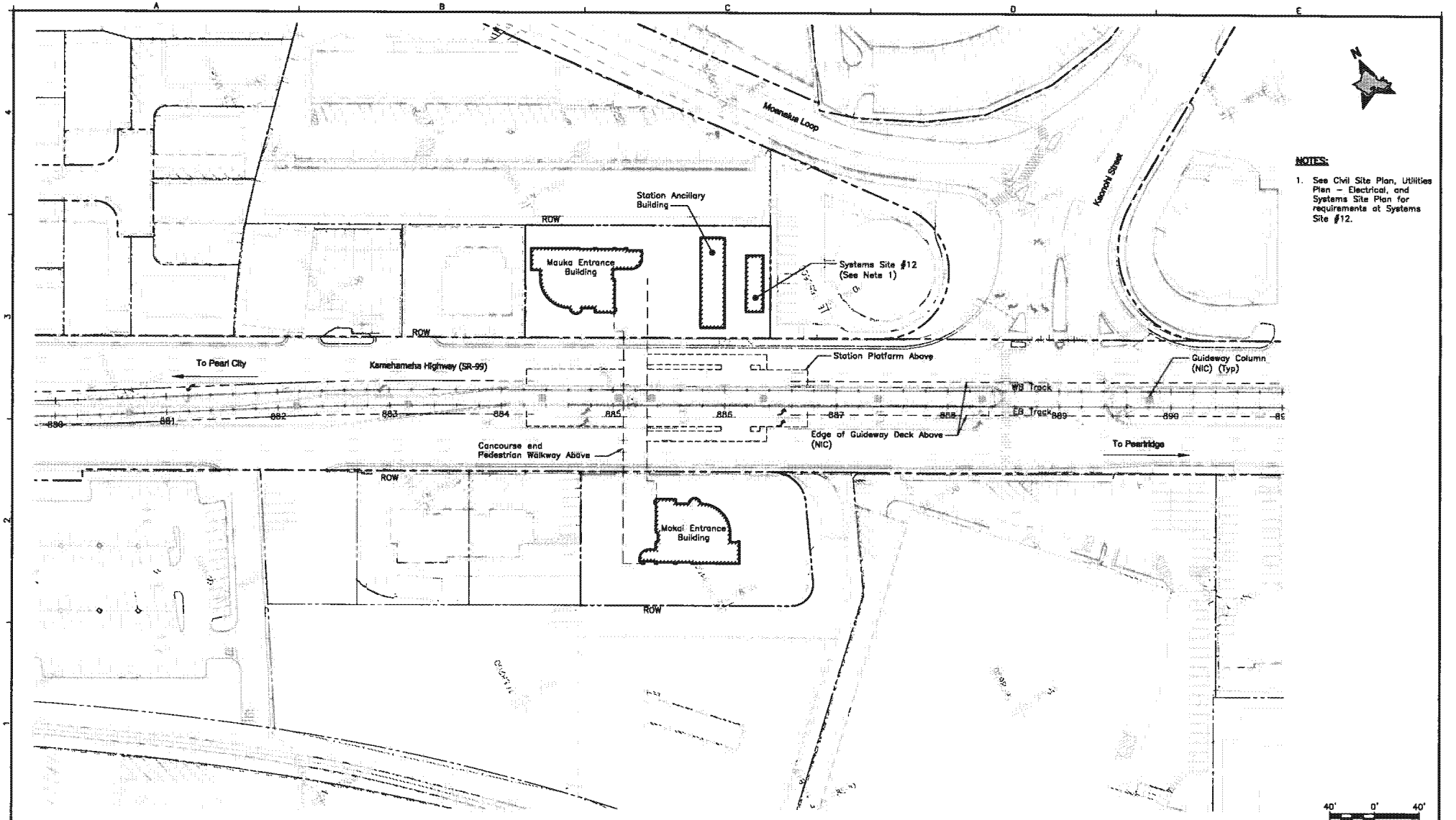

NOTES:

1. See Civil Site Plan, Utilities Plan – Electrical, and Systems Site Plan for requirements at Systems Site #12.

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: B Pang
Drawn: B Pang
Checked: B Muranaka
Approved: M Ding
Date: 12-18-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: AECOM Pacific, Inc.
DAVIES PACIFIC CTR, STE 1600 · 841 BISHOP ST, HONOLULU, HAWAII 96813

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

PEARLRIDGE STATION
STATION AREA PLAN

Contract No.: SV-340
CADD File: SD1-A04-GN005
Drawing No: GN005 Rev.
Scale: 1"=40'
Page No. 4 of 60

2010-01-12 2:05 PM P:\Projects\Oahu\60028311-HHCT\500 Submittal\Station Package\RTD BLACK 2nd Revision (01-15-2010)\SD1-A04-GN005.dwg

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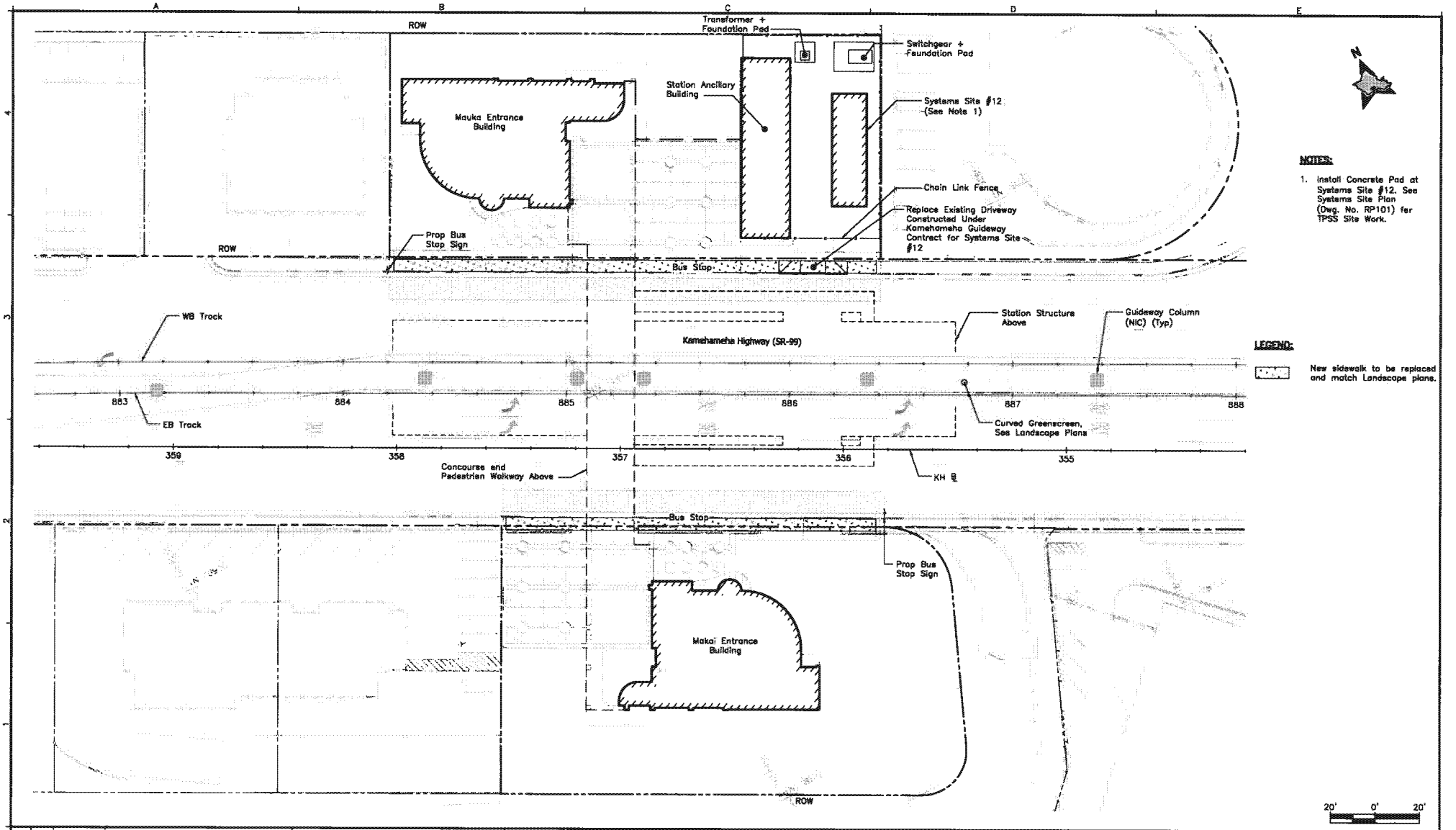

NOTES:

1. Install Concrete Pad at Systems Site #12. See Systems Site Plan (Dwg. No. RP101) for TPSS Site Work.

LEGEND:

New sidewalk to be replaced and match Landscape plans.

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: B Pang
Drawn: B Pang
Checked: B Muraneka
Approved: M Ding
Date: 12-18-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: AECOM Pacific, Inc.
DAVIES PACIFIC CTR, STE 1909 - 841 BISHOP ST, HONOLULU, HAWAII 96813

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

PEARLRIDGE STATION
CIVIL SITE PLAN

Contract No.: SV-340
CADD File: SD1-B10-RP001
Drawing No: RP001 Rev.
Scale: 1"=20'
Page No. 16 of 60

2009-12-23 10:07 AM P:\Projects\Oahu\60026311-HHCT\500 Submittal\Station Package\RTD BLACK Revised (12-31-2009)\SD1-B10-RP001.dwg

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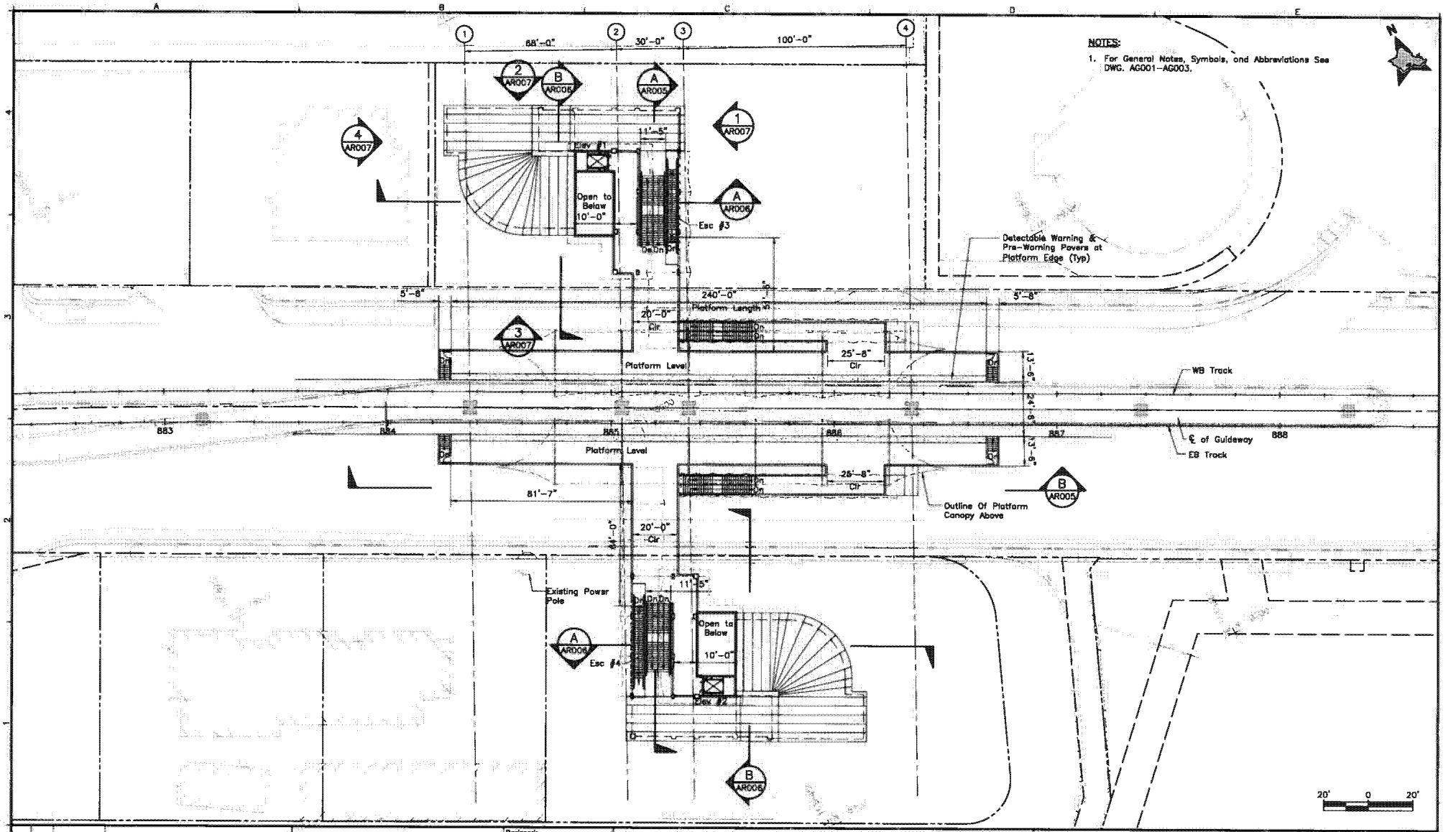


Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: W Deguchi
Drawn: D Wong
Checked: M. Leineweber
Approved: K Parmar
Date: 12-18-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

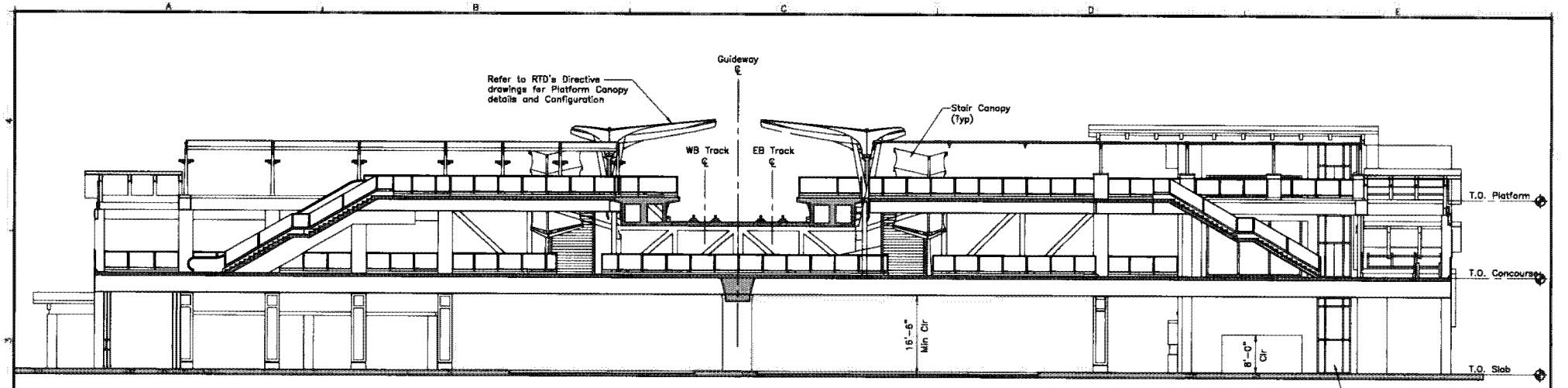
Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: DURRANT Media Fire
949 QUEEN STREET, SUITE 801
HONOLULU, HAWAII 96813

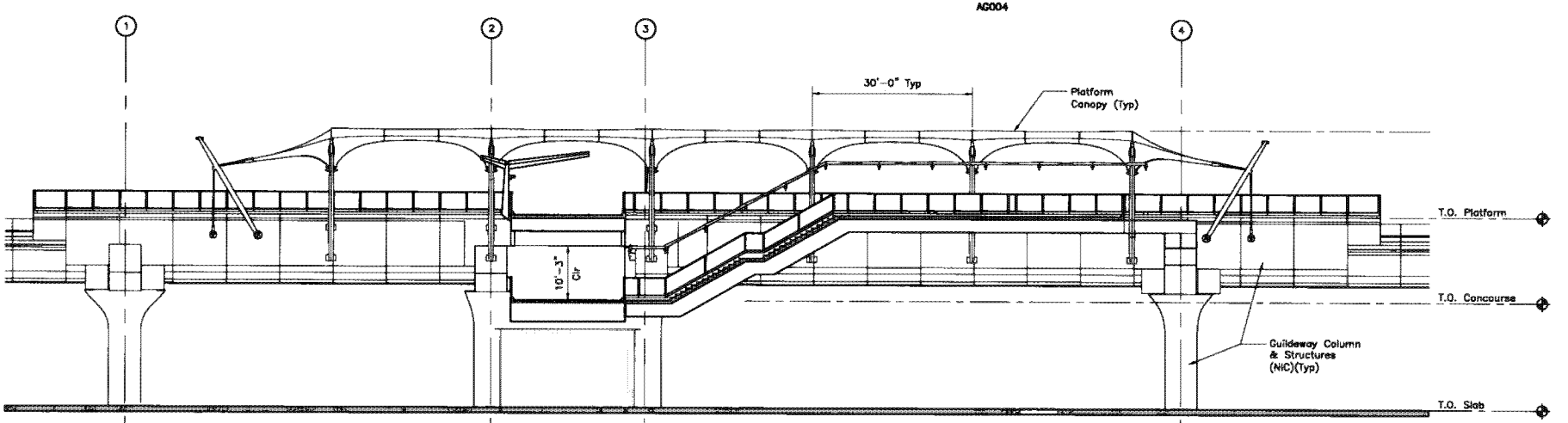
For reduced prints, original page size in inches:

PEARLRIDGE STATION
PLATFORM FLOOR PLAN

Contract No.: SV-340
CADD File: SD1-H03-AR004
Drawing No: AR004 Rev.
Scale: 1" = 20'
Page No. 51 of 60



LONGITUDINAL
1"=10'
A AR005 AG002 AG003 AG004



LONGITUDINAL
1"=10'
B AR005 AG002 AG003 AG004

10' 0 10'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: W Deguchi
Drawn: D Wong
Checked: M. Leineweber
Approved: K Parmar
Date: 12-18-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: DURRANT Media Five
345 QUEEN STREET, SUITE 801
HONOLULU, HAWAII 96813

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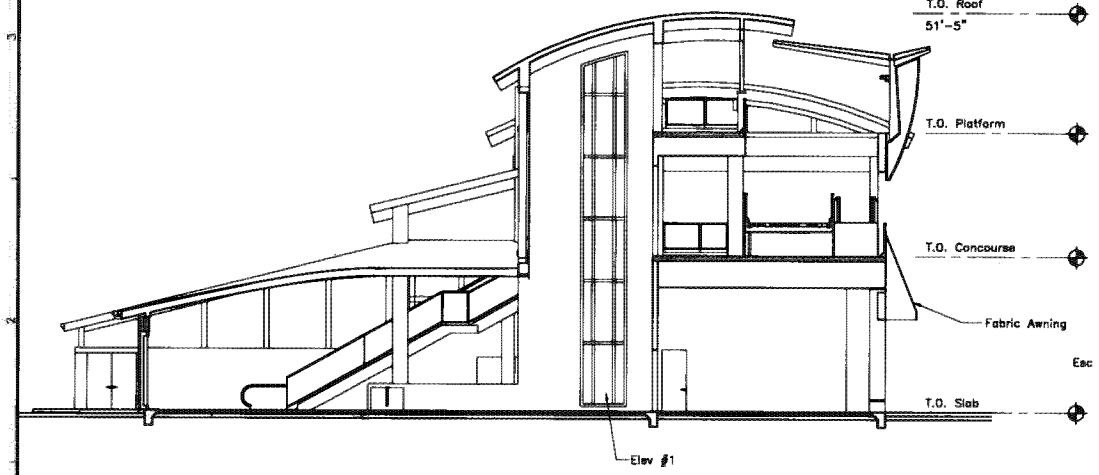
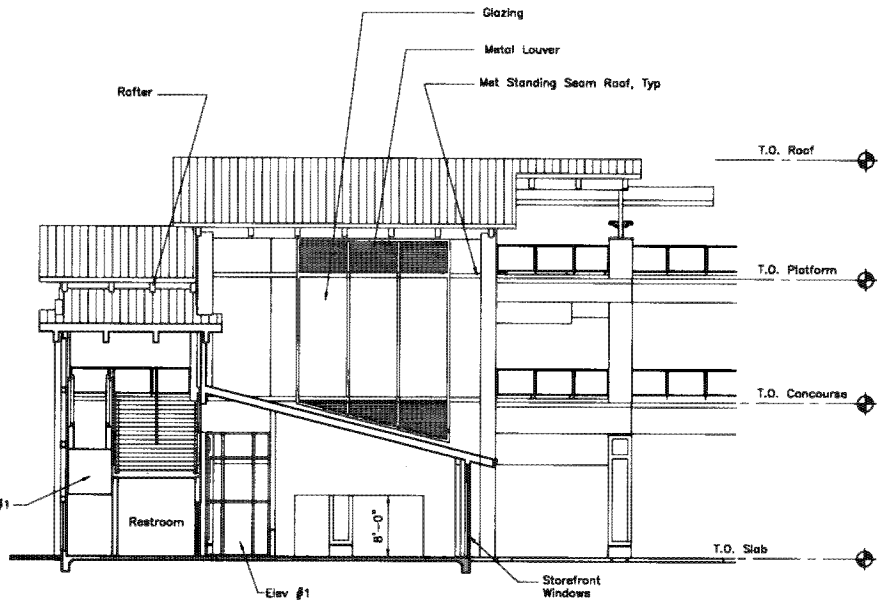
PEARLRIDGE STATION
LONGITUDINAL SECTIONS

Contract No.: SV-340
CADD File: SD1-H05-AR005
Drawing No: AR005 Rev.
Scale: 1"=10'
Page No. 52 of 60

AR00078020





CROSS SECTION A
1/8"=1'-0"
AR006 AG002 AG003 AG004

CROSS SECTION B
1/8"=1'-0"
AR006 AG002 AG003 AG004

8' 0 8'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: W Deguchi
Drawn: D Wong
Checked: M. Leineweber
Approved: K Parmar
Date: 12-18-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: DURRANT Media Fire
345 QUEEN STREET, SUITE 801
HONOLULU, HAWAII 96813

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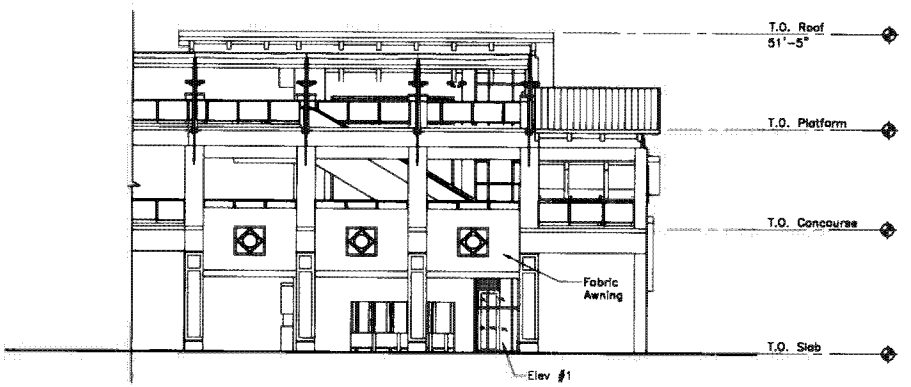
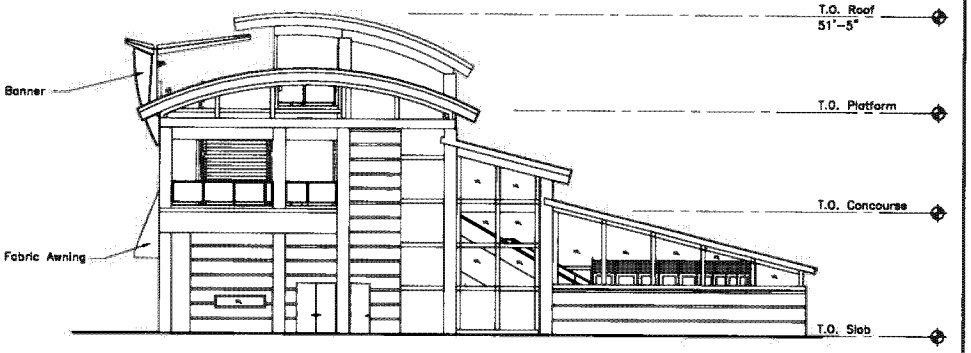
PEARLRIDGE STATION
CROSS SECTIONS

Contract No.: SV-340
CADD File: SD1-H05-AR006
Drawing No: AR006 Rev.
Scale: 1/8"=1'-0"
Page No. 53 of 60

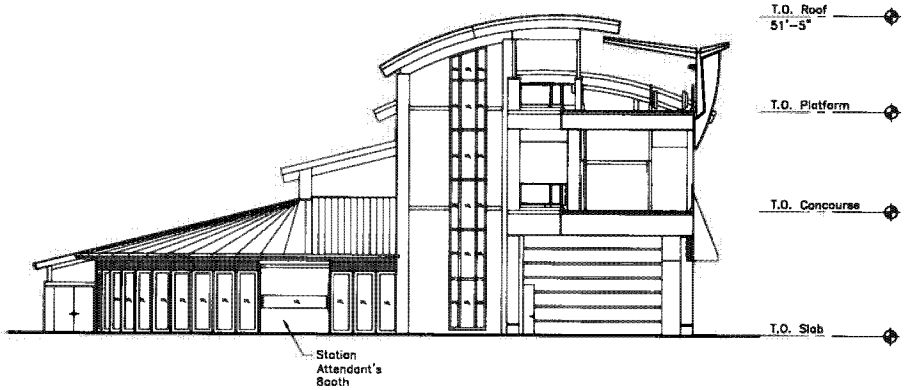
AR00078021



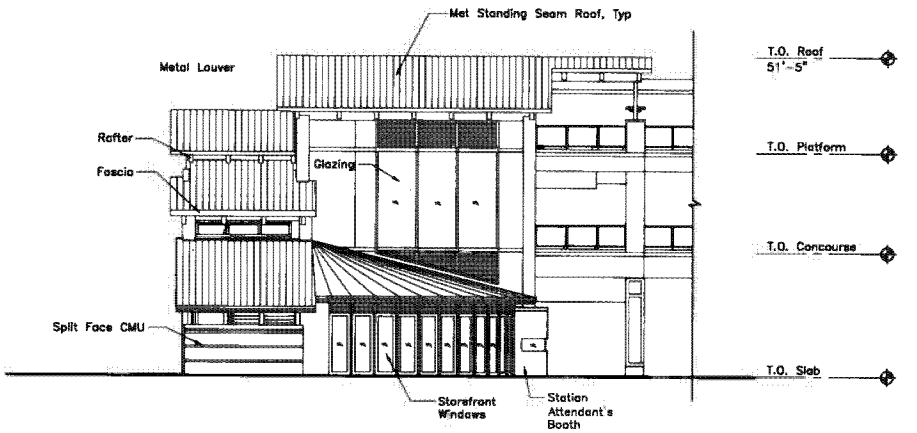
EAST ELEVATION
1"=10'
1 AR007 AR002 AR003 AR004



NORTH ELEVATION
1"=10'
2 AR007 AR002 AR003 AR004



SOUTH ELEVATION
1"=10'
3 AR007 AR002 AR003 AR004



WEST ELEVATION
1"=10'
4 AR007 AR002 AR003 AR004

10' 0 10'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: W Deguchi
Drawn: D Wang
Checked: M. Leineweber
Approved: K Parmar
Date: 12-18-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: DUBRANT Media Fire
345 QUEEN STREET, SUITE 901
HONOLULU, HAWAII 96813

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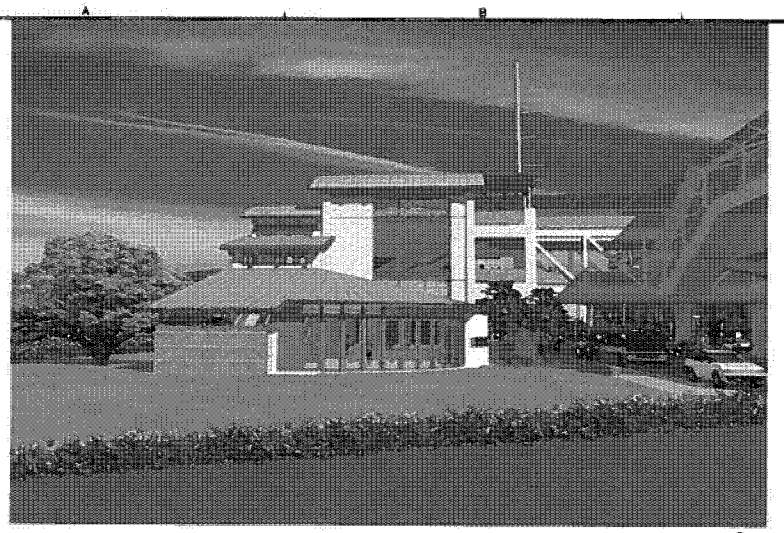
PEARLRIDGE STATION

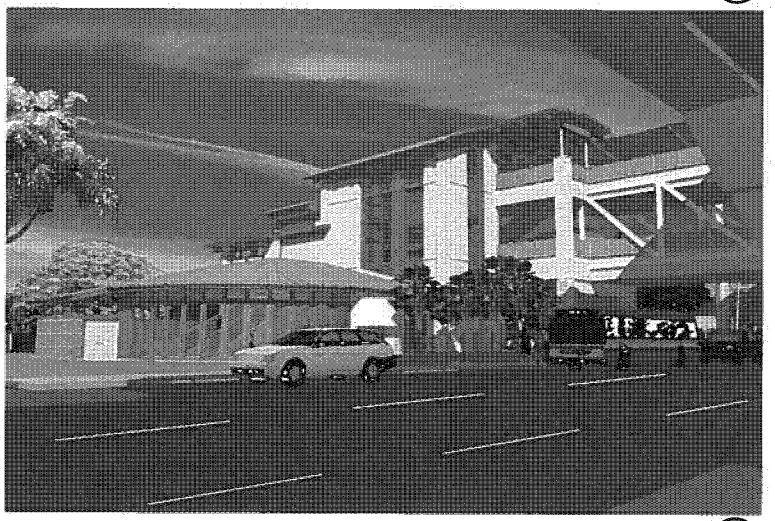
ELEVATIONS

Contract No.: SV-340
CADD File: SD1-H06-AR007
Drawing No: AR007 Rev.
Scale: 1"=10'
Page No. 54 of 60

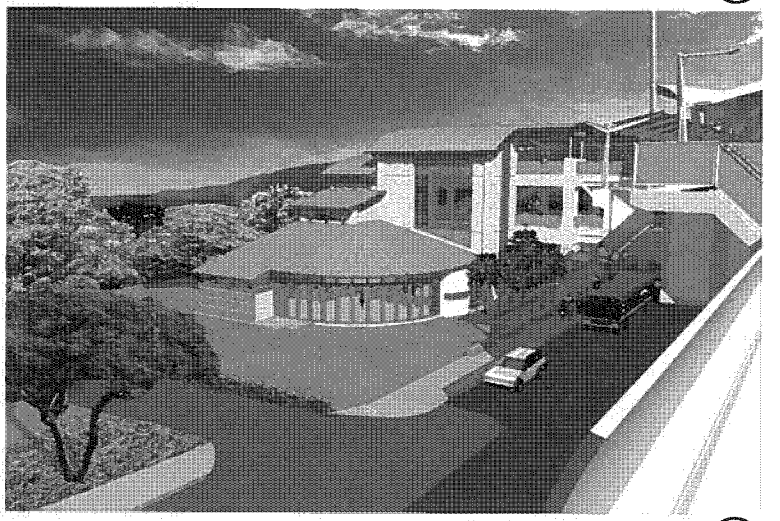


GROUND VIEW
N/A
2
AR008

ENTRY VIEW
N/A
1
AR008



UNDER PLATFORM VIEW
N/A
3
AR008



AERIAL VIEW
N/A
4
AR008

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: W Deguchi
Drawn: D Wong
Checked: M. Leineweber
Approved: K Parmar
Date: 12-18-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: DURRANT Media Five
345 QUEEN STREET, SUITE 801
HONOLULU, HAWAII 96813

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PEARLRIDGE STATION

3D VIEWS

Contract No.: SV-340
CADD File: SD1-H07-AR008
Drawing No: AR008
Rev.
Scale: N/A
Page No. 55 of 60

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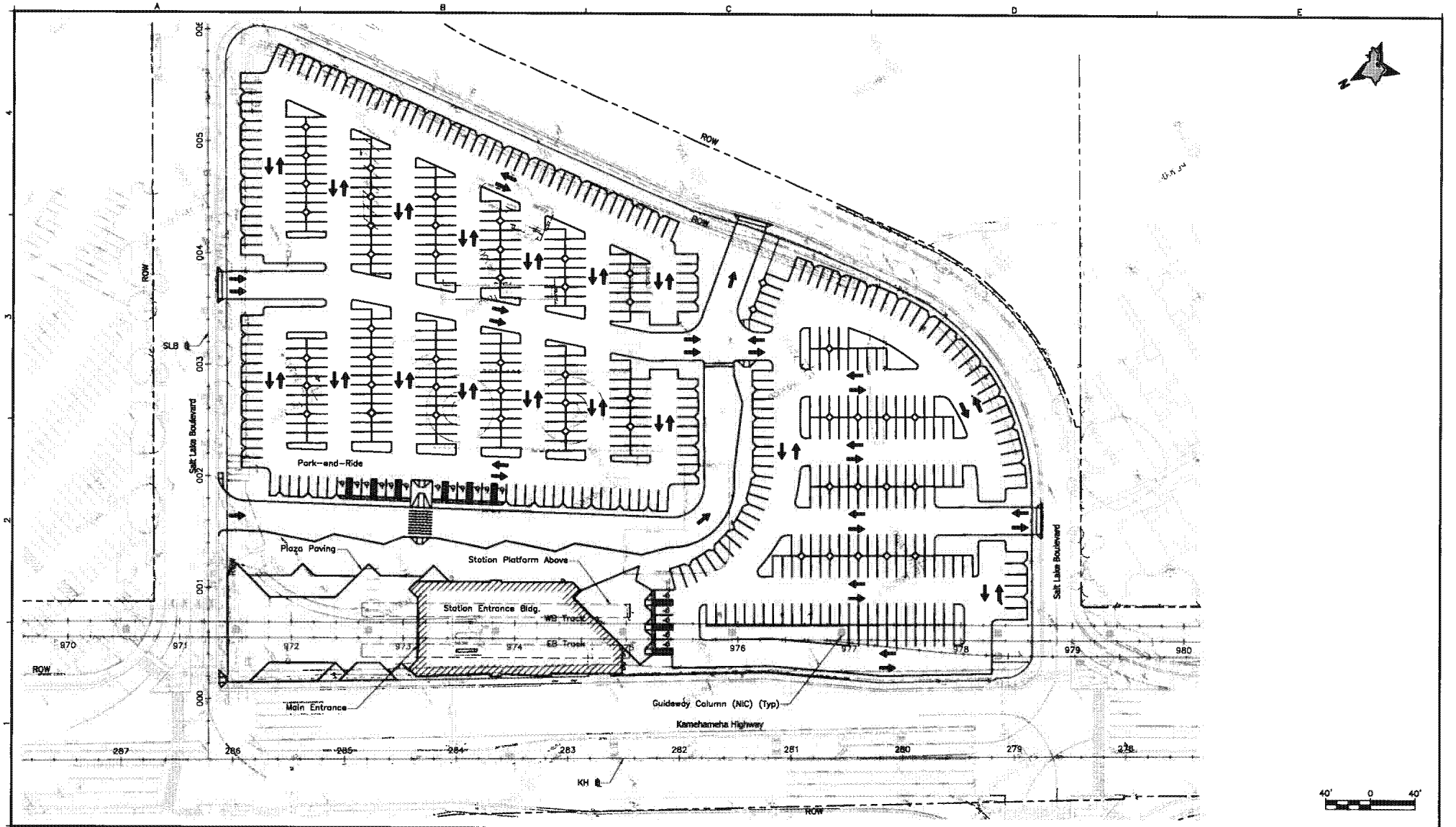

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: G Tom
Drawn: N Chan
Checked: J Yamamoto
Approved: G Takahashi
Date: 12-18-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R.M. TOWILL CORPORATION

For reduced prints, original page size in inches:

ALOHA STADIUM STATION
STATION AREA PLAN

Contract No.: SV-340
CADD File: SJ1-A03-GN005
Drawing No: GN005 Rev.
Scale: 1"=40'
Page No. 4 of 53

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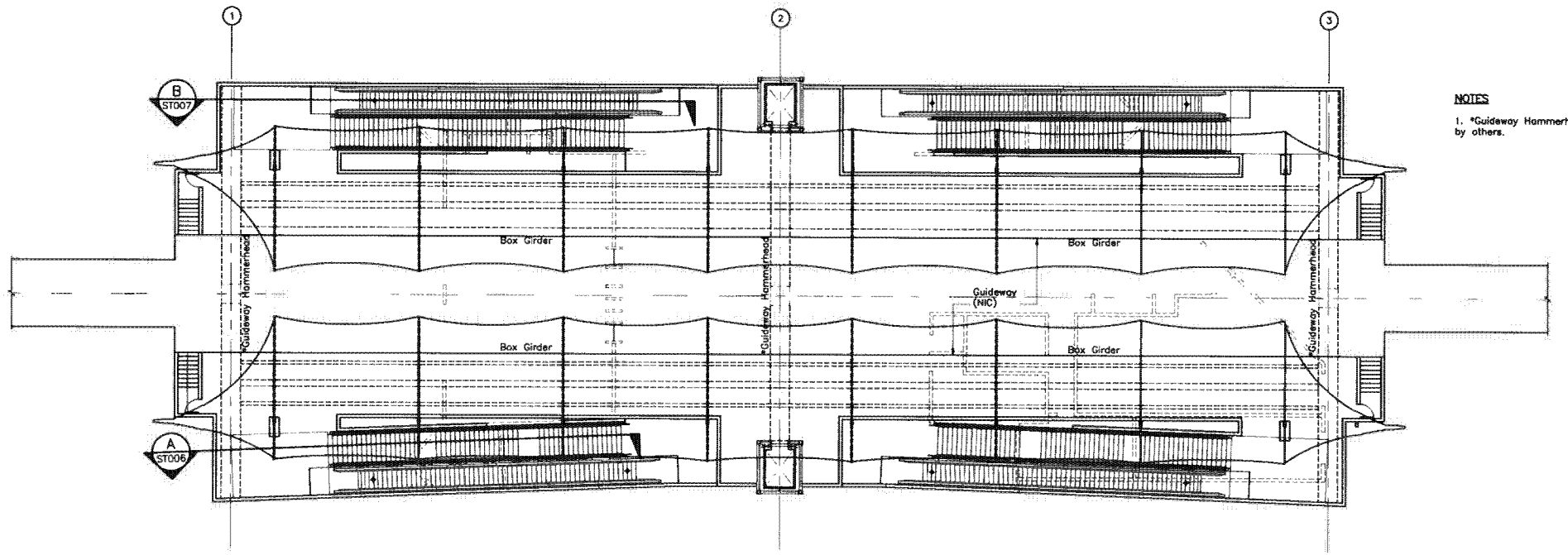


NOTES

1. *Guideway Hammerhead by others.

2' 0 2' 4' 8' 12' 20'

Rev	By	Date	Description

2010-01-11 2:53 PM \\cahdomain\csh_info\Drawings_Design\RKY\09026A_HHCTCP_Aloha_Stadium\SJ1-G14-ST004.dwg

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: R Yamashiro
Drawn: J Perreira
Checked: G Suzuki
Approved: G Suzuki
Date: 01-15-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: CONSULTING STRUCTURAL HAWAII, INC.
931 MAUNAKEA STREET, SUITE 200
HONOLULU, HAWAII 96817

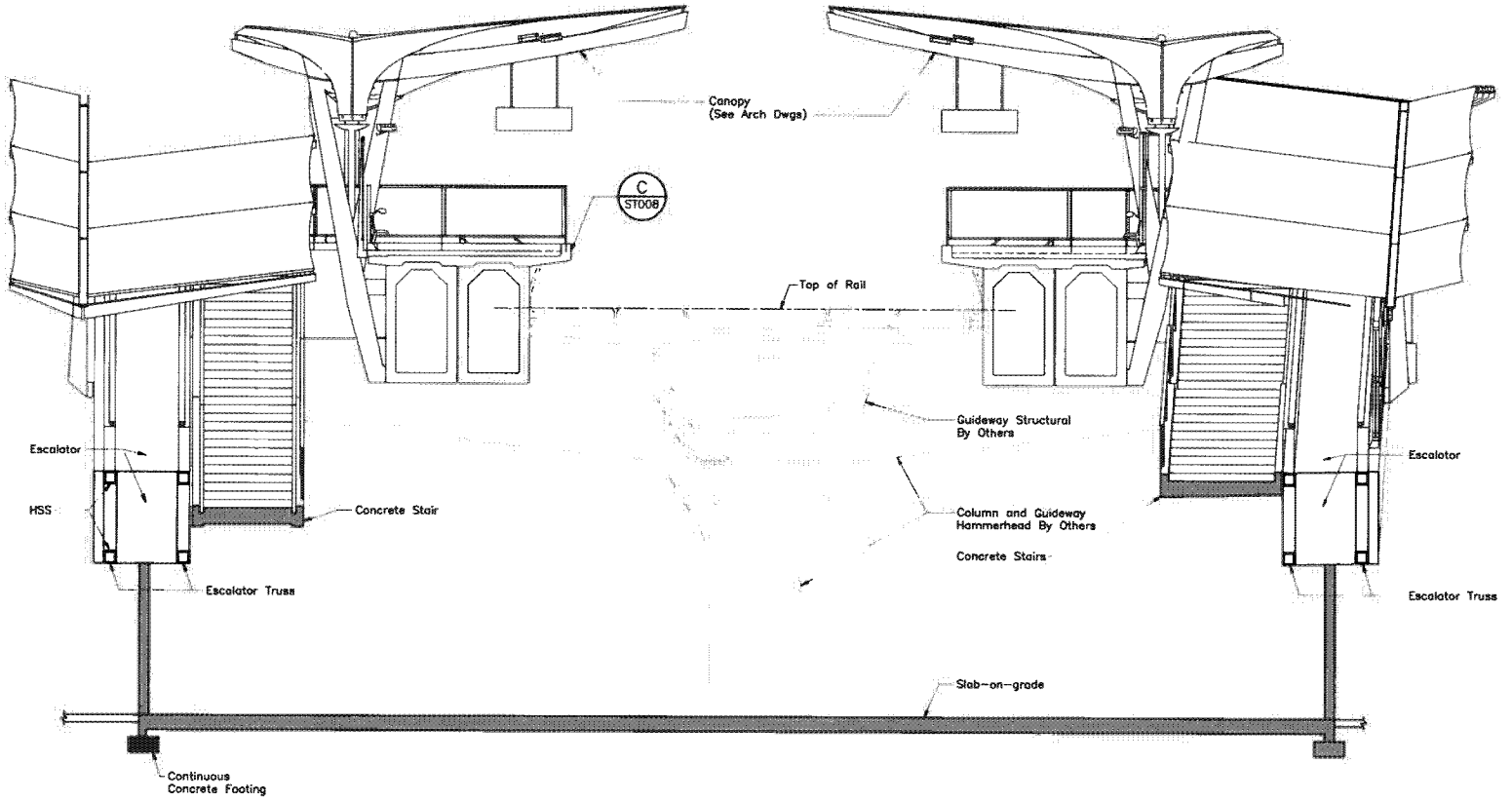
For reduced prints, original page size in inches: A

ALOHA STADIUM STATION

STRUCTURAL PLATFORM LEVEL ROOF FRAMING PLAN

Contract No.: SV-340
CADD File: SJ1-G14-ST004
Drawing No: ST004 Rev.
Scale: 3/32" = 1'-0"
Page No. 29 of 53

AR00078025



1' 0 2' 4' 8'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: R Yamashiro
Drawn: J Perreira
Checked: G Suzuki
Approved: G Suzuki
Date: 01-15-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: CONSULTING STRUCTURAL HAWAII, INC.
905 KAMOKILA BLVD., SUITE 200
KAPOLEI, HAWAII 96707

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

ALOHA STADIUM STATION

STRUCTURAL CROSS SECTION

Contract No.: SV-340
CADD File: SJ1-G15-ST005
Drawing No: ST005 Rev.
Scale: 1/4" = 1'-0"
Page No. 30 of 53

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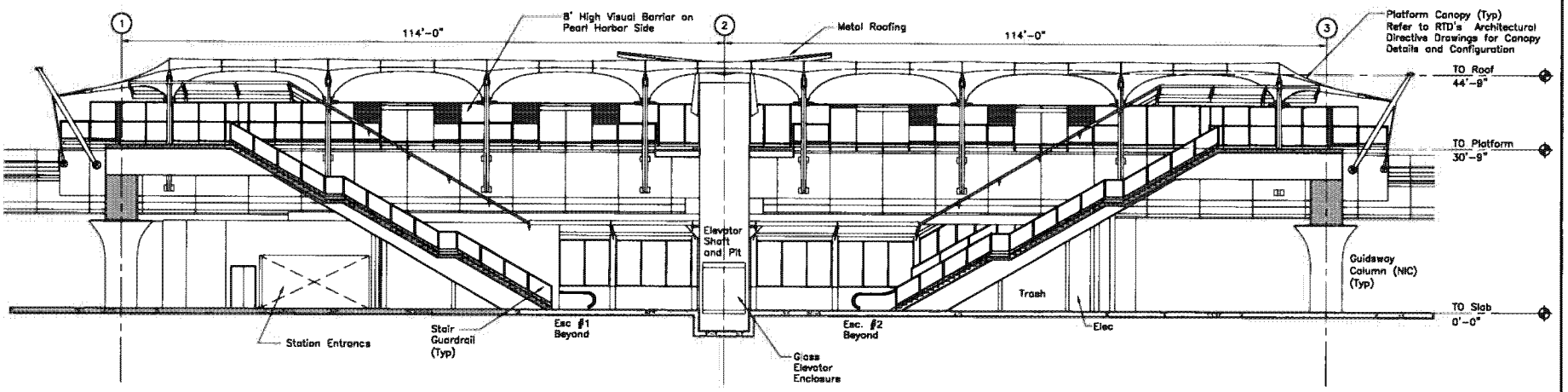
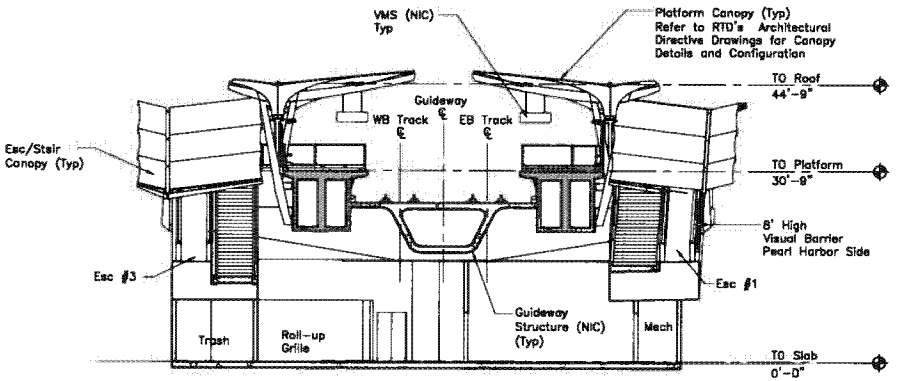


LONGITUDINAL SECTION (A / AR004)
1"=10'
AR002
AR003



NOTE:

1. For General Notes, Symbols, and Abbreviations See Dwg AG001-AG003.

LONGITUDINAL SECTION (B / AR004)
1"=10'
AR002
AR003

10' 0 10'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: W Deguchi
Drawn: D Wong
Checked: W Loui
Approved: K Parmar
Date: 12-18-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: DUBRANT Media Fire
949 QUEEN STREET, SUITE 901
HONOLULU, HAWAII 96813

For reduced prints, original page size in inches:

ALOHA STADIUM STATION

BUILDING SECTIONS

Contract No.: SV-340
CADD File: SJ1-H05-AR004
Drawing No: AR004 Rev.
Scale: 1" = 10'
Page No. 41 of 53

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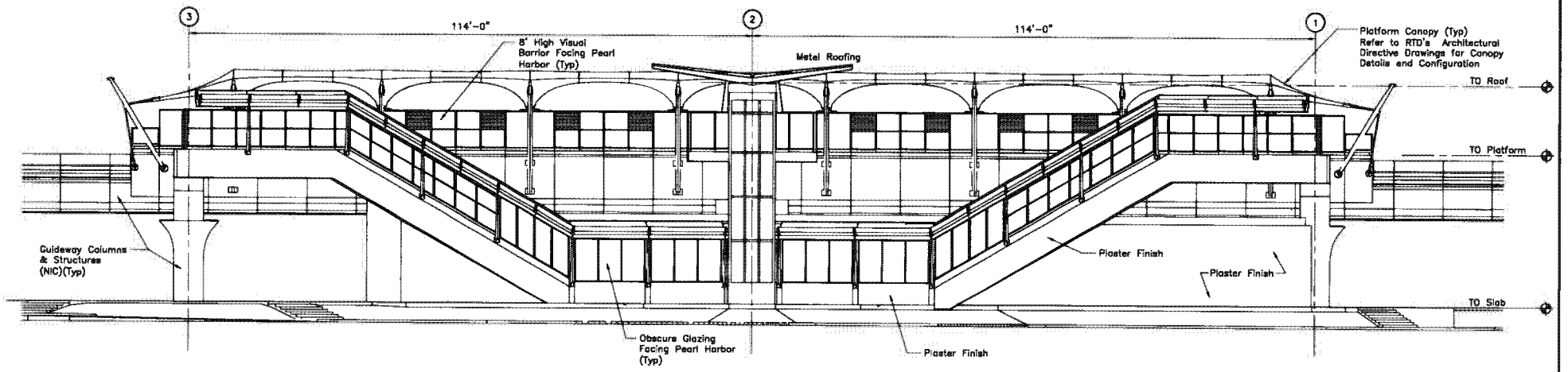
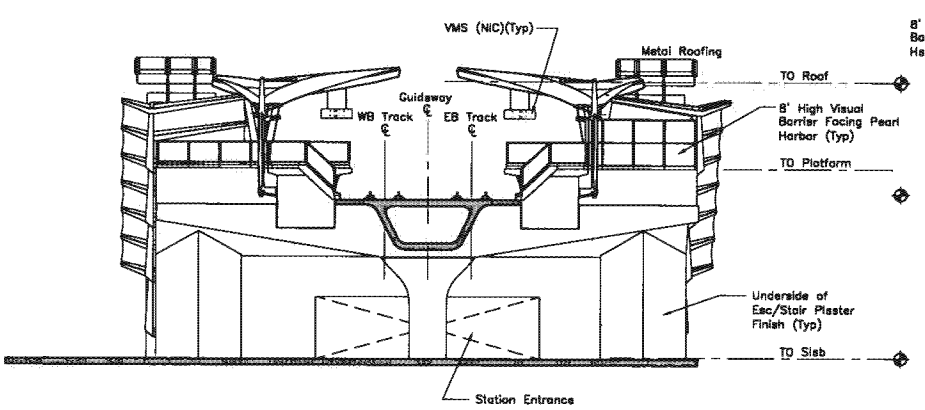


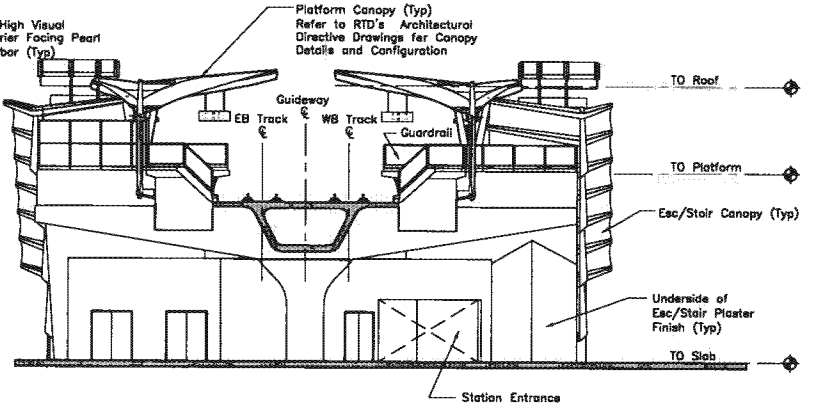
WEST ELEVATION 1 AR005 AR002 AR003
1"=10'

NOTE:

1. For General Notes, Symbols, and Abbreviations See Dwg AG001-AG003.



NORTH ELEVATION 2 AR005 AR002 AR003
1"=10'



SOUTH ELEVATION 3 AR005 AR002 AR003
1"=10'

10' 0 10'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: W Deguchi
Drawn: D Wang
Checked: W Loui
Approved: K Parmar
Date: 12-18-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: DUBRANT Media Five
345 QUEEN STREET, SUITE 801
HONOLULU, HAWAII 96813

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ALOHA STADIUM STATION

BUILDING ELEVATIONS

SHEET 1 OF 2

Contract No.: SV-340
CADD File: SJ1-H06-AR005
Drawing No: AR005 Rev.
Scale: 1" = 10'
Page No. 42 of 53

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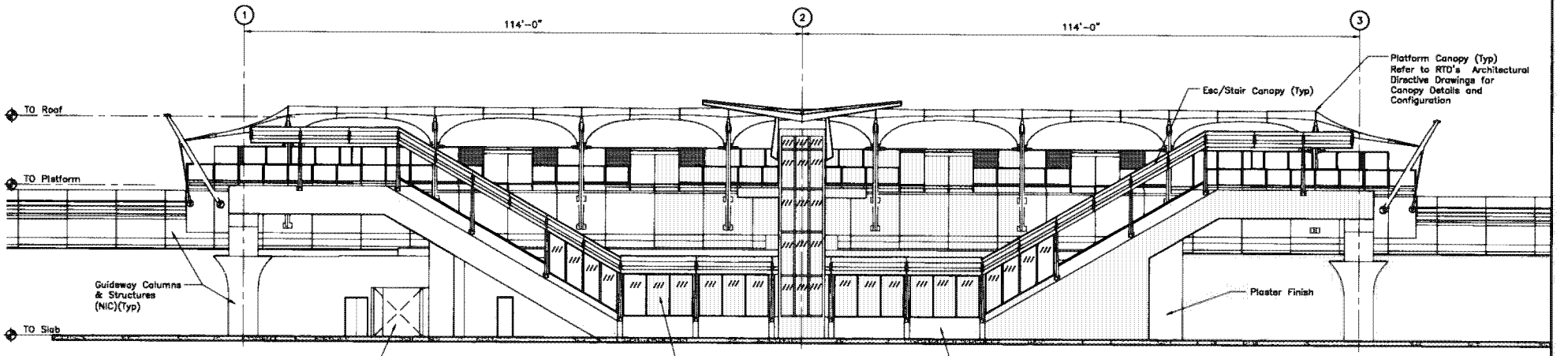
NOTE:

1. For General Notes, Symbols, and Abbreviations See Dwg. AG001–AG003.



EAST ELEVATION 1 (AR006) AR002 AR003
1"=10'

10' 0 10'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: W Deguchi
Drawn: D Wong
Checked: W Loui
Approved: K Parmar
Date: 12-18-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: DUBRANT Media Five
345 QUEEN STREET, SUITE 801
HONOLULU, HAWAII 96813

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ALOHA STADIUM STATION

BUILDING ELEVATIONS

SHEET 2 OF 2

Contract No.: SV-340
CADD File: SJ1-H06-AR006
Drawing No: AR006 Rev.
Scale: 1" = 10'
Page No. 43 of 53

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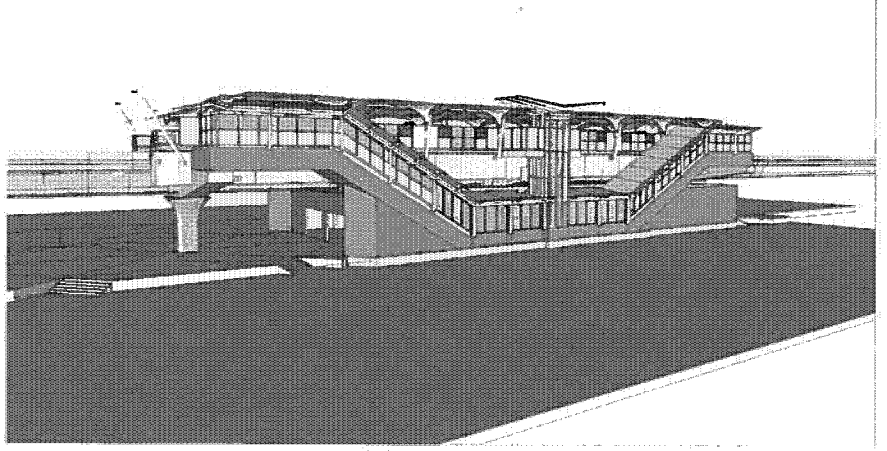
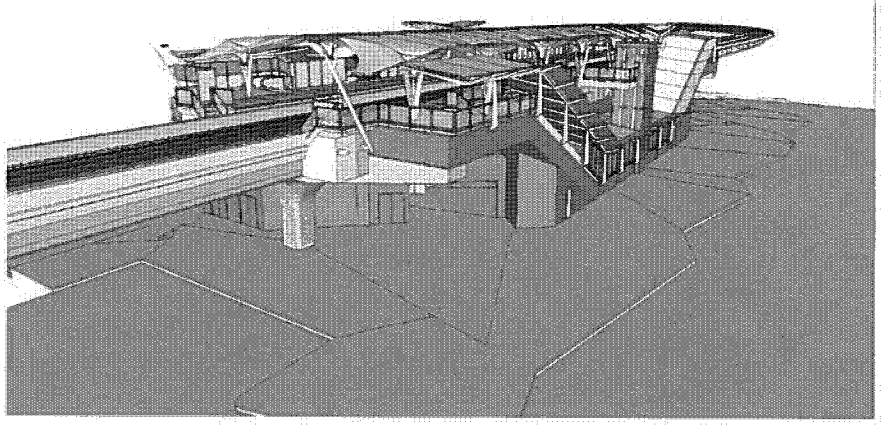
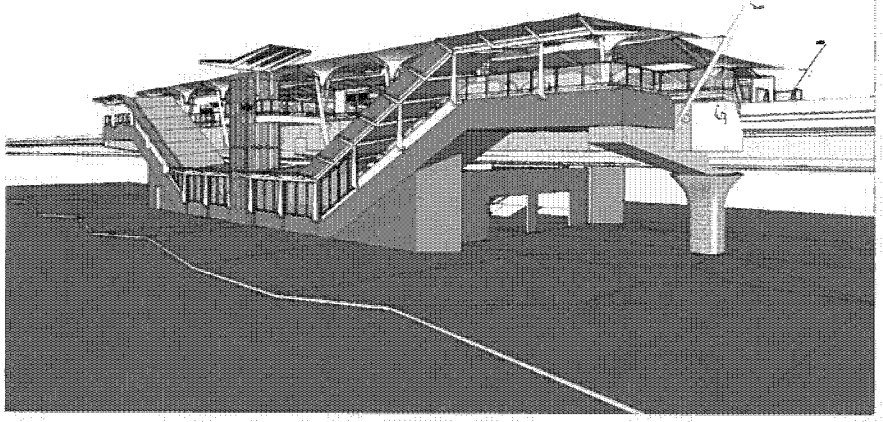


ACROSS HIGHWAY
NTS
1 AR007



AERIAL VIEW
NTS
2 AR007



FROM PARKING
NTS
3 AR007

AERIAL OVER STADIUM
NTS
4 AR007

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: W Deguchi
Drawn: D Wong
Checked: W Loui
Approved: K Parmar
Date: 12-18-09

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: DURRANT Media Five
345 QUEEN STREET, SUITE 801
HONOLULU, HAWAII 96813

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

ALOHA STADIUM STATION

3D VIEWS

Contract No.: SV-340
CADD File: SJ1-H06-AR007
Drawing No: AR007 Rev.
Scale: NTS
Page No. 44 of 53

2010-01-04 9:32 AM P:\8042 HHTCP Transit Stations\8042 Production\8042 CAD Files\8042 Current Dwgs\8042 HCCT Station\Sheets\8042 SJ Airport\SJ1-H06-AR007.dwg

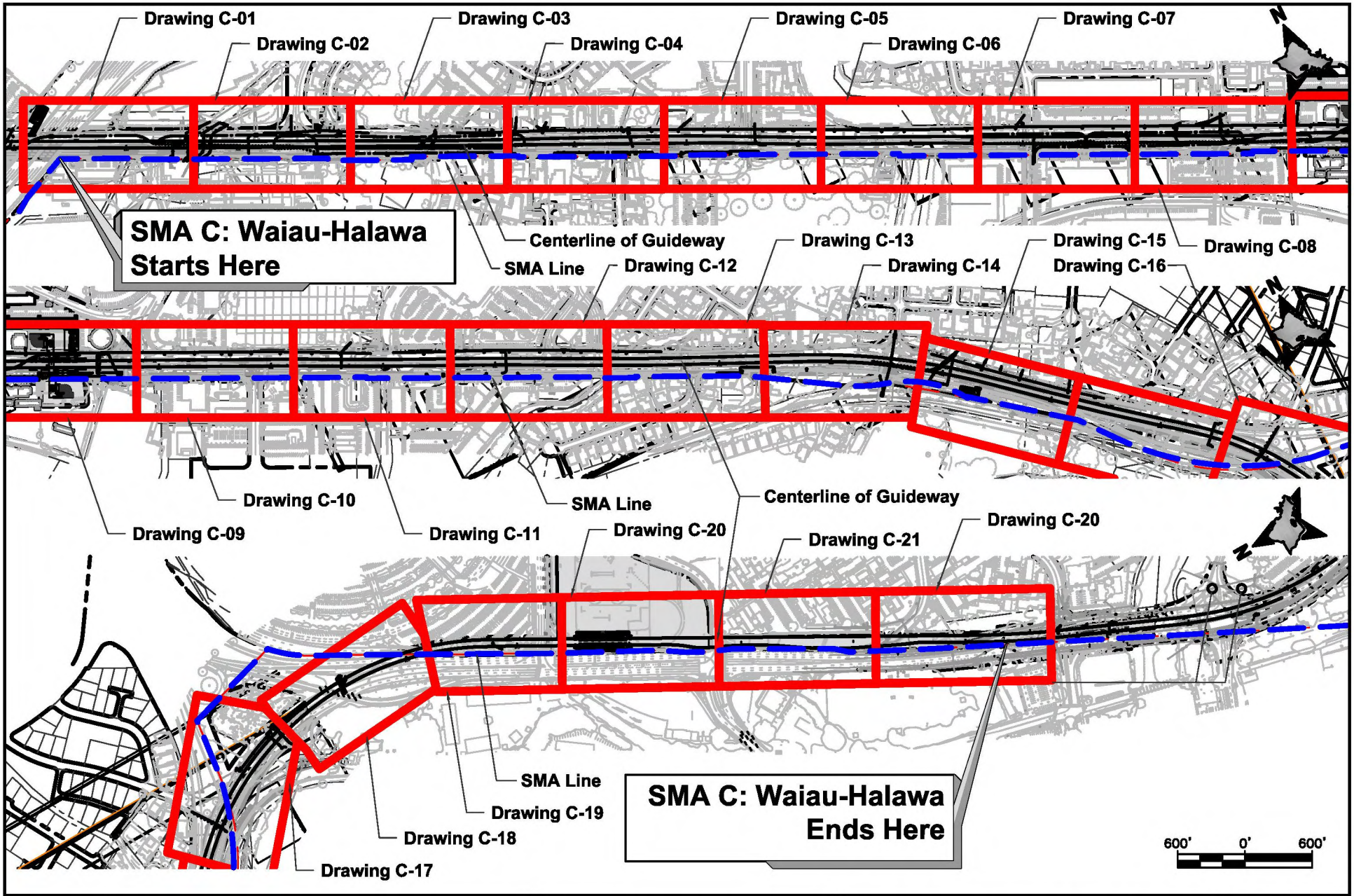
AR00078030

Attachment F:

Preliminary Engineering Project Drawings, SMA B: Waiau – Hālawa

- C-00 to C-22: SMA Line Plan Sheets
- C-HR: Historic Resources

AR00078031



CITY & COUNTY OF HONOLULU
DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

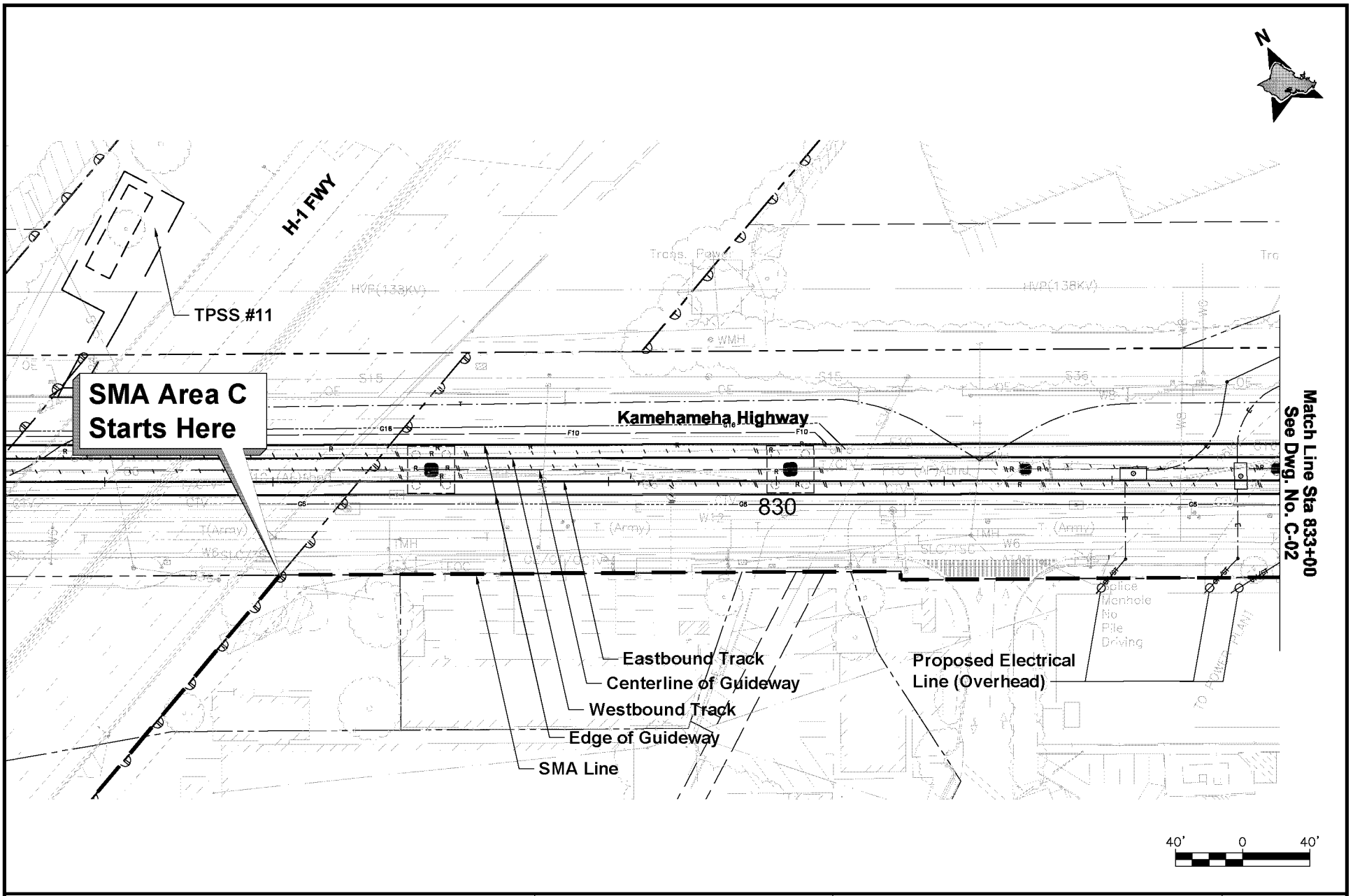
SPECIAL MANAGEMENT AREA LINES
SMA AREA C
PLAN

STA 826+00 TO STA 993+00

Drawing No: **C-00**

Date: 11/06/2009

AR00078032



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU
HIGH-CAPACITY TRANSIT
CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

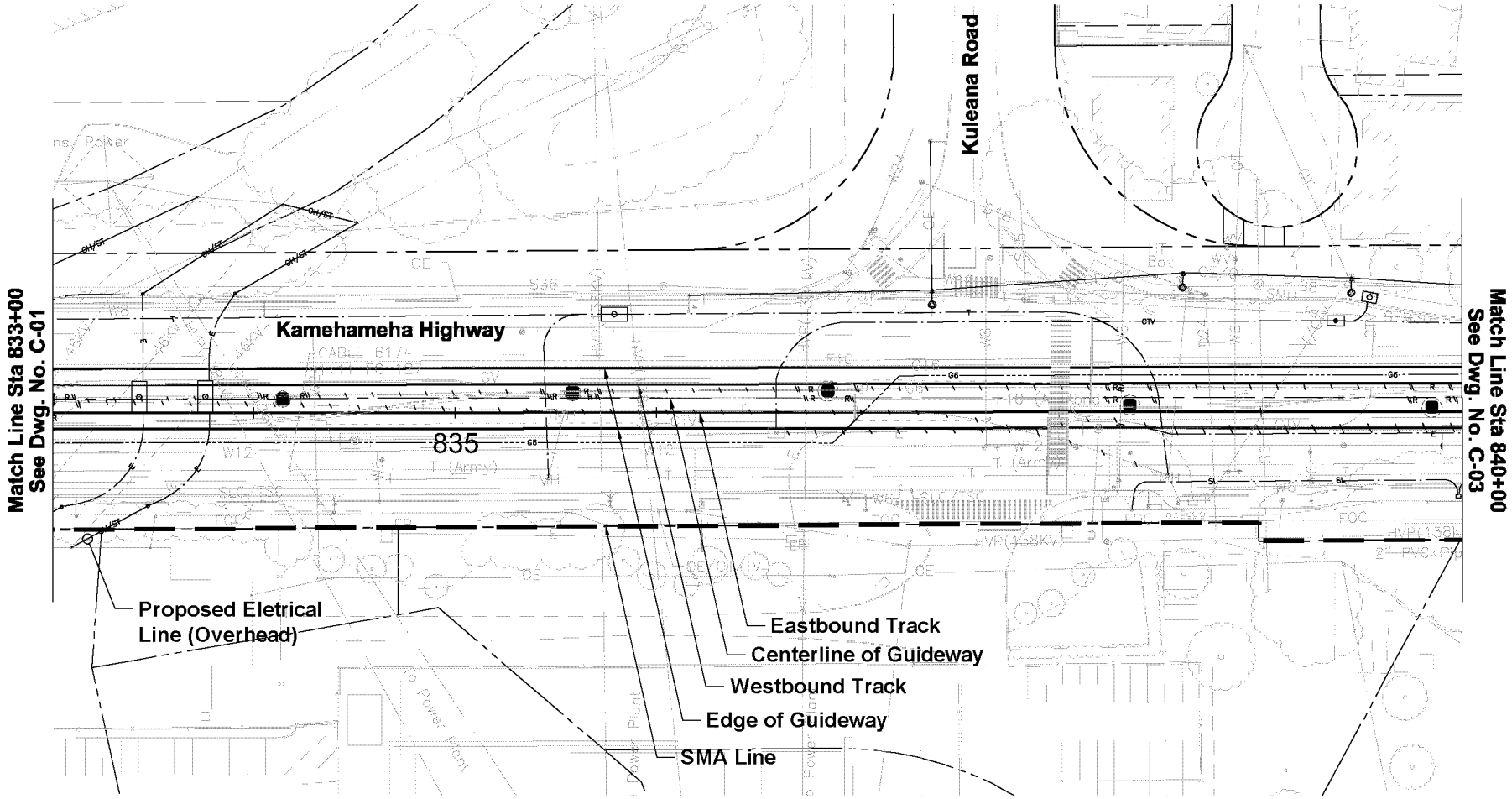
SMA AREA C
PLAN

STA 826+00 TO STA 833+00

Drawing No:
C-01

Date:
11/06/2009

AR00078033



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

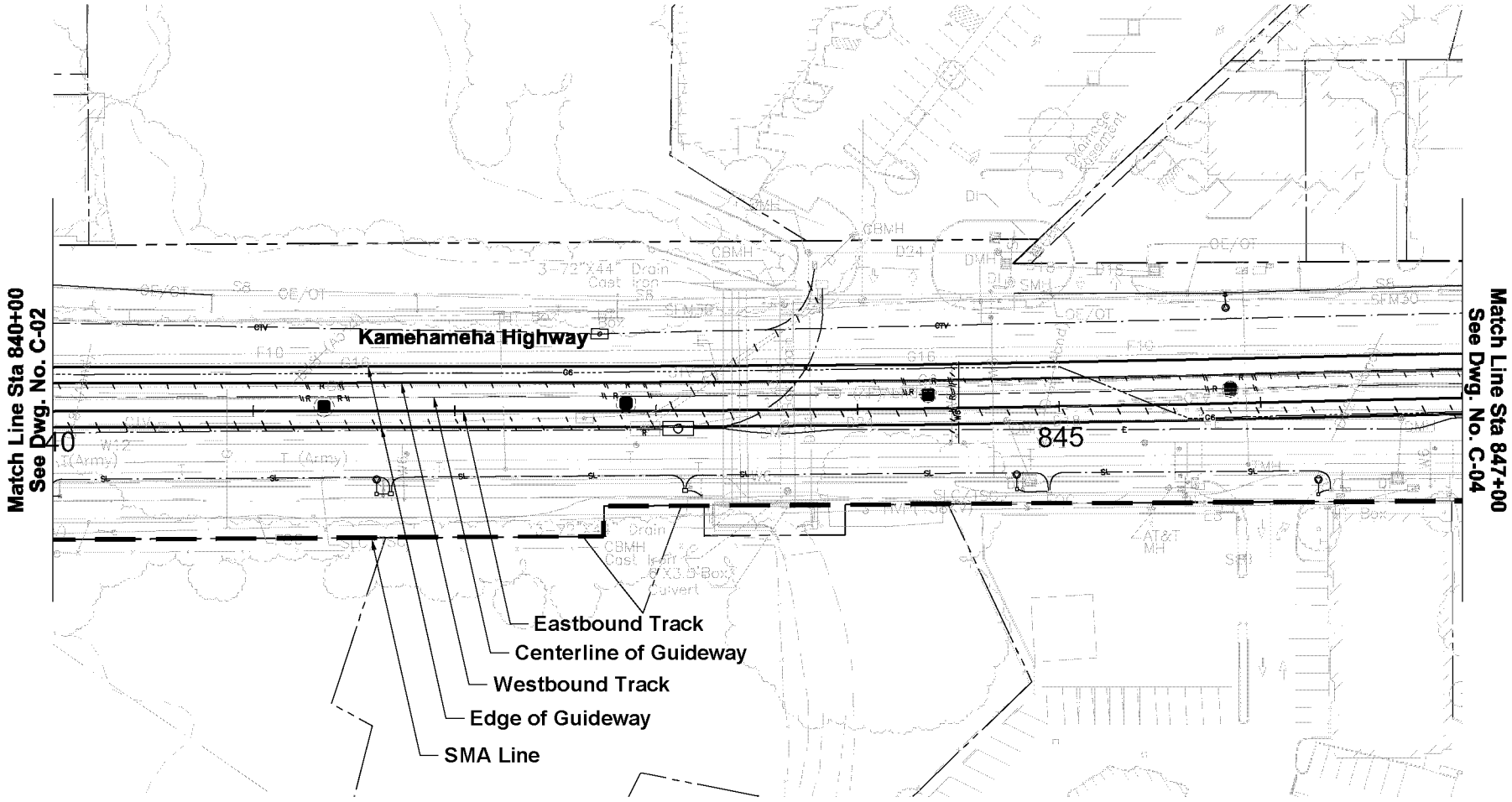
SMA AREA C
PLAN

STA 833+00 TO STA 840+00

Drawing No:
C-02

Date:
11/06/2009

AR00078034



40' 0 40'

CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA C

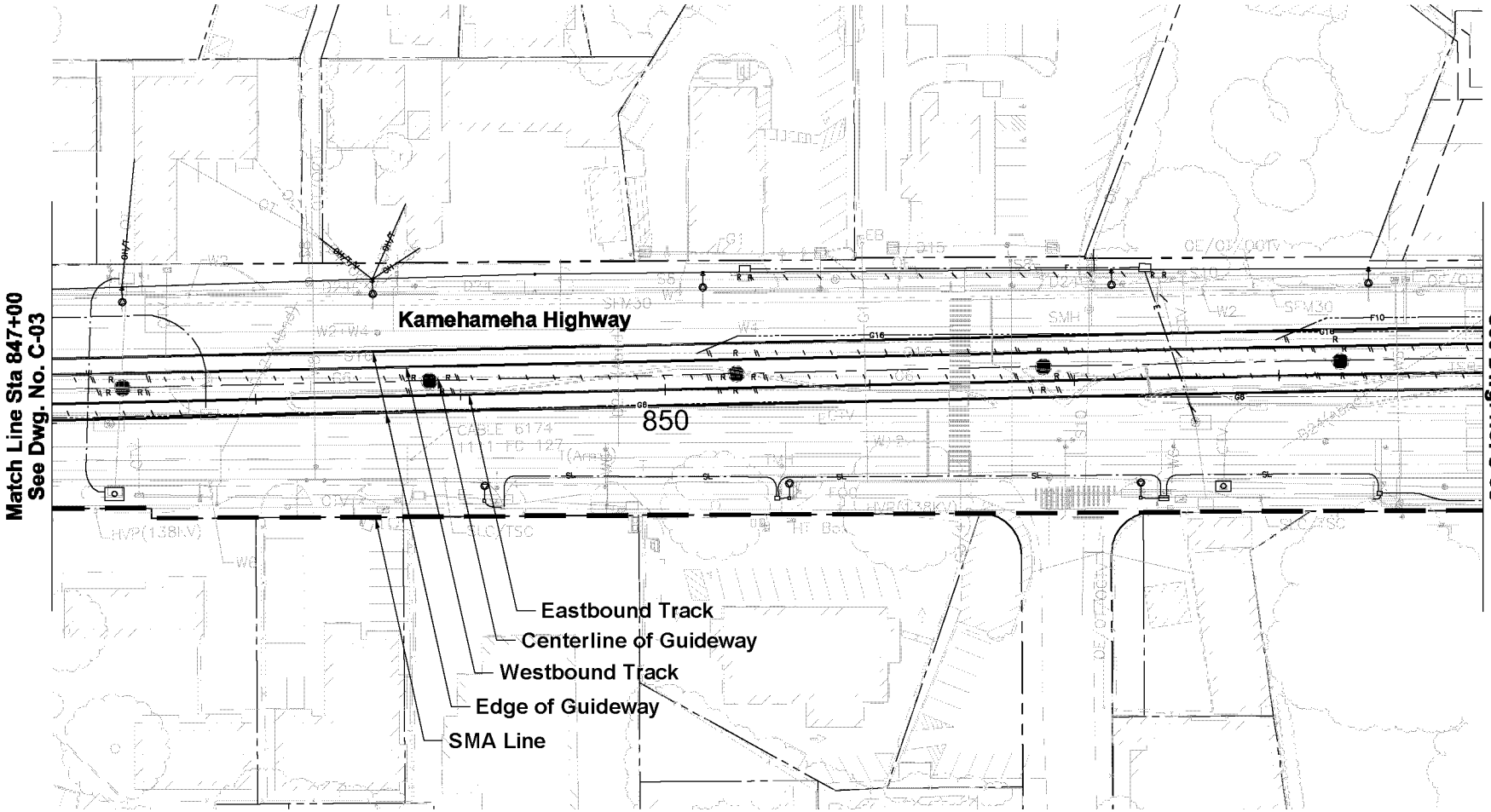
PLAN

STA 840+00 TO STA 847+00

Drawing No: **C-03**

Date: 11/06/2009

AR00078035



40' 0 40'

CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA C

PLAN

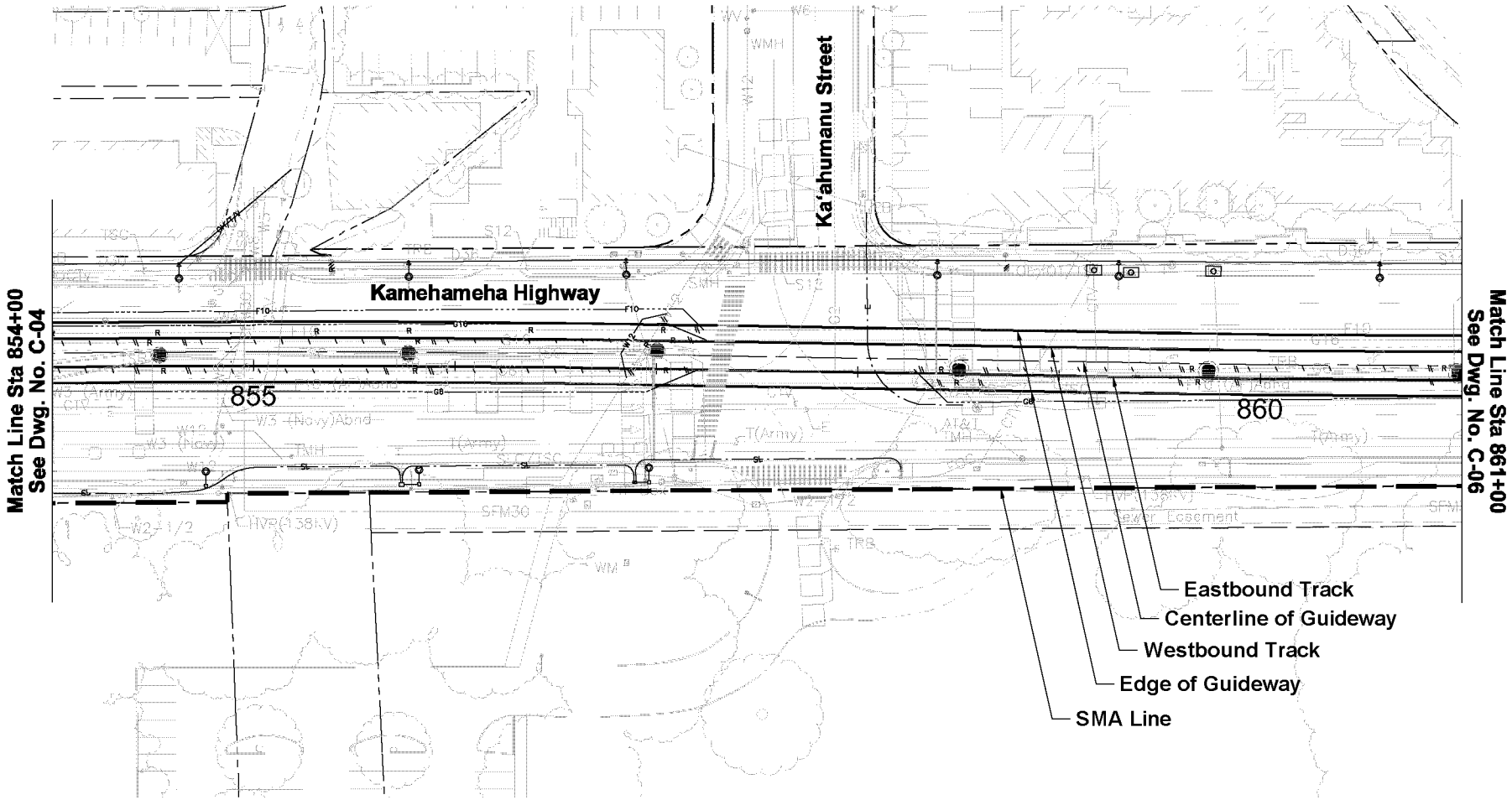
STA 847+00 TO STA 854+00

Drawing No:

C-04

Date:
11/06/2009

AR00078036



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA C

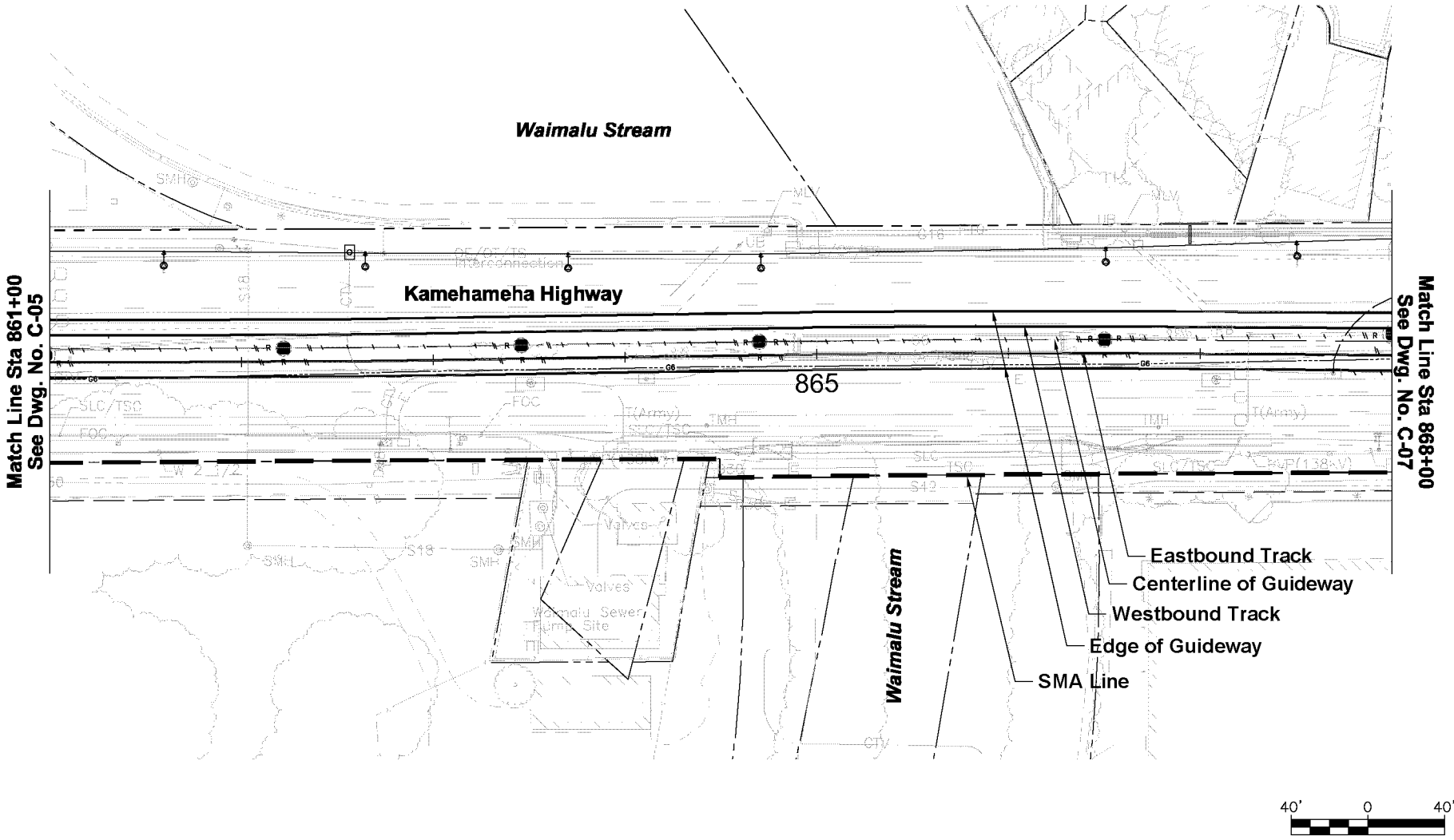
PLAN

STA 854+00 TO STA 861+00

Drawing No: **C-05**

Date: 11/06/2009

AR00078037



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA C

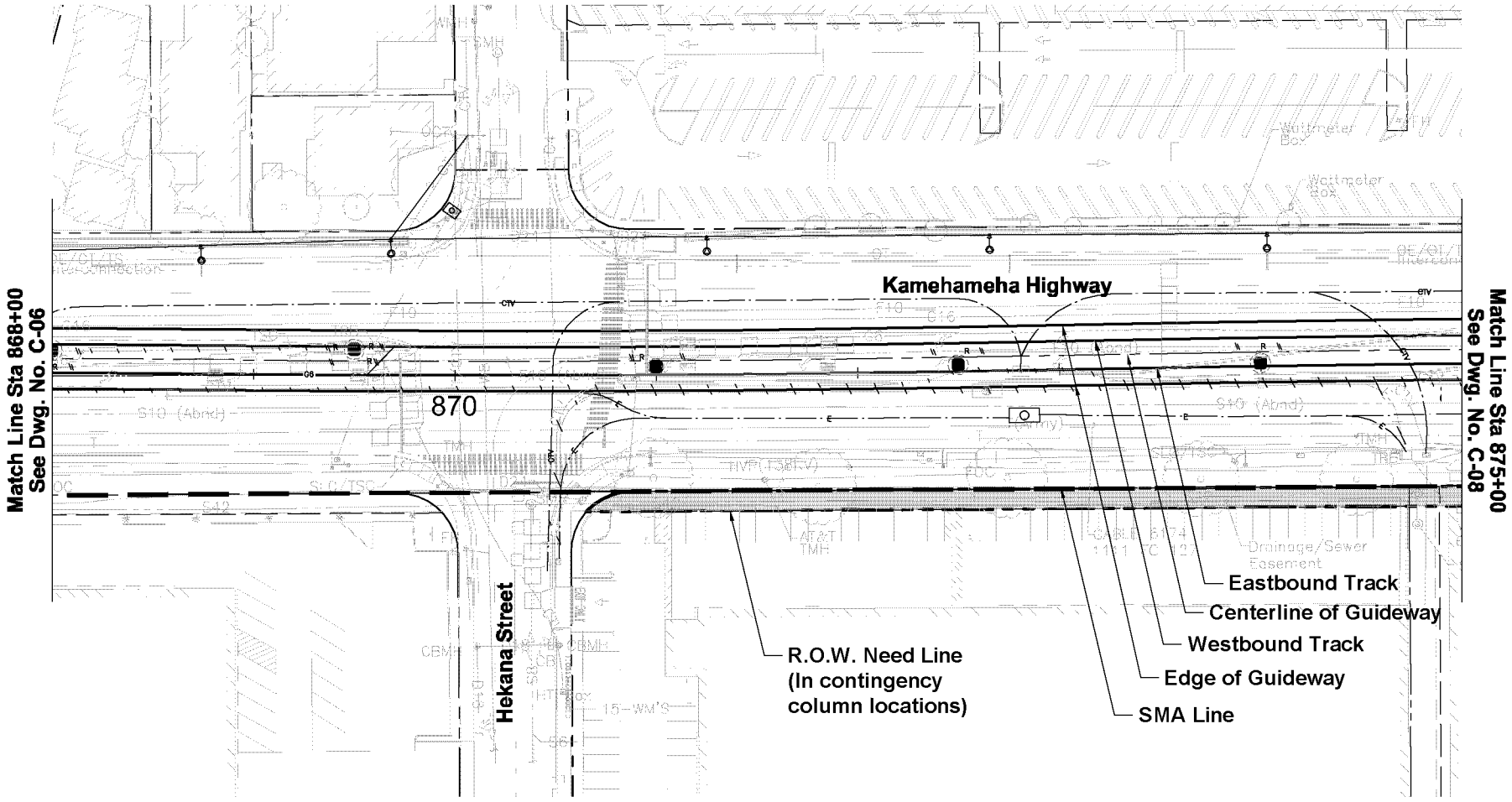
PLAN

STA 861+00 TO STA 868+00

Drawing No: **C-06**

Date: 11/06/2009

AR00078038



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU
HIGH-CAPACITY TRANSIT
CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

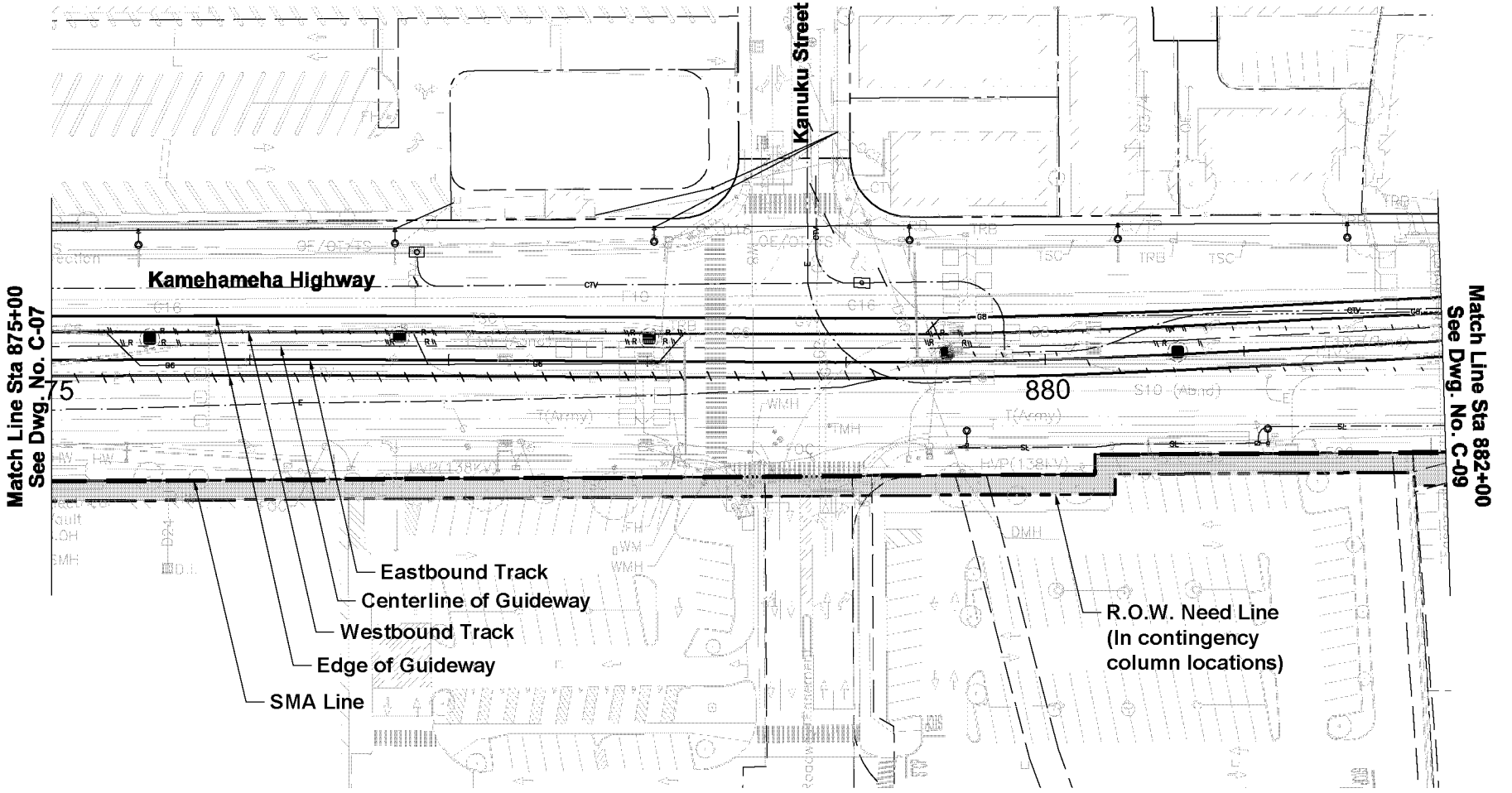
SMA AREA C
PLAN

STA 868+00 TO STA 875+00

Drawing No:
C-07

Date:
11/06/2009

AR00078039



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU
HIGH-CAPACITY TRANSIT
CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

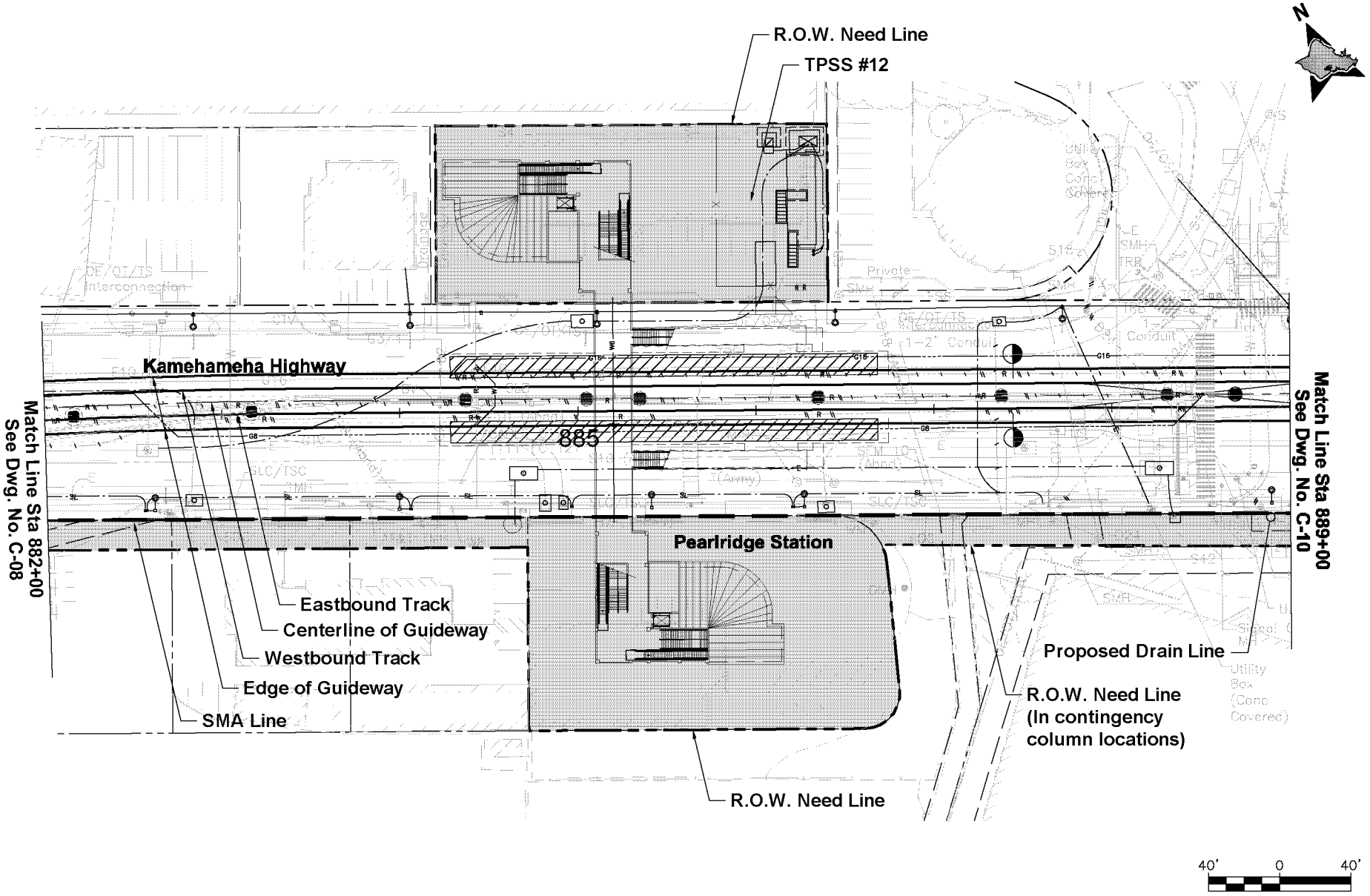
SMA AREA C
PLAN

STA 875+00 TO STA 882+00

Drawing No:
C-08

Date:
11/06/2009

AR00078040



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA C

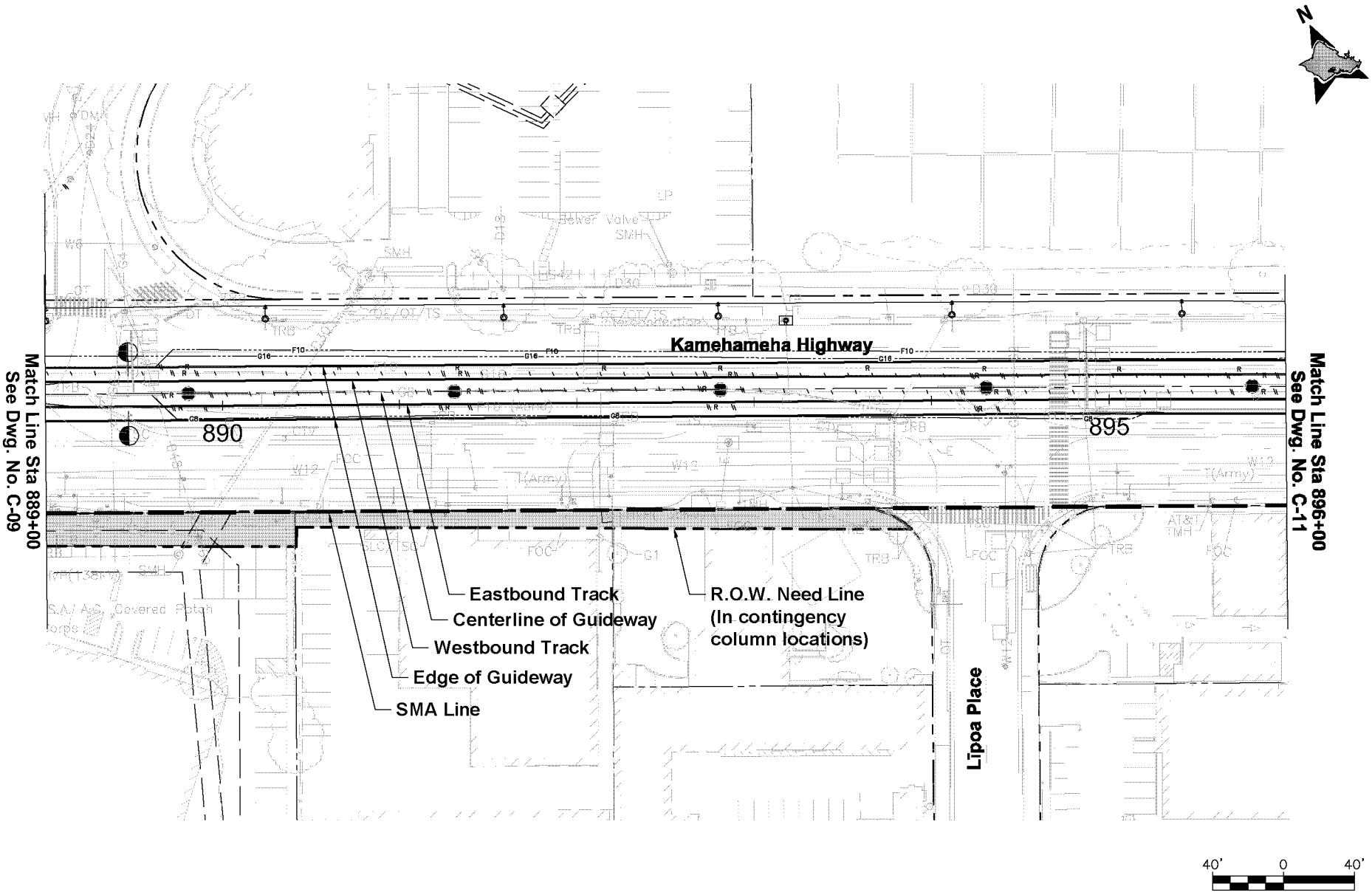
PLAN

STA 882+00 TO STA 889+00

Drawing No: **C-09**

Date: 11/06/2009

AR00078041



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA C

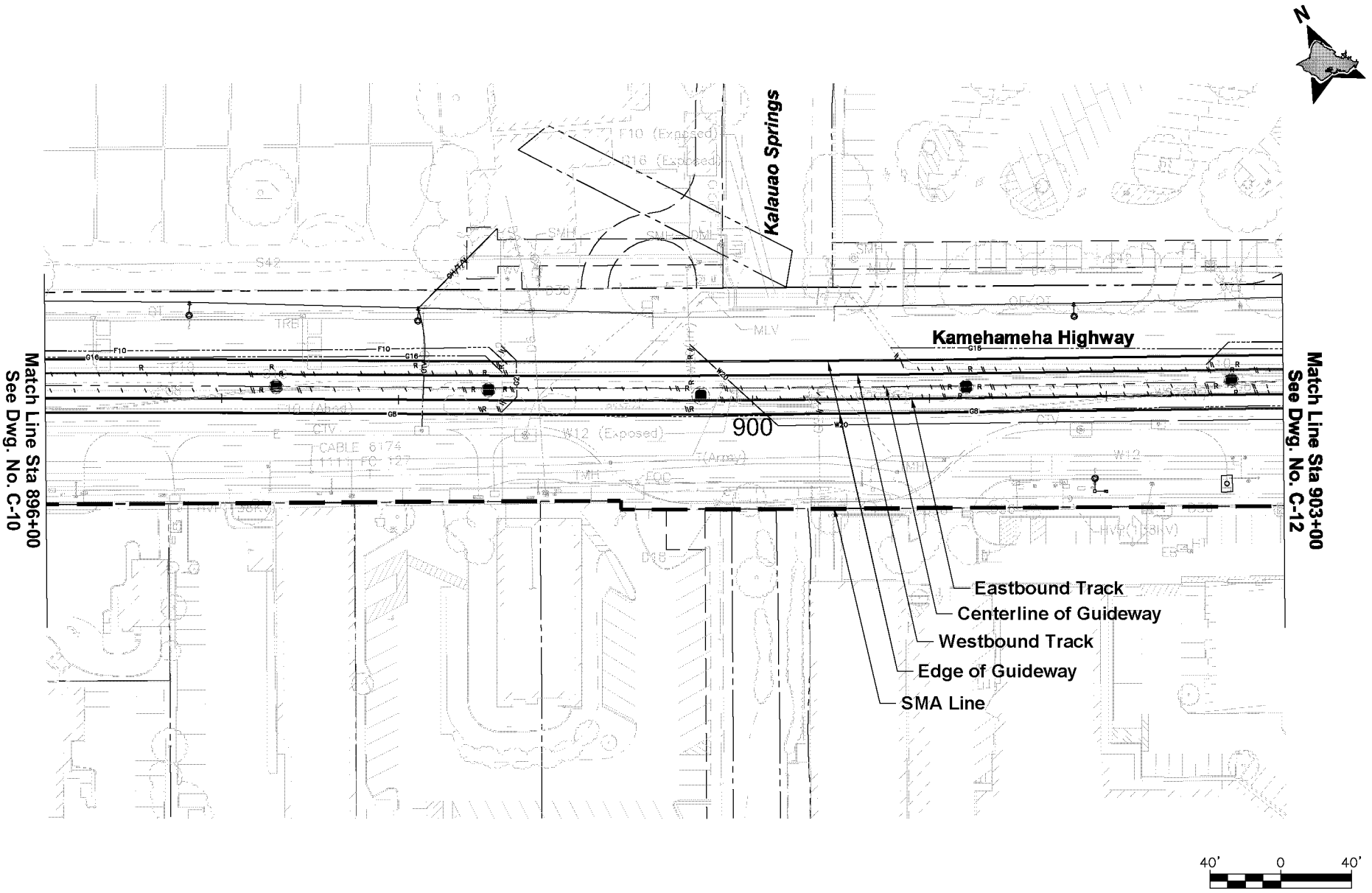
PLAN

STA 889+00 TO STA 896+00

Drawing No: **C-10**

Date: 11/06/2009

AR00078042



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA C

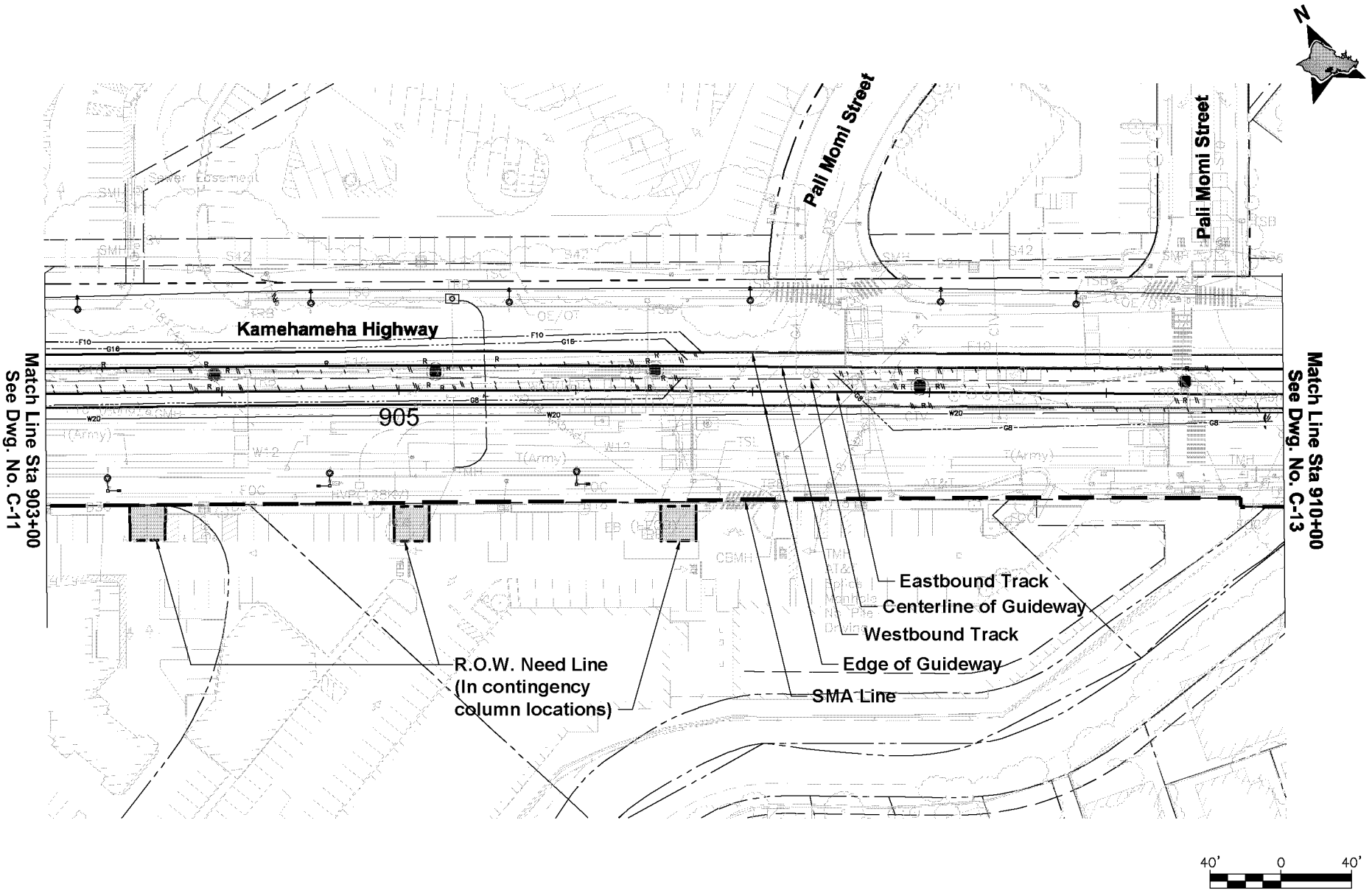
PLAN

STA 896+00 TO STA 903+00

Drawing No: **C-11**

Date: 11/06/2009

AR00078043



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA C

PLAN

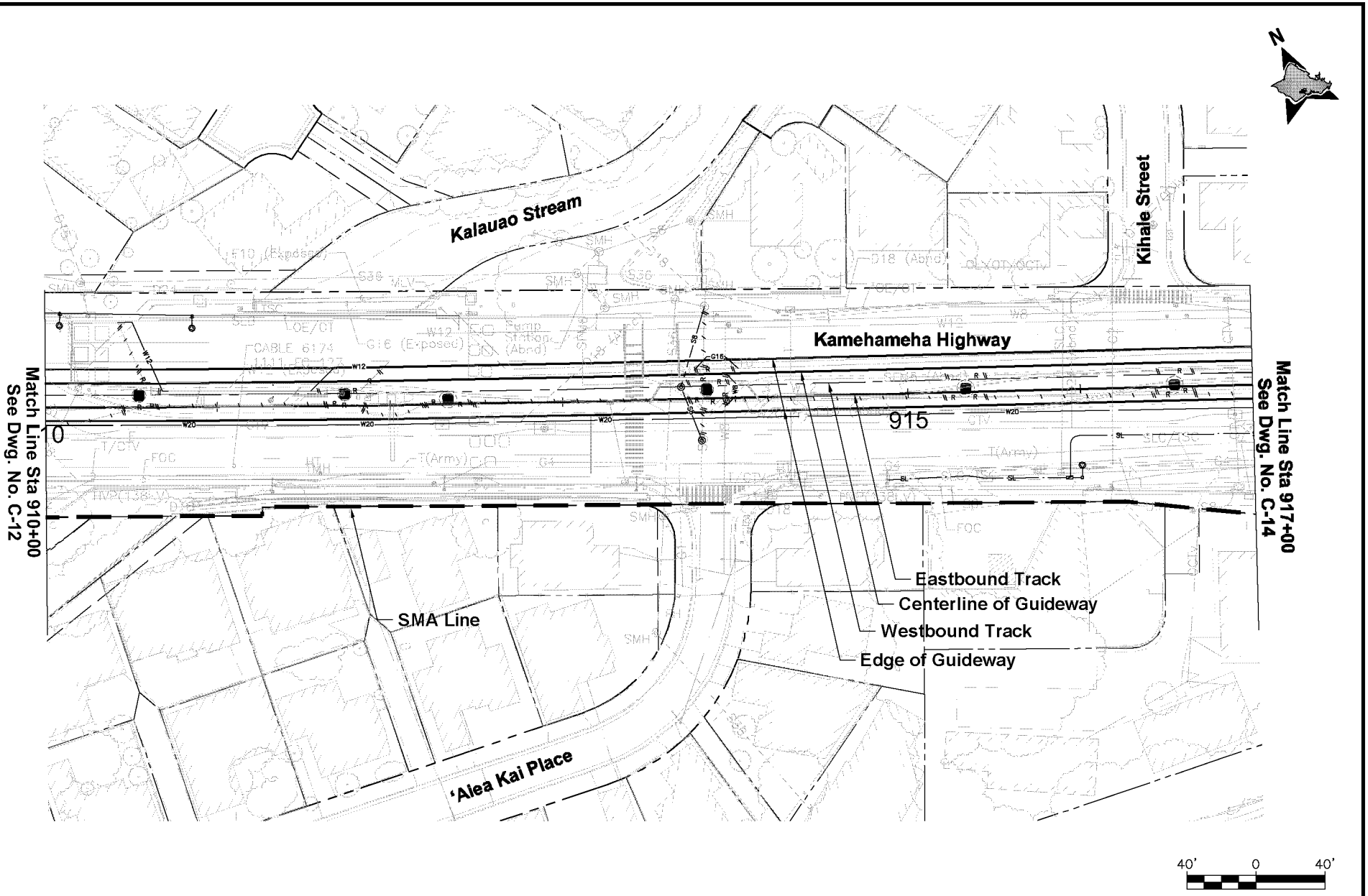
STA 903+00 TO STA 910+00

Drawing No:

C-12

Date:
11/06/2009

AR00078044



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

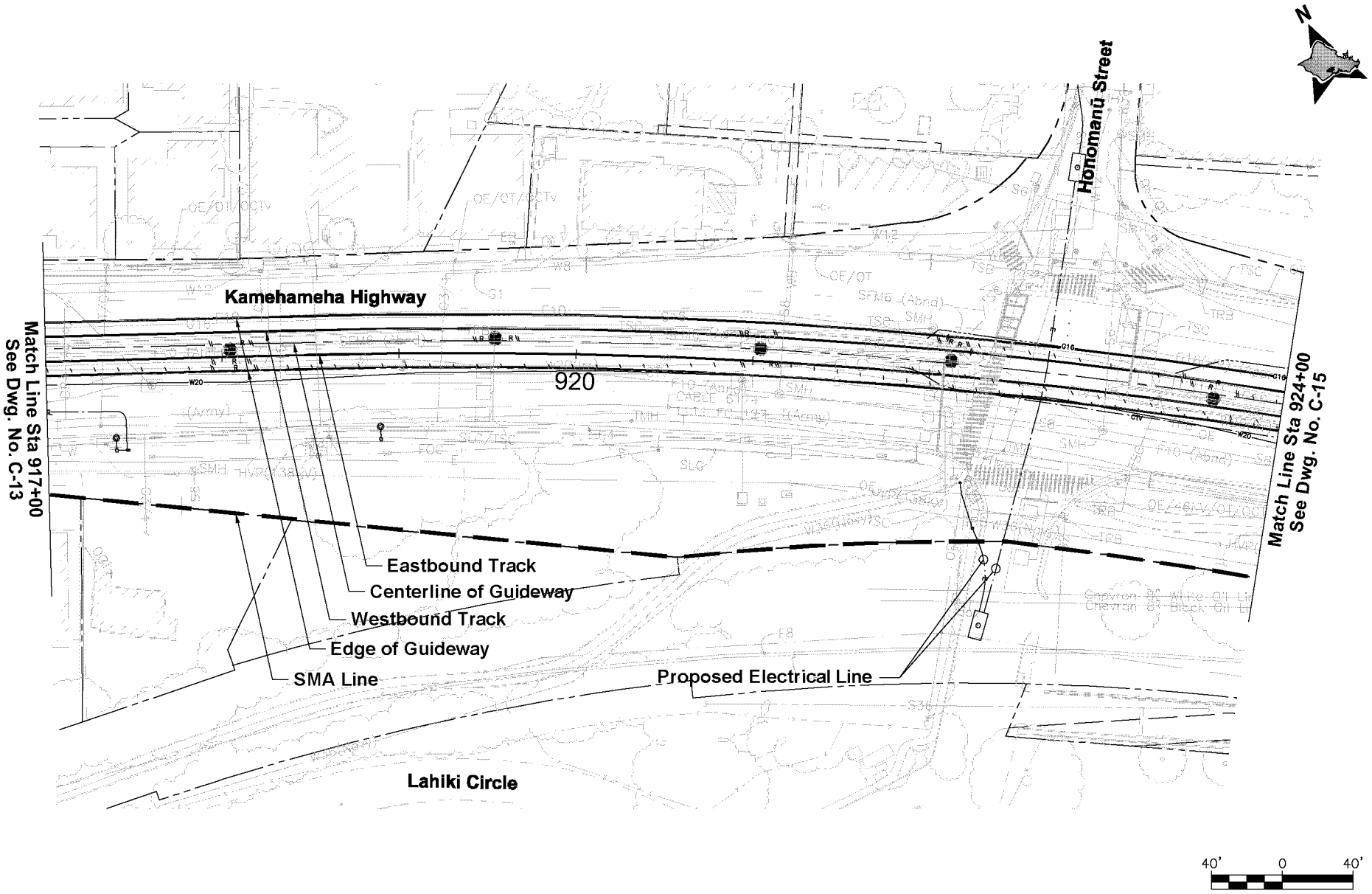
SMA AREA C
PLAN

STA 910+00 TO STA 917+00

Drawing No:
C-13

Date:
11/06/2009

AR00078045



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA C

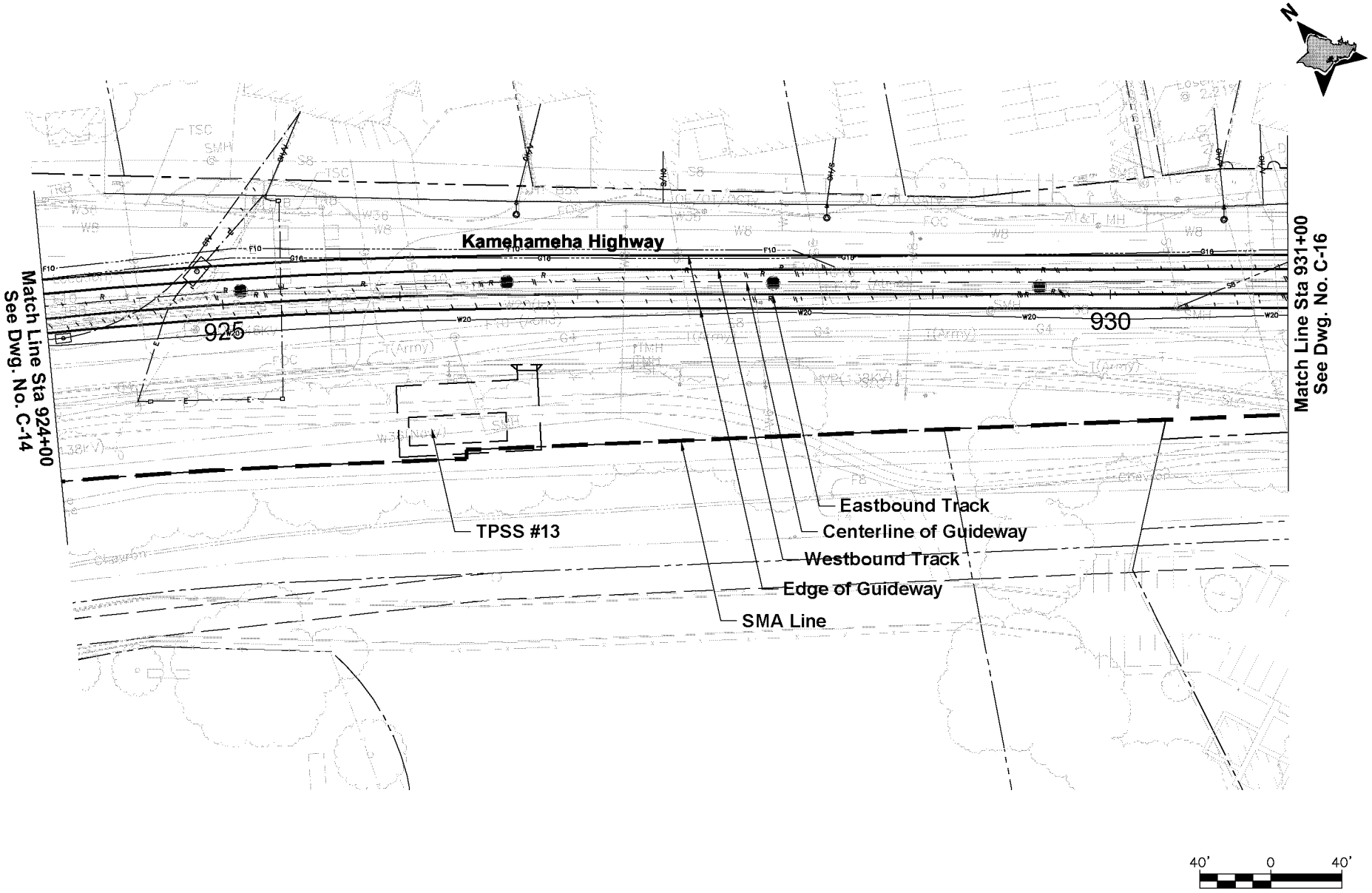
PLAN

STA 917+00 TO STA 924+00

Drawing No: **C-14**

Date: 11/06/2009

AR00078046



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA C

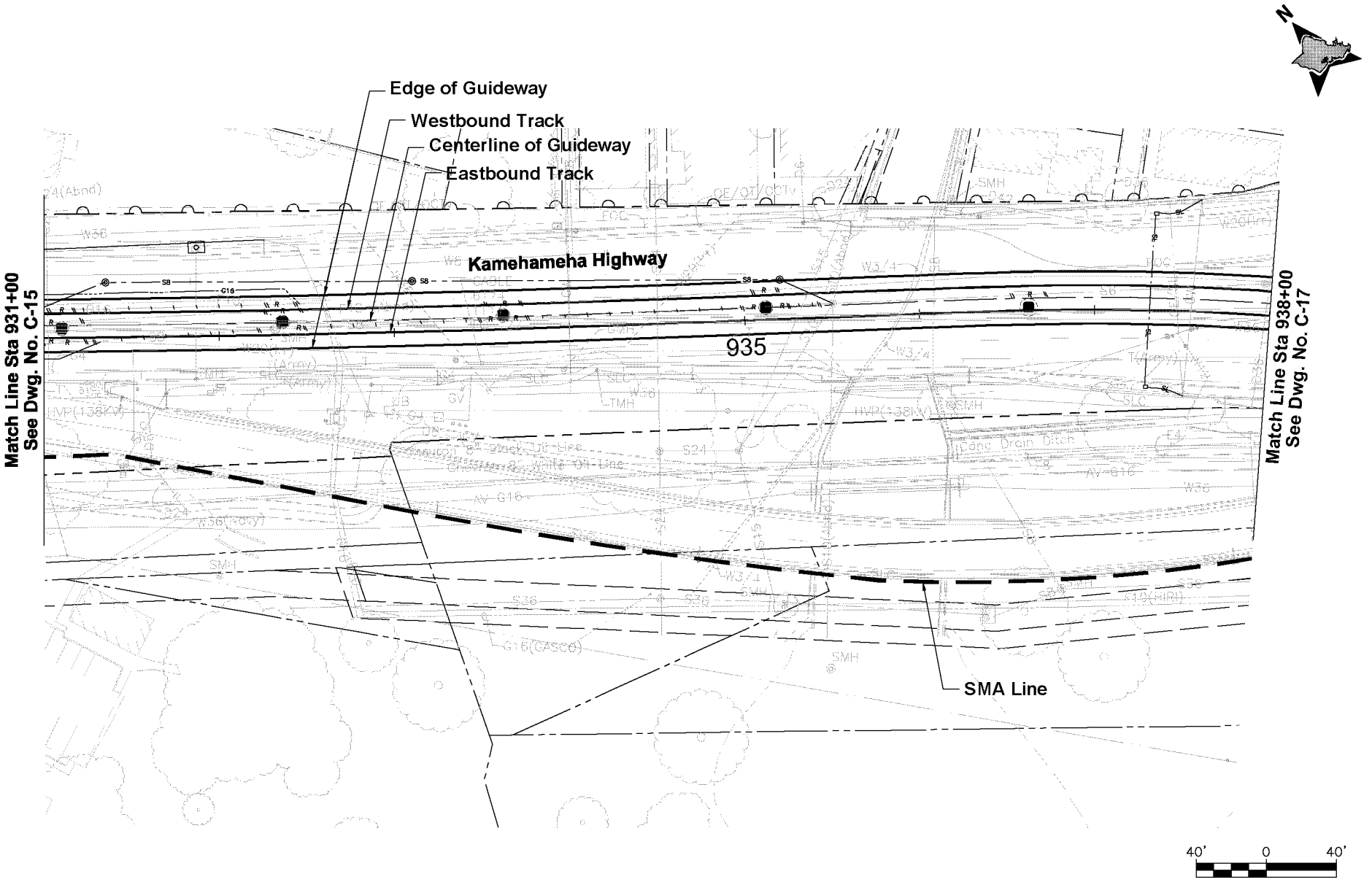
PLAN

STA 924+00 TO STA 931+00

Drawing No: **C-15**

Date: 11/06/2009

AR00078047



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

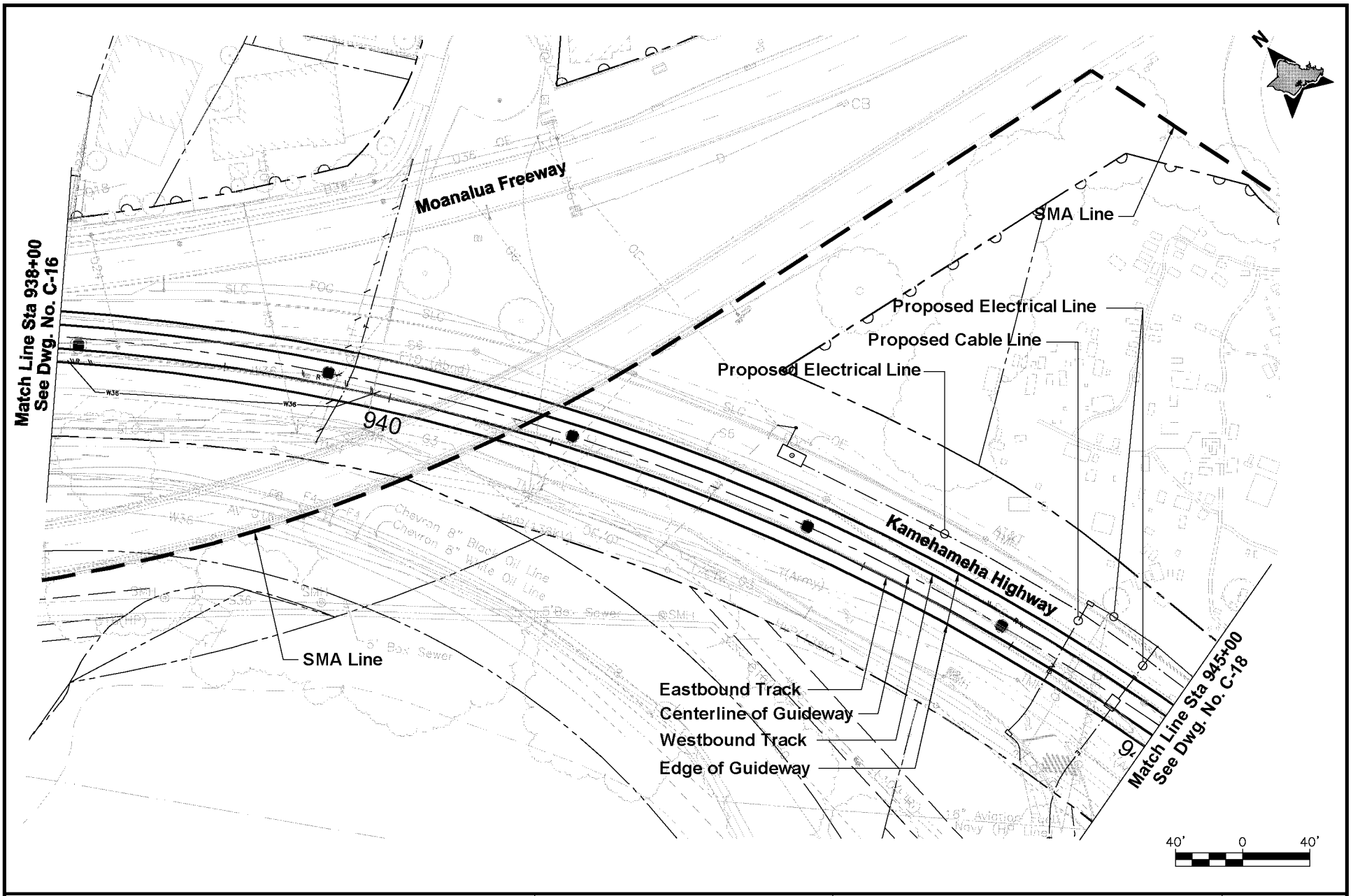
SMA AREA C

PLAN

STA 931+00 TO STA 938+00

Drawing No: **C-16**

Date: 11/06/2009



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

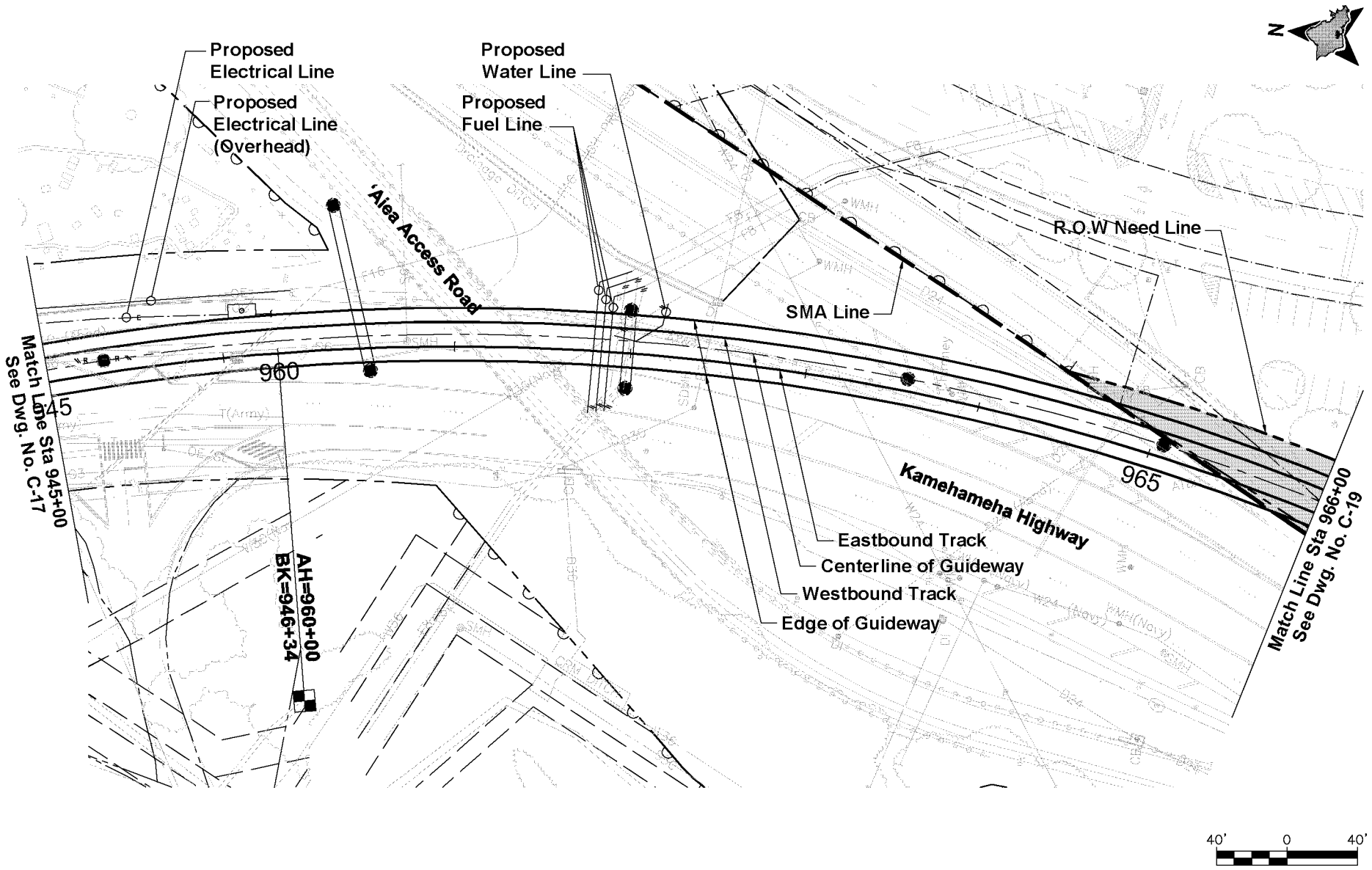
SMA AREA C
PLAN

STA 938+00 TO STA 945+00

Drawing No:
C-17

Date:
11/06/2009

AR00078049



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA C

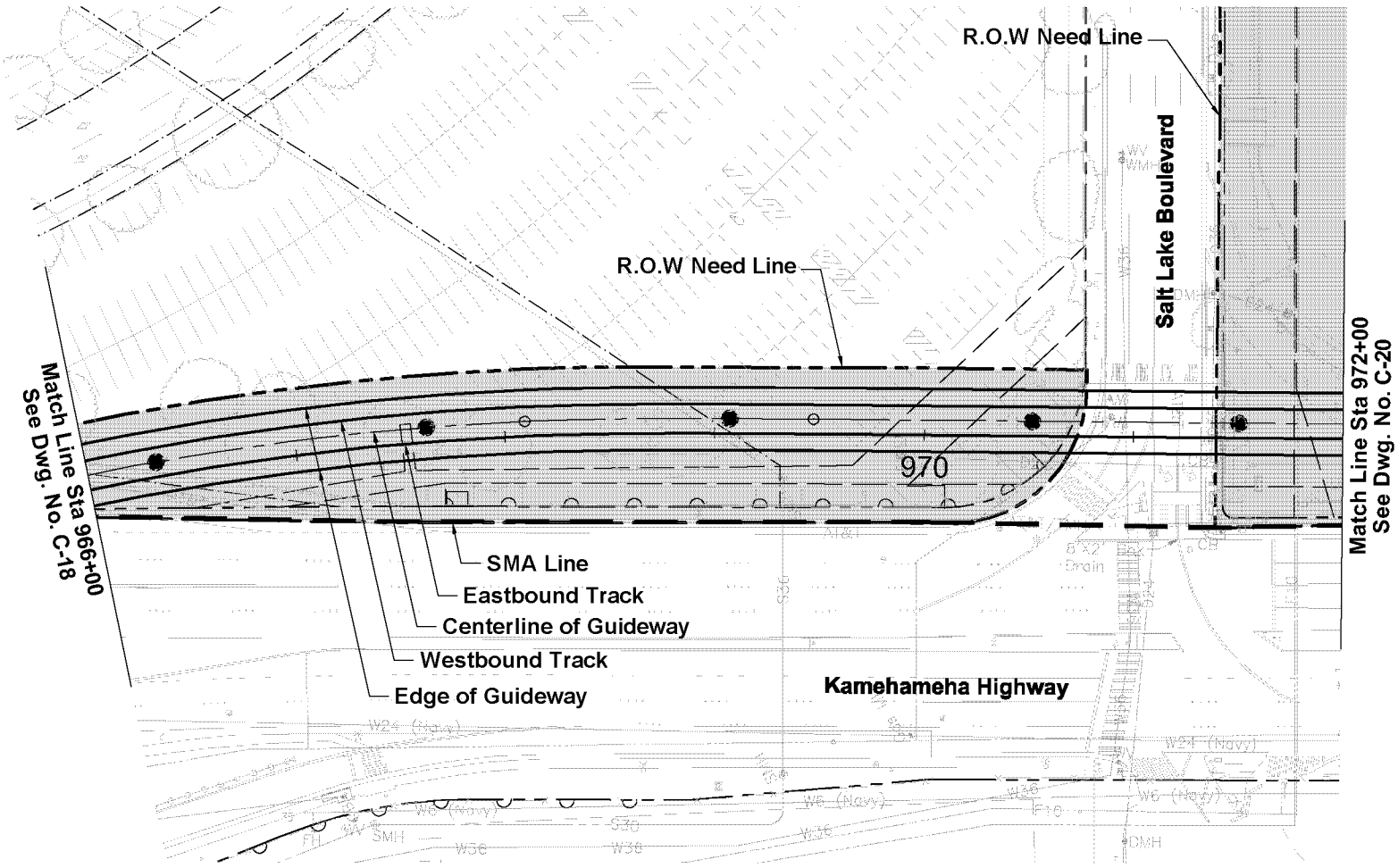
PLAN

STA 945+00 TO STA 966+00

Drawing No: **C-18**

Date: 11/06/2009

AR00078050



40' 0 40'

CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA C

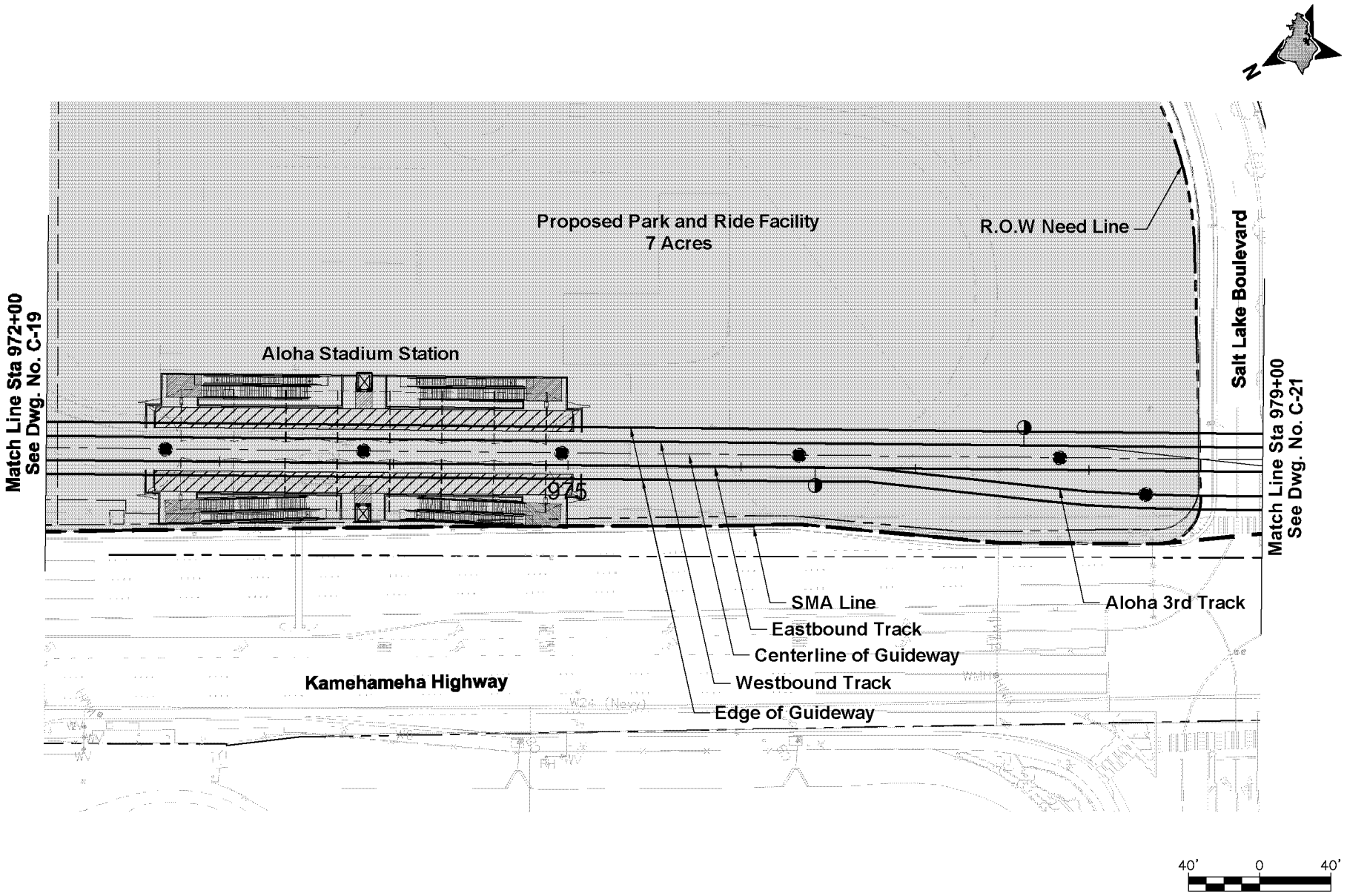
PLAN

STA 966+00 TO STA 972+00

Drawing No: **C-19**

Date: 11/06/2009

AR00078051



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

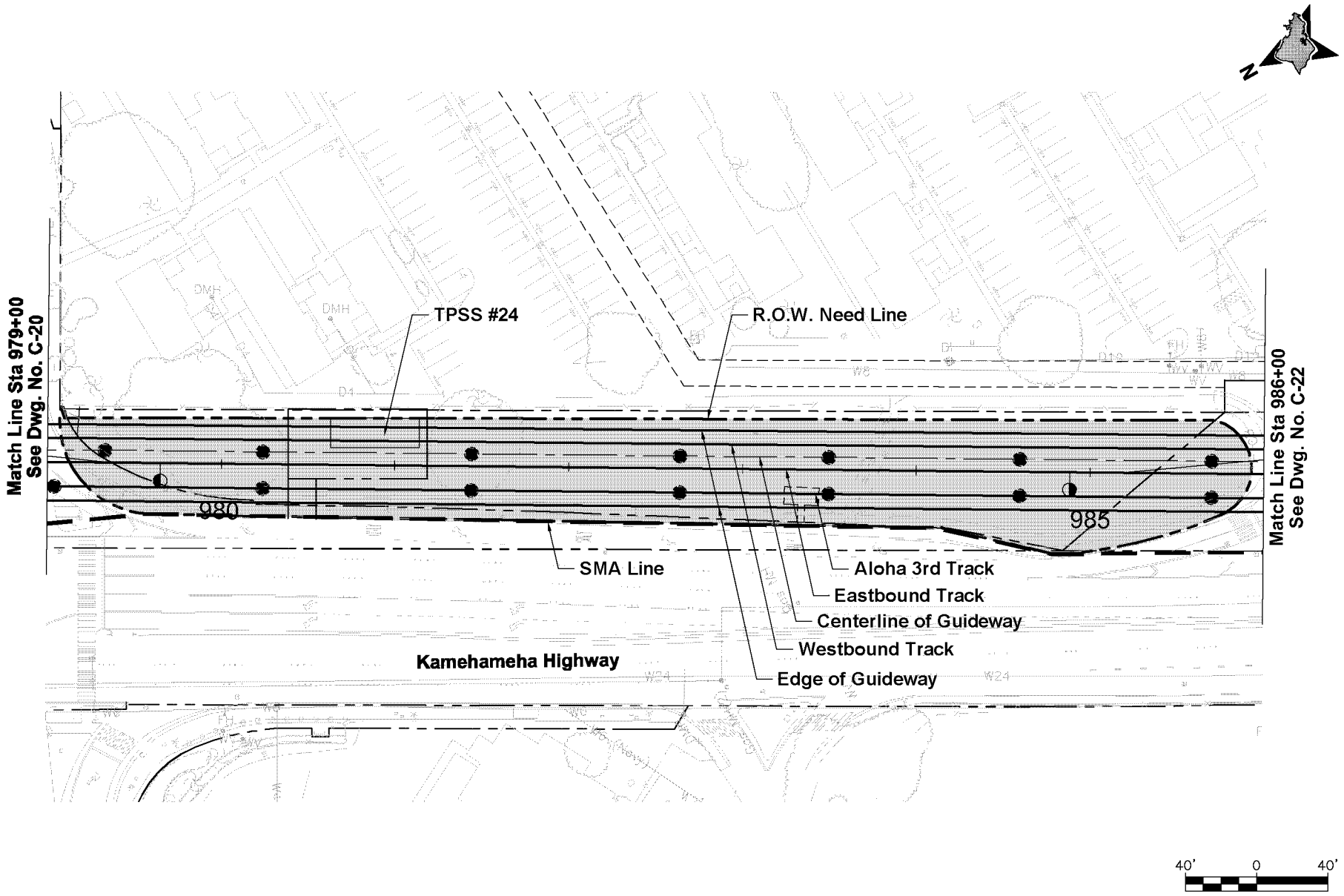
SMA AREA C
PLAN

STA 972+00 TO STA 979+00

Drawing No:
C-20

Date:
11/06/2009

AR00078052



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA C

PLAN

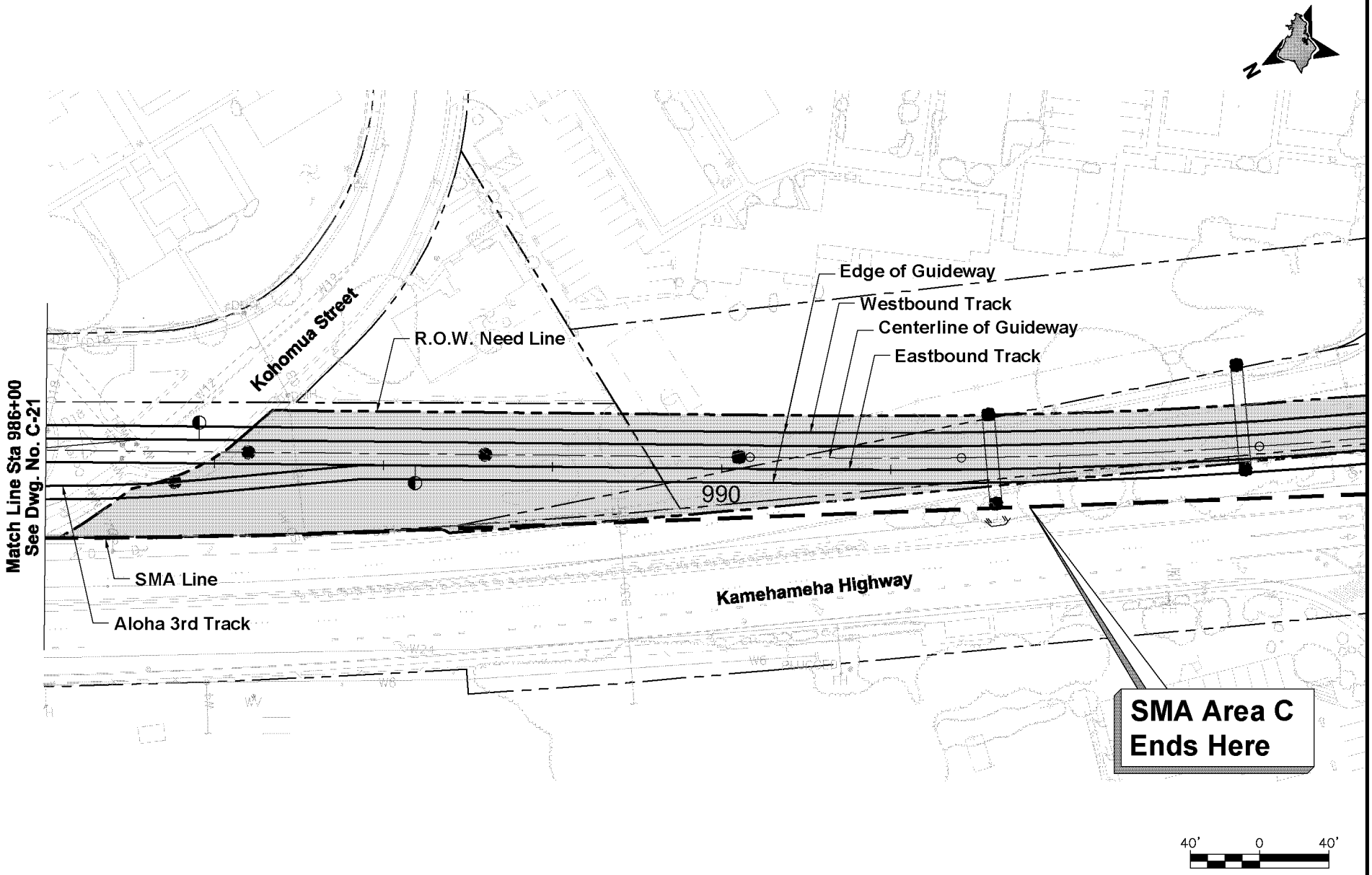
STA 979+00 TO STA 986+00

Drawing No:

C-21

Date:
11/06/2009

AR00078053



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

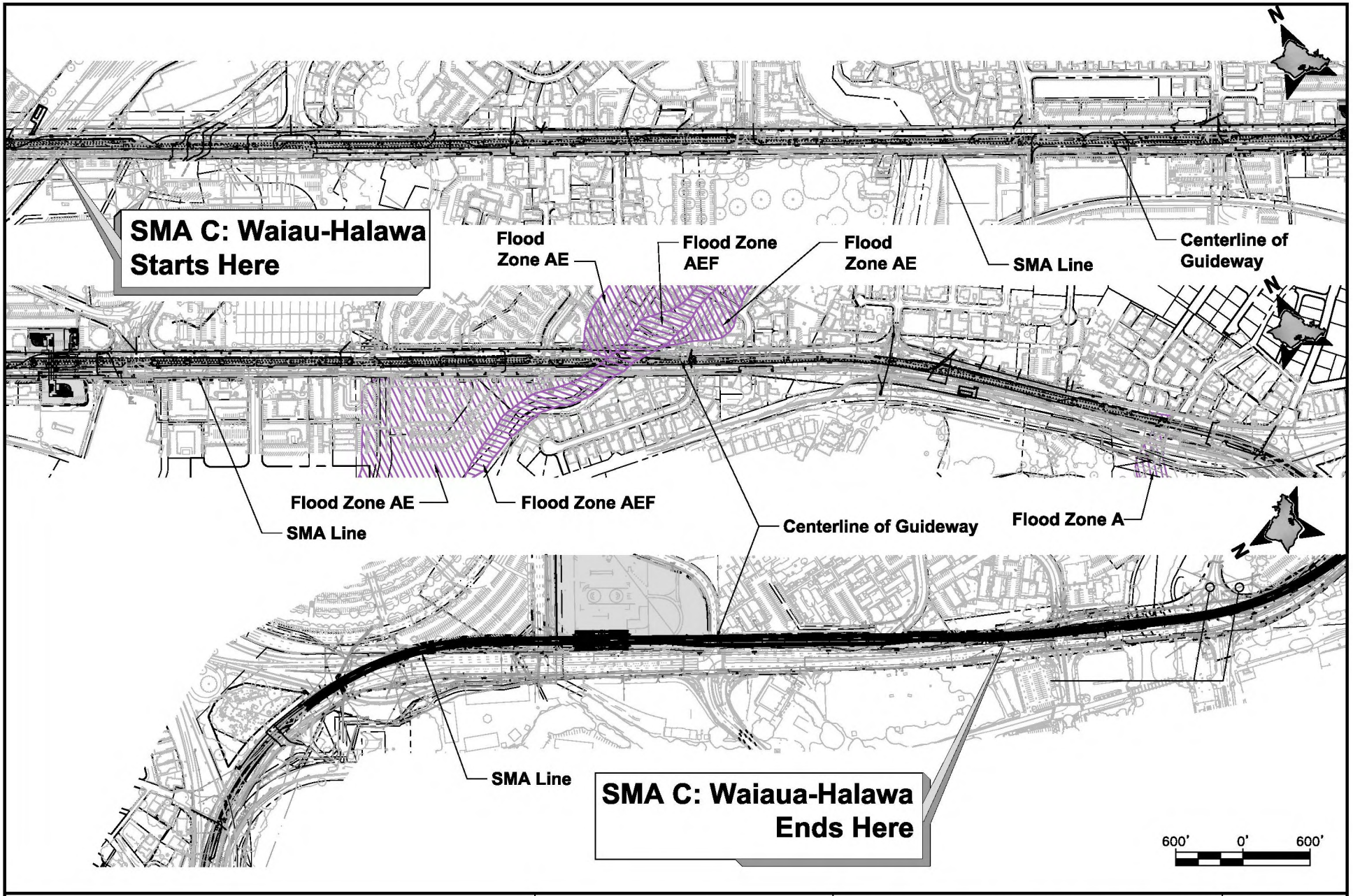
SMA AREA C
PLAN

STA 986+00 TO STA 993+00

Drawing No:

C-22

Date:
11/06/2009



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

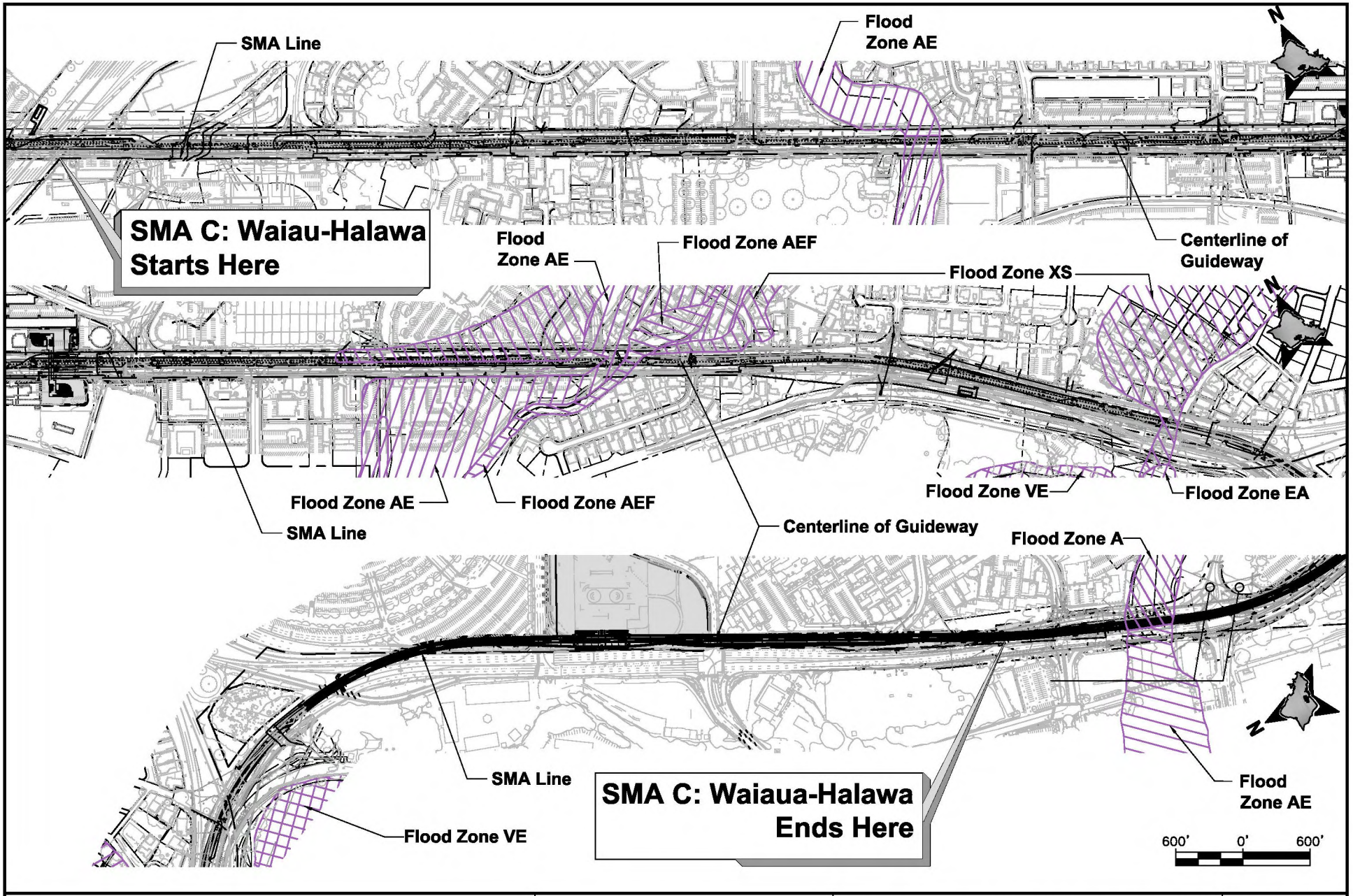
SPECIAL MANAGEMENT AREA LINES

SMA AREA C PLAN

STA 826+00 TO STA 993+00

Drawing No: **C-FZ**

Date: 11/06/2009



CITY & COUNTY OF HONOLULU
DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

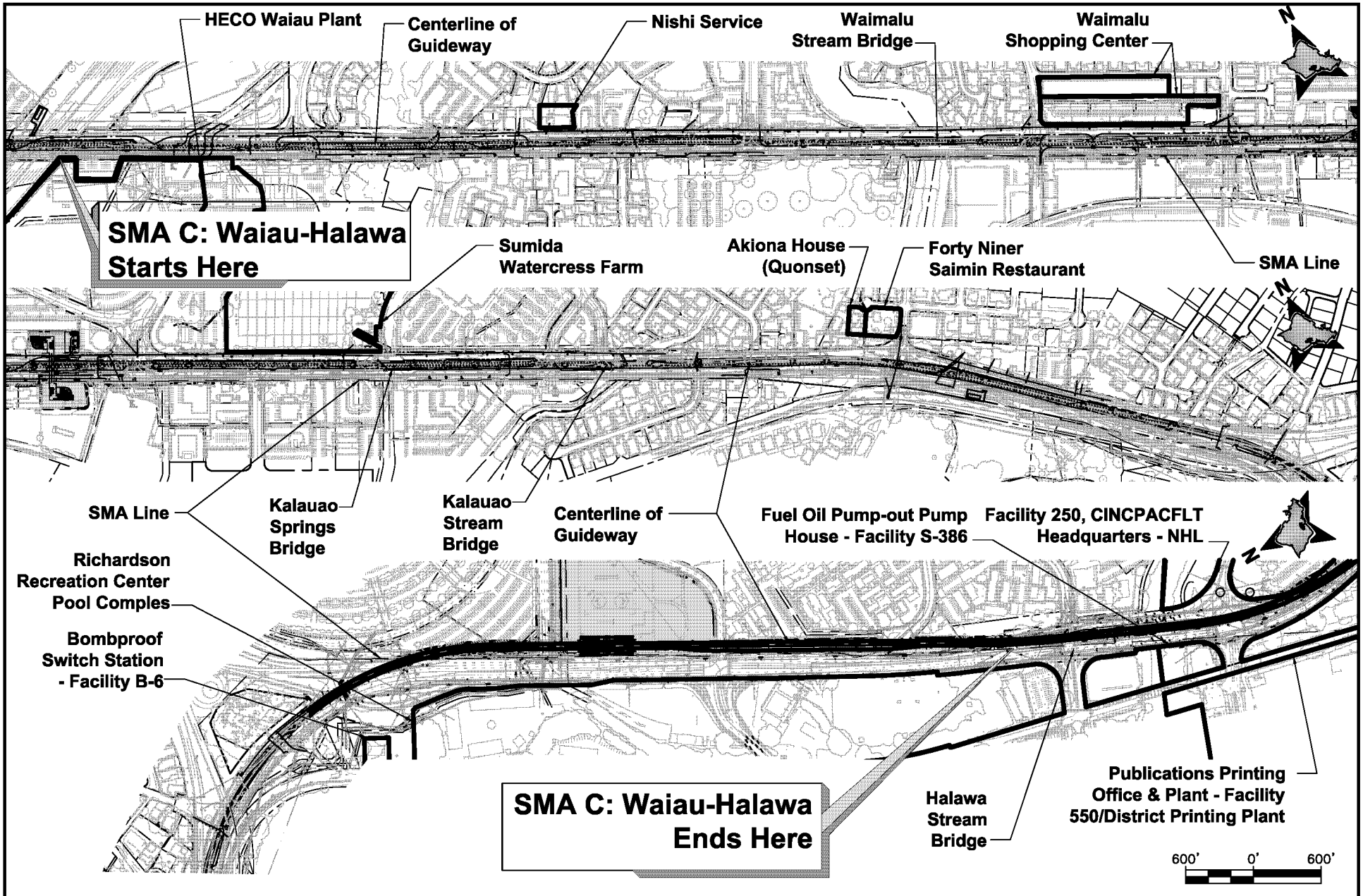
HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES
SMA AREA C
FLOOD ZONES 2011
STA 826+00 TO STA 993+00

Drawing No: **C-FZ2**

Date: 10/04/10

AR00078056



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA C

PLAN

STA 826+00 TO STA 993+00

Drawing No: **C-HR**

Date: 11/06/2009

Attachment G:

Preliminary Engineering Plan/Profile Sheets, SMA D: Ke'ehi Lagoon Beach Park

These plan and profile sheets are excerpts from:

City and County of Honolulu
Department of Transportation Services
Rapid Transit Division (RTD)

Airport Segment – Conformed October 1, 2010

Prepared for: HHCTCP

Prepared by: Parsons Brinckerhoff, General Engineering Consultant (GEC)

AR00078058

City and County of Honolulu
Department of Transportation Services

Rapid Transit Division (RTD)

AIRPORT GUIDEWAY & UTILITIES

CONTRACT SV-430

October 1, 2010
Prepared for:
HHCTCP

Prepared by:
Parsons Brinckerhoff
General Engineering Consultant (GEC)

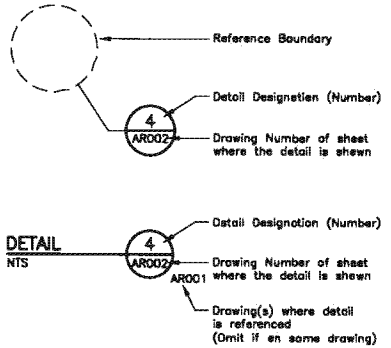
AR00078059

GENERAL NOTES

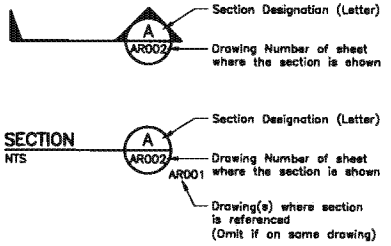
1. "EB Track" denotes the centerline of the Eastbound Track. "WB Track" denotes centerline of the Westbound Track.
2. Origin of Coordinates: Hawaii State Plane Coordinate Grid System, Zone III with the North American Datum of 83 High Accuracy Reference Network (NAD83 HARN).
3. Elevations shown on these plans are reference to Mean Sea Level (MSL).
4. The proposed WB Track alignment stationing equals to the proposed EB Track alignment stationing in all parallel tangent sections. Station equations are given at the endpoint of each westbound curve.
5. The top of rail profile shown represents the elevation of the top of low running rail.
6. Degree of Curve (Dc) values are expressed in arc definition.
7. All track points, except PI's are at centerline of proposed track, unless noted otherwise.
8. Underground facilities, poles, structures, and utilities have been plotted from available surveys and records. Their locations must be considered approximate only. There may be others, the existence of which is at present unknown. Verification of all the locations, shown or not shown, will be the responsibility of the contractor.
9. The existing conditions shown hereon are based on LIDAR data collected in September and October of 2007, supplemental ground surveys were performed between September of 2007 and December of 2008, and record information from various design projects either constructed, under construction or proposed. The selected design-build contractor is responsible for verifying existing conditions prior to supplying advanced design documents to the RTD.
10. Contact the Hawaii Department of Transportation (HDOT) and/or the City and County of Honolulu for additional plan sheet details not included in the Standard Details Summary and Standard Plans Summary plan sheets.
11. For Survey Control data see RTD Standard drawings.

SYMBOLS

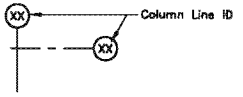
DETAILS



SECTIONS



COLUMN LINE GRID INDICATOR



HATCH

Station Platform

SPECIAL TERMS

Makai	Ocean
Mauka	Mountain

231° 41' 16" South Azimuth

GENERAL SYMBOLS

&	And
@	At
#	Number
ø	Diameter
%	Percent
=	Equal to
>	Greater Than
<	Less Than
≥	Greater Than or Equal To
≤	Less Than or Equal To

CIVIL SYMBOLS

- Chain Link Fence
- CB10 — Track Curve Name
- Point of Intersection
- PVC
- Point of Switch
- SB10-B — Track Spiral Name
- Station Equation
- XX-X — Roadway Curve Number
- CUT — Limit of Cut Slope (Top of Slope)
- FILL — Limit of Fill Slope (Toe of Slope)
- Sawcut Line
- Wetland Boundary
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

ABBREVIATIONS

Aggr	Aggregate
Ahd, Ah	Ahead
AH	Ahead
Align	Alignment
Approx	Approximate
℄	Baseline
Bk, BK	Back
BT	Back Tangent
Bldg	Building
BVC	Begin Vertical Curve
BVCE	Begin Vertical Curve Elevation
BVCS	Begin Vertical Curve Station
℄	Centerline
CB	Catch Basin
CBMN	Catch Basin Manhole
CCTV	Closed Circuit Television Camera
Comm	Communications
Conc	Concrete
Const	Construction
CS	Curve to Spiral
DF	Direct Fixation
DI	Drainage Inlet
Dia	Diameter
Δ	Delta
DMH	Drainage Manhole
DS	Downspout
Drg	Drawing
E	East
Ea	Actual Superelevation
Eu	Unbalanced Elevation
EB	Eastbound
EG	Existing Ground
El	Elevation
Elev	Elevation
Esmt	Easement
EVC	End Vertical Curve
EVCE	End Vertical Curve Elevation
EVCS	End Vertical Curve Station
Exist	Existing
FA	Fire Alarm
FEIS	Final Environmental Impact Statement
FG	Finish Grade
Fin	Finish, Finished
FOC	Face of Curb
Ft, ft	Foot, Feet
GB	Grade Break
GBS	Gap Breaker Station
GDI	Grated Drop Inlet
Gnd	Ground
H, Horiz	Horizontal
HWY	Highway
kV	Kilovolt
Jt(s)	Joint(s)
L	Length
Lc	Length of Curve
LH, L.H.	Left Hand
LIDAR	Light Detection and Ranging
Ls	Length of Spiral
LT	Left
LVC	Length of Vertical Curve
Max	Maximum
Mech	Mechanical
Min	Minimum
MHN	Manhole, Negative
MHP	Manhole, Positive
MPH	Miles Per Hour
N	North
N/A	Not Applicable
NB	Northbound
NIC	Not in Contract
N.I.C.	Not in Contract
No.	Number
OD	Outside Diameter
OH	Overhead
PB	Pullbox
PC	Point of Curve
PI	Point of Intersection
PITO	Point of Intersection of Turnout
POB	Point of Beginning
POC	Point on Curve
POE	Point of Ending
POT	Point on Tangent
POVC	Point on Vertical Curve
POVT	Point on Vertical Tangent
Prop	Proposed
PS	Point of Switch
PSI	Pounds Per Square Inch
PT	Point of Tangent
PVC	Point of Vertical Curvature Poly Vinyl Chloride
PVI	Point of Vertical Intersection
PVT	Point of Vertical Tangency
R	Radius
Reinf	Reinforce, Reinforcing
RH, R.H.	Right Hand
Rm	Room
ROW	Right-of-Way
RPM	Revolutions Per Minute
RT	Right
S	South
SB	Southbound
SC	Spiral to Curve
SDMH	Storm Drain Manhole
Shldr	Shoulder
Sht	Sheet
Sig	Signal
Sq	Square
St	Street
ST	Spiral to Tangent
Sta	Station
T	Tangent Distance
T&B	Top & Bottom
TCCR	Train Control & Communications Room
T.O.	Turnout
TOR	Top of Rail
TPSS	Traction Power Substation
TS	Tangent to Spiral
Typ	Typical
UPS	Uninterruptible Power Supply
UG	Underground
USACE	United States Army Corps of Engineers
V	Speed, Vertical
Vert	Vertical
W	West
WB	Westbound
w/	With

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: N/A
Drawn: T Cochran
Checked: J Davis
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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AIRPORT GUIDEWAY & UTILITIES

GENERAL CIVIL NOTES, SYMBOLS, AND ABBREVIATIONS

Contract No.: SV-430
CADD File: AP-801-CG001
Drawing No: CG001 Rev.
Scale: N/A
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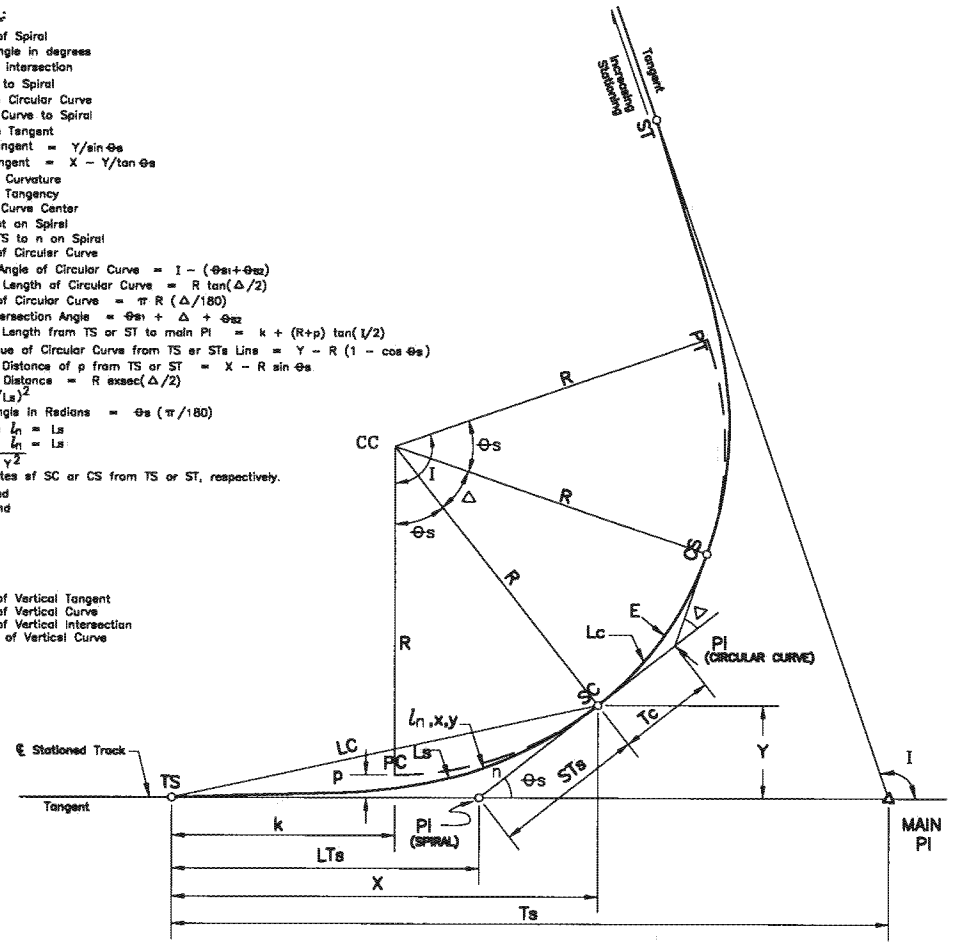
TRACK ALIGNMENT ABBREVIATIONS:

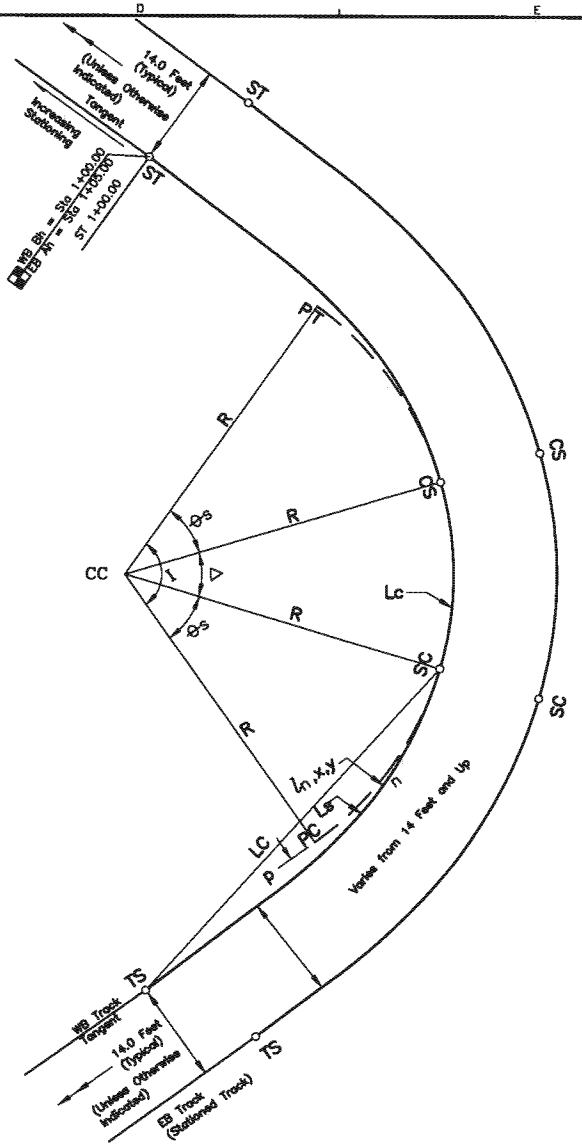
HORIZONTAL:

- Ls = Length of Spiral
- θs = Spiral Angle in degrees
- PI = Point of Intersection
- TS = Tangent to Spiral
- SC = Spiral to Circular Curve
- CS = Circular Curve to Spiral
- ST = Spiral to Tangent
- STs = Short Tangent = $Y/\sin\theta s$
- LTs = Long Tangent = $X - Y/\tan\theta s$
- PC = Point of Curvature
- PT = Point of Tangency
- CC = Circular Curve Center
- n = any Point on Spiral
- l_n = Length TS to n on Spiral
- R = Radius of Circular Curve
- Δ = Central Angle of Circular Curve = $I - (\theta s_1 + \theta s_2)$
- Tc = Tangent Length of Circular Curve = $R \tan(\Delta/2)$
- Lc = Length of Circular Curve = $\pi R (\Delta/180)$
- I = Total Intersection Angle = $\theta s_1 + \Delta + \theta s_2$
- Ts = Tangent Length from TS or ST to main PI = $k + (R+p) \tan(I/2)$
- p = Shift Value of Circular Curve from TS or STs Line = $Y - R(1 - \cos\theta s)$
- k = Tangent Distance of p from TS or ST = $X - R \sin\theta s$
- E = External Distance = $R \operatorname{exsec}(\Delta/2)$
- δn = $\delta s (l_n/Ls)^2$
- δs = Spiral Angle in Radians = $\theta s (\pi/180)$
- X = x, where l_n = Ls
- Y = y, where l_n = Ls
- LC = $\sqrt{X^2 + Y^2}$
- X & Y = Coordinates of SC or CS from TS or ST, respectively.
- EB = Eastbound
- WB = Westbound

VERTICAL:

- PVT = Point of Vertical Tangent
- PVC = Point of Vertical Curve
- PVI = Point of Vertical Intersection
- LVC = Length of Vertical Curve





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Checked: E Libermen
Approved: A Borst
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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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AIRPORT GUIDEWAY & UTILITIES

TRACK ALIGNMENT ABBREVIATIONS

Contract No.: SV-430
CADD File: AP-B01-CG002
Drawing No: CG002 Rev.
Scale: N/A
Page No. 23 of 279

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ROADWAY CONSTRUCTION NOTES:

1. Construct Concrete Curb.
2. Construct Concrete Curb and Gutter.
3. Construct Concrete Sidewalk.
4. Construct Reinforced Concrete Driveway.
5. Construct Concrete Curb Ramp.
6. Install Chain Link Fence with Toprail.
7. Install Chain Link Fence without Toprail.
8. Install Double Swing Chain Link Drive Gate.
9. Construct Concrete Barrier Rail.
10. Install Guardrail.
11. Install Guardrail End Treatment.
12. Construct Concrete Retaining Wall.
13. Construct PCC Bus Pad.
14. Construct Plantmix Bituminous Surface Overlay.
15. Construct Plantmix Bituminous Pavement.
16. Construct Concrete Median Island Paving.
17. Place Aggregate Base Surface.
18. Construct Gravel Driveway.
19. Construct Concrete Half Barrier Rail.
20. Construct Concrete Pavement.

ROADWAY CONSTRUCTION LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Proposed gravel pavement.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed guideway column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

GENERAL ROADWAY CONSTRUCTION NOTES:

1. See survey control plan sheets for references to horizontal and vertical control datums.
2. See structural plan and profile sheets for proposed guideway column details.
3. See landscaping plan sheets for proposed landscaping details.
4. See ROW plan sheets for proposed ROW details.
5. See utility plan sheets for proposed modifications and/or improvements to existing above and below ground utility systems.
6. See drainage plans sheets for proposed modifications and/or improvements to existing storm drainage facilities and piping.
7. See traffic signal plan sheets for proposed modifications and/or improvements to existing traffic signal systems.
8. See systems site plan sheets for proposed TPSS and GBS details.
9. See track alignment plan and profile for proposed track alignment details.
10. See station plan sheets for proposed station details.

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Checked: B Wordell
Approved: C Shimizu
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HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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ROADWAY CONSTRUCTION NOTES AND LEGEND

Contract No.: SV-430
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Drawing No: CG003
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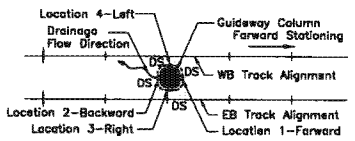
GENERAL DRAINAGE CONSTRUCTION NOTES:

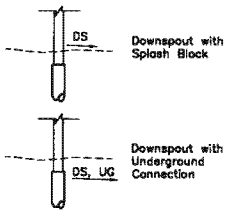
1. See Dwg No. CG001 for General Civil Notes, Symbols, and Abbreviations.
2. See Dwg No. GD101 for Downspout Locations and Discharge Conditions.
3. See Utility Relocation Plans for Proposed Drainage Structures Shown in Guideway Drainage Plans.
4. See Track Alignment Plan and Profile Sheets for Proposed Track Alignment Information.
5. See System Site Plans for System Site Information.
6. See Structural Plan and Profile Sheets for Proposed Guideway Details.
7. See Landscaping Plans for Proposed Landscaping Details.
8. All Downspouts within Guideway Columns shall be 8" Minimum Nominal Pipe Size.

DRAINAGE CONSTRUCTION LEGEND:

LEGEND:



DOWNSPOUT(DS) LOCATION OPTIONS



PROFILE

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HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
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AIRPORT GUIDEWAY & UTILITIES

DRAINAGE NOTES AND LEGEND

Contract No.: SV-430
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Drawing No: CG004 Rev.
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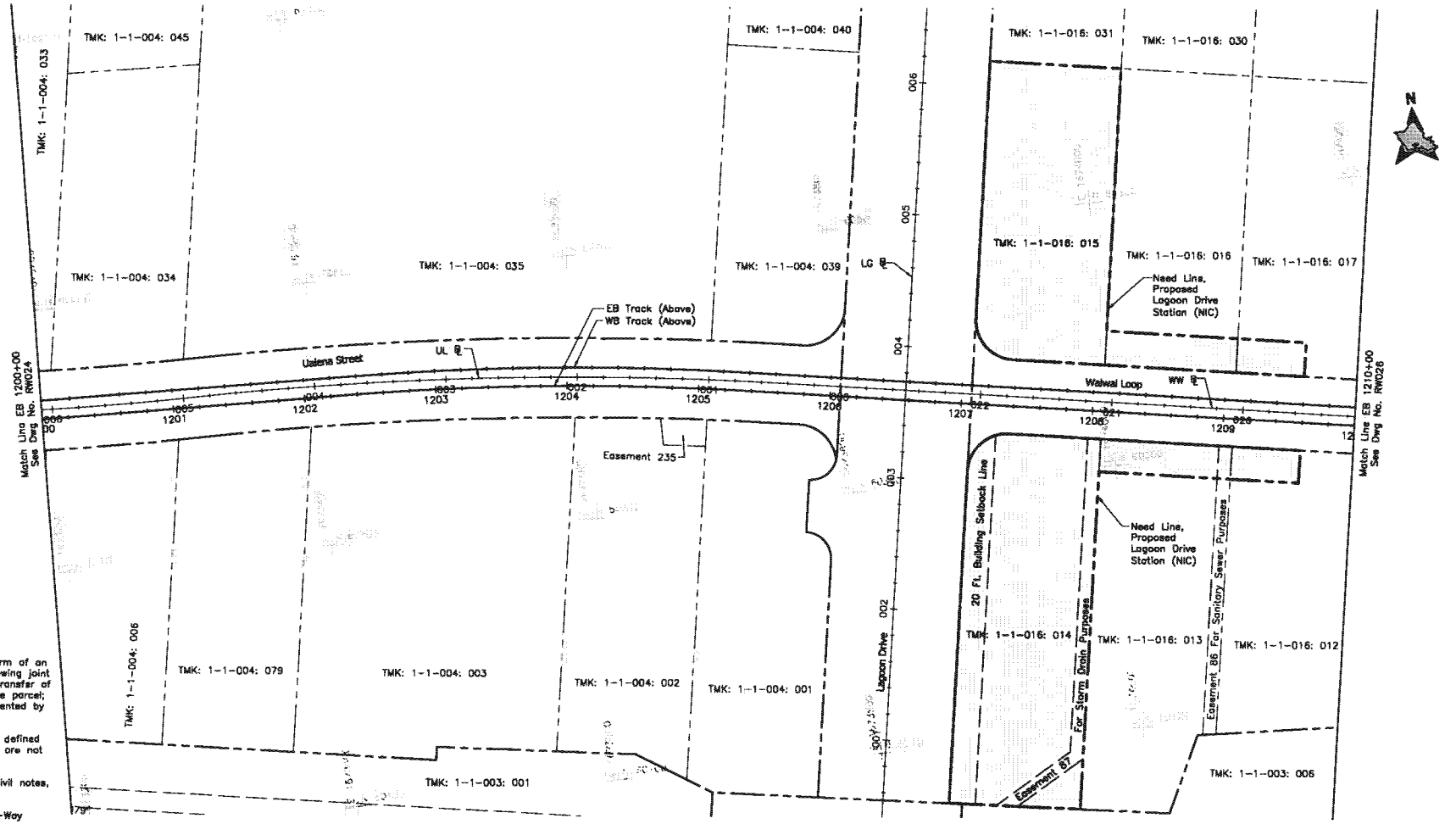

NOTES:

1. ROW acquisition may be in the form of an aerial easement; an easement allowing joint use; subdivision of property with transfer of title; transfer of title for the entire parcel; or some other form to be documented by Land Court registration.
2. Construction easements should be defined during the final design phase and are not reflected on plans.
3. See Dwg No. CC001 for general civil notes, legend and abbreviations.
4. See Dwg No. RW003 for Right-of-Way legend.

Tax Map Key Number	Parcel Acquisitions	House Number	Street Name	Land Use
1-1-016:012	Partial	2620	Waiwai Lp	Industrial
1-1-016:013	Partial	2612	Waiwai Lp	Industrial
1-1-016:014	Full	2604	Waiwai Lp	Industrial
1-1-016:014	Full	479	Lagoon Dr	Industrial

Tax Map Key Number	Parcel Acquisitions	House Number	Street Name	Land Use
1-1-016:015	Full	515	Waiwai Lp	Industrial
1-1-016:016	Partial	2613	Waiwai Lp	Industrial
1-1-016:017	Partial	2621	Waiwai Lp	Industrial

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

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Drawn: L Karamatsu
Checked: K Weng
Approved: C Shimizu
Date: 10-01-10

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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AIRPORT GUIDEWAY & UTILITIES

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 1200+00 TO EB 1210+00

Contract No.:
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Drawing No: RW025 Rev.
Scale: 1"=40'
Page No. 48 of 279

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NOTES:

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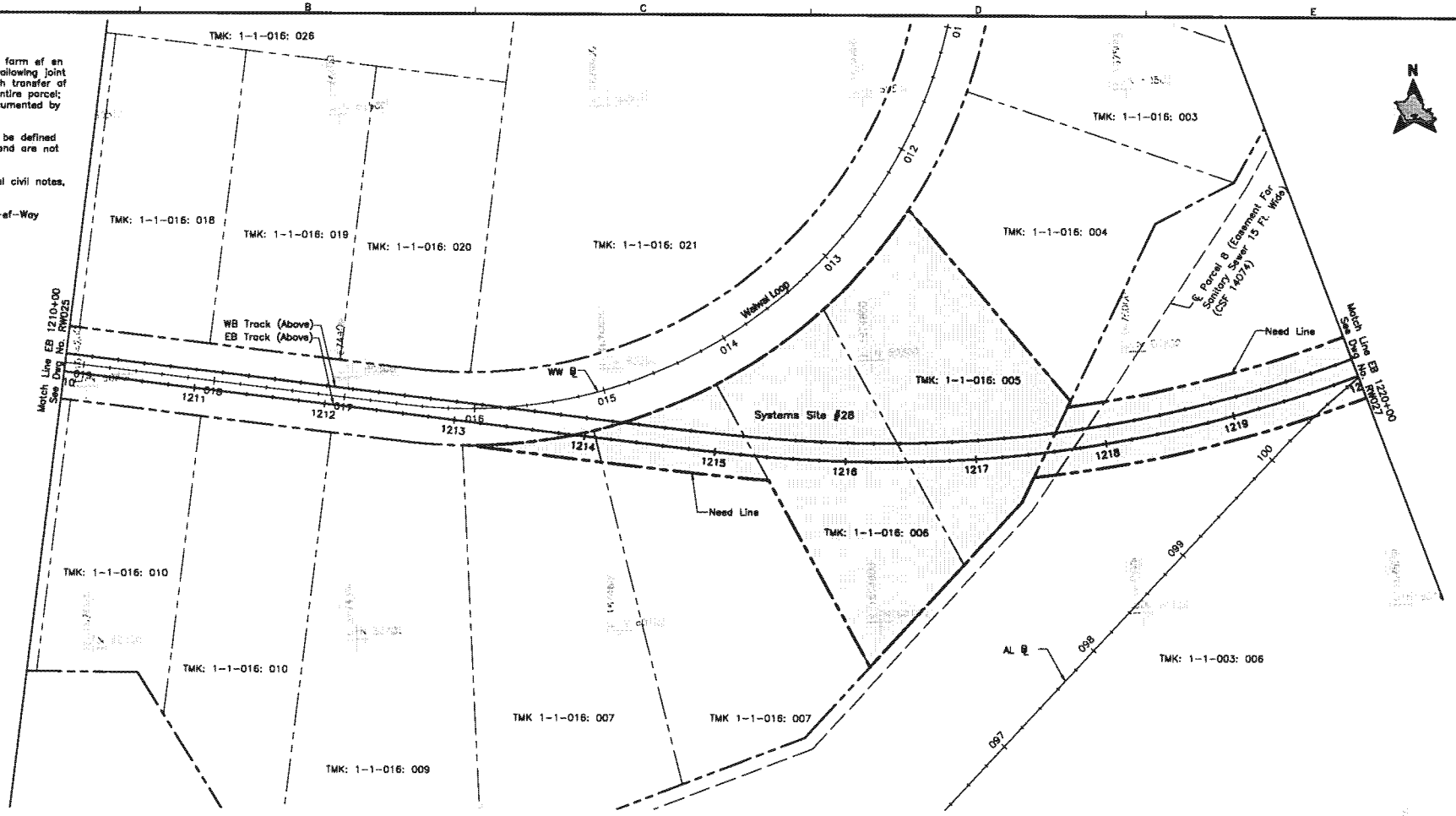
3. See Dwg No. CG001 for general civil notes, legend and abbreviations.
4. See Dwg No. RW003 for Right-of-Way legend.



Tax Map Key Number	Parcel Acquisitions	House Number	Street Name	Land Use
1-1-003:006	Partial	465	Lagoon Dr	Public
1-1-016:005	Full	2678	Waiwai Lp	Industrial
1-1-016:006	Full	2668	Waiwai Lp	Industrial
1-1-016:007	Partial	2656, 2660	Waiwai Lp	Industrial

40' 0 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: L Karamatsu
Drawn: L Karamatsu
Checked: K Wong
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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AIRPORT GUIDEWAY & UTILITIES

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 1210+00 TO EB 1220+00

Contract No.:
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Drawing No: RW026 Rev.
Scale: 1"=40'
Page No. 49 of 279

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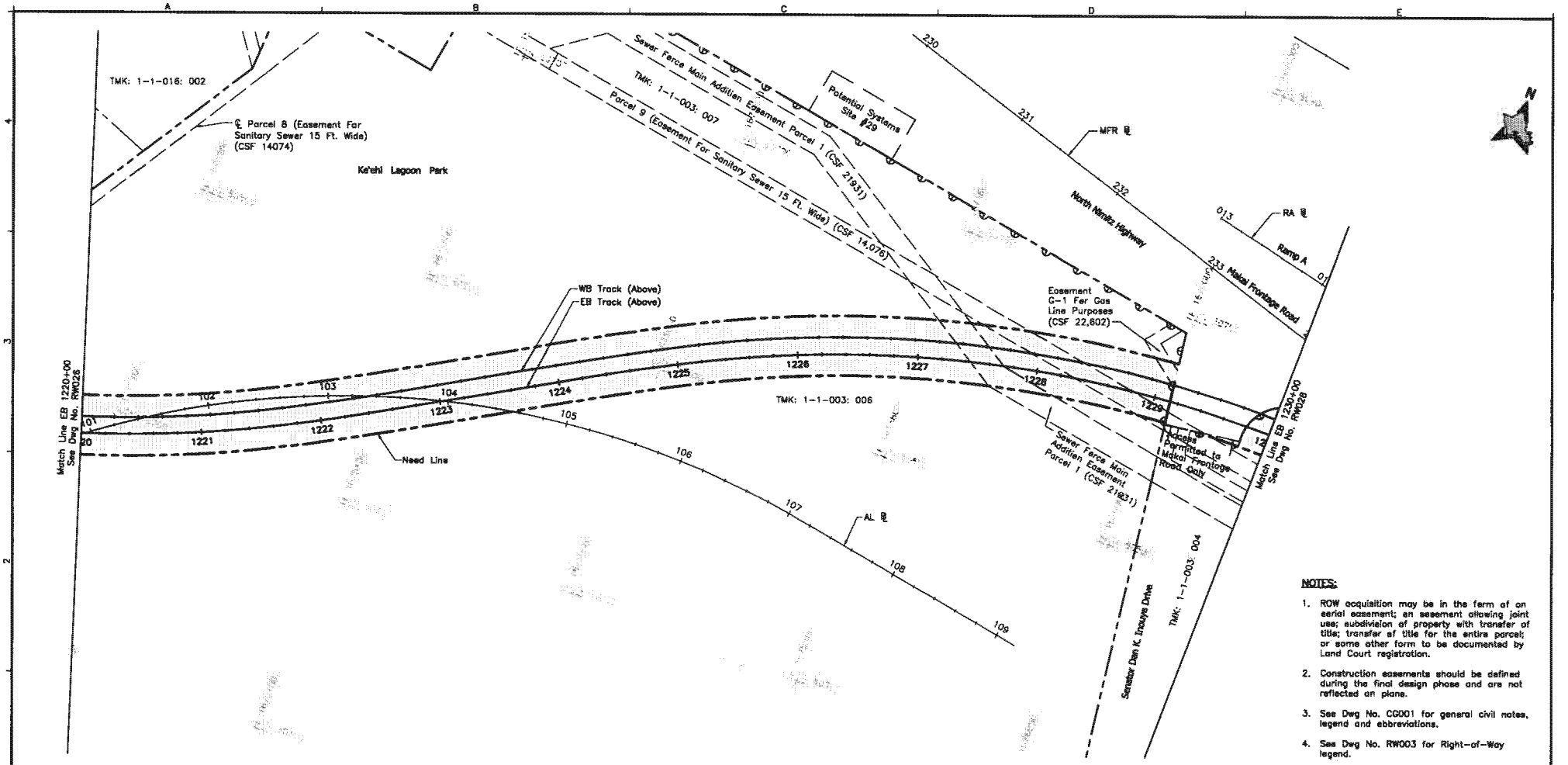

NOTES:

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3. See Dwg No. CG001 for general civil notes, legend and abbreviations.
4. See Dwg No. RW003 for Right-of-Way legend.

Tax Map Key Number	Parcel Acquisitions	House Number	Street Name	Land Use
1-1-003:004	Partial	2685	North Nimitz Hwy	Public
1-1-003:006	Partial	465	Lagoon Dr	Public
1-1-003:007	Partial	–	–	Public

40' 0 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: L Karamatsu
Drawn: L Karamatsu
Checked: K Wong
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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AIRPORT GUIDEWAY & UTILITIES

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 1220+00 TO EB 1230+00

Contract No.:
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Drawing No: RW027 Rev.
Scale: 1"=40'
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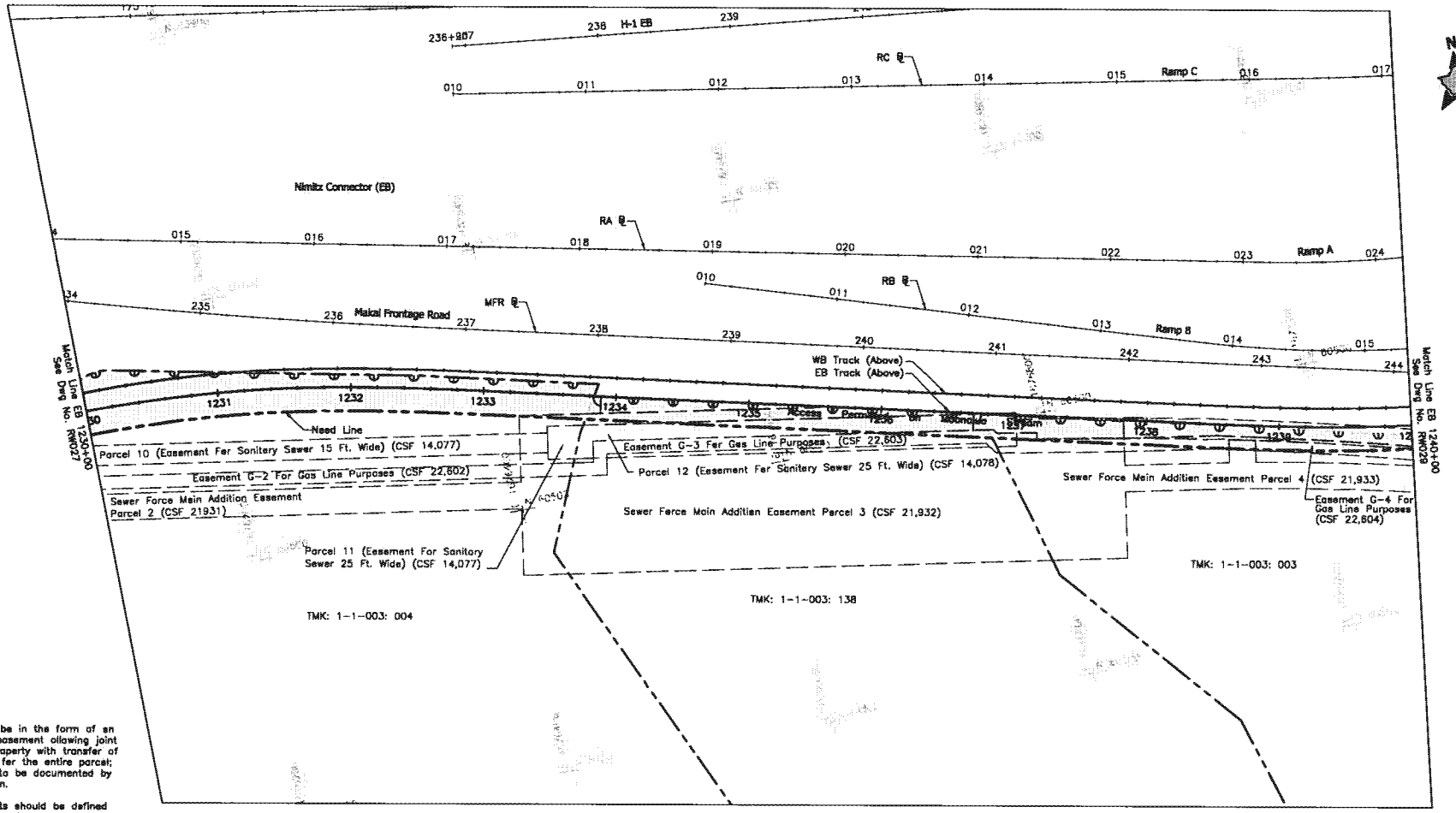

NOTES:

1. ROW acquisition may be in the form of an aerial easement; an easement allowing joint use; subdivision of property with transfer of title; transfer of title for the entire parcel; or some other form to be documented by Land Court registration.
2. Construction easements should be defined during the final design phase and are not reflected on plans.
3. See Dwg No. CG001 for general civil notes, legend and abbreviations.
4. See Dwg No. RW003 for Right-of-Way legend.

Tax Map Key Number	Parcel Acquisitions	House Number	Street Name	Land Use
1-1-003:003	Partial	–	–	Public
1-1-003:004	Partial	2685	North Nimitz Hwy	Public
1-1-003:138	Partial	–	–	Public

40' 0 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

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Drawn: L Karamatsu
Checked: K Weng
Approved: C Shimizu
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HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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AIRPORT GUIDEWAY & UTILITIES

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 1230+00 TO EB 1240+00

Contract No.:
CADD File: AP-804-RW028
Drawing No: RW028 Rev.
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Page No. 51 of 279

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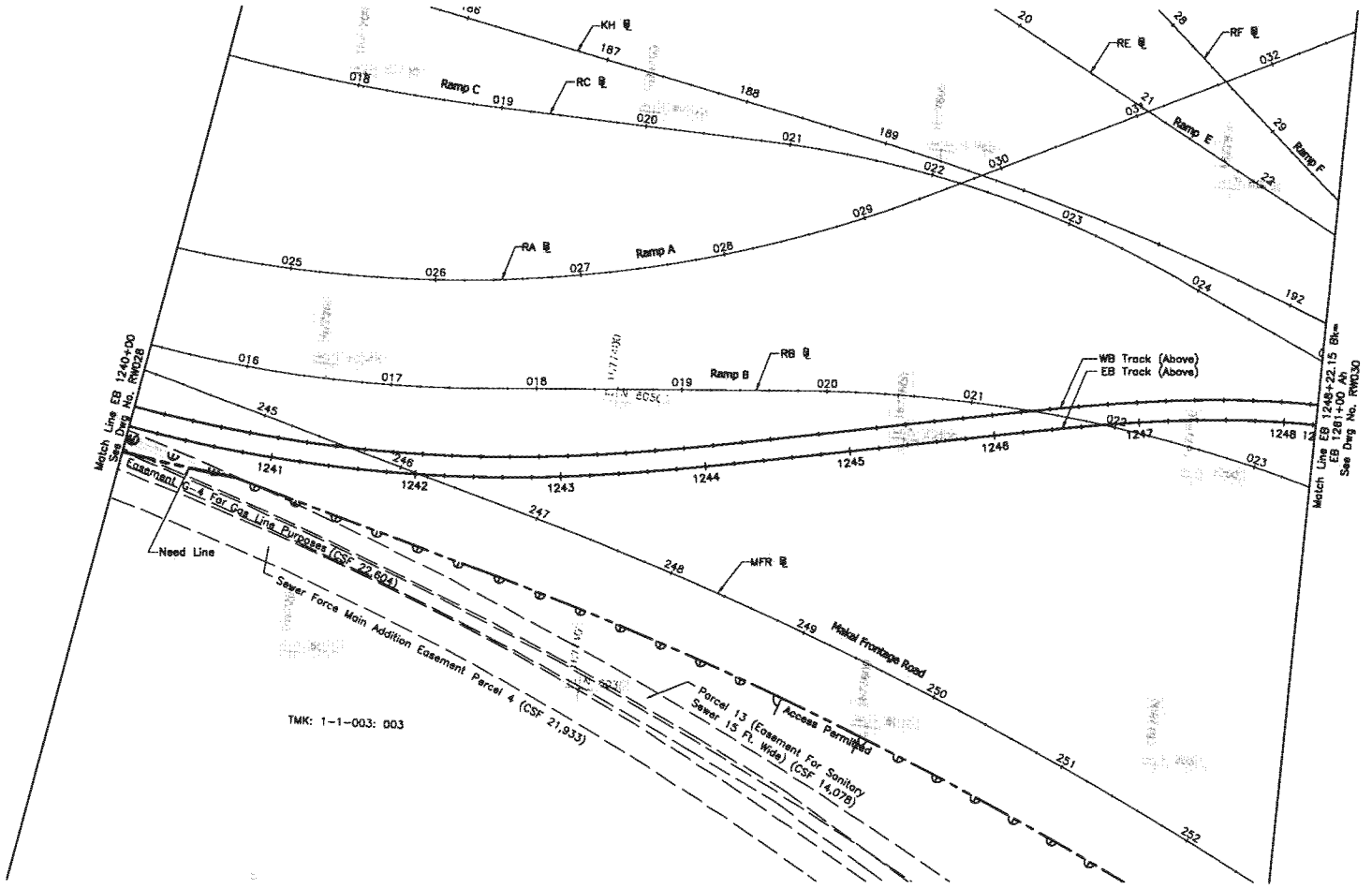

NOTES:

1. ROW acquisition may be in the form of an aerial easement; an easement allowing joint use; subdivision of property with transfer of title; transfer of title for the entire parcel; or some other form to be documented by Land Court registration.
2. Construction easements should be defined during the final design phase and are not reflected on plans.
3. See Dwg No. CG001 for general civil notes, legend and abbreviations.
4. See Dwg No. RW003 for Right-of-Way legend.

Tax Map Key Number	Parcel Acquisitions	House Number	Street Name	Land Use
1-1-003:003	Partial	–	–	Public

40' 0 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: L Karamatsu
Drawn: L Karamatsu
Checked: K Wong
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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AIRPORT GUIDEWAY & UTILITIES

EXISTING RIGHT-OF-WAY & PROPOSED ACQUISITION TABULATIONS

EB 1240+00 TO EB 1248+19.54 Bk

Contract No.:
CADD File: AP-B04-RW029
Drawing No: RW029 Rev.
Scale: 1"=40'
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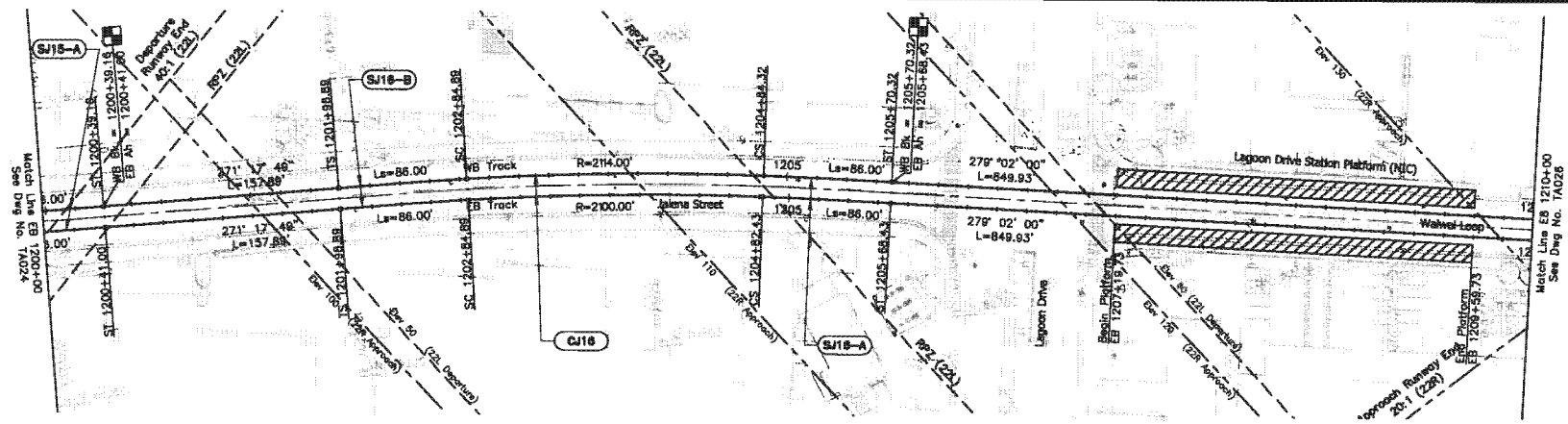

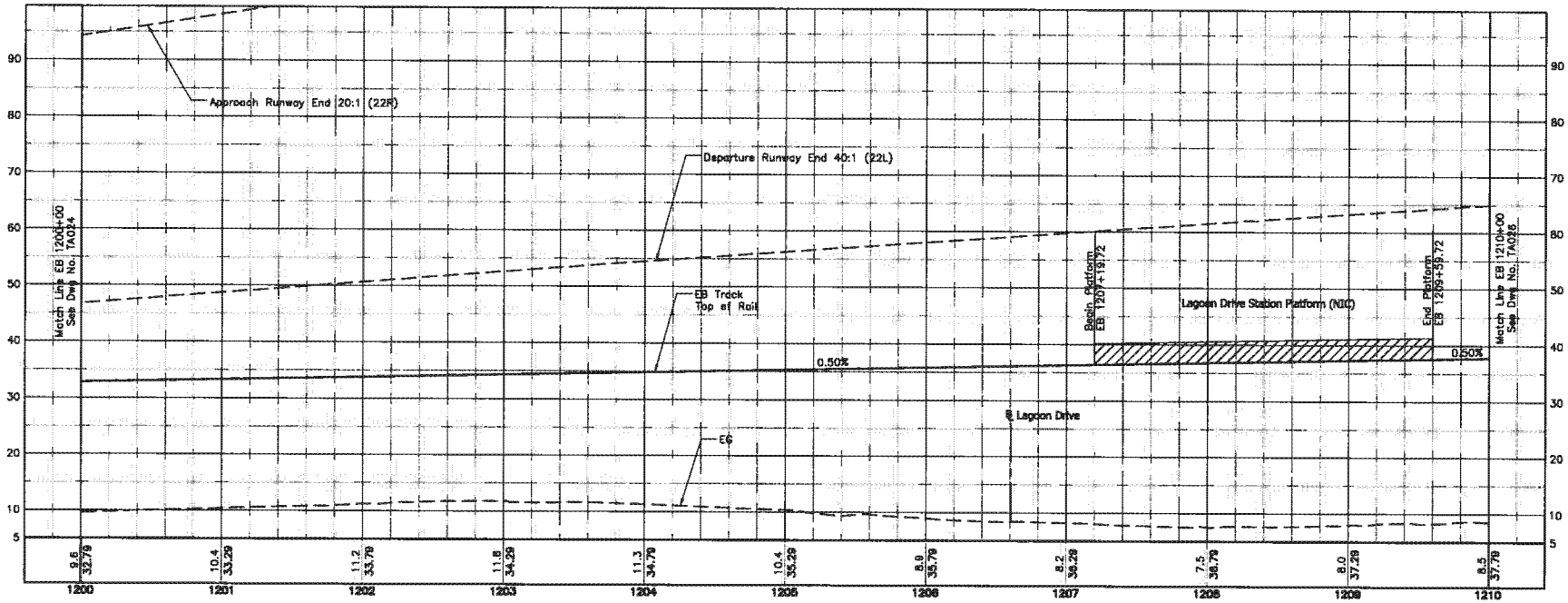

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NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Track Alignment Abbreviations, see Dwg No. CG002.
3. For Station information, refer to Structural Plans.
4. For Systems Site information, refer to Systems Site Plans.

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

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Drawn: R Necion
Checked: E Liberman
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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AIRPORT GUIDEWAY AND UTILITIES

TRACK ALIGNMENT PLAN & PROFILE

EB 1200+00 TO EB 1210+00

Contract No.: SV-430
CADD File: AP-B05-TA025
Drawing No: TA025 Rev.
Scale: 1"=40' H, 1"=10' V
Page No. 77 of 279

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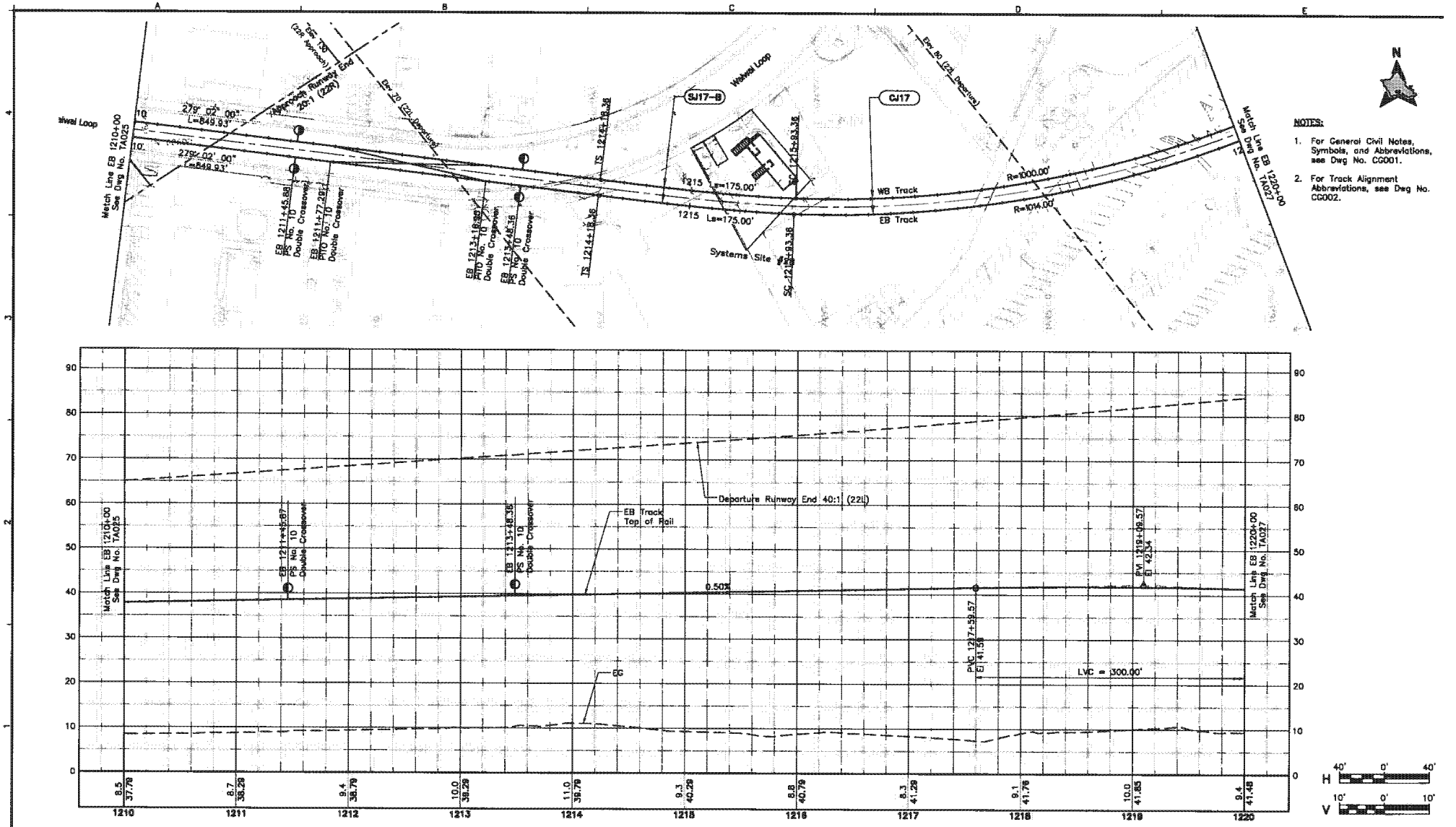

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Track Alignment Abbreviations, see Dwg No. CG002.

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

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AIRPORT GUIDEWAY AND UTILITIES

TRACK ALIGNMENT PLAN & PROFILE

EB 1210+00 TO EB 1220+00

Contract No.: SV-430
CADD File: AP-B05-TA026
Drawing No: TA026 Rev.
Scale: 1"=40' H, 1"=10' V
Page No. 78 of 279

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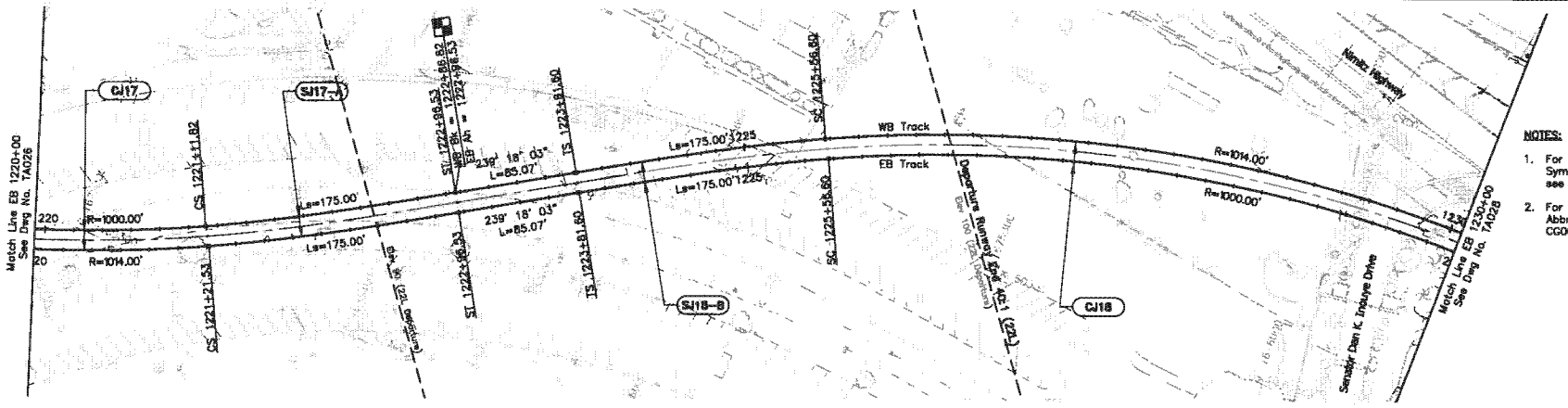
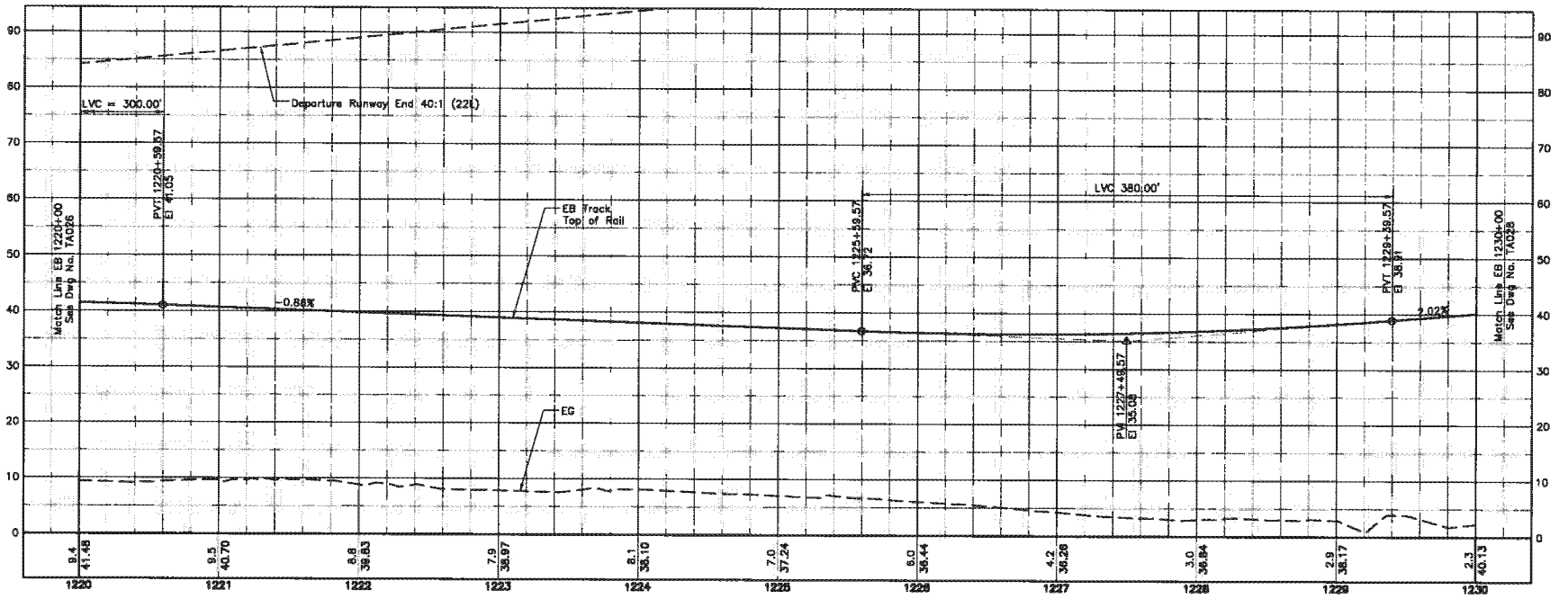


NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Track Alignment Abbreviations, see Dwg No. CG002.



H 40' 0' 40'
V 10' 0' 10'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: B Wardell
Drawn: R Nacion
Checked: E Liberman
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
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AIRPORT GUIDEWAY AND UTILITIES

TRACK ALIGNMENT PLAN & PROFILE

EB 1220+00 TO EB 1230+00

Contract No.: SV-430
CADD File: AP-B05-TA027
Drawing No: TA027 Rev.
Scale: 1"=40' H, 1"=10' V
Page No. 79 of 279

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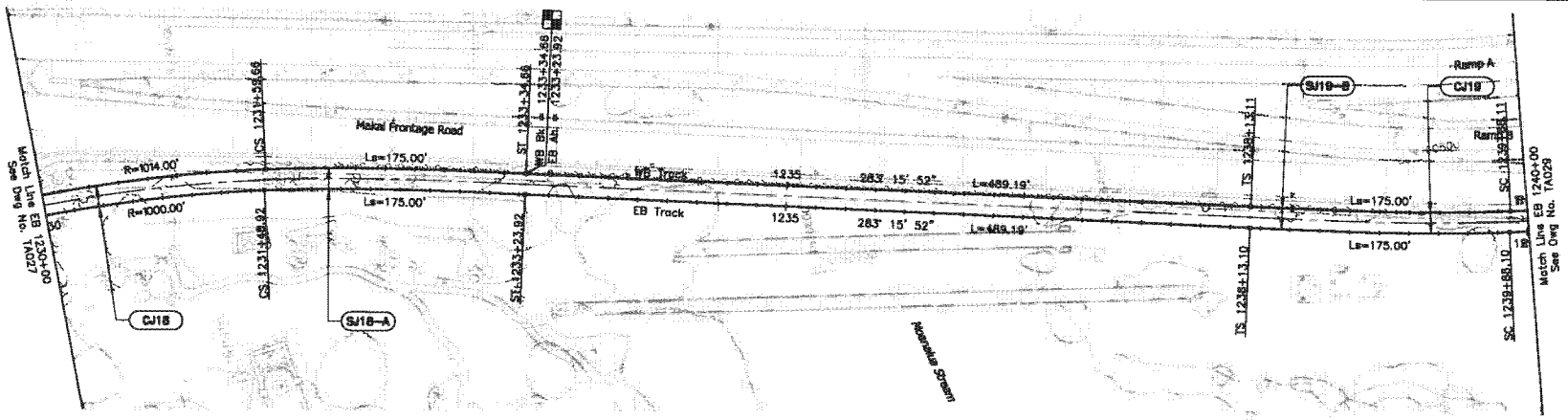
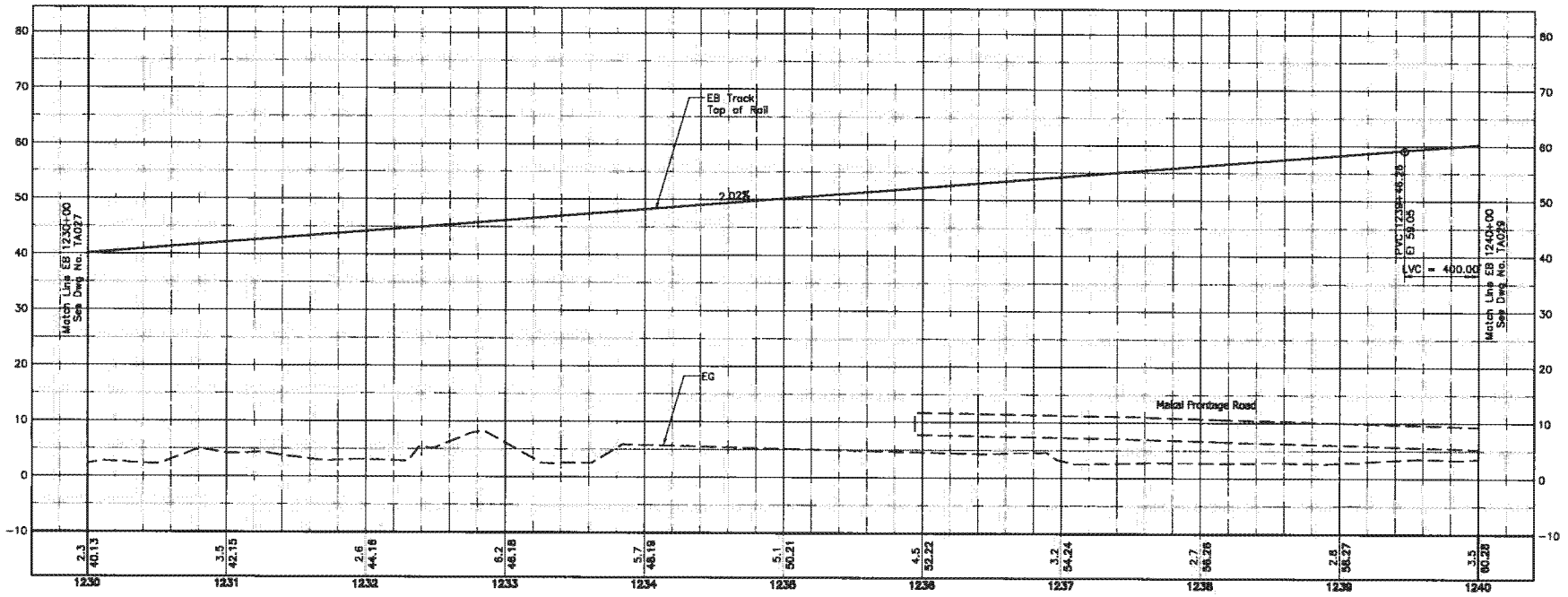


NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Track Alignment Abbreviations, see Dwg No. CG002.



Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: B Wardell
Drawn: R Nacion
Checked: E Liberman
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

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AIRPORT GUIDEWAY AND UTILITIES

TRACK ALIGNMENT PLAN & PROFILE

EB 1230+00 TO EB 1240+00

Contract No.: SV-430
CADD File: AP-B05-TA028
Drawing No: TA028 Rev.
Scale: 1"=40' H, 1"=10' V
Page No. 80 of 279

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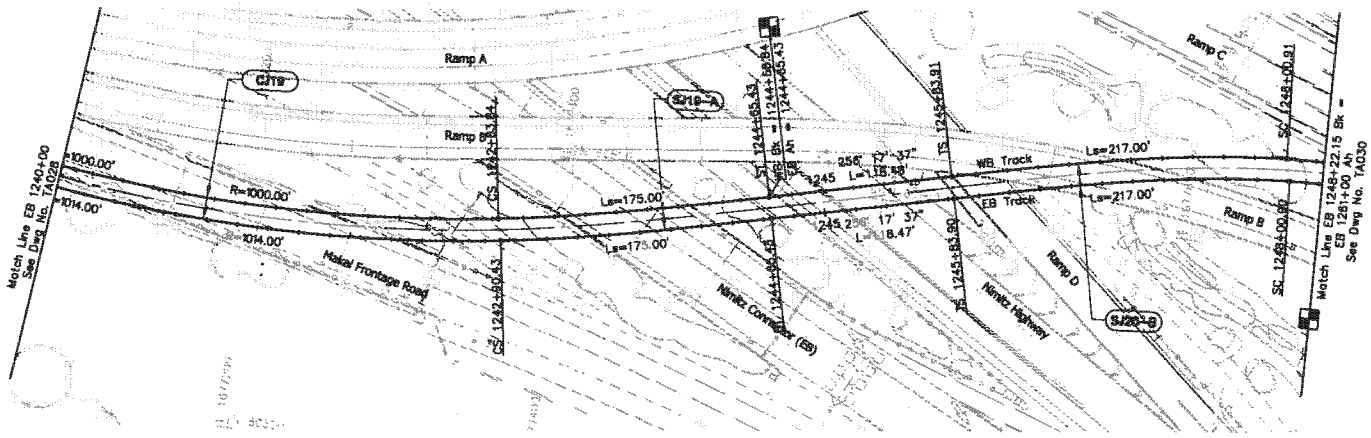

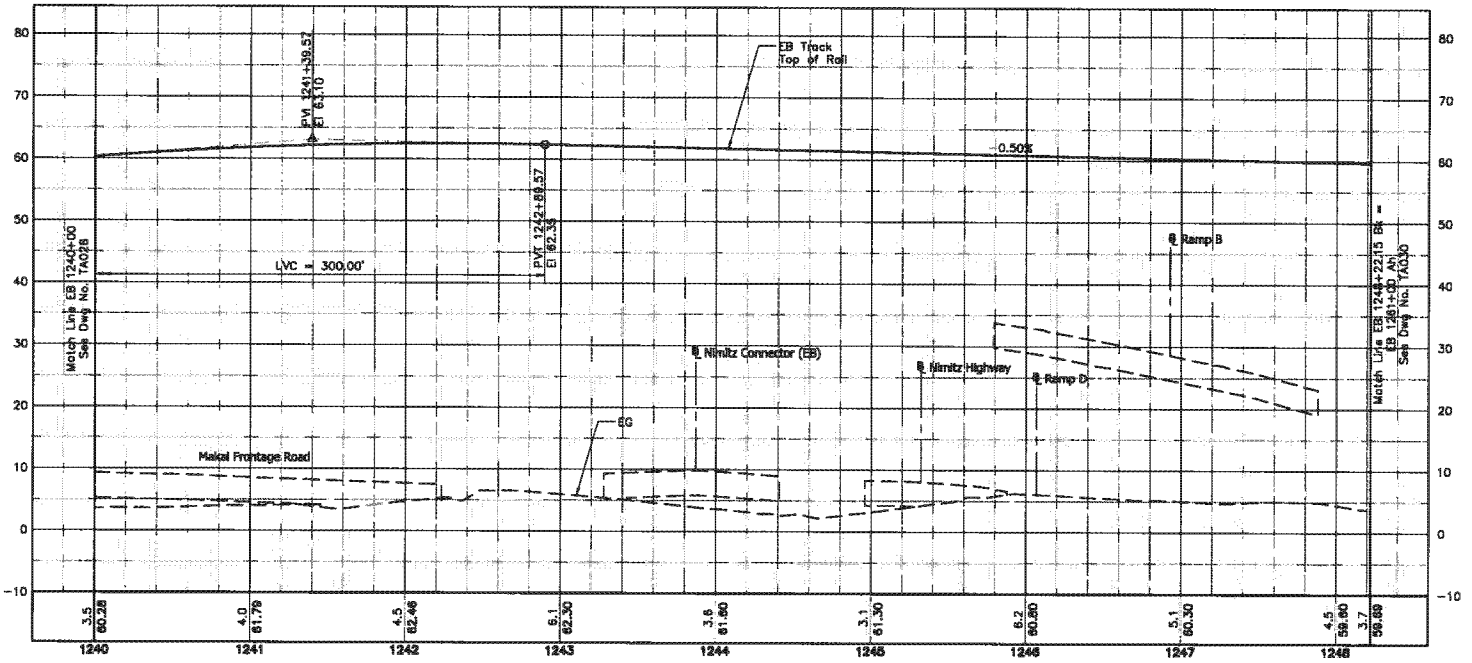

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Track Alignment Abbreviations, see Dwg No. CG002.

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: B Wardell
Drawn: R Nacion
Checked: E Liberman
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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AIRPORT GUIDEWAY AND UTILITIES

TRACK ALIGNMENT PLAN & PROFILE

EB 1240+00 TO EB 1248+22.15 Bk

Contract No.: SV-430
CADD File: AP-B05-TA029
Drawing No: TA029 Rev.
Scale: 1"=40' H, 1"=10' V
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End Construction
LA 8+68.92 POT
Limits of Pavement Milling and Overlay
Sawcut and Match Existing Pavement

LA 8+68.92 POT @ Lagoon Drive=
1206+59.57, 310.17' LT, EB Track (Above)

UL ℄
WB Track (Above)
EB Track (Above)

UL 0+50.00 POT BK=
LA 3+66.53 POT AHD

UL 1+00.00 POB BK=
WW 22+07.05 POE AHD

LA 0+00.00 POB BK=
AL 85+13.89, 1.04' LT, POT AHD

Begin Construction
LA 10+36.44 POT
Limits of Pavement Milling and Overlay
Sawcut and Match Existing Pavement

LA 0+36.44 POT @ Lagoon Drive=
1206+69.22, 358.75' RT, EB Track (Above)

Match Line EB 1200+00 See Dwg No. RP024

Match Line EB 1210+00 See Dwg No. RP026

Aolele Street

Lagoon Drive

WaiWai Loop

ROW

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed Guideway Column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

CONSTRUCTION NOTES:

1. Construct Concrete Curb.
2. Construct Concrete Curb and Gutter.
3. Construct Concrete Sidewalk.
4. Construct Reinforced Concrete Driveway.
5. Construct Concrete Curb Ramp.
14. Construct Plantmix Bituminous Surface Overlay.
15. Construct Plantmix Bituminous Pavement.
16. Construct Concrete Median Island Paving.
20. Construct Concrete Pavement.

ROADWAY CURVE DATA

	UL-1	UL-2	AL-11	AL-12
Δ	9° 18' 00.0"	9° 18' 00.0"	1° 41' 48.1"	10° 51' 30.8"
R	2690.00'	2690.00'	10000.00'	500.00'
T	218.80'	218.80'	148.08'	47.52'
C	436.15'	436.15'	296.12'	94.62'
L_C	436.63'	436.63'	296.13'	94.76'

40' 0 40'

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Rev	By	Date	Description

Designed: M Jewell
Drawn: J Dressler
Checked: B Wardell
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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AIRPORT GUIDEWAY AND UTILITIES

ROADWAY CONSTRUCTION PLAN

EB 1200+00 to EB 1210+00

Contract No.: SV-430
CADD File: AP-B09-RP025
Drawing No: RP025 Rev.
Scale: 1"=40'
Page No. 108 of 279

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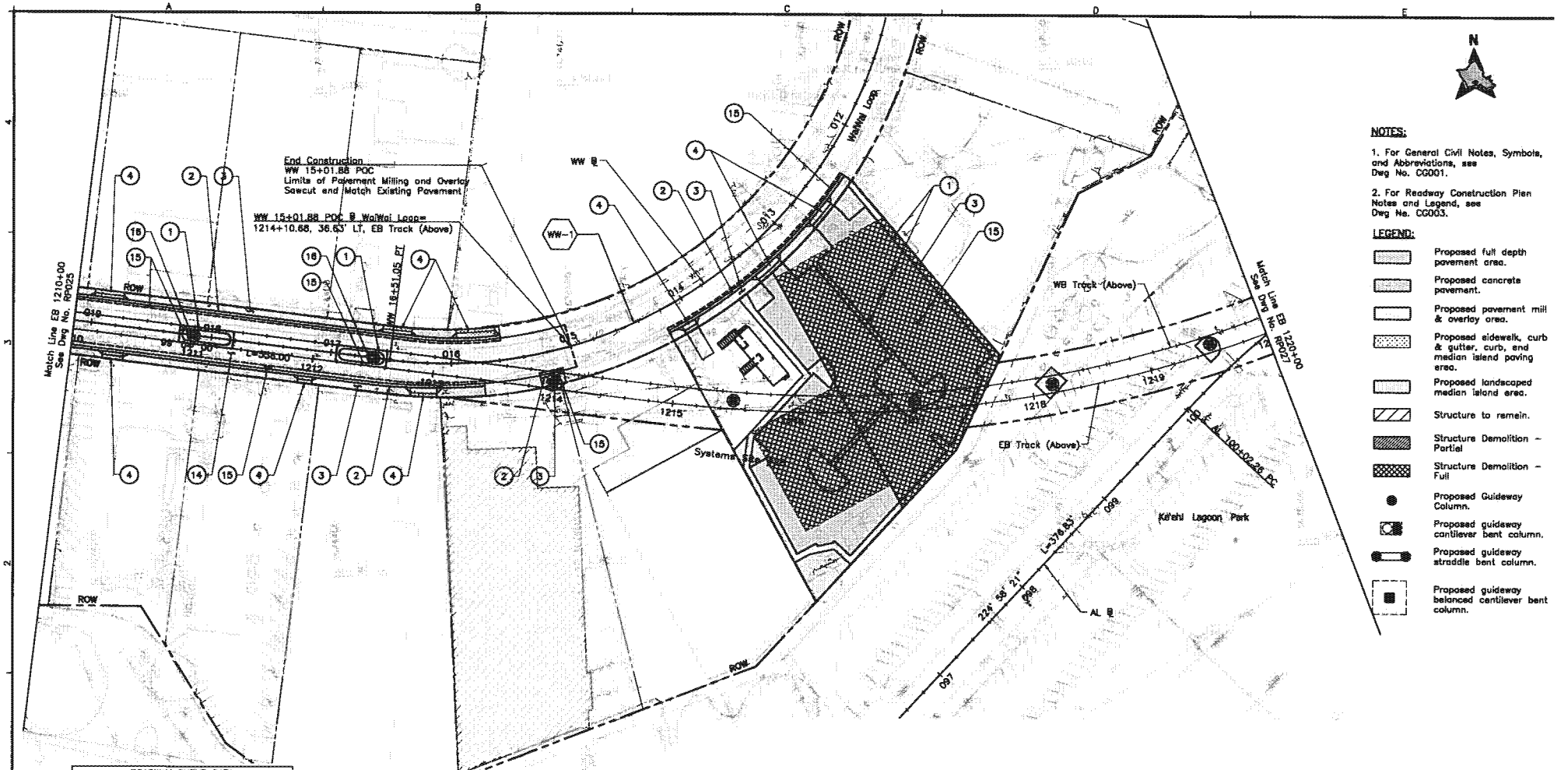

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.

2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed Guideway Column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

ROADWAY CURVE DATA	WW-1	AL-1
Δ	90° 00' 00.0"	54° 05' 29.6"
R	375.00'	750.00'
T	375.00'	382.90'
C	330.33'	882.05'
L_C	589.05'	708.06'

CONSTRUCTION NOTES:

1. Construct Concrete Curb.
2. Construct Concrete Curb and Gutter.
3. Construct Concrete Sidewalk.
4. Construct Reinforced Concrete Driveway.
14. Construct Plantmix Bituminous Surface Overlay.
15. Construct Plantmix Bituminous Pavement.
16. Construct Concrete Median Island Paving.

40' 0 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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AIRPORT GUIDEWAY AND UTILITIES

ROADWAY CONSTRUCTION PLAN

EB 1210+00 to EB 1220+00

Contract No.: SV-430
CADD File: AP-B09-RP026
Drawing No: RP026 Rev.
Scale: 1"=40'
Page No. 109 of 279

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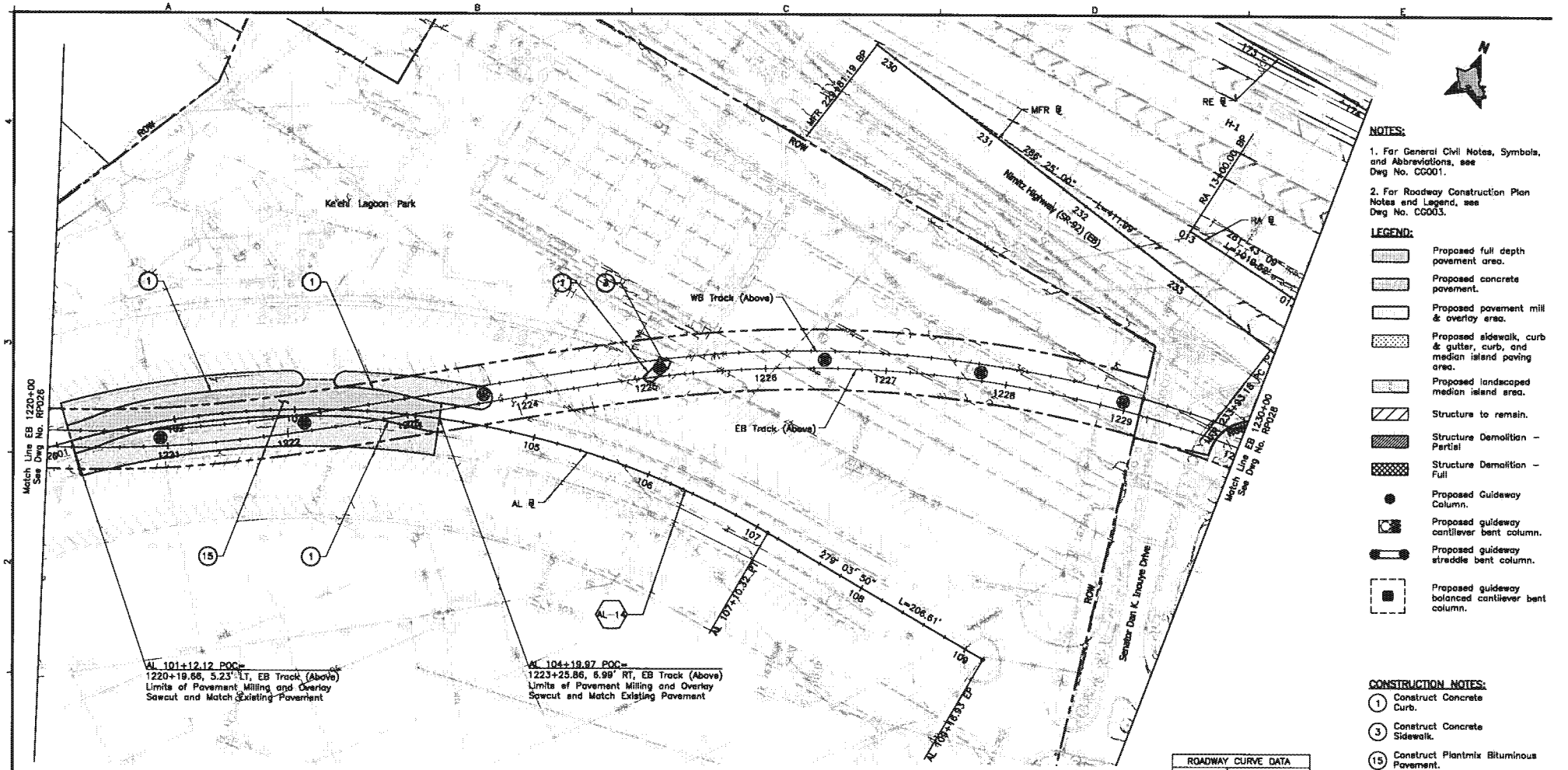

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.

2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed Guideway Column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

CONSTRUCTION NOTES:

1. Construct Concrete Curb.
3. Construct Concrete Sidewalk.
15. Construct Plantmix Bituminous Pavement.

ROADWAY CURVE DATA	
	AL-14
Δ	54° 05' 29.6"
R	750.00'
T	382.90'
C	682.05'
L_C	708.08'

40' 0 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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Subconsultant:

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AIRPORT GUIDEWAY AND UTILITIES
ROADWAY CONSTRUCTION PLAN
EB 1220+00 to EB 1230+00

Contract No.: SV-430
CADD File: AP-B09-RP027
Drawing No: RP027
Rev.
Scale: 1"=40'
Page No. 110 of 279

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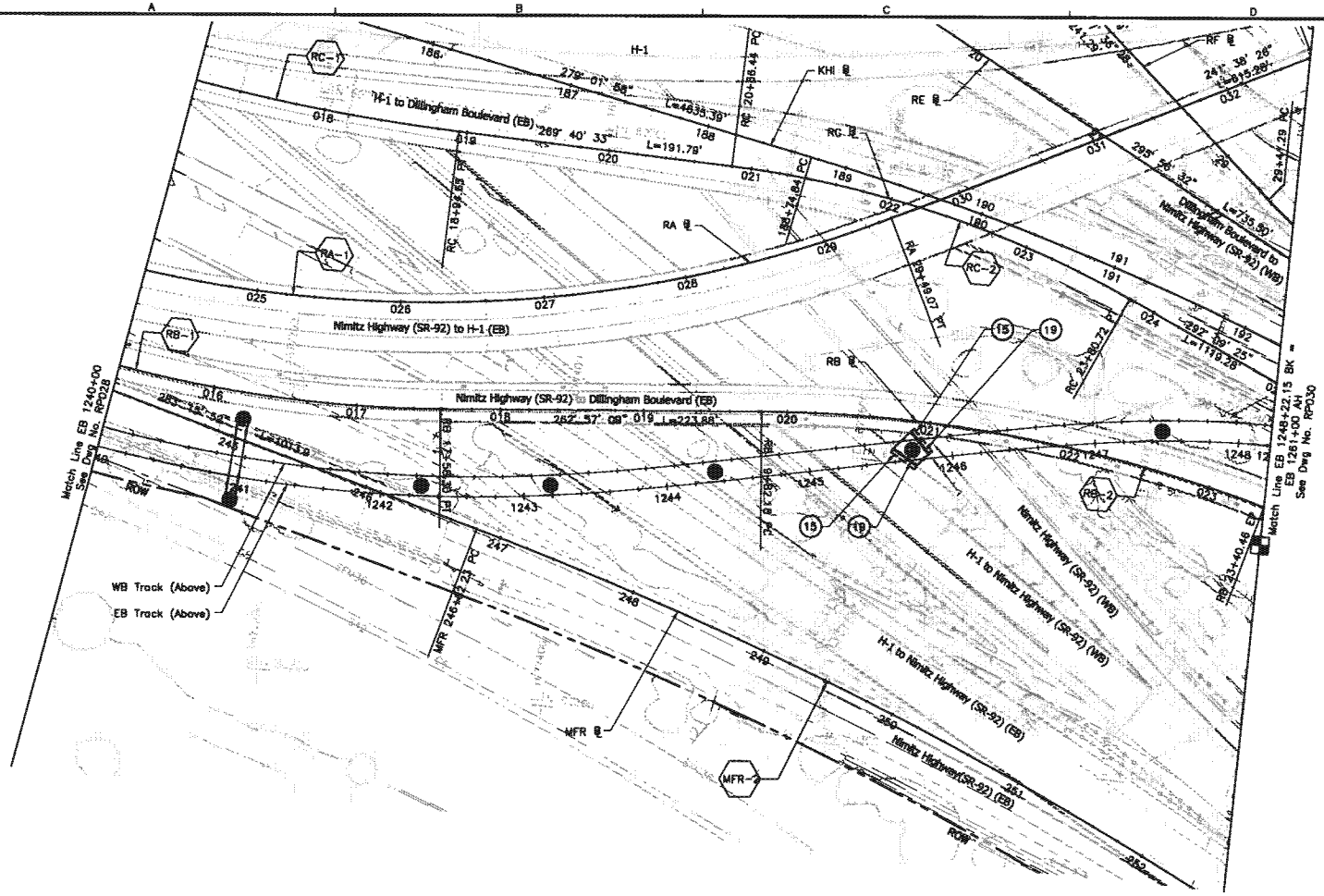

N

NOTES:

1. For General Civil Notes, Symbols, and Abbreviations, see Dwg No. CG001.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

LEGEND:

- Proposed full depth pavement area.
- Proposed concrete pavement.
- Proposed pavement mill & overlay area.
- Proposed sidewalk, curb & gutter, curb, and median island paving area.
- Proposed landscaped median island area.
- Structure to remain.
- Structure Demolition – Partial
- Structure Demolition – Full
- Proposed Guideway Column.
- Proposed guideway cantilever bent column.
- Proposed guideway straddle bent column.
- Proposed guideway balanced cantilever bent column.

CONSTRUCTION NOTES:

(15) Construct Plantmix Bituminous Pavement

(19) Construct Concrete Half Barrier Rail

ROADWAY CURVE DATA

	MFR-2	RA-1	RB-1	RB-2	RC-1	RC-2
Δ	15° 01' 25.9"	40° 04' 42.1"	24° 28' 38.0"	18° 59' 29.4"	9° 53' 08.7"	22° 28' 52.6"
R	2718.72'	900.00'	900.00'	1000.00'	1400.00'	750.00'
T	358.50'	328.27'	195.22'	187.27'	121.08'	149.06'
C	710.85'	618.79'	381.57'	329.95'	241.25'	292.40'
L_C	712.89'	629.55'	384.49'	331.46'	241.55'	294.28'

40' 0 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: M Jewell
Drawn: J Derosier
Checked: B Wardell
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

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AIRPORT GUIDEWAY AND UTILITIES

ROADWAY CONSTRUCTION PLAN

EB 1240+00 to EB 1248+22.15 Bk

Contract No.: SV-430
CADD File: AP-B09-RP029
Drawing No: RP029 Rev.
Scale: 1"=40'
Page No. 111 of 279

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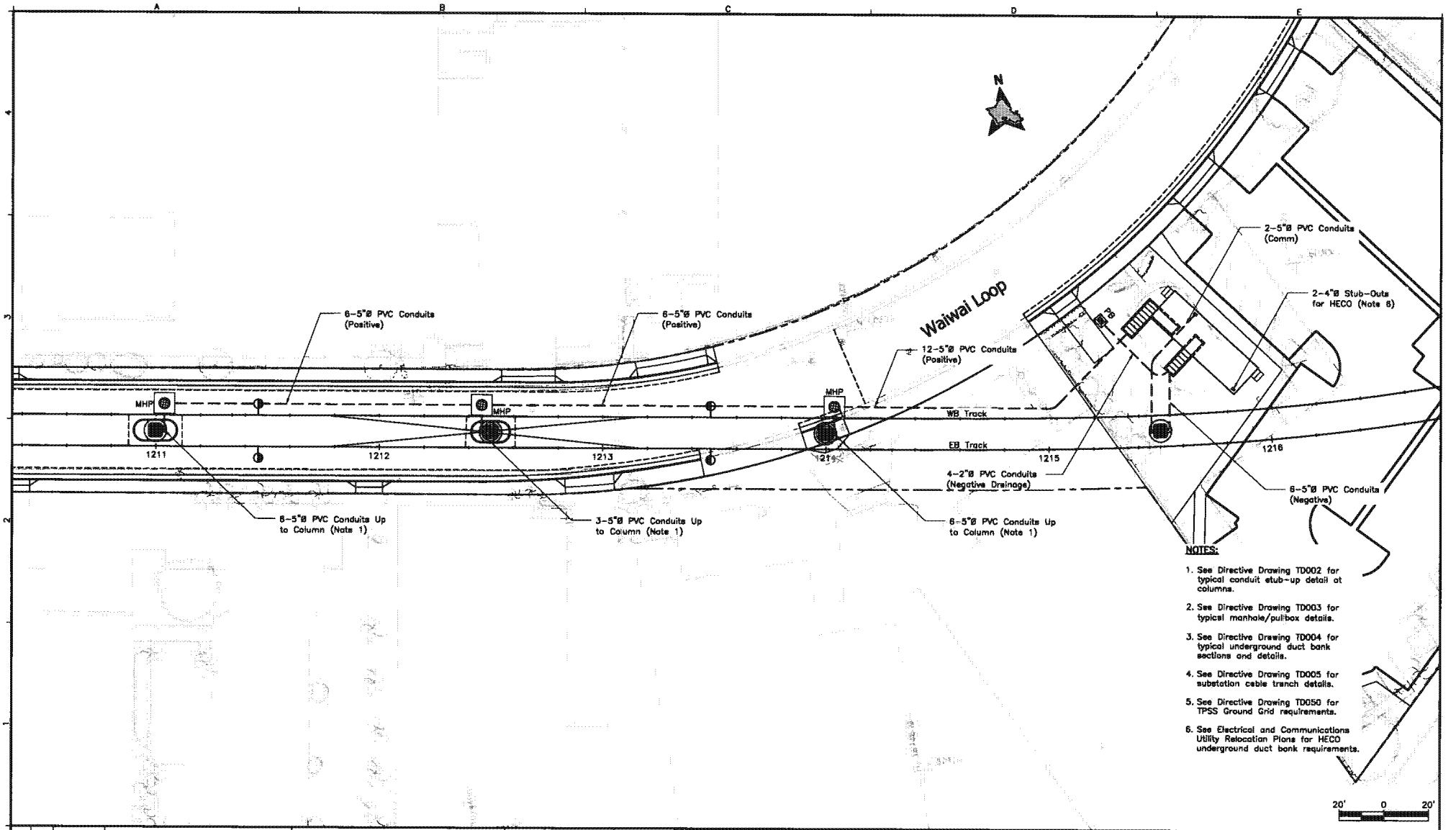

NOTES:

1. See Directive Drawing TD002 for typical conduit stub-up detail at columns.
2. See Directive Drawing TD003 for typical manhole/pullbox details.
3. See Directive Drawing TD004 for typical underground duct bank sections and details.
4. See Directive Drawing TD005 for substation cable trench details.
5. See Directive Drawing TD050 for TPSS Ground Grid requirements.
6. See Electrical and Communications Utility Relocation Plans for HECO underground duct bank requirements.

Rev	By	Date	Description

2010-06-16 1:23 PM K:\CADD\16 Communications\AP-B10-RP106.dwg

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: D Gobelle
Drawn: C Jamison
Checked: L Mayola
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 - Honolulu, HI 96813
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AIRPORT GUIDEWAY & UTILITIES

SYSTEMS SITE PLAN
SITE # 28

Contract No.: SV-430
CADD File: AP-B10-RP106
Drawing No: RP106 Rev.
Scale: 1"=20'
Page No. 116 of 279

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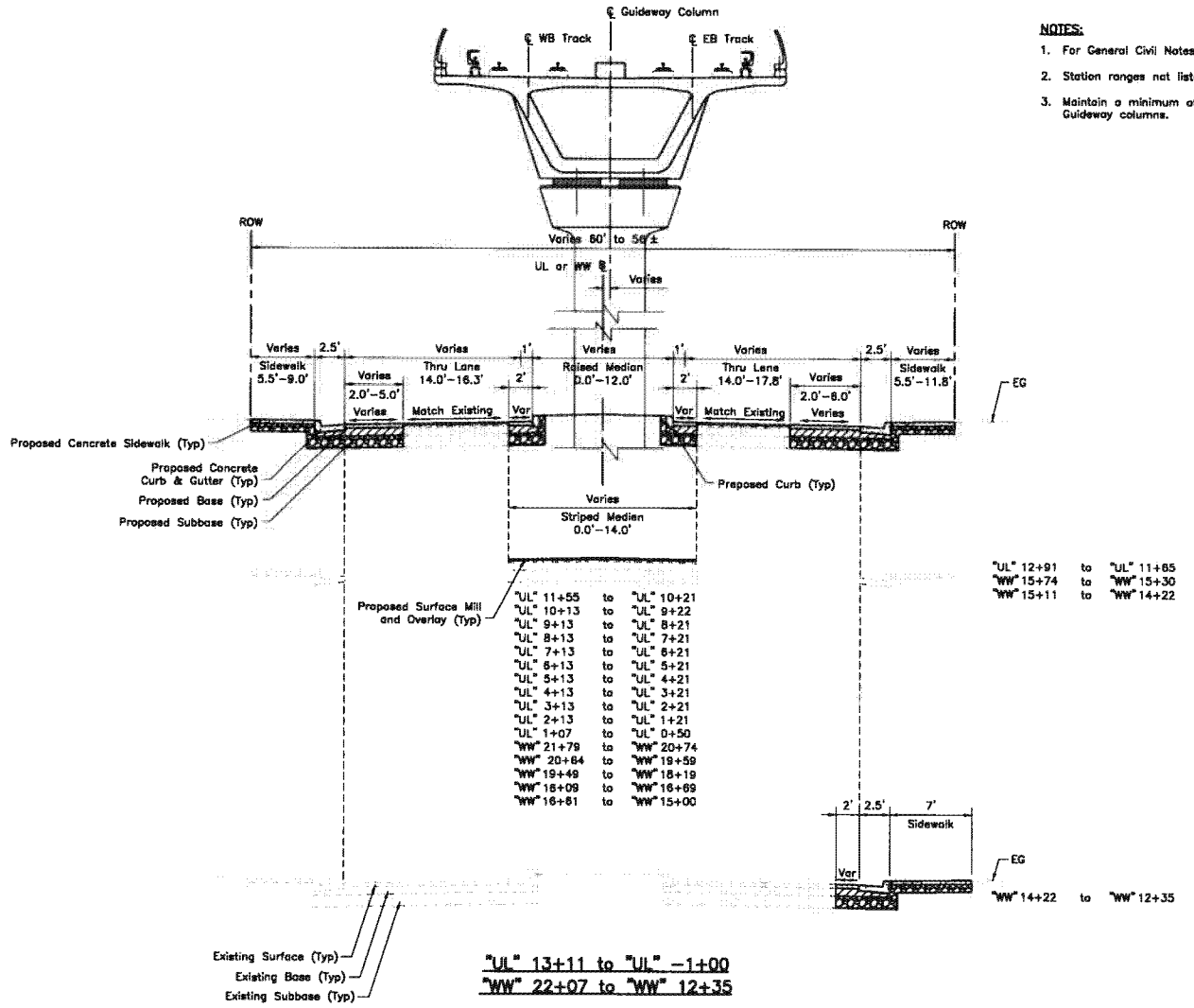

NOTES:

1. For General Civil Notes, Symbols and Abbreviations, See Dwg No. CG001.
2. Station ranges not listed have 0' width dimension.
3. Maintain a minimum of 16.5' clearance above inside travel lane for all Guideway columns.

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: M Jowell
Drawn: J Derosier
Checked: G Wardell
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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Subconsultant:

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AIRPORT GUIDEWAY AND UTILITIES

TYPICAL SECTIONS
UALENA STREET & WAIWAI LOOP

UL 13+13 TO UL -1+00 & WW 22+07 TO WW 12+35

Contract No.: SV-430
CADD File: AP-B13-RX015
Drawing No: RX015
Rev.
Scale: 1"=5'
Page No. 135 of 279

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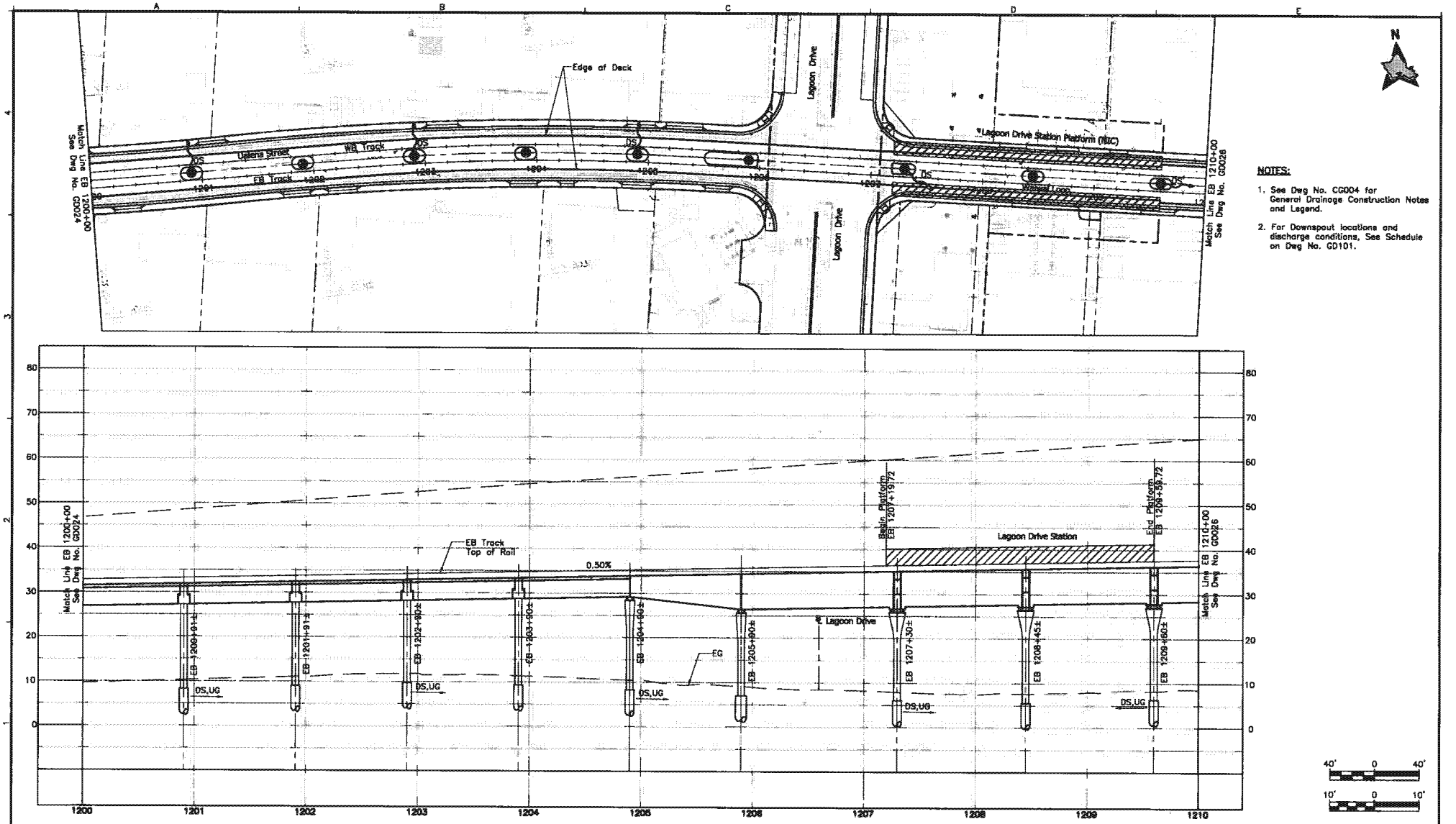

NOTES:

1. See Dwg No. CG004 for General Drainage Construction Notes and Legend.
2. For Downspout locations and discharge conditions, See Schedule on Dwg No. GD101.

Rev	By	Date	Description

2010-09-22 2:02 PM K:\CADD\03 Civil\Segment J\Sheet Files\AP-B16-GD022-GD031.dwg

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: P Fujii
Drawn: T Cochran
Checked: K Wong
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
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AIRPORT GUIDEWAY & UTILITIES

GUIDEWAY DRAINAGE LAYOUT PLAN AND PROFILE

EB 1200+00 TO EB 1210+00

Contract No.: SV-430
CADD File: AP-B16-GD025
Drawing No: GD025 Rev.
Scale: 1"=40' H, 1"=10' V
Page No. 161 of 279

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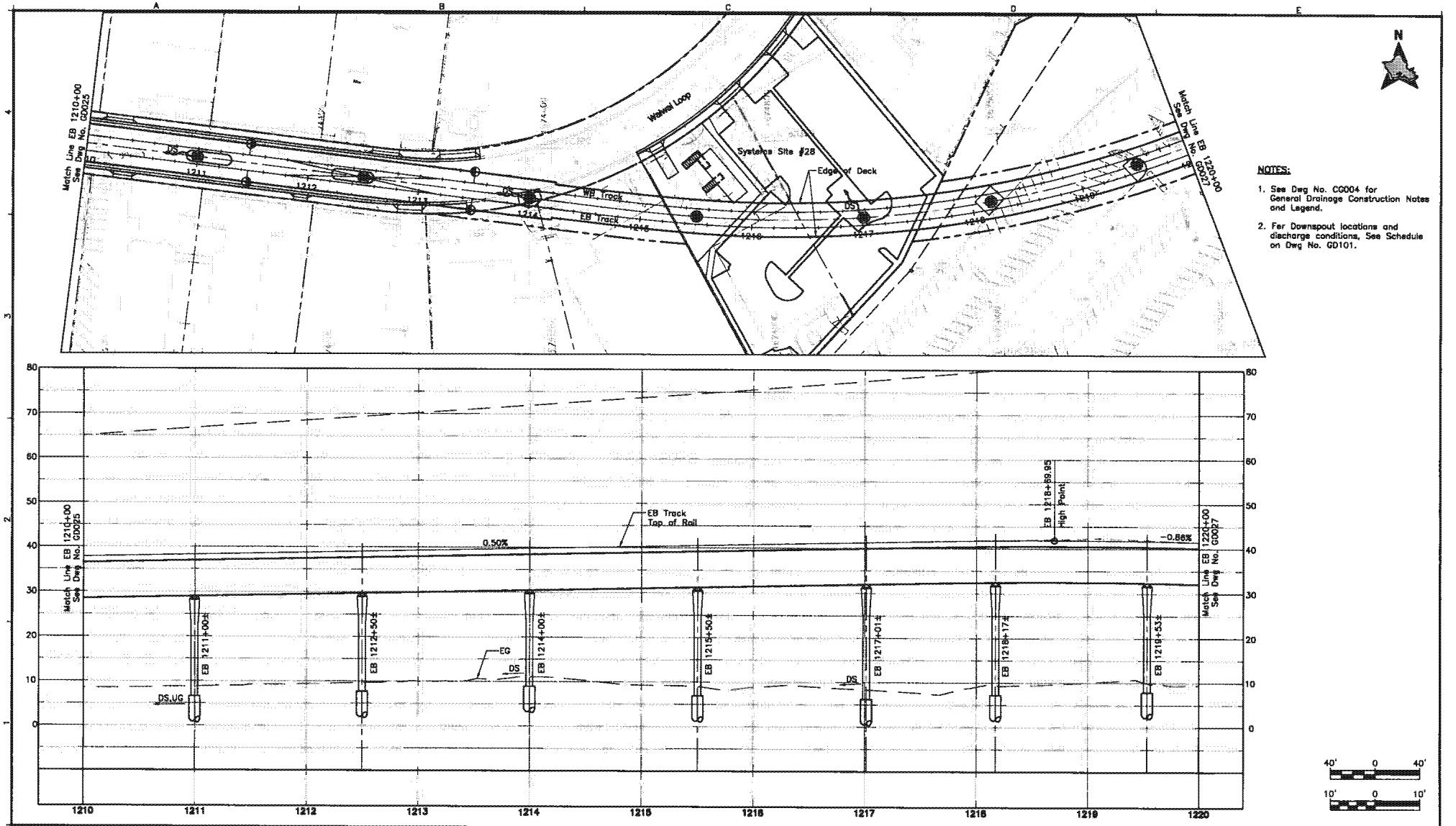

NOTES:

1. See Dwg No. CG004 for General Drainage Construction Notes and Legend.
2. For Downspout locations and discharge conditions, See Schedule on Dwg No. GD101.

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: P Fujii
Drawn: T Cochran
Checked: K Weng
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

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AIRPORT GUIDEWAY & UTILITIES

GUIDEWAY DRAINAGE LAYOUT PLAN AND PROFILE

EB 1210+00 TO EB 1220+00

Contract No.: SV-430
CADD File: AP-B16-GD026
Drawing No: GD026 Rev.
Scale: 1"=40' H, 1"=10' V
Page No. 162 of 278

2010-09-22 2:02 PM K:\CADD\03 Civil\Segment J\Sheet Files\AP-B16-GD022-GD031.dwg

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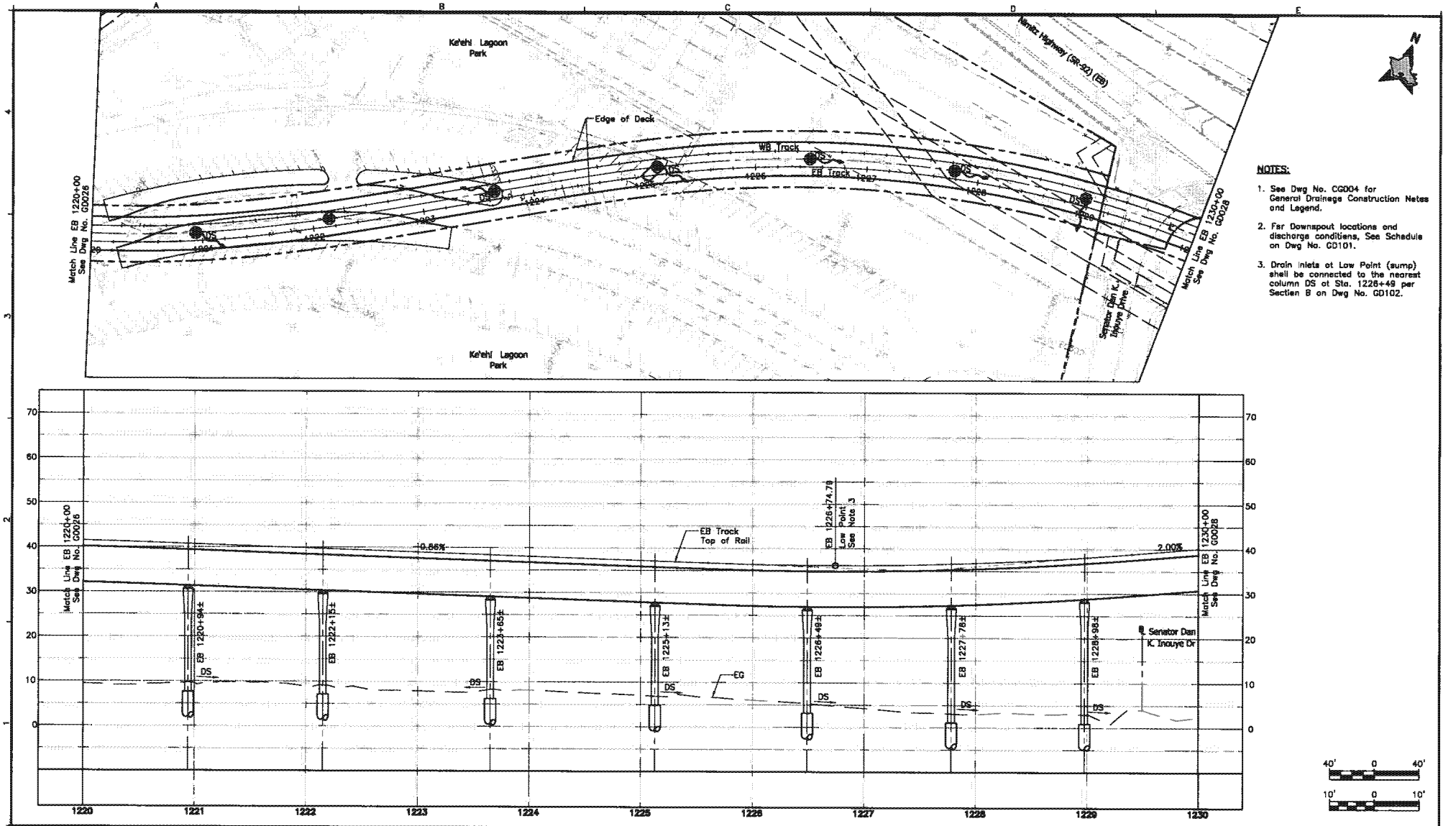

NOTES:

1. See Dwg No. CG004 for General Drainage Construction Notes and Legend.
2. For Downspout locations and discharge conditions, See Schedule on Dwg No. GD101.
3. Drain inlets at Low Point (sump) shall be connected to the nearest column DS at Sta. 1226+49 per Section B on Dwg No. GD102.

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: P Fujii
Drawn: T Cochran
Checked: K Wong
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU · DEPARTMENT OF TRANSPORTATION SERVICES · RAPID TRANSIT DIVISION

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Subconsultant:

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AIRPORT GUIDEWAY & UTILITIES

GUIDEWAY DRAINAGE LAYOUT PLAN AND PROFILE

EB 1220+00 TO EB 1230+00

Contract No.: SV-430
CADD File: AP-B16-GD027
Drawing No: GD027 Rev.
Scale: 1"=40' H, 1"=10' V
Page No. 163 of 279

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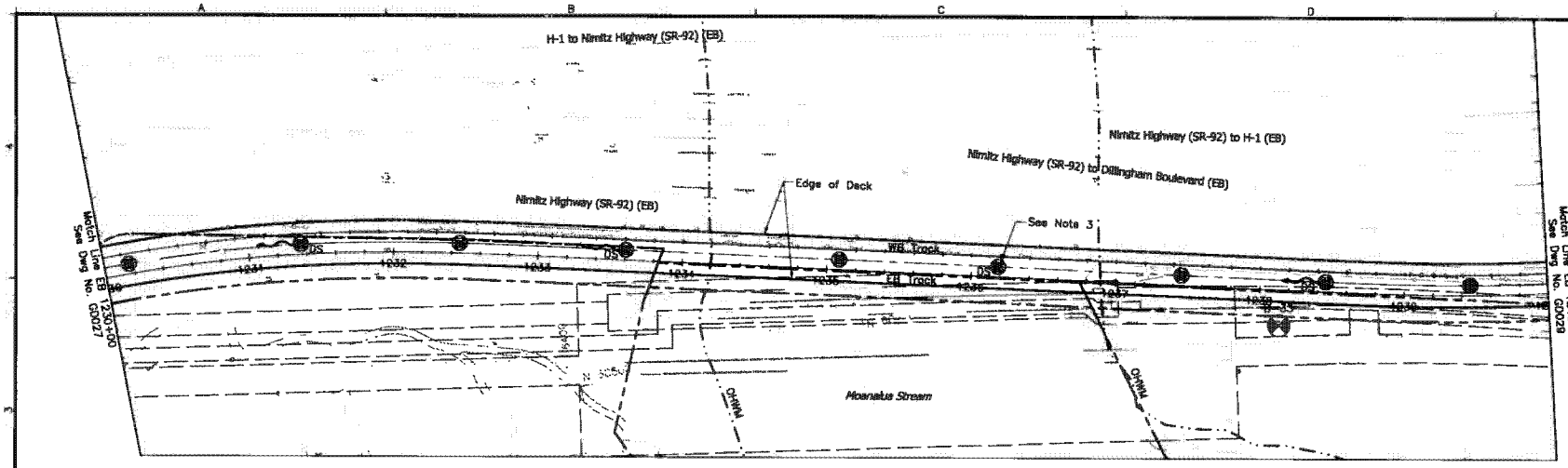
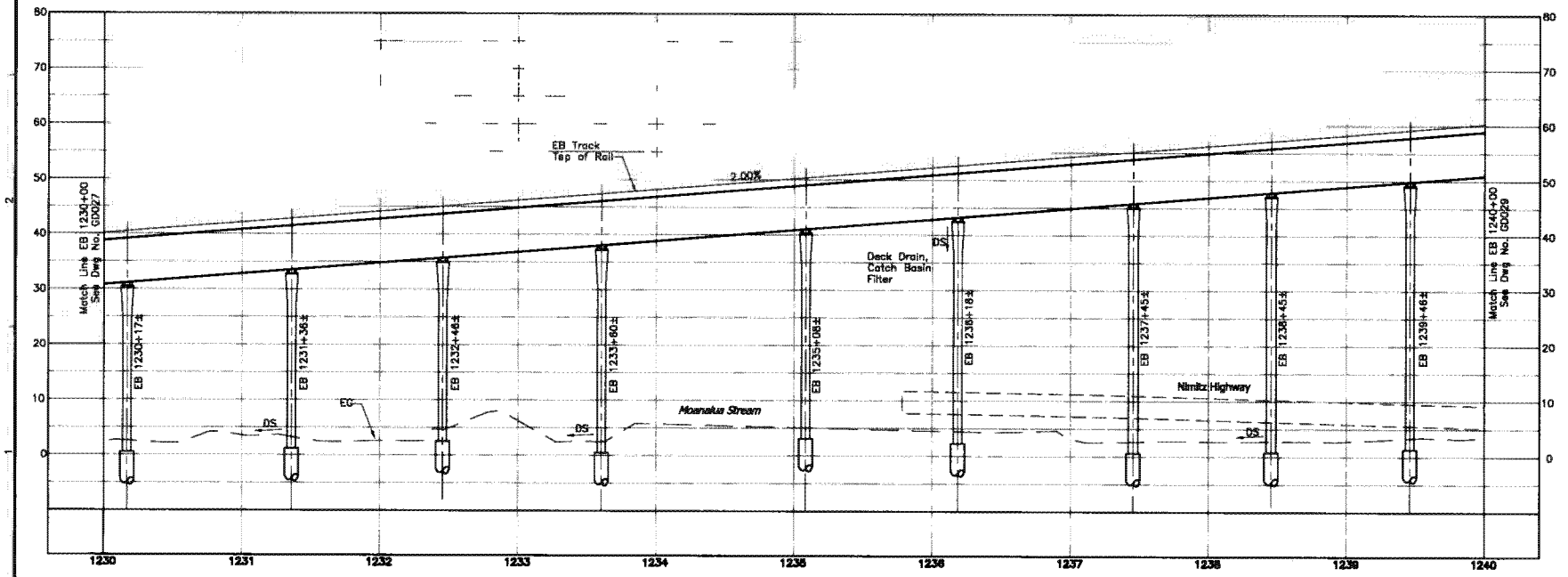


NOTES:

1. See Dwg No. CG004 for General Drainage Construction Notes and Legend.
2. For Downspout locations and discharge conditions, See Schedule on Dwg No. GD101.
3. Construct Deck Drain, Steel Catch Basin Storm Filter by Contech, or approved equivalent. Provide 8"ø PVC Scupper Drain.



40' 0 40'

10' 0 10'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: P Fujii
Drawn: T Cochran
Checked: K Wang
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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AIRPORT GUIDEWAY & UTILITIES

GUIDEWAY DRAINAGE LAYOUT PLAN AND PROFILE

EB 1230+00 TO EB 1240+00

Contract No.: SV-430
CADD File: AP-B16-GD028
Drawing No: GD028 Rev.
Scale: 1"=40' H, 1"=10' V
Page No. 164 of 279

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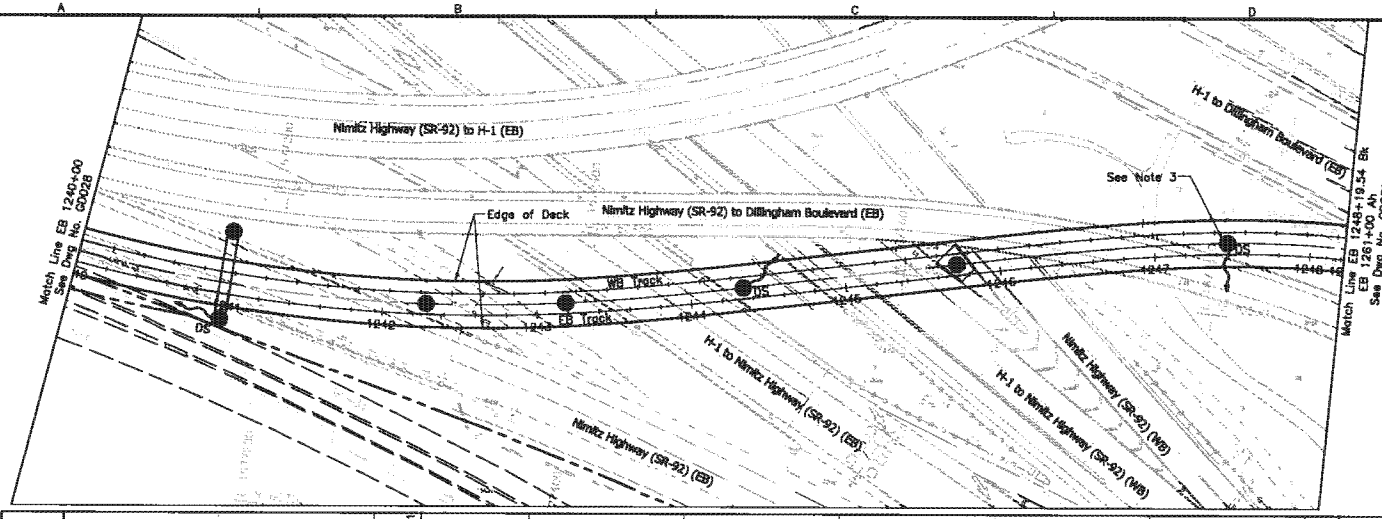

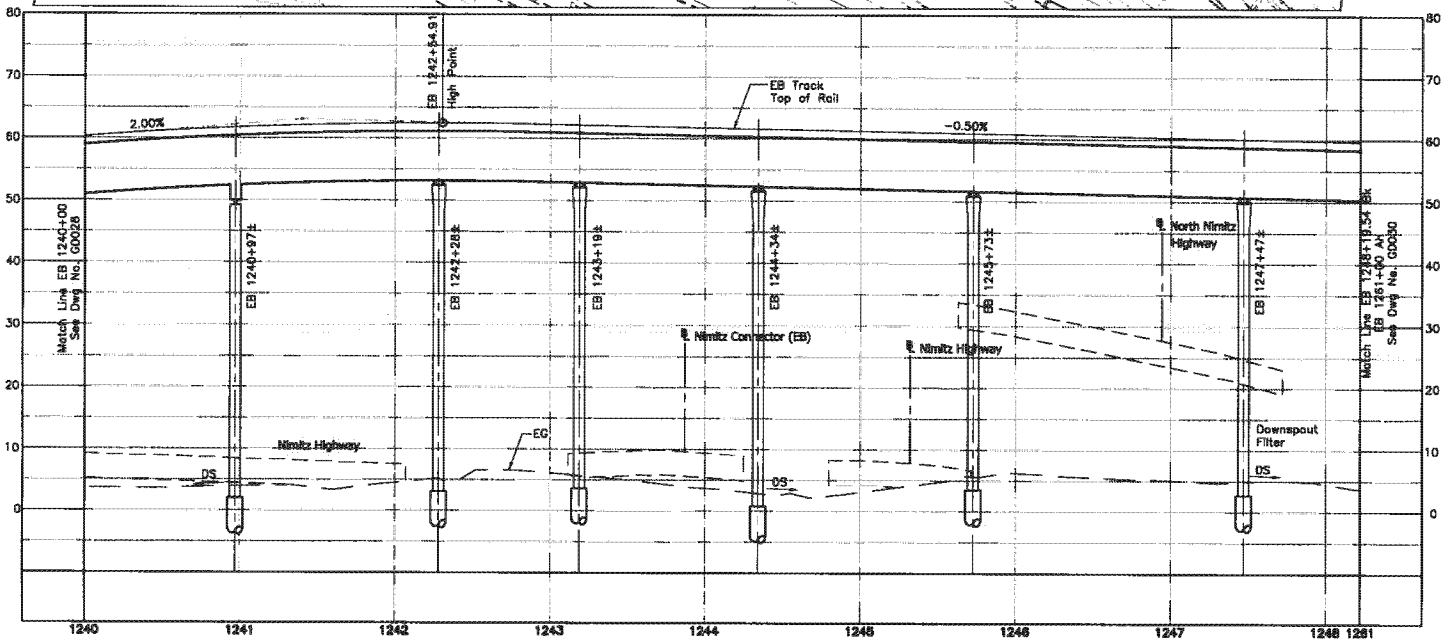

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NOTES:

1. See Dwg No. CG004 for General Drainage Construction Notes and Legend.
2. For Downspout locations and discharge conditions, See Schedule on Dwg No. GD101.
3. Downspout at location noted shall be provided with downspout filter per Dwg No. GD108.

40' 0 40'

10' 0 10'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: P Fujii
Drawn: T Cochran
Checked: K Wong
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 Honolulu, HI 96813
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AIRPORT GUIDEWAY & UTILITIES

GUIDEWAY DRAINAGE LAYOUT PLAN AND PROFILE

EB 1240+00 TO EB 1248+19.54 Bk

Contract No.: SV-430
CADD File: AP-B16-GD029
Drawing No: GD029 Rev.
Scale: 1"=40' H, 1"=10' V
Page No. 165 of 279

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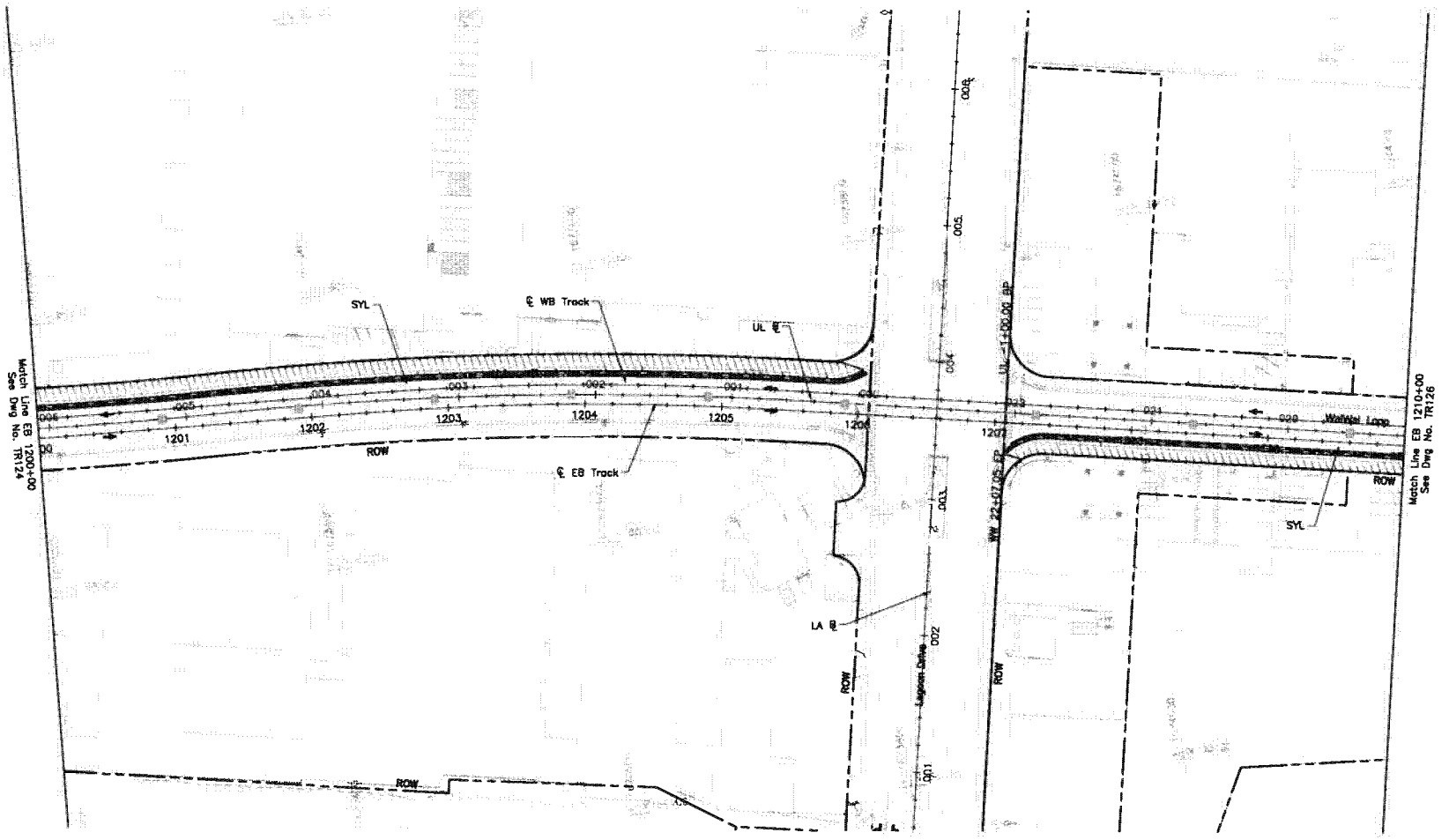

NOTES

1. For general notes, see Dwg No. TG001.

LEGEND

- Work Zone
- Bus Pullout Area
- Concrete Barrier
- Proposed Traffic Control
- SYL Temporary Solid Yellow Line
- SWL Temporary Solid White Line
- BWL Temporary Broken White Line
- DWL Temporary Dashed White Line
- Flow of Traffic
- Guideway Column Location
- Attenuator
- Existing Sign
- FOC Face of Curb
- EP Edge of Pavement

40' 0 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: B Wardell
Drawn: J Derosier
Checked: M Jewell
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
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AIRPORT GUIDEWAY & UTILITIES

MAINTENANCE OF TRAFFIC PLAN
PHASE 1

EB 1200+00 TO EB 1210+00

Contract No.: SV-430
CADD File: AP-C03-TR125
Drawing No: TR125 Rev.
Scale: 1"=40'
Page No. 225 of 279

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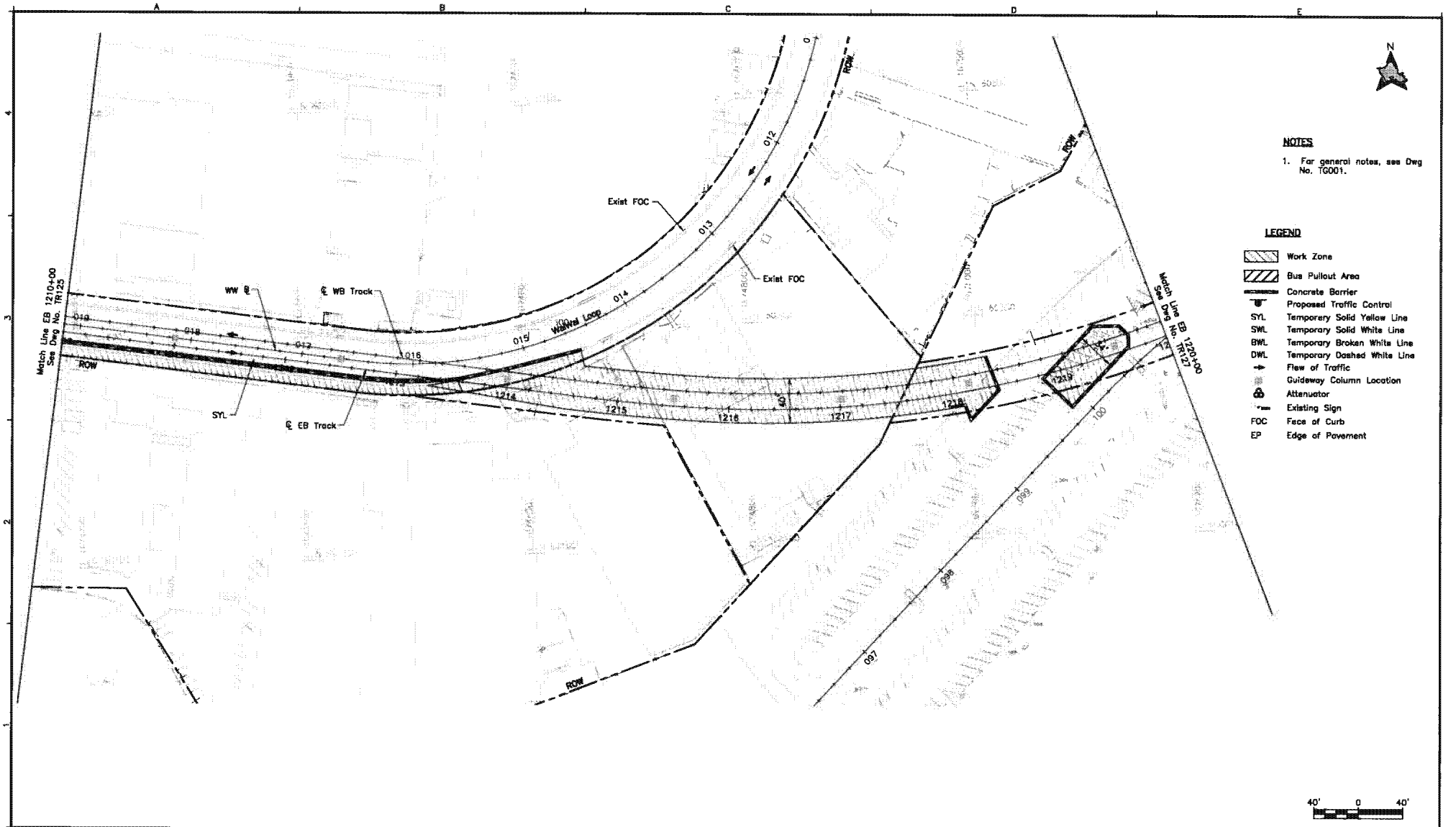

NOTES

1. For general notes, see Dwg No. TG001.

LEGEND

- Work Zone
- Bus Pullout Area
- Concrete Barrier
- Proposed Traffic Control
- SYL Temporary Solid Yellow Line
- SWL Temporary Solid White Line
- BWL Temporary Broken White Line
- DWL Temporary Dashed White Line
- Flow of Traffic
- Guideway Column Location
- Attenuator
- Existing Sign
- FOC Face of Curb
- EP Edge of Pavement

Rev	By	Date	Description

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PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: B Werdell
Drawn: J Derosier
Checked: M Jewell
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 - Honolulu, HI 96813
Subconsultant:
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AIRPORT GUIDEWAY & UTILITIES

MAINTENANCE OF TRAFFIC PLAN
PHASE 1

EB 1210+00 TO EB 1220+00

Contract No.: SV-430
CADD File: AP-C03-TR126
Drawing No: TR126 Rev.
Scale: 1"=40'
Page No. 226 of 279

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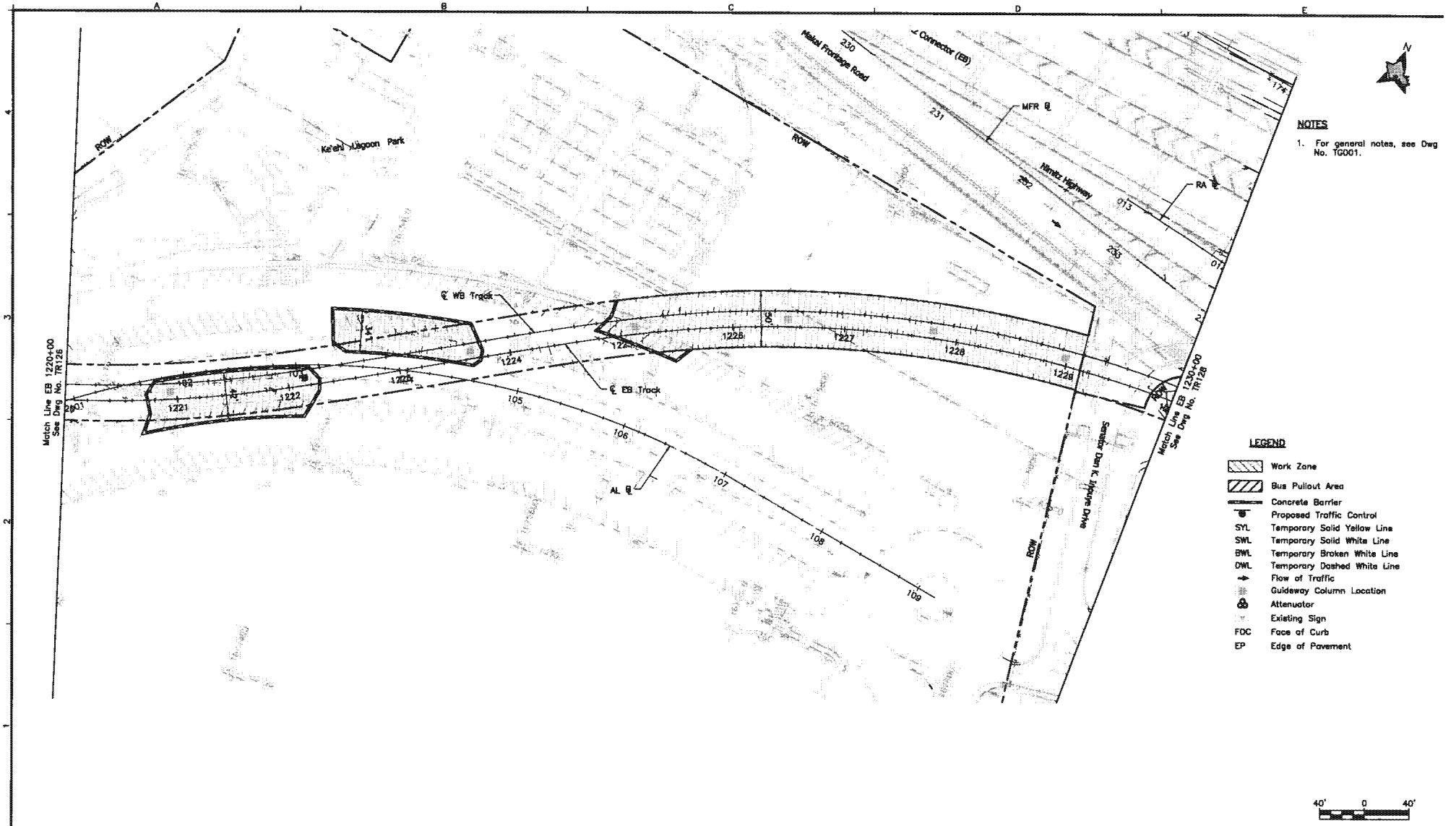

NOTES

1. For general notes, see Dwg No. TG001.

LEGEND

	Work Zone
	Bus Pullout Area
	Concrete Barrier
	Proposed Traffic Control
SYL	Temporary Solid Yellow Line
SWL	Temporary Solid White Line
BWL	Temporary Broken White Line
DWL	Temporary Dashed White Line
	Flow of Traffic
	Guideway Column Location
	Attenuator
	Existing Sign
FOC	Face of Curb
EP	Edge of Pavement

40' 0 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: B Wardell
Drawn: J Derosier
Checked: M Jewell
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
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AIRPORT GUIDEWAY & UTILITIES
MAINTENANCE OF TRAFFIC PLAN
EB 1220+00 TO EB 1230+00

Contract No.: SV-430
CADD File: AP-C03-TR127
Drawing No: TR127 Rev.
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Page No. 227 of 279

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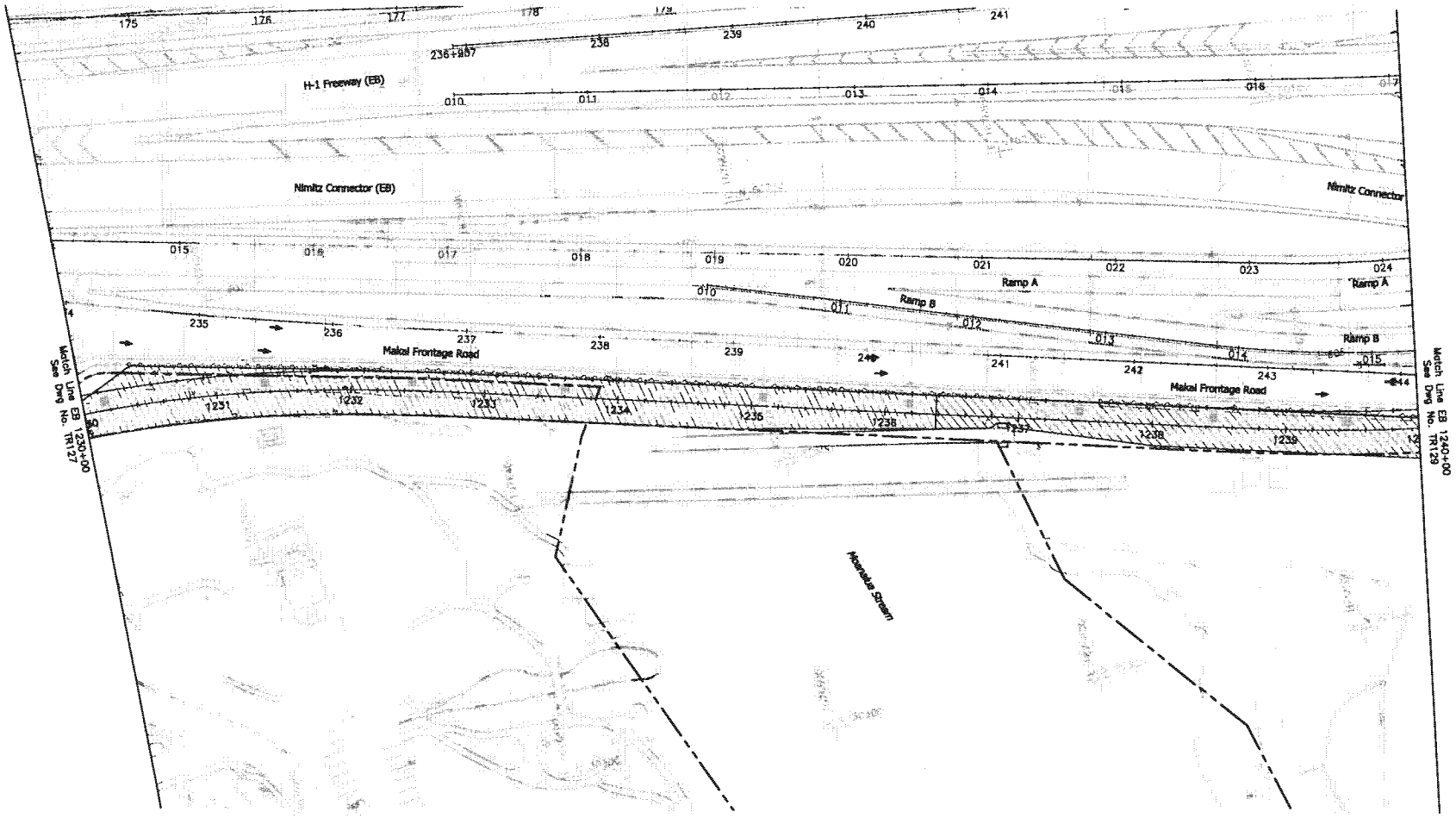

NOTES

1. For general notes, see Dwg No. TG001.

LEGEND

- Work Zone
- Bus Pullout Area
- Concrete Barrier
- Proposed Traffic Control
- SYL Temporary Solid Yellow Line
- SWL Temporary Solid White Line
- BWL Temporary Broken White Line
- DWL Temporary Dashed White Line
- Flow of Traffic
- Guideway Column Location
- Attenuator
- Existing Sign
- FOC Face of Curb
- EP Edge of Pavement

40' 0 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: B Wardell
Drawn: J Derosier
Checked: M Jewell
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
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AIRPORT GUIDEWAY & UTILITIES
MAINTENANCE OF TRAFFIC PLAN
EB 1230+00 TO EB 1240+00

Contract No.: SV-430
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Drawing No: TR128 Rev.
Scale: 1"=40'
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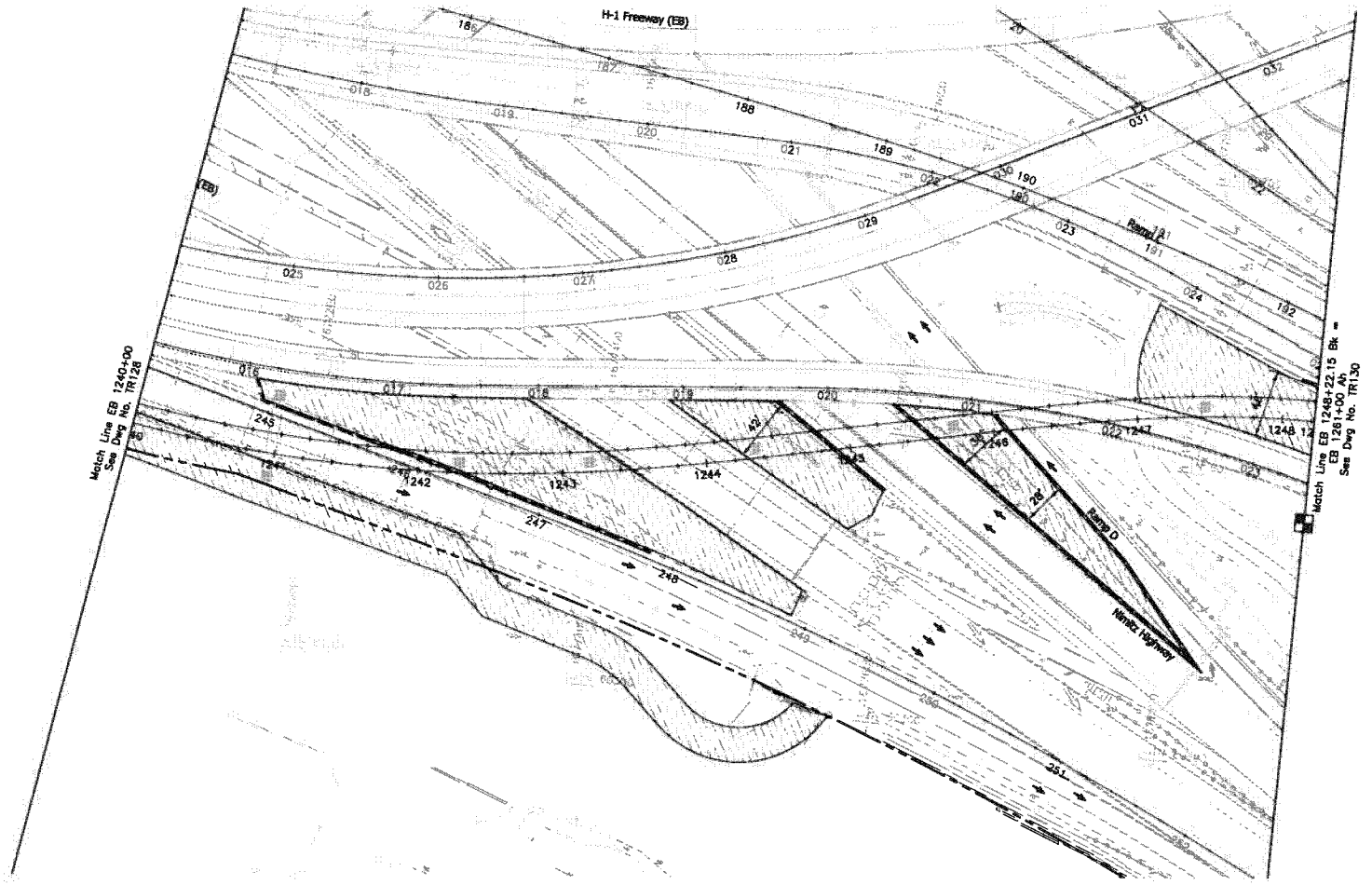

NOTES

1. For general notes, see Dwg No. TG001.

LEGEND

- Work Zone
- Bus Pullout Area
- Concrete Barrier
- Proposed Traffic Control
- SYL Temporary Solid Yellow Line
- SWL Temporary Solid White Line
- BWL Temporary Broken White Line
- DWL Temporary Dashed White Line
- Flow of Traffic
- Guideway Column Location
- Attenuator
- Existing Sign
- FOC Face of Curb
- EP Edge of Pavement

40' 0 40'

Rev	By	Date	Description

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PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: B Wardell
Drawn: J Derosier
Checked: M Jewell
Approved: C Shimizu
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:
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AIRPORT GUIDEWAY & UTILITIES
MAINTENANCE OF TRAFFIC PLAN
EB 1240+00 TO EB 1248+22.15 Bk

Contract No.: SV-430
CADD File: AP-C03-TR129
Drawing No: TR129 Rev.
Scale: 1"=40'
Page No. 229 of 279

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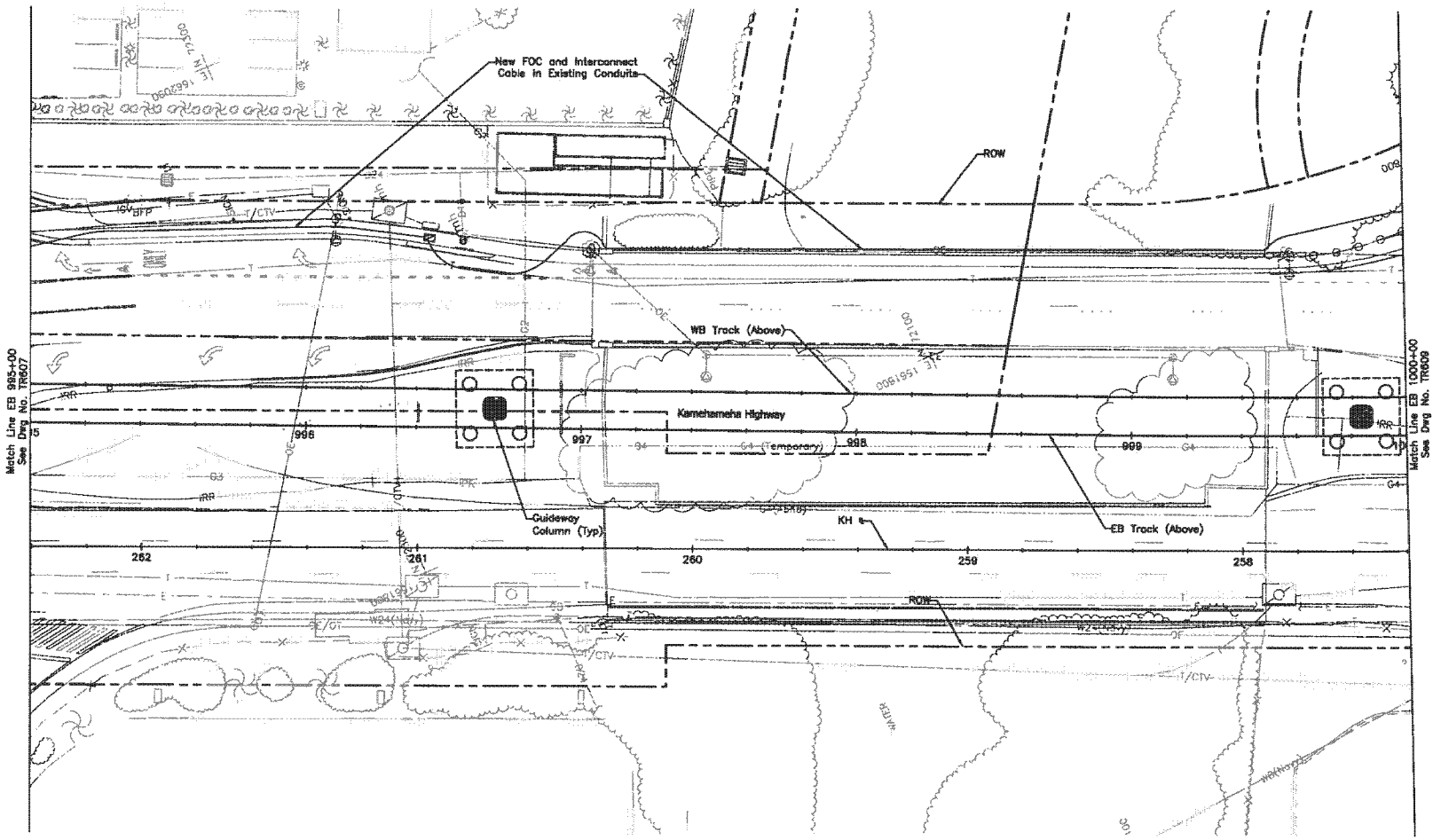

NOTES:

1. For General Traffic Signal Notes, Symbols, and Abbreviations, see Dwg No. TG006.
2. For Roadway Construction Plan Notes and Legend, see Dwg No. CG003.

20' 0 20'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: K Okazaki
Drawn: Z Tong
Checked: L Yokomizo
Approved: K Niiya
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: ATA AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII

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AIRPORT GUIDEWAY AND UTILITIES

FIBER OPTIC & TRAFFIC SIGNAL INTERCONNECT PLAN

EB 995+00 TO EB 1000+00

Contract No.: SV-430
CADD File: AP-C04-TR608
Drawing No: TR608 Rev.
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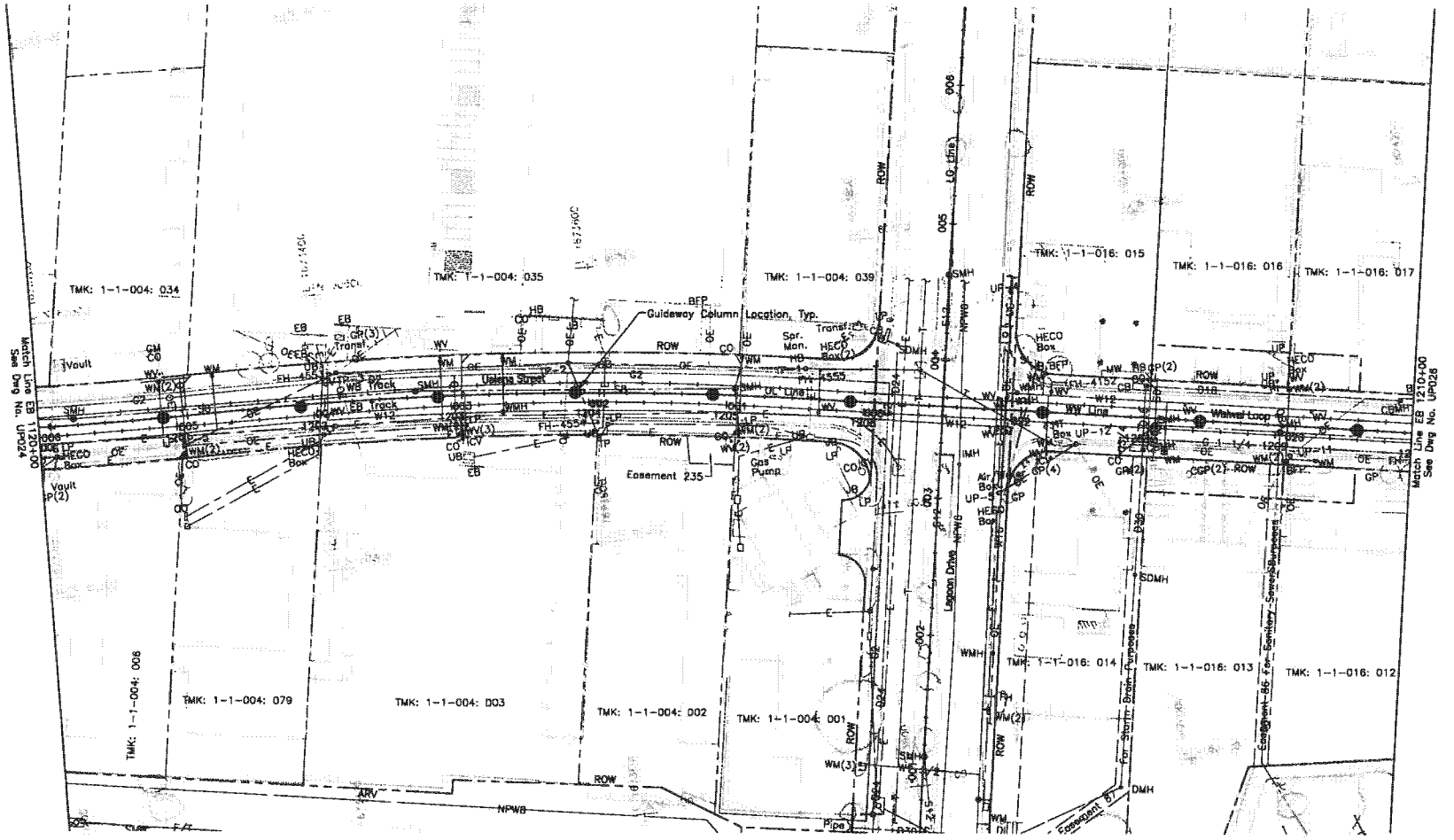

40' 0' 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: G Tom
Drawn: D Lee
Checked: H Andrews
Approved: J Yamamoto
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: R. M. TOWILL CORPORATION

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AIRPORT GUIDEWAY & UTILITIES

COMPOSITE PLAN EXISTING UTILITIES

EB 1200+00 TO EB 1210+00

Contract No.: SV-430
CADD File: AP-D02-UP025
Drawing No: UP025 Rev.
Scale: 1"=40'
Page No. 55 of 222

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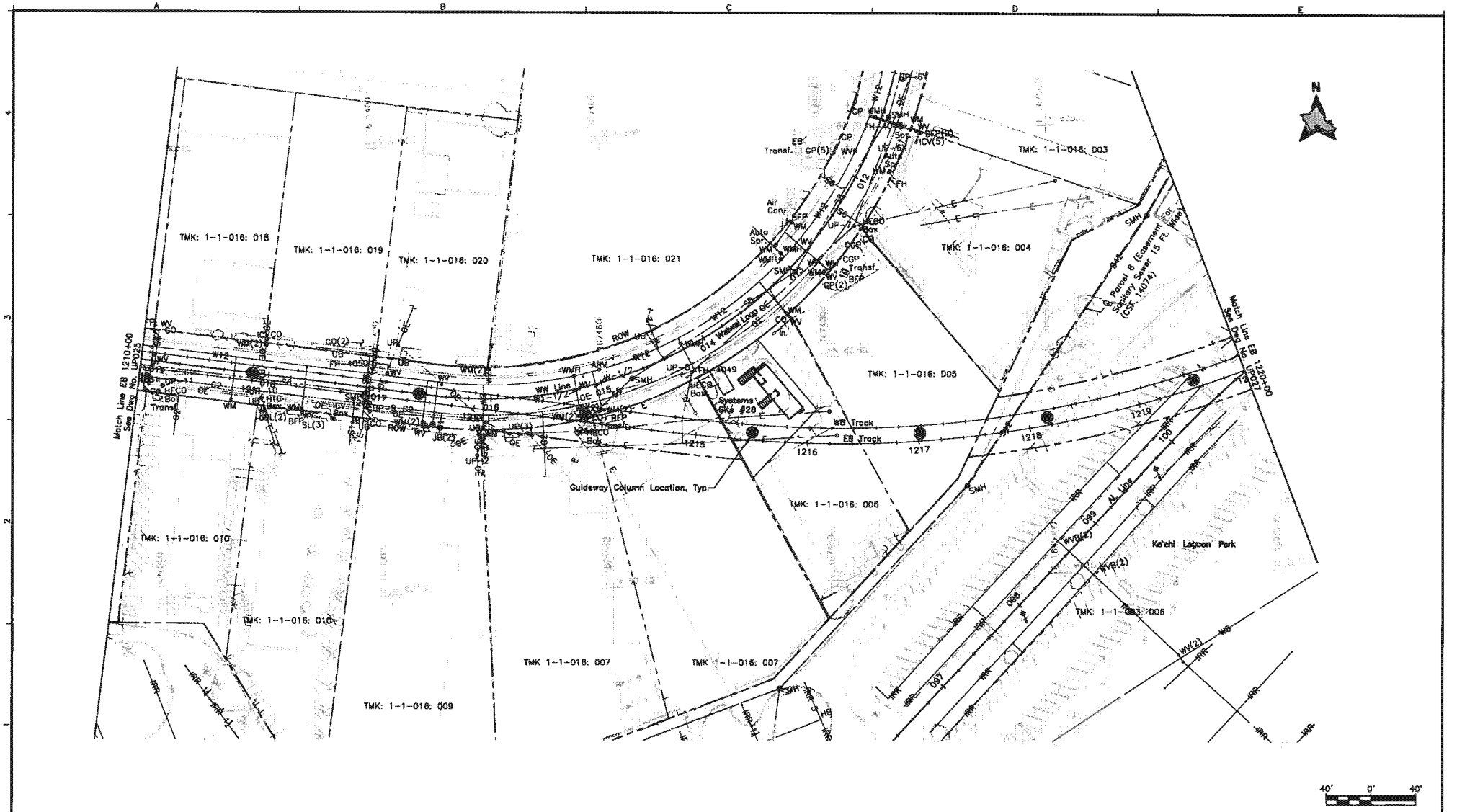

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: G Tom
Drawn: D Lee
Checked: H Andrews
Approved: J Yamamoto
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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AIRPORT GUIDEWAY & UTILITIES

COMPOSITE PLAN EXISTING UTILITIES

EB 1210+00 TO EB 1220+00

Contract No.: SV-430
CADD File: AP-D02-UP026
Drawing No: UP026
Rev.
Scale: 1"=40'
Page No. 56 of 222

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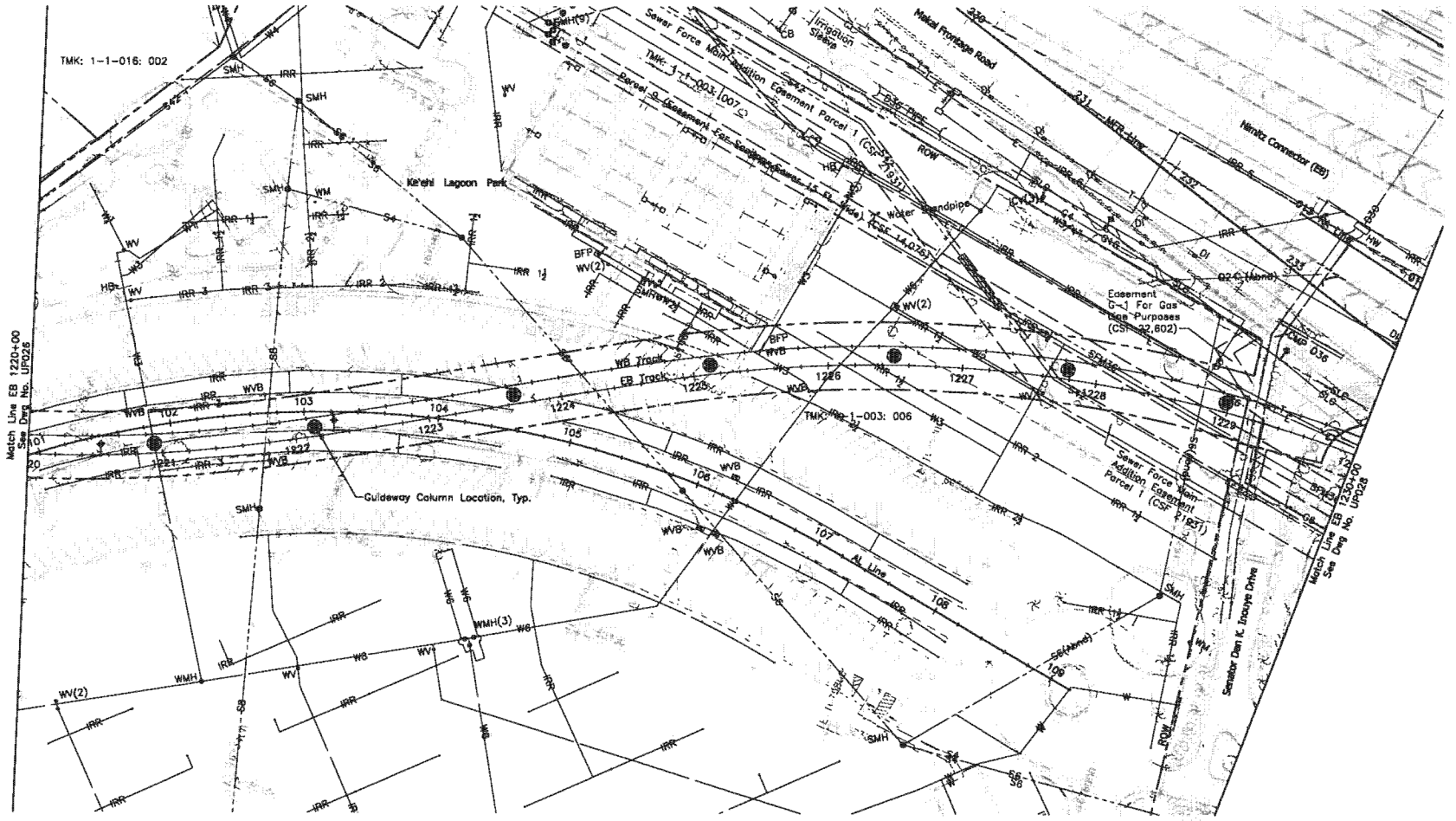

40' 0' 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: G Tom
Drawn: D Lee
Checked: H Andrews
Approved: J Yamamoto
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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AIRPORT GUIDEWAY & UTILITIES

COMPOSITE PLAN EXISTING UTILITIES

EB 1220+00 TO EB 1230+00

Contract No.: SV-430
CADD File: AP-D02-UP027
Drawing No: UP027
Rev.
Scale: 1"=40'
Page No. 57 of 222

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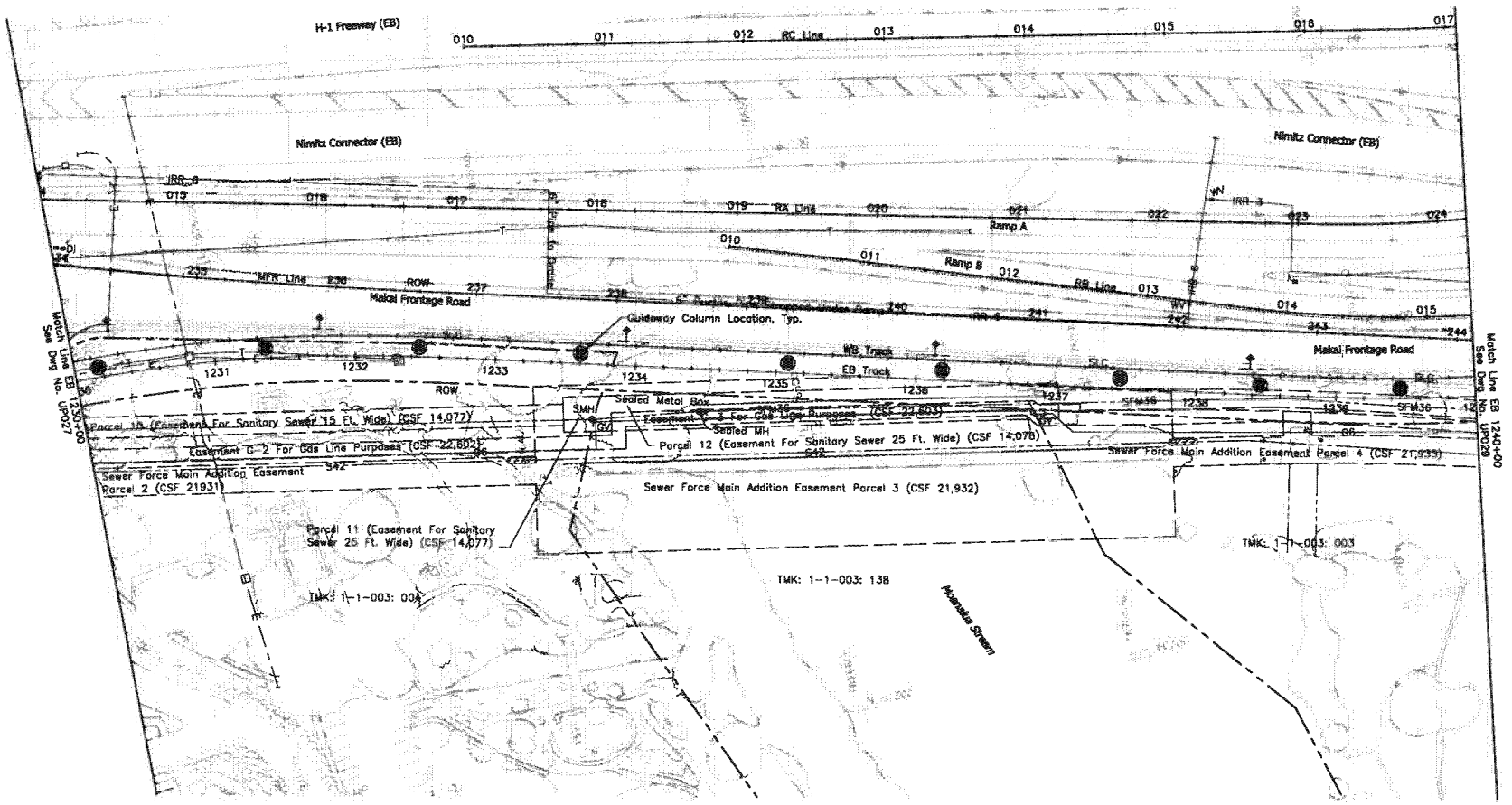

Rev	By	Date	Description

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PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: G Tom
Drawn: D Lee
Checked: H Andrews
Approved: J Yamemata
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: R. M. TOWILL CORPORATION

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AIRPORT GUIDEWAY & UTILITIES

COMPOSITE PLAN EXISTING UTILITIES

EB 1230+00 TO EB 1240+00

Contract No.: SV-430
CADD File: AP-D02-UP028
Drawing No: UP028 Rev.
Scale: 1"=40'
Page No. 58 of 222

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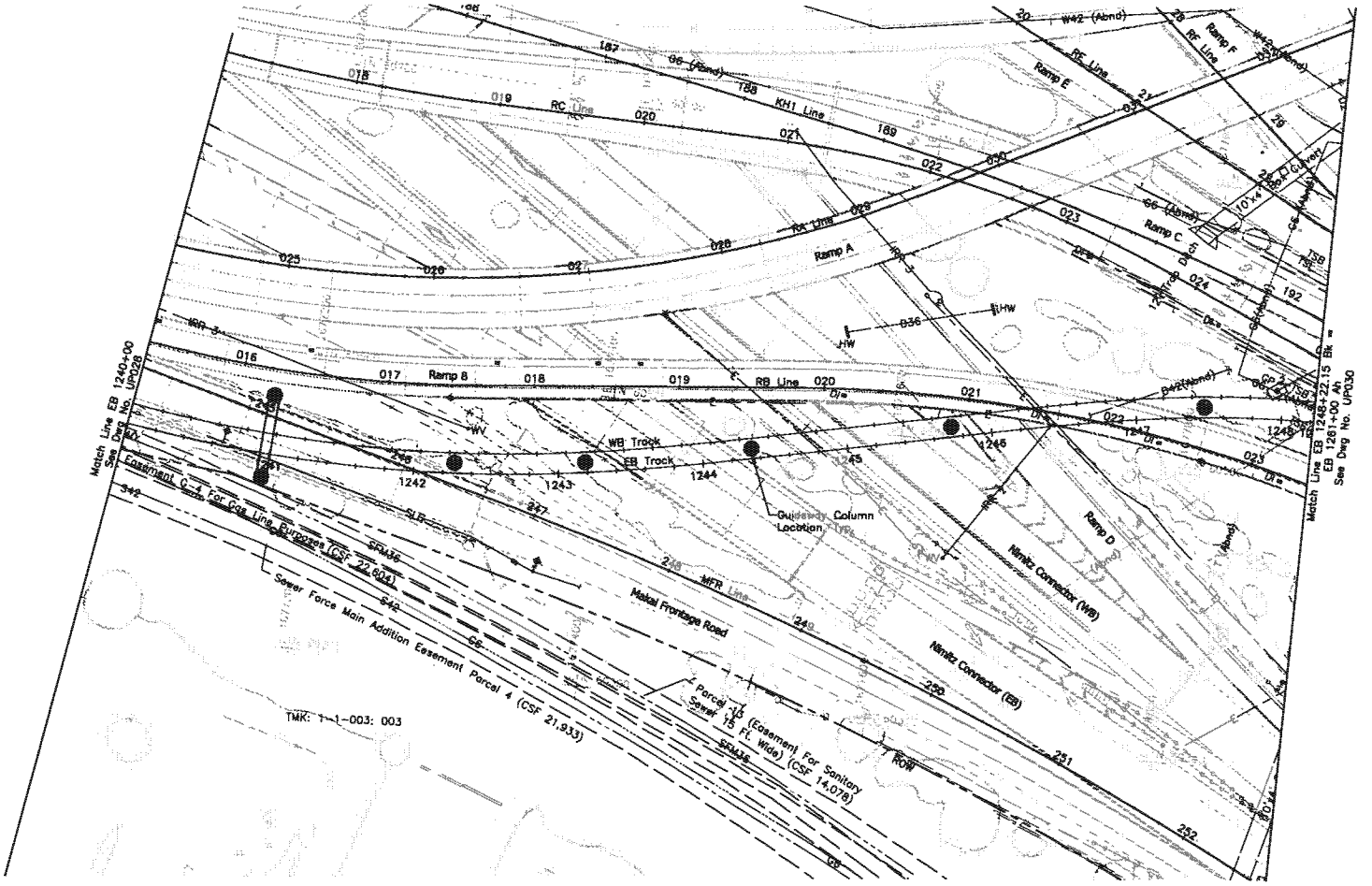

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: G Tom
Drawn: O Lee
Checked: H Andrews
Approved: J Yamamoto
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: R. M. TOWILL CORPORATION

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AIRPORT GUIDEWAY & UTILITIES

COMPOSITE PLAN EXISTING UTILITIES

EB 1240+00 TO EB 1248+22.15 BK

Contract No.: SV-430
CADD File: AP-D02-UP029
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Page No. 59 of 222

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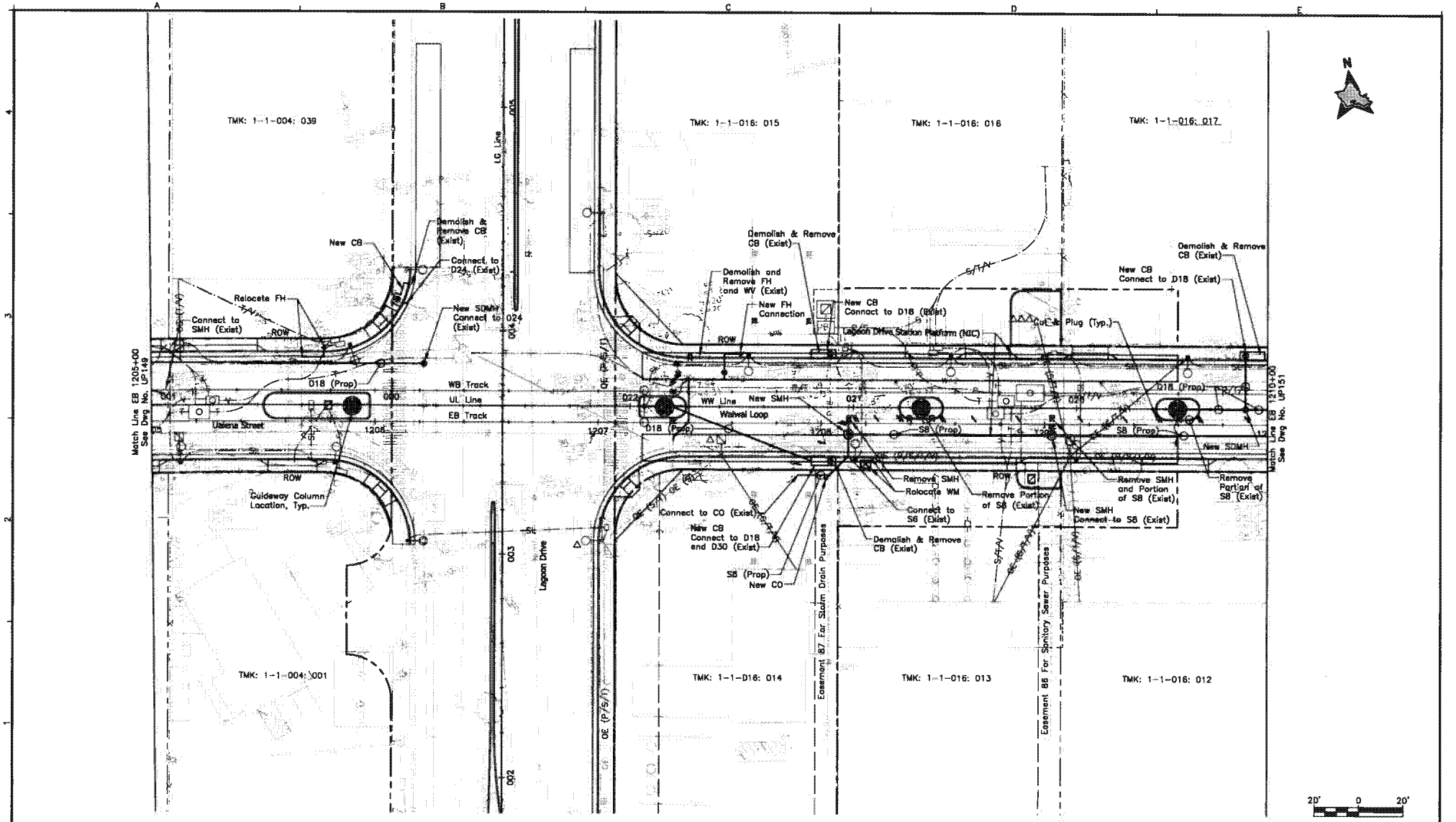

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: C Tom
Drawn: D Lee
Checked: H Andrews
Approved: J Yamamoto
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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AIRPORT GUIDEWAY & UTILITIES

UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 1205+00 TO EB 1210+00

Contract No.: SV-430
CADD File: AP-D03-UP150
Drawing No: UP150
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Scale: 1"=20'
Page No. 106 of 222

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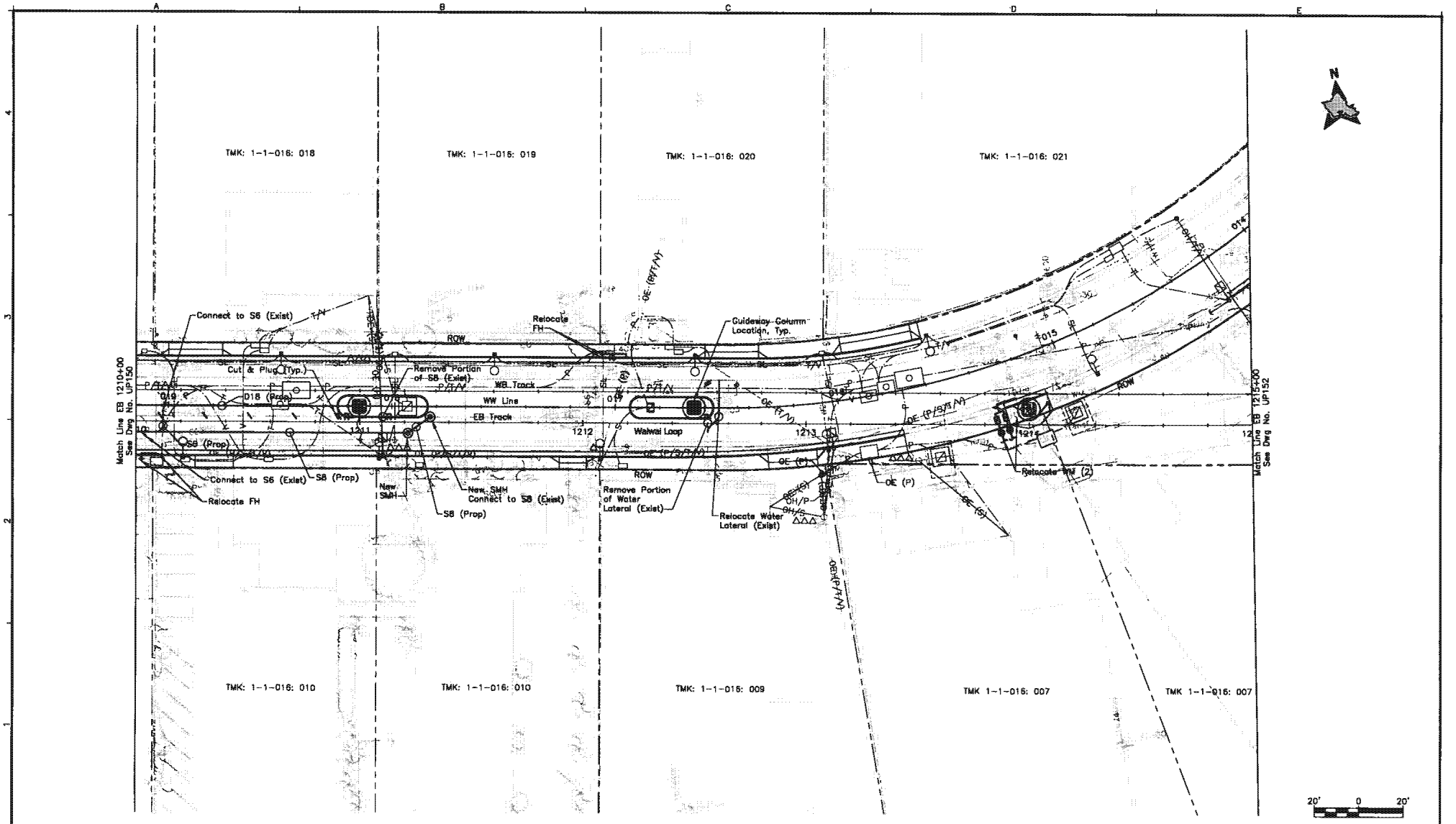

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: G Tom
Drawn: D Lee
Checked: H Andrews
Approved: J Yamamoto
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant: R. M. TOWILL CORPORATION

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

AIRPORT GUIDEWAY & UTILITIES

UTILITY RELOCATION PLAN WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 1210+00 TO EB 1215+00

Contract No.: SV-430
CADD File: AP-D03-UP151
Drawing No: UP151
Rev.
Scale: 1"=20'
Page No. 107 of 222

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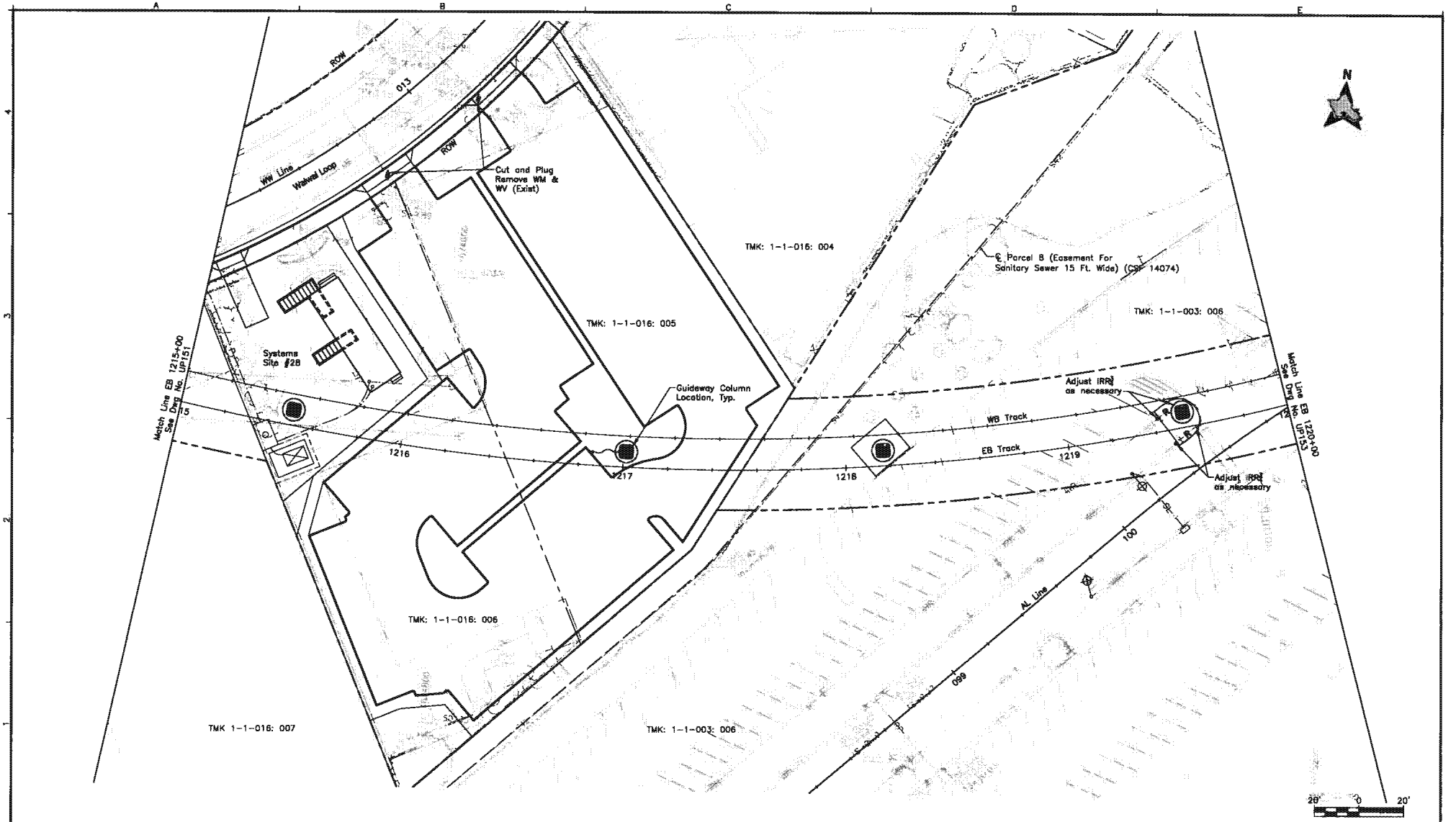

Rev	By	Date	Description

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PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: G Tom
Drawn: D Lee
Checked: H Andrews
Approved: J Yamamoto
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 1215+00 TO EB 1220+00

Contract No.: SV-430
CADD File: AP-D03-UP152
Drawing No: UP152 Rev.
Scale: 1"=20'
Page No. 108 of 222

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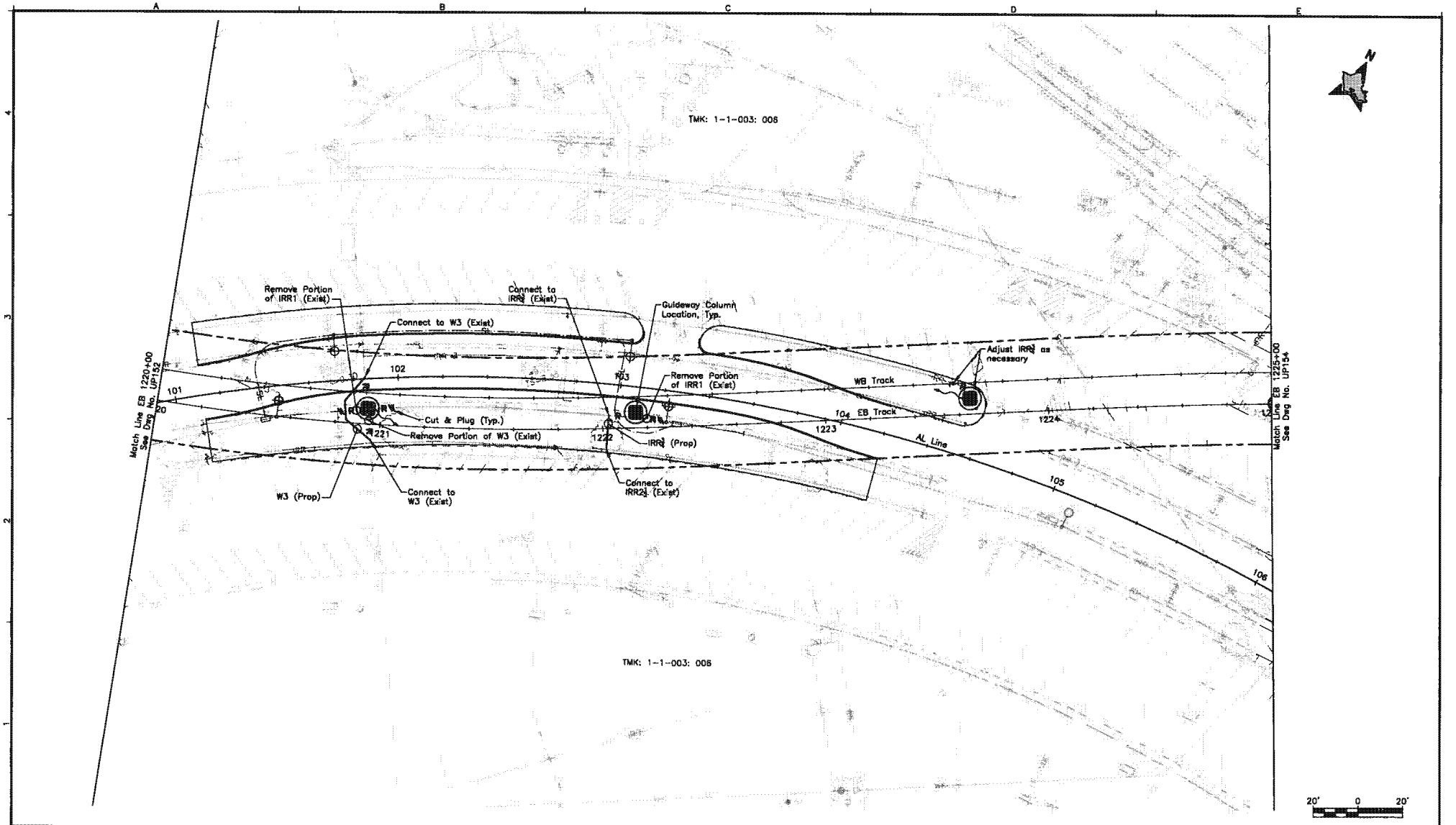

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 1220+00 TO EB 1225+00

Contract No.: SV-430
CADD File: AP-D03-UP153
Drawing No: UP153 Rev.
Scale: 1"=20'
Page No. 109 of 222

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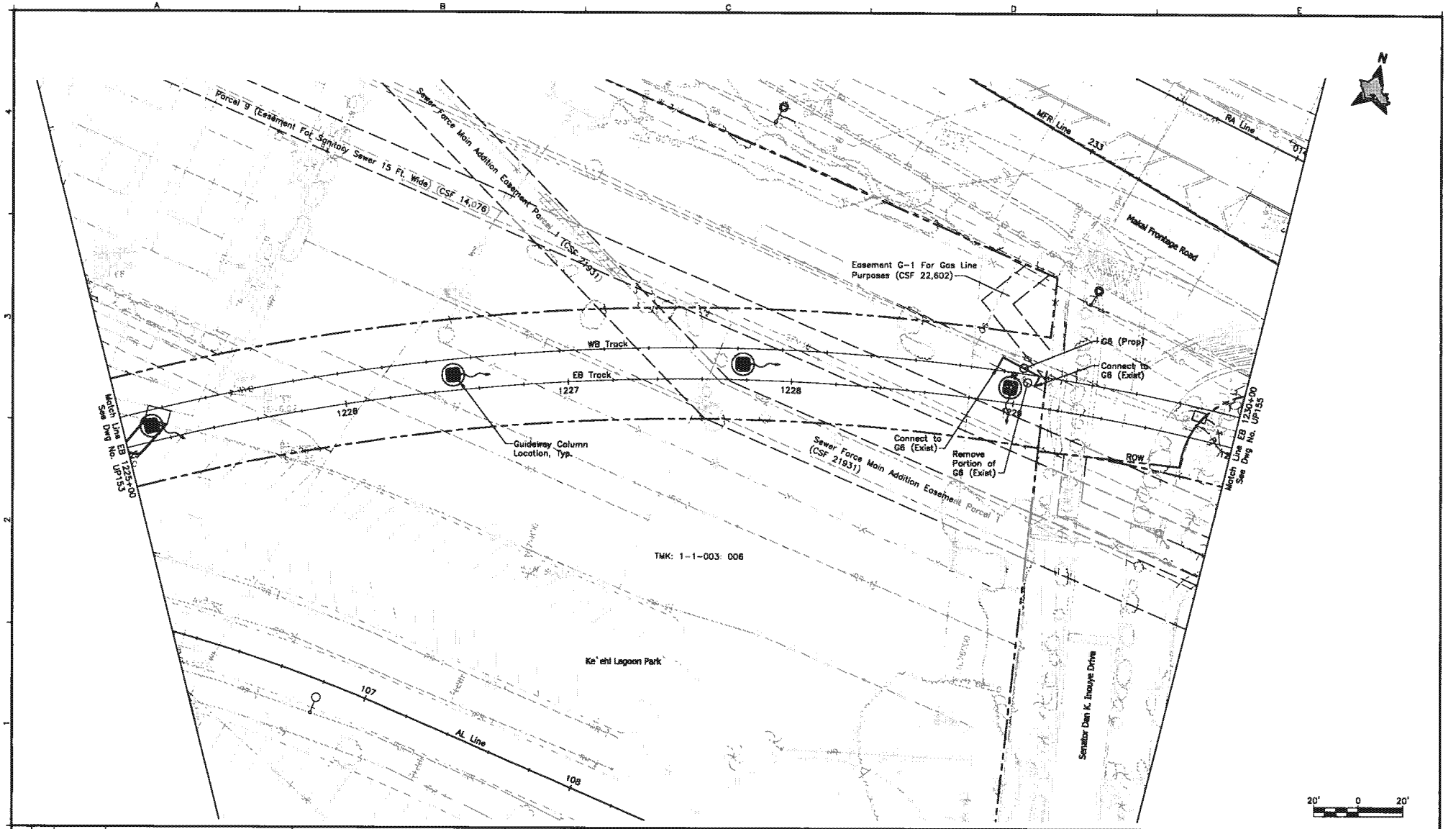

Rev	By	Date	Description

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WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 1225+00 TO EB 1230+00

Contract No.: SV-430
CADD File: AP-D03-UP154
Drawing No: UP154 Rev.
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Page No. 110 of 222

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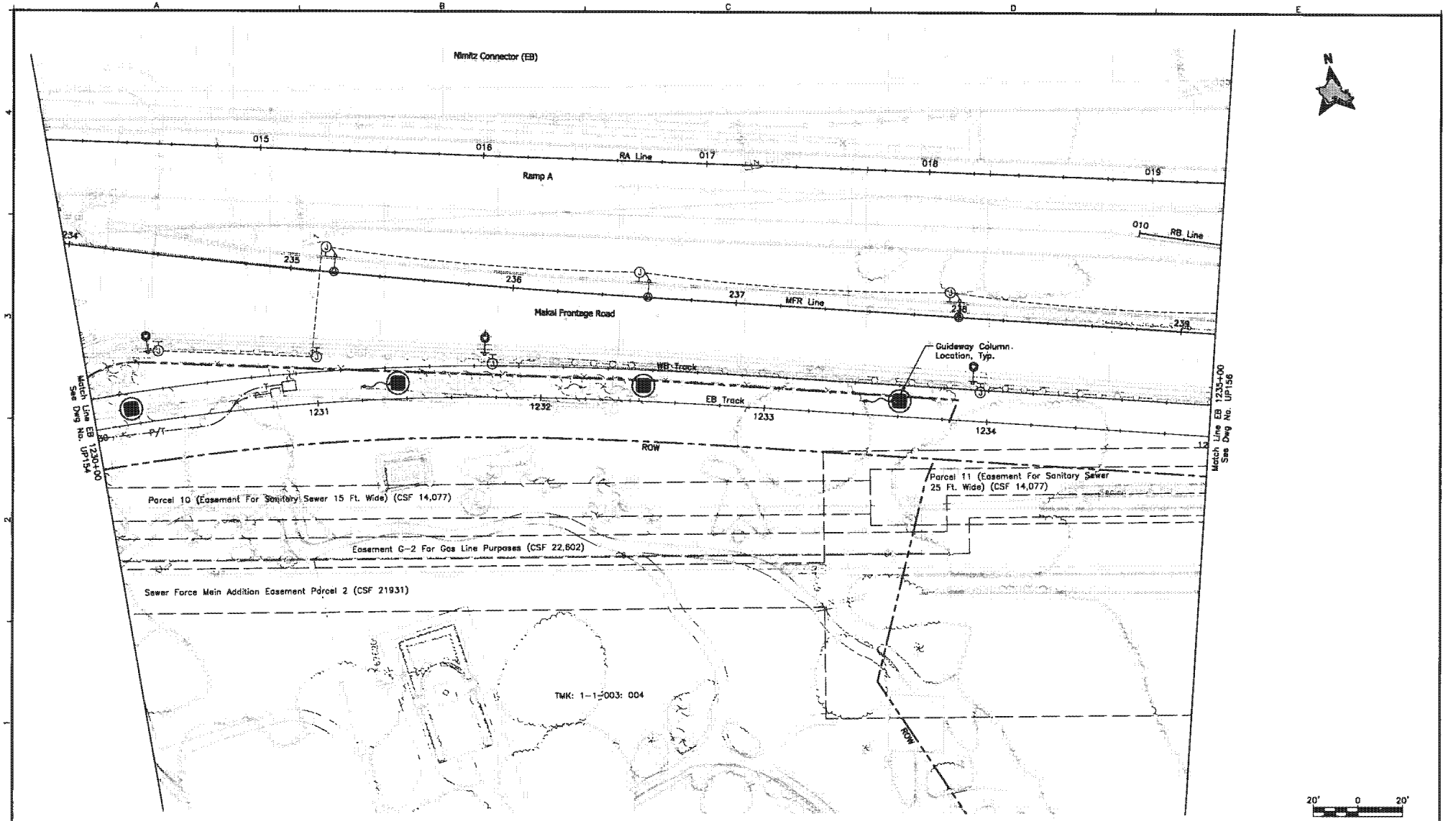

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Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 1230+00 TO EB 1235+00

Contract No.: SV-430
CADD File: AP-D03-UP155
Drawing No: UP155 Rev.
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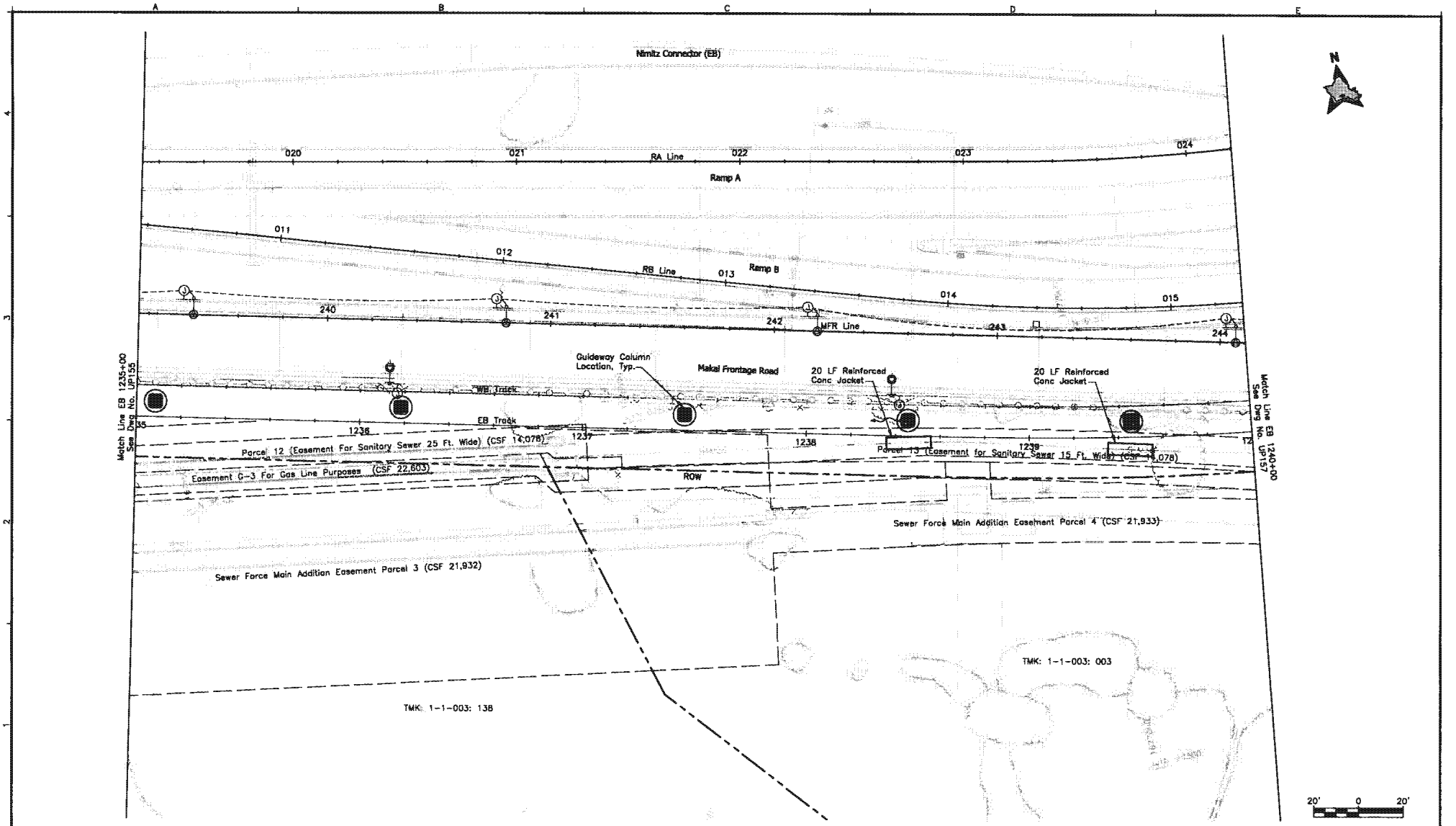

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 1235+00 TO EB 1240+00

Contract No.: SV-430
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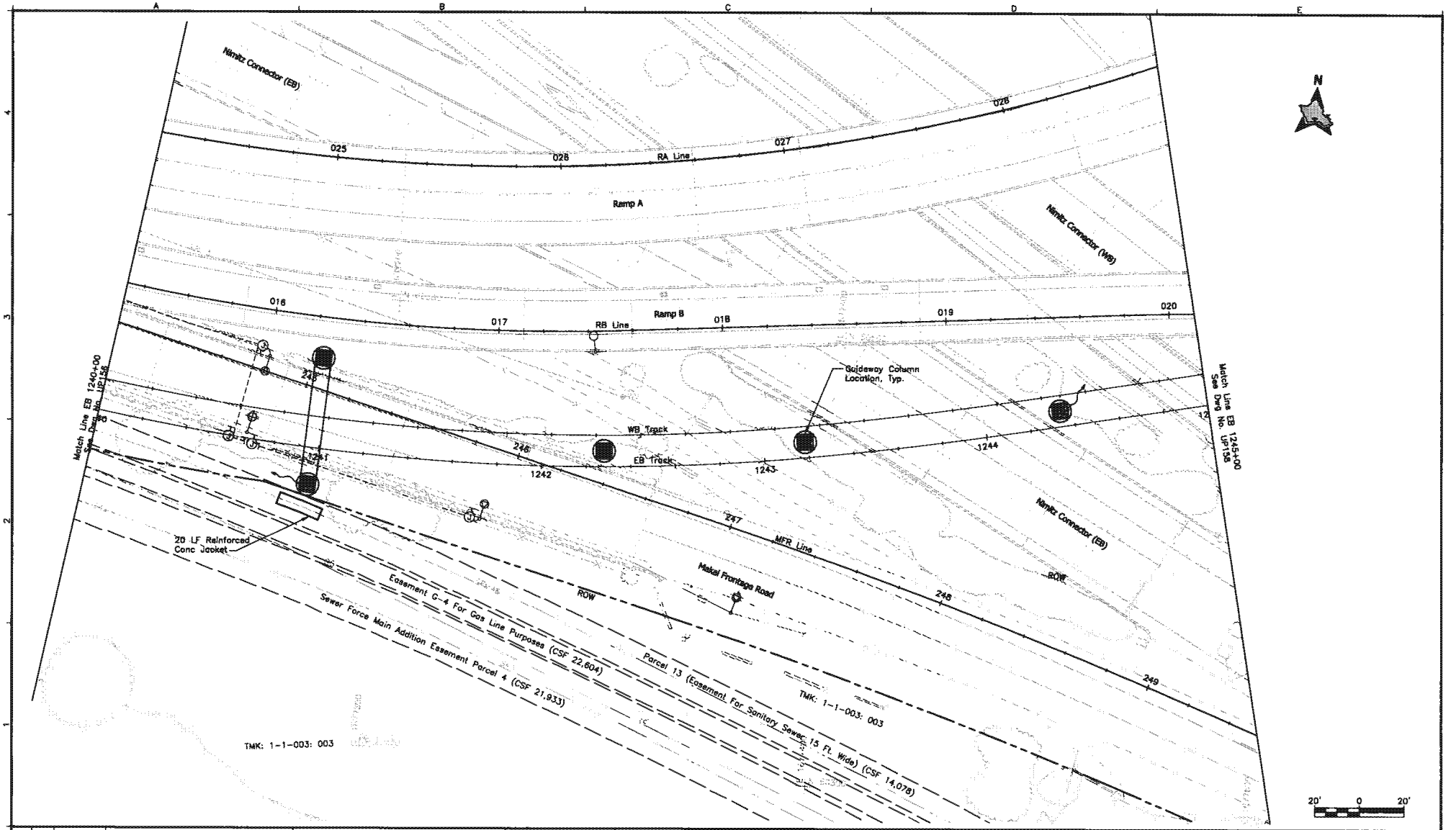

Rev	By	Date	Description

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Approved: J Yamamoto
Date: 10-01-10

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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UTILITY RELOCATION PLAN
WATER, SEWER, DRAINAGE, PETROLEUM, & GAS

EB 1240+00 TO EB 1245+00

Contract No.: SV-430
CADD File: AP-D03-UP157
Drawing No: UP157 Rev.
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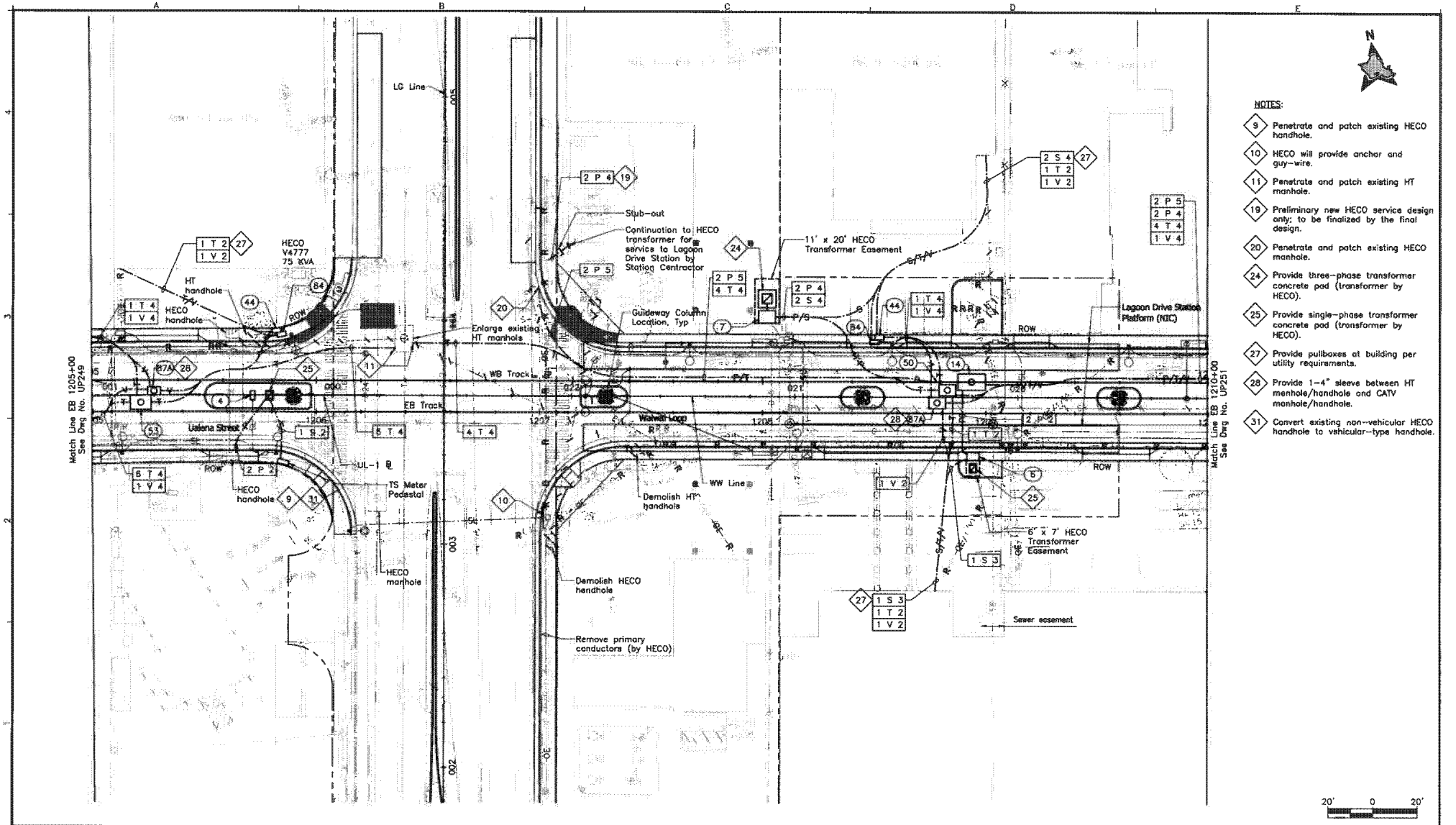

NOTES:

9 Penetrate and patch existing HECO handhole.

10 HECO will provide anchor and guy-wire.

11 Penetrate and patch existing HT manhole.

19 Preliminary new HECO service design only; to be finalized by the final design.

20 Penetrate and patch existing HECO manhole.

24 Provide three-phase transformer concrete pad (transformer by HECO).

25 Provide single-phase transformer concrete pad (transformer by HECO).

27 Provide pullboxes at building per utility requirements.

28 Provide 1-4" sleeve between HT manhole/handhole and CATV manhole/handhole.

31 Convert existing non-vehicular HECO handhole to vehicular-type handhole.

Rev.	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: F Hirakami
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 1205+00 TO EB 1210+00

Contract No.: SV-430
CADD File: AP-D03-UP250
Drawing No: UP250 Rev.
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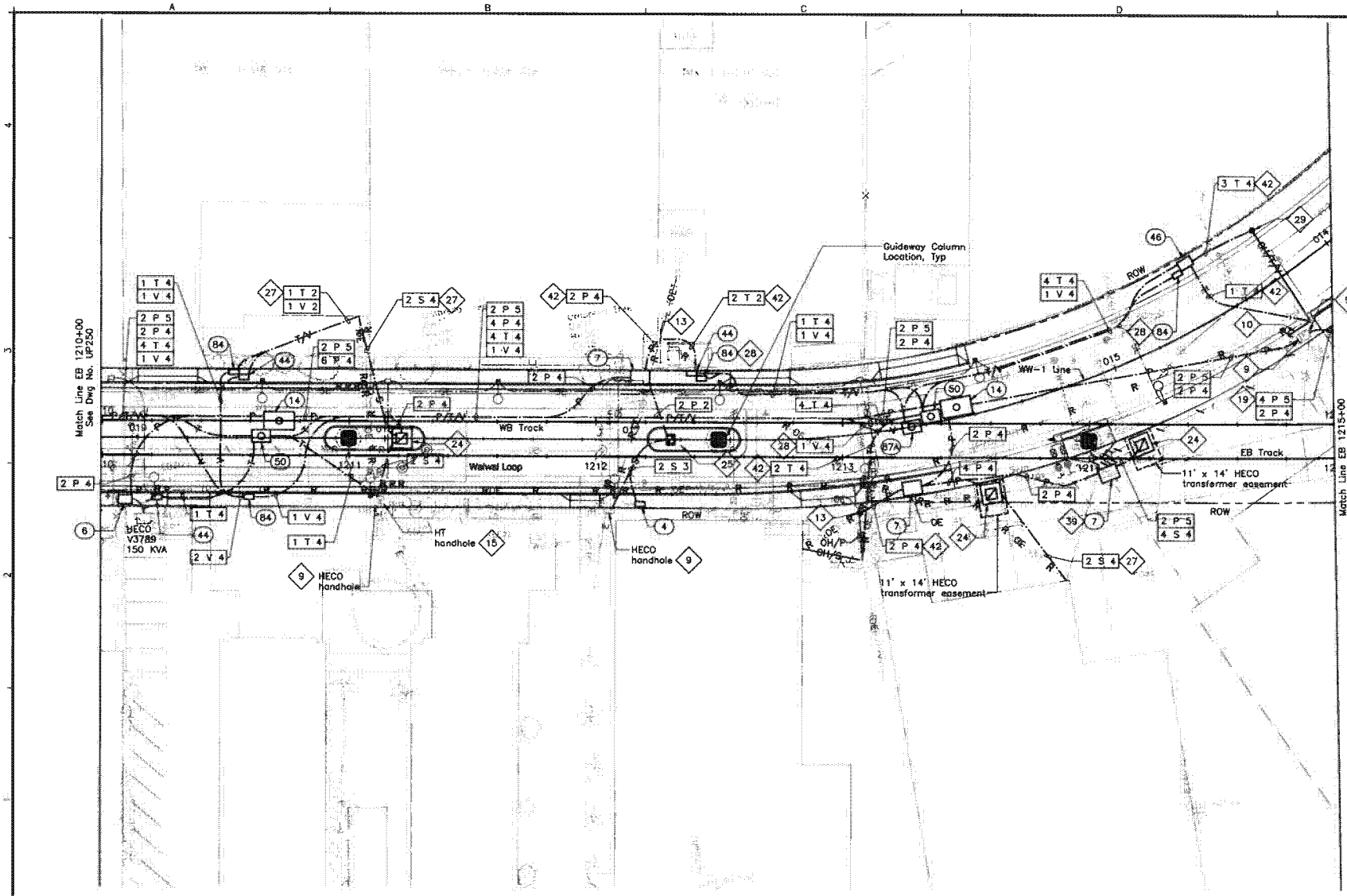

NOTES:

- 9 Penetrate and patch existing HECO handhole.
- 10 HECO will provide anchor and guy-wire.
- 13 HECO will modify/replace existing pole to provide new riser.
- 15 Penetrate and patch existing HT handhole.
- 19 Preliminary new HECO service design only; to be finalized by the final design.
- 24 Provide three-phase transformer concrete pad (transformer by HECO).
- 25 Provide single-phase transformer concrete pad (transformer by HECO).
- 27 Provide pullboxes at building per utility requirements.
- 28 Provide 1-4" sleeve between HT manhole/handhole and CATV manhole/handhole.
- 29 New riser utility pole by HT.
- 39 Intercept existing HECO ductline with new manhole.
- 42 Provide pole riser conduits in complement indicated up to applicable location on pole.

20' 0 20'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: F Hirakami
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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AIRPORT GUIDEWAY & UTILITIES

UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 1210+00 TO EB 1215+00

Contract No.: SV-430
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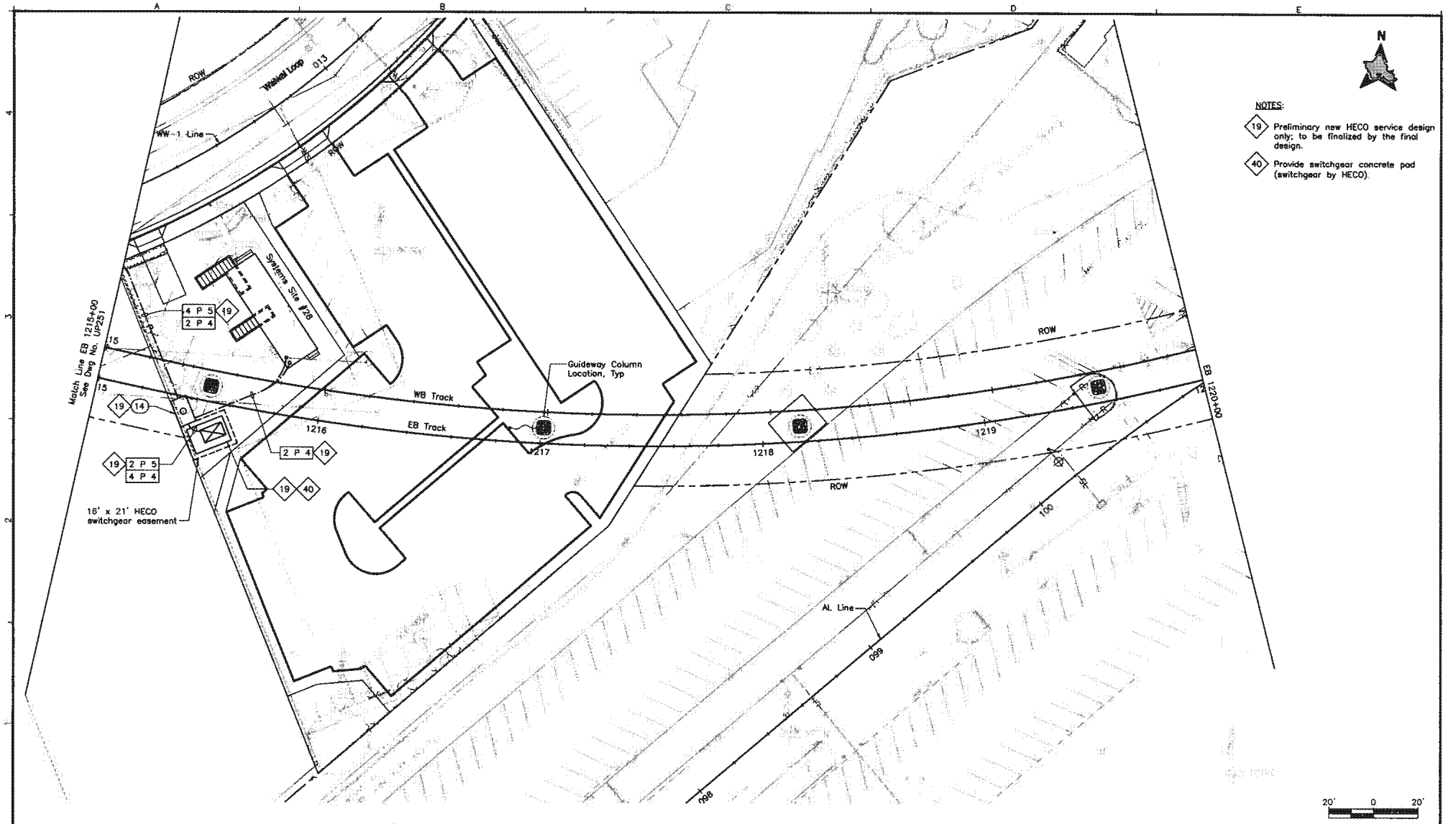

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: F Hirakami
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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AIRPORT GUIDEWAY & UTILITIES

UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 1215+00 TO EB 1220+00

Contract No.: SV-430
CADD File: AP-D03-UP252
Drawing No: UP252 Rev.
Scale: 1"=20'
Page No. 168 of 222

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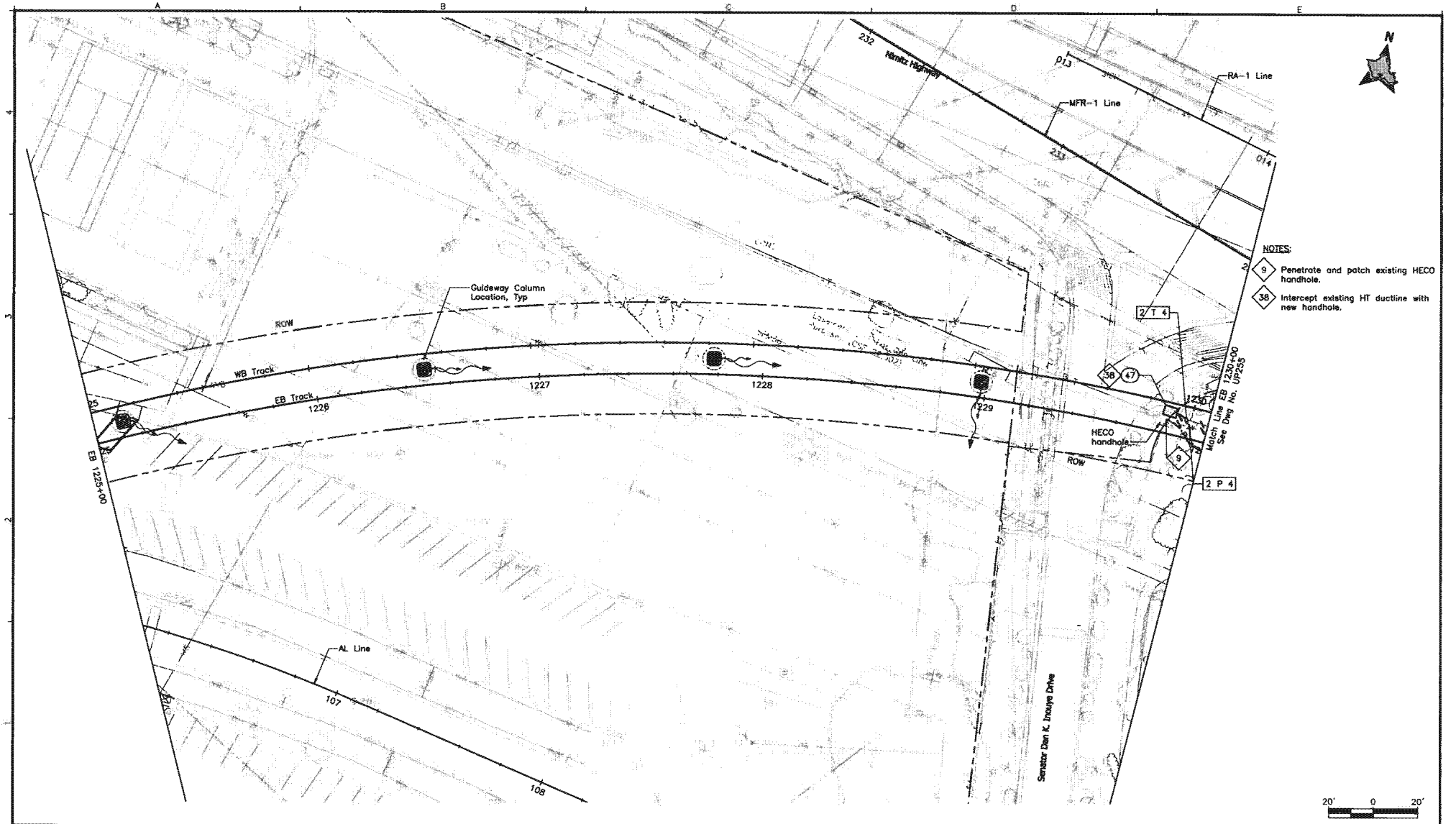

NOTES:

9 Penetrate and patch existing HECO handhole.

38 Intercept existing HT ductline with new handhole.

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: F Hirakami
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
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AIRPORT GUIDEWAY & UTILITIES

UTILITY RELOCATION PLAN ELECTRICAL & COMMUNICATIONS

EB 1225+00 TO EB 1230+00

Contract No.: SV-430
CADD File: AP-D03-UP254
Drawing No: UP254 Rev.
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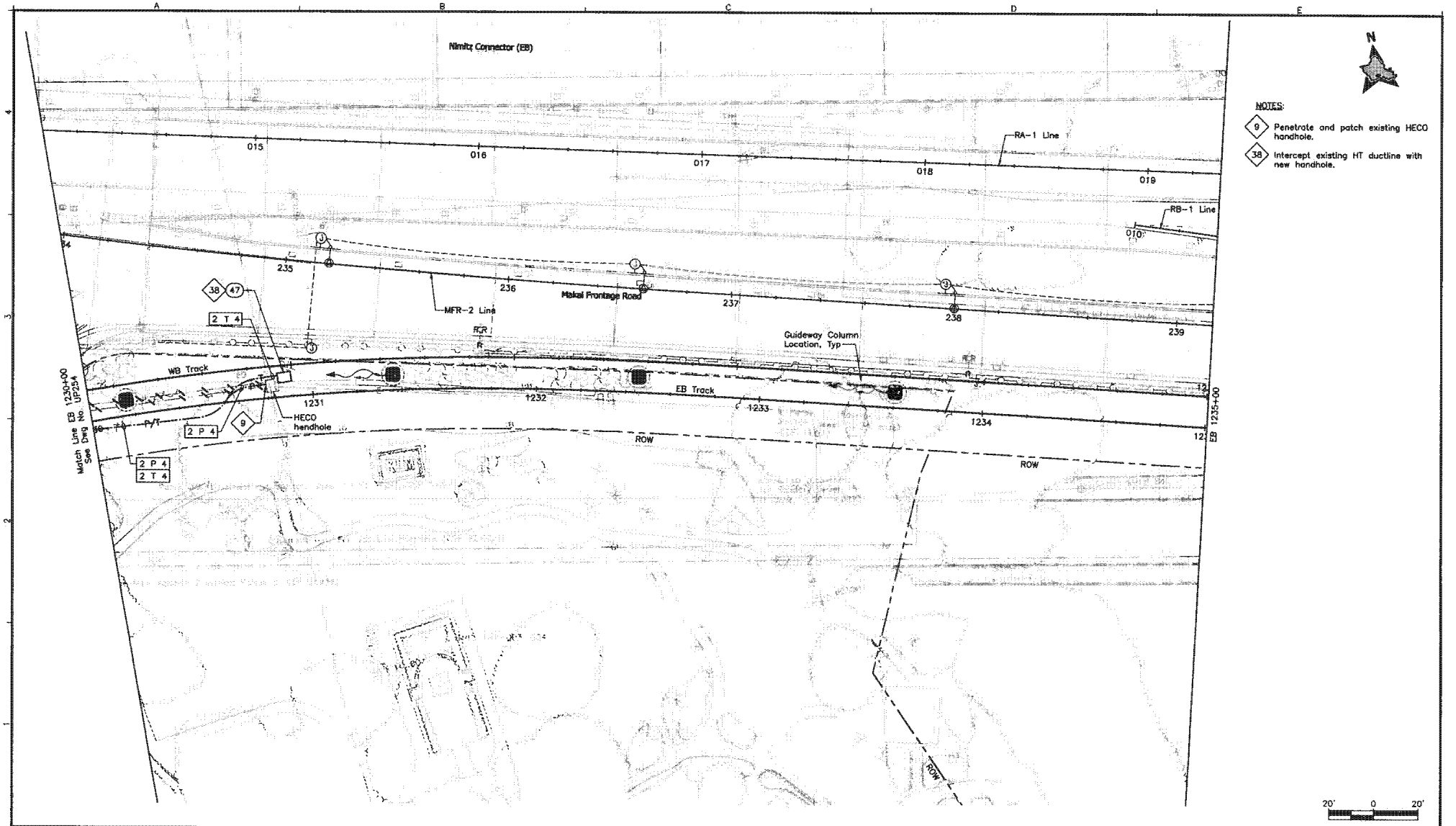

NOTES:

9 Penetrate and patch existing HECO handhole.

38 Intercept existing HT ductline with new handhole.

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: F Hirakami
Drawn: D Saito
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HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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AIRPORT GUIDEWAY & UTILITIES

UTILITY RELOCATION PLAN
ELECTRICAL & COMMUNICATIONS

EB 1230+00 TO EB 1235+00

Contract No.: SV-430
CADD File: AP-D03-UP255
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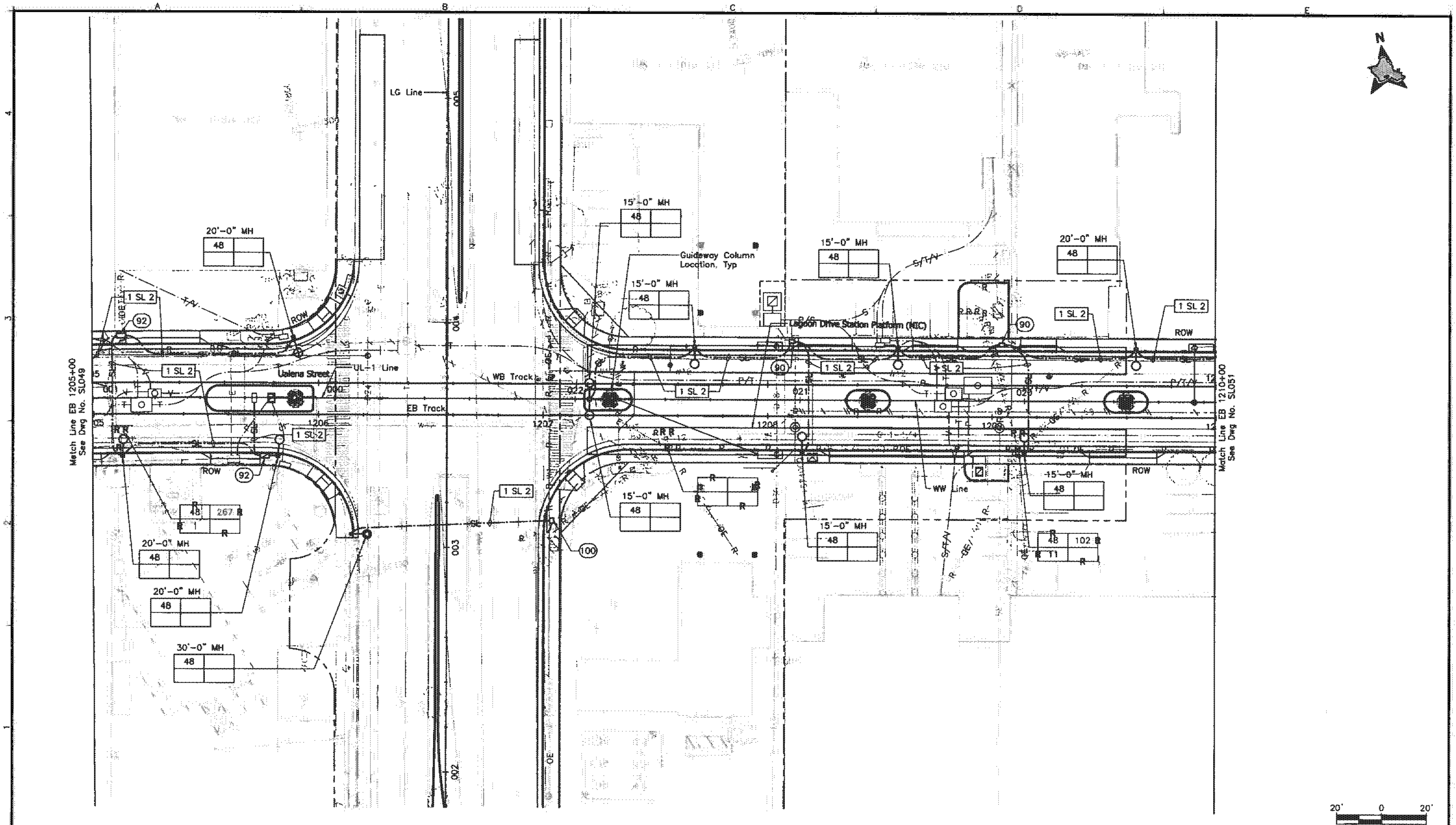

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Designed: R Katahara
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 10-01-10

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STREET LIGHTING PLAN

EB 1205+00 TO EB 1210+00

Contract No.: SV-430
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Page No. 201 of 222

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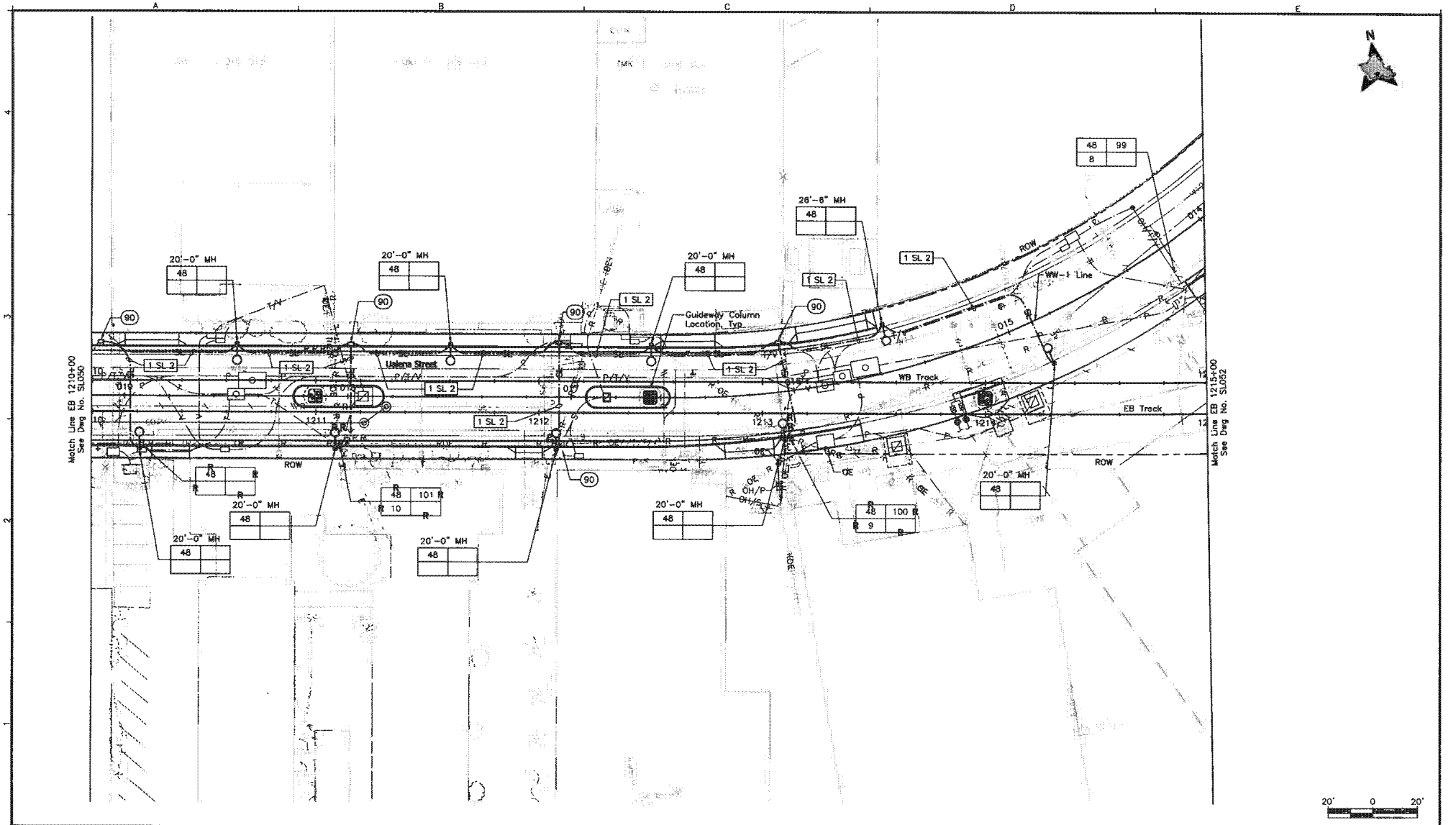

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STREET LIGHTING PLAN

EB 1210+00 TO EB 1215+00

Contract No.: SV-430
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Drawing No: SL051
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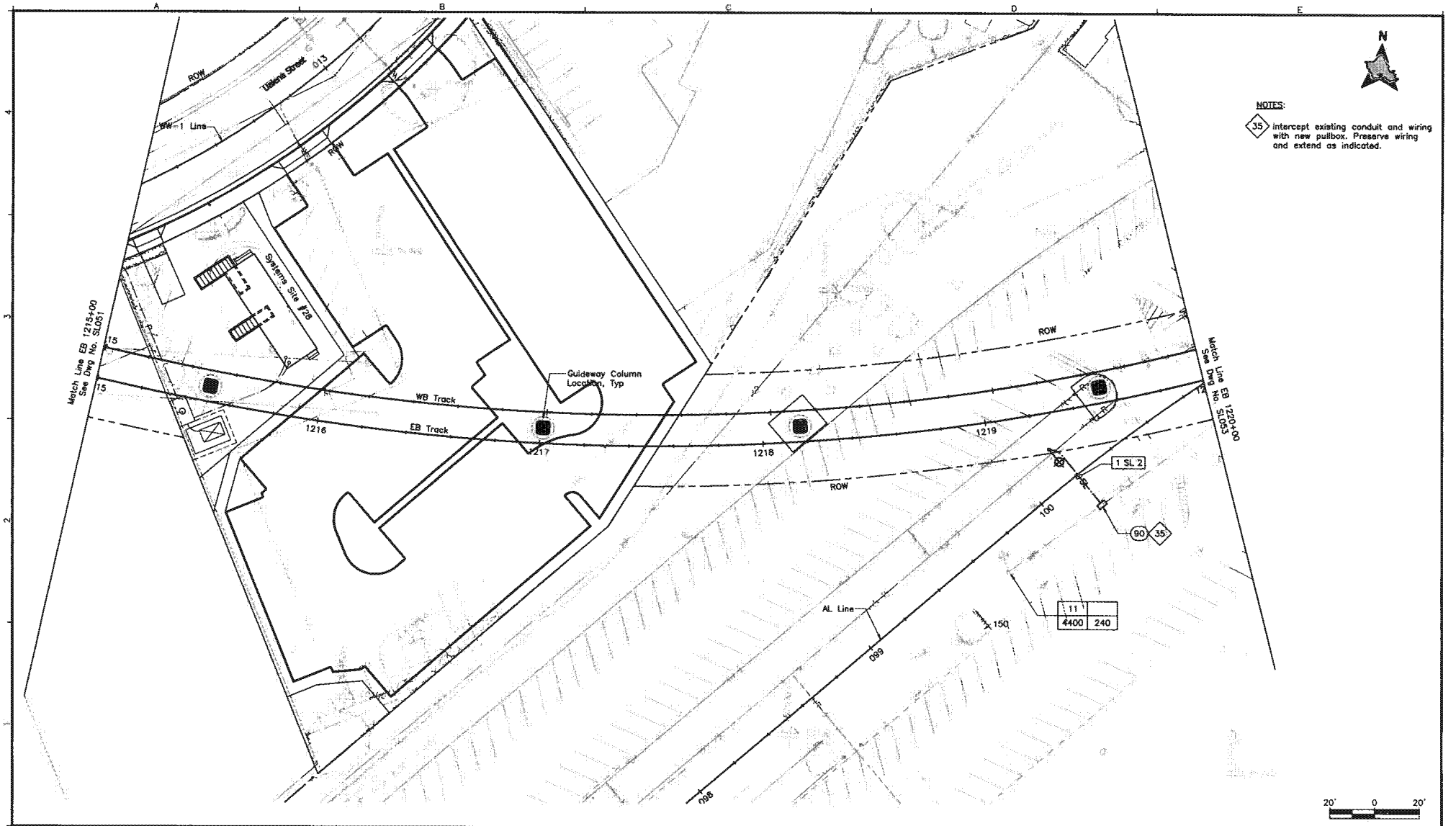

NOTES:

35 Intercept existing conduit and wiring with new pullbox. Preserve wiring and extend as indicated.

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: R Kotahara
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STREET LIGHTING PLAN

EB 1215+00 TO EB 1220+00

Contract No.: SV-430
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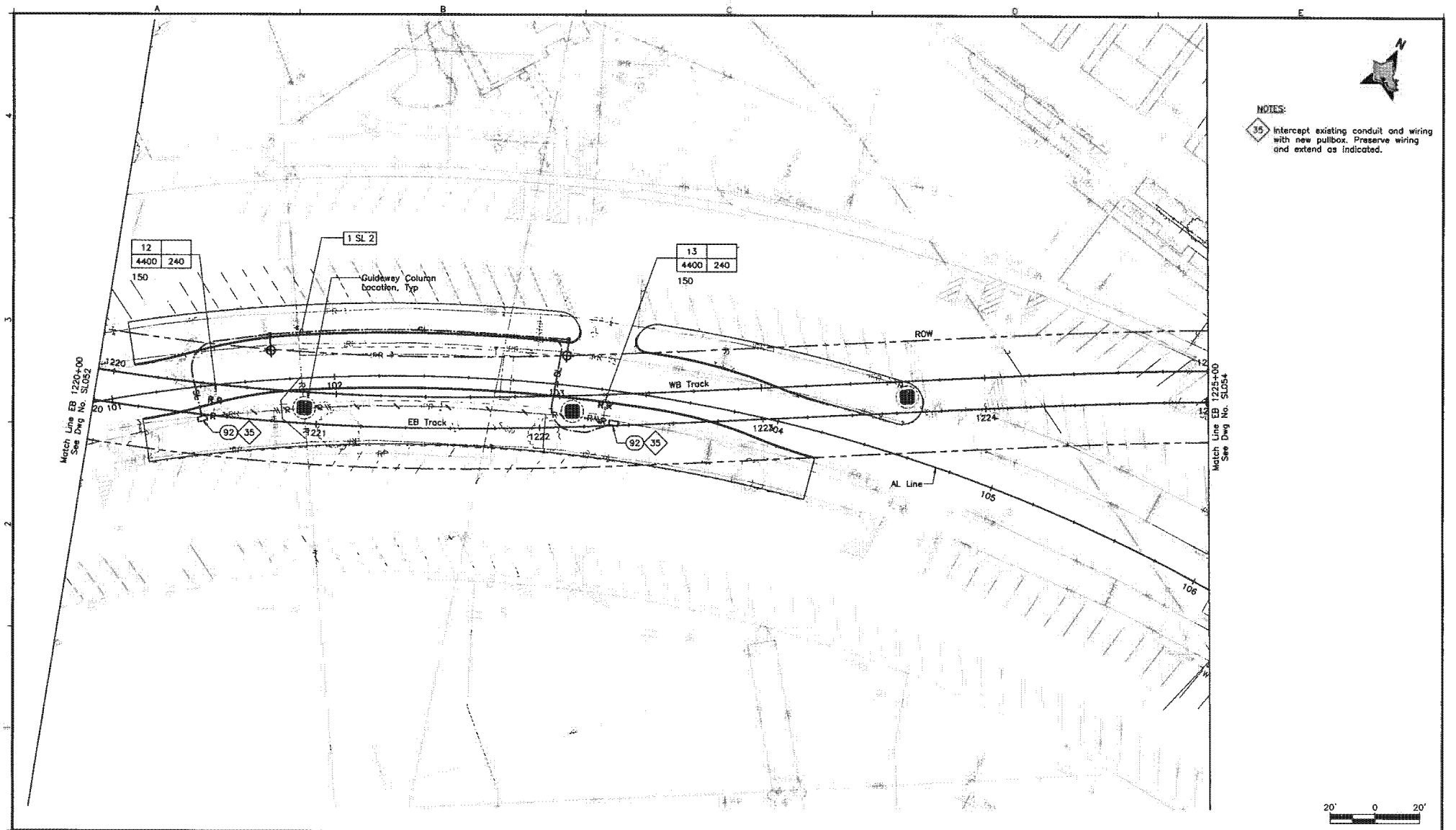

NOTES:

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STREET LIGHTING PLAN

EB 1220+00 TO EB 1225+00

Contract No.: SV-430
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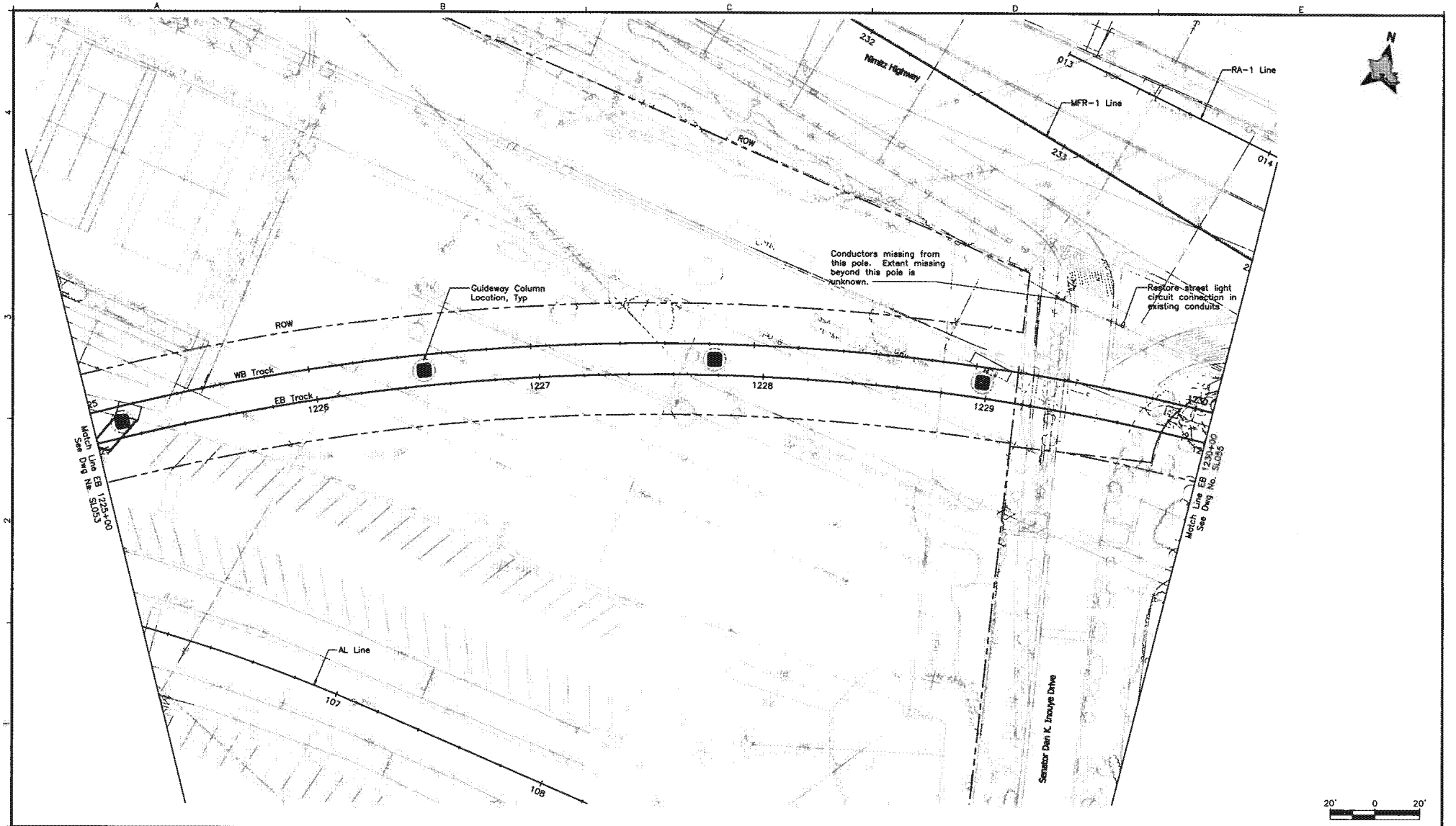

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CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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AIRPORT GUIDEWAY & UTILITIES

STREET LIGHTING PLAN

EB 1225+00 TO EB 1230+00

Contract No.: SV-430
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Drawing No.: SL054
Rev.
Scale: 1"=20'
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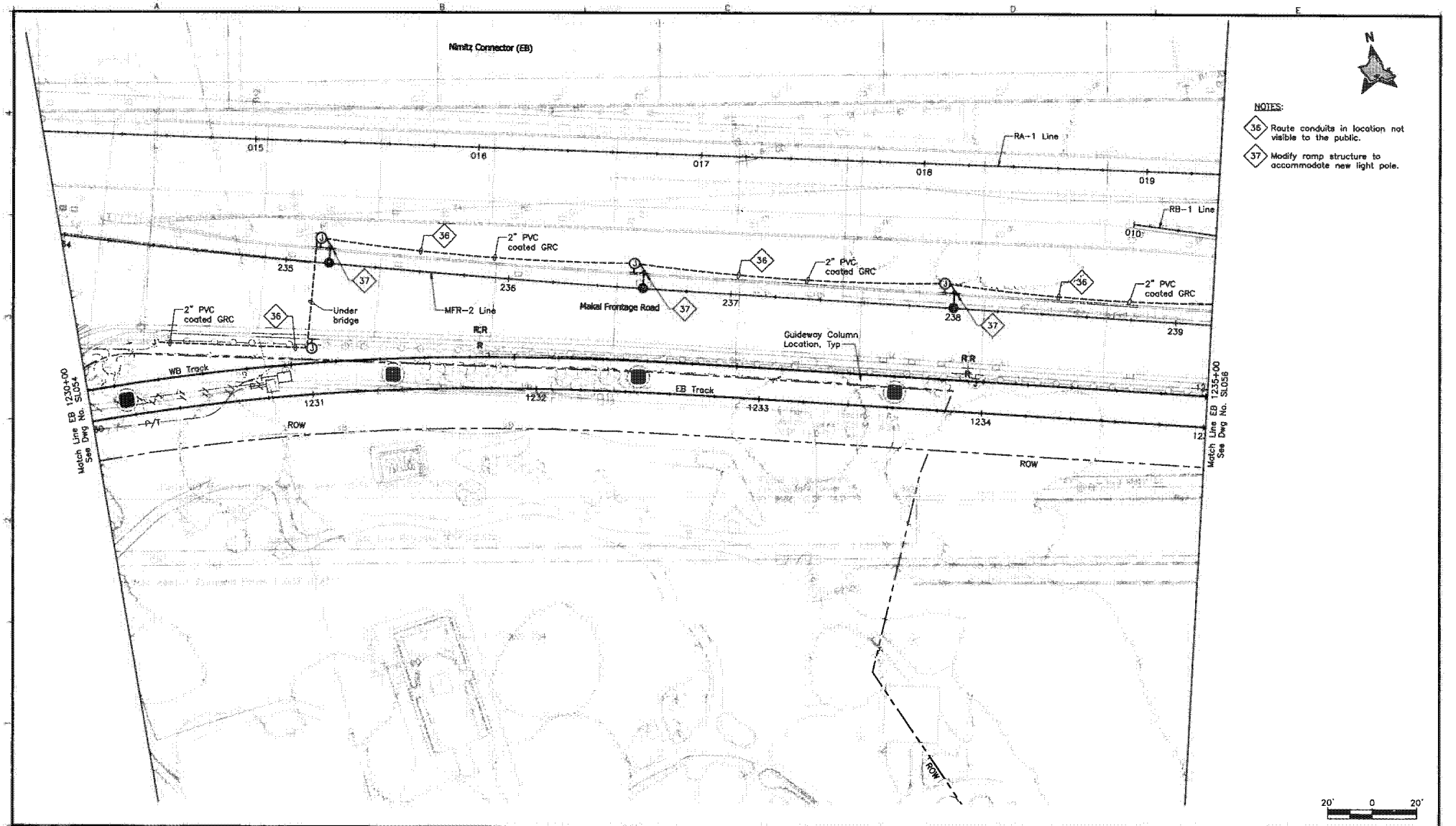

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HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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AIRPORT GUIDEWAY & UTILITIES

STREET LIGHTING PLAN

EB 1230+00 TO EB 1235+00

Contract No.: SV-430
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Drawing No.: SL055
Rev.
Scale: 1"=20'
Page No. 206 of 222

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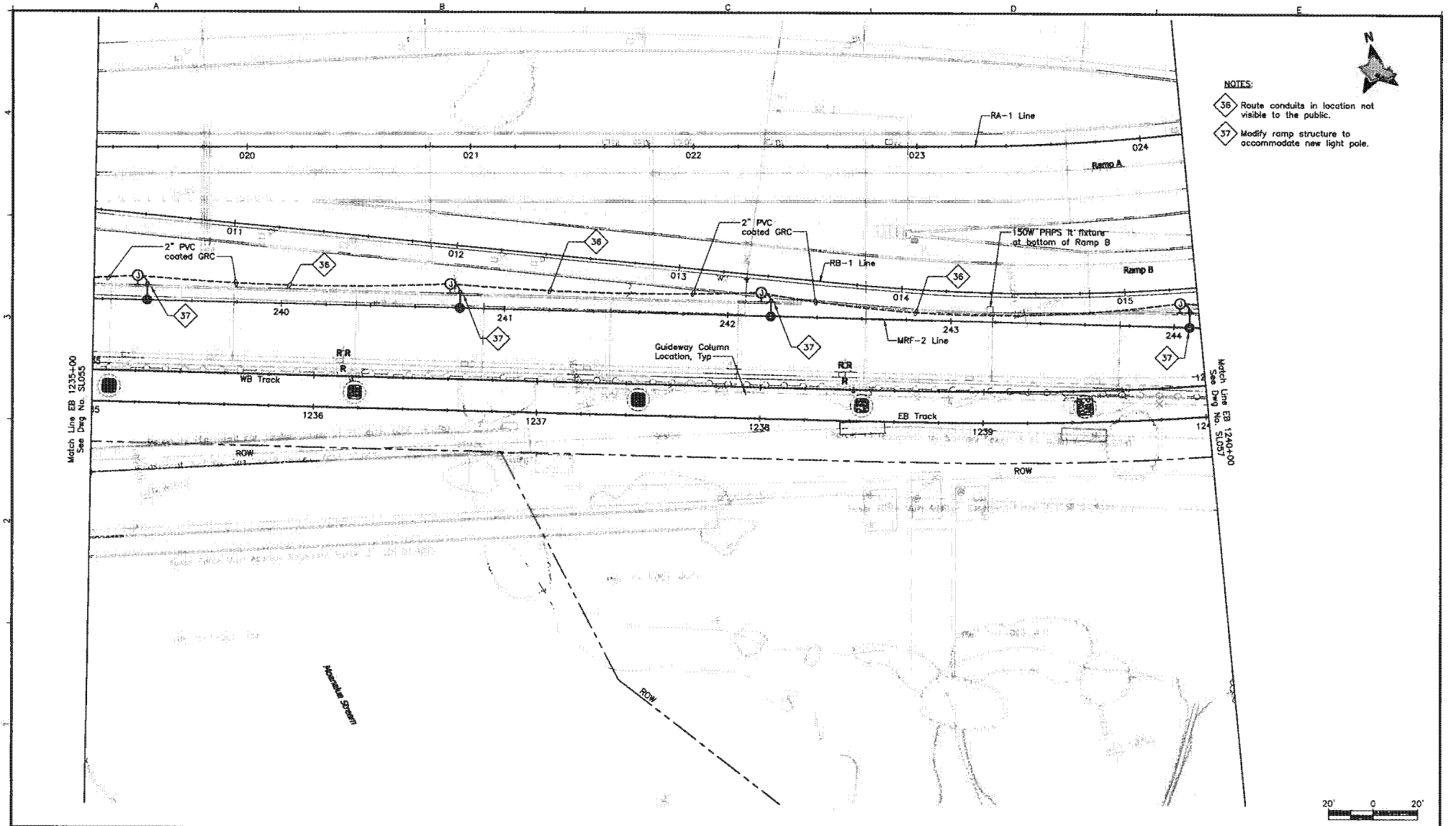

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: R Katahara
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: MKengineers
226 Hatiki Street
Honolulu, Hawaii 96819
Phone: (808) 848-2888
Fax: (808) 848-0674
E-Mail: info@mkengineers.com

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

AIRPORT GUIDEWAY & UTILITIES

STREET LIGHTING PLAN

EB 1235+00 TO EB 1240+00

Contract No.: SV-430
CADD File: AP-D04-SL056
Drawing No.: SL056
Rev.
Scale: 1"=20'
Page No. 207 of 222

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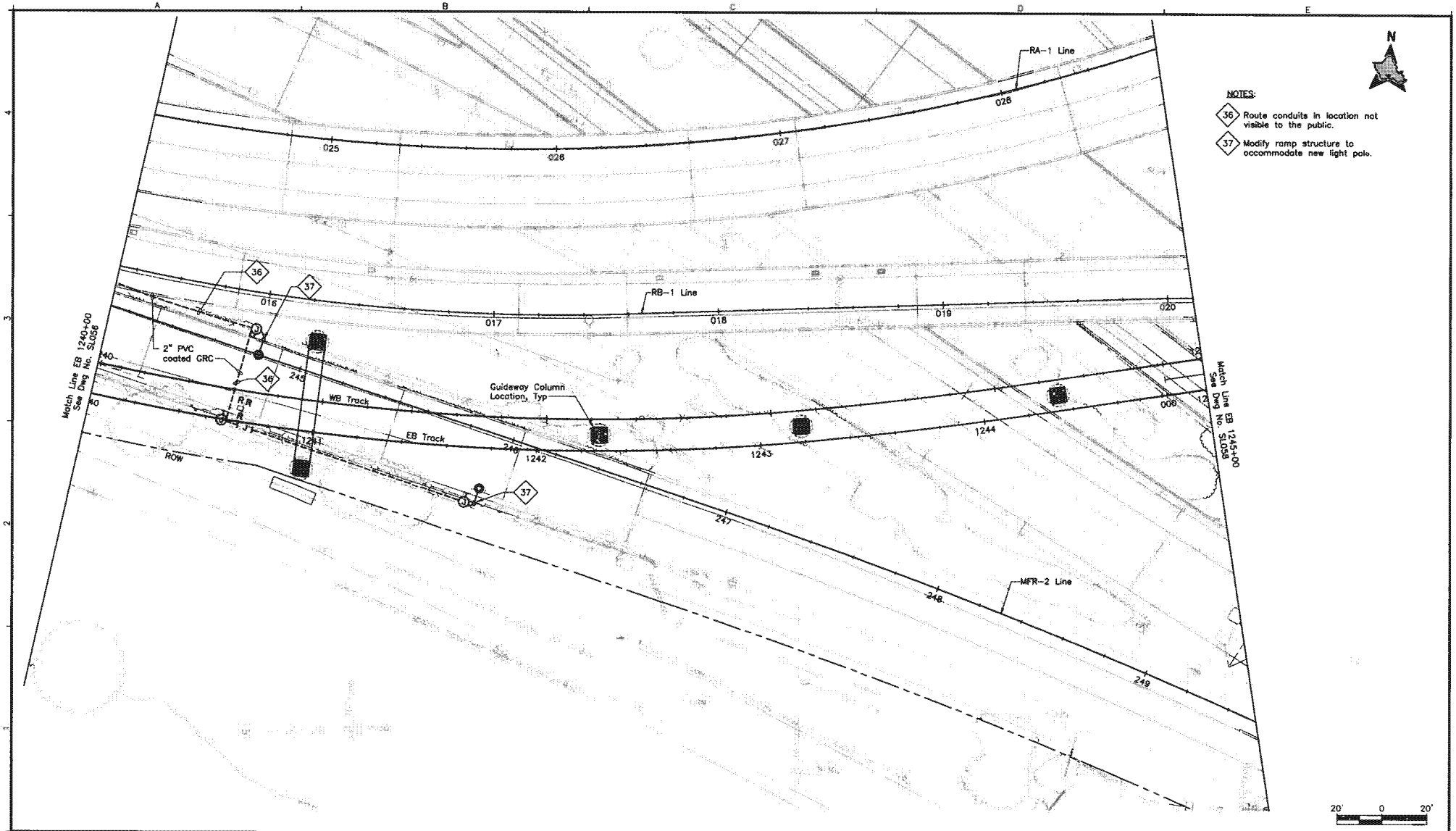

NOTES:

36 Route conduits in location not visible to the public.

37 Modify ramp structure to accommodate new light pole.

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: R Katahara
Drawn: D Saito
Checked: P Uyeda
Approved: P Uyeda
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: MKengineers
226 Keolu Street
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For reduced prints, original page size in inches: 0 1 2 3 4

AIRPORT GUIDEWAY & UTILITIES

STREET LIGHTING PLAN

EB 1240+00 TO EB STA 1245+00

Contract No.: SV-430
CADD File: AP-D04-SL057
Drawing No: SL057
Rev.
Scale: 1"=20'
Page No. 208 of 222

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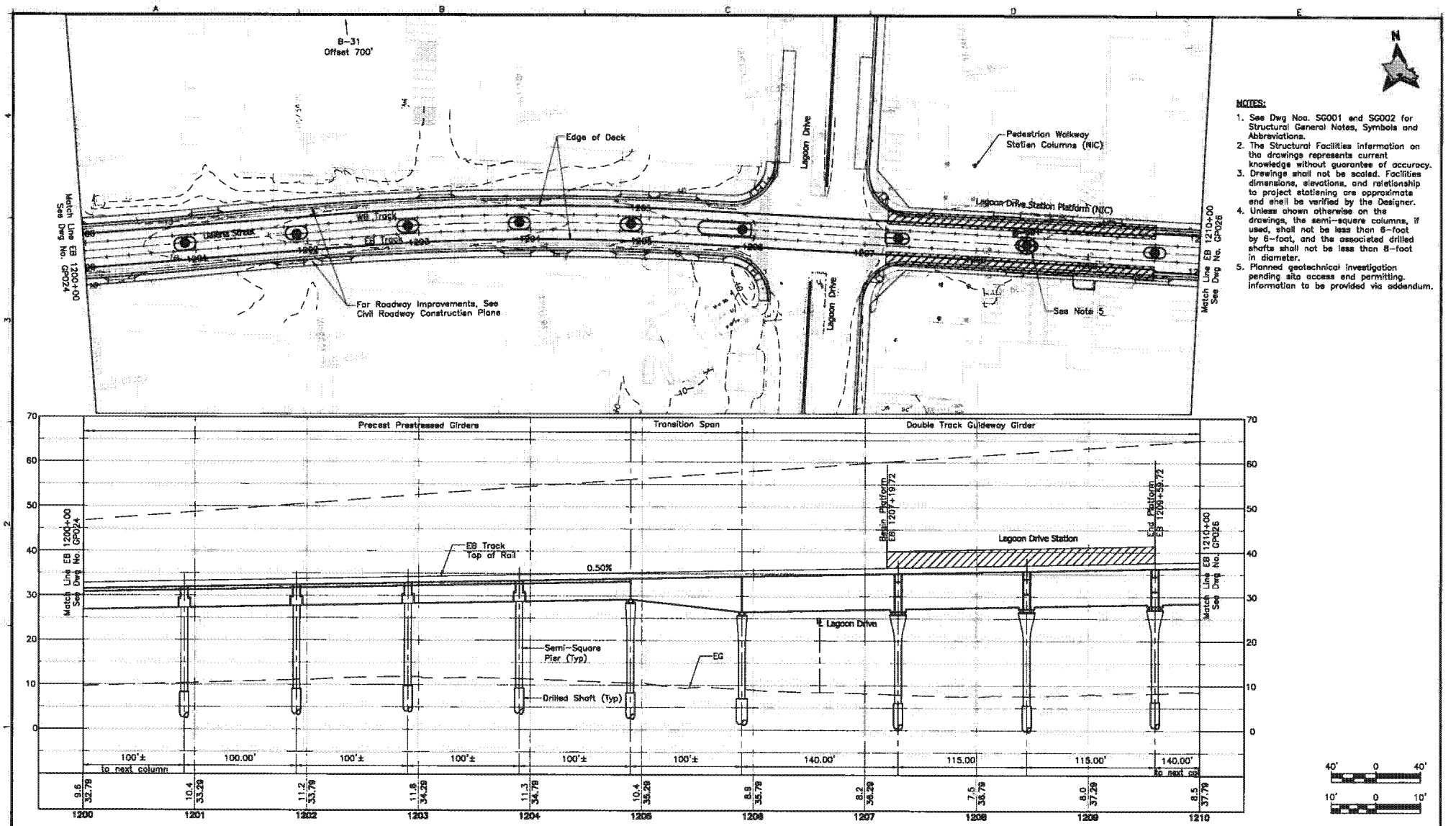

NOTES:

1. See Dwg Nos. SG001 and SG002 for Structural General Notes, Symbols and Abbreviations.
2. The Structural Facilities information on the drawings represents current knowledge without guarantee of accuracy.
3. Drawings shall not be scaled. Facilities dimensions, elevations, and relationship to project stationing are approximate and shall be verified by the Designer.
4. Unless shown otherwise on the drawings, the semi-square columns, if used, shall not be less than 6-foot by 6-foot, and the associated drilled shafts shall not be less than 8-foot in diameter.
5. Planned geotechnical investigation pending site access and permitting. Information to be provided via addendum.

Rev	By	Date	Description

2010-09-27 10:00 AM K:\CADD\08 Structural\Segment J_Airport\AP-G04-GP021.dwg

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: D Yavorsky
Drawn: T Cochran
Checked: T Kimura
Approved: A Barst
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813
Subconsultant:

For reduced prints, original page size in inches:

AIRPORT GUIDEWAY & UTILITIES

STRUCTURAL PLAN AND PROFILE

EB 1200+00 TO EB 1210+00

Contract No.: SV-430
CADD File: AP-G04-GP025
Drawing No: GP025 Rev.
Scale: 1"=40' H, 1"=10' V
Page No. 46 of 193

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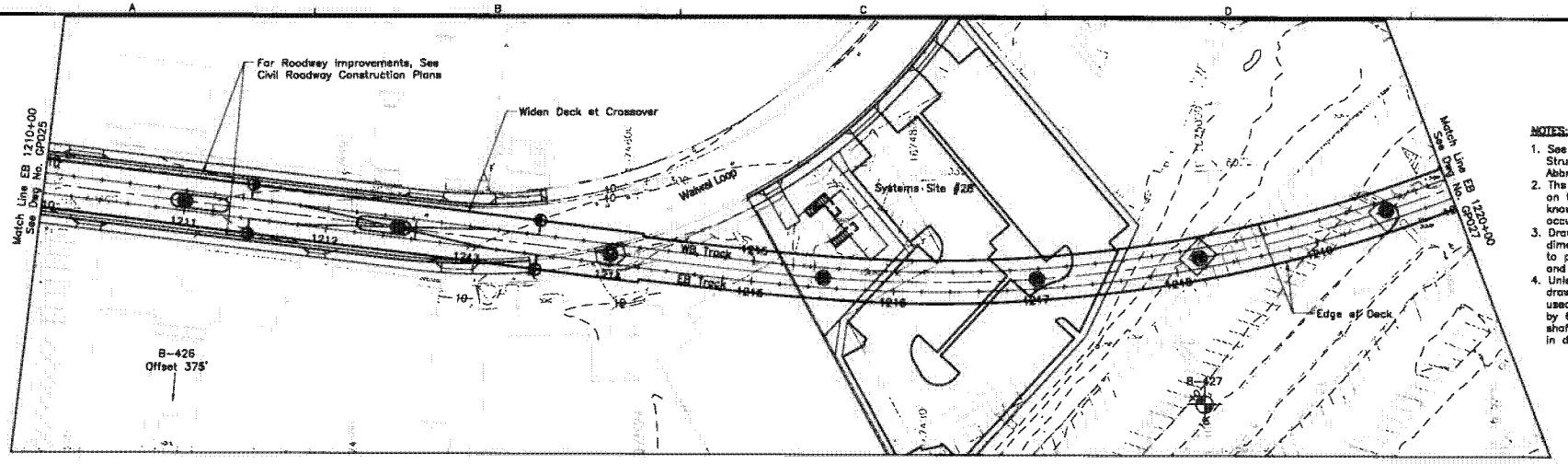

NOTES:

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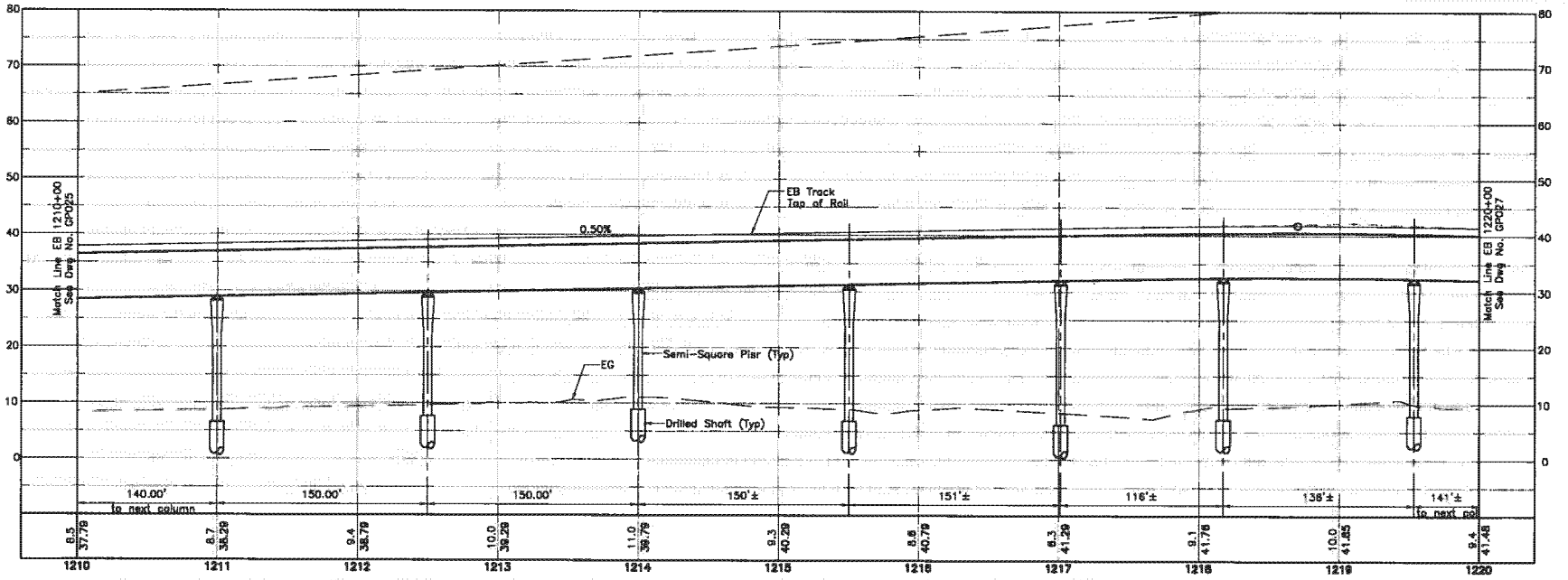

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: D Yavorsky
Drawn: T Cochran
Checked: T Kimura
Approved: A Borst
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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AIRPORT GUIDEWAY & UTILITIES

STRUCTURAL PLAN AND PROFILE

EB 1210+00 TO EB 1220+00

Contract No.: SV-430
CADD File: AP-G04-GP026
Drawing No: GP026
Rev.
Scale: 1"=40' H, 1"=10' V
Page No. 47 of 193

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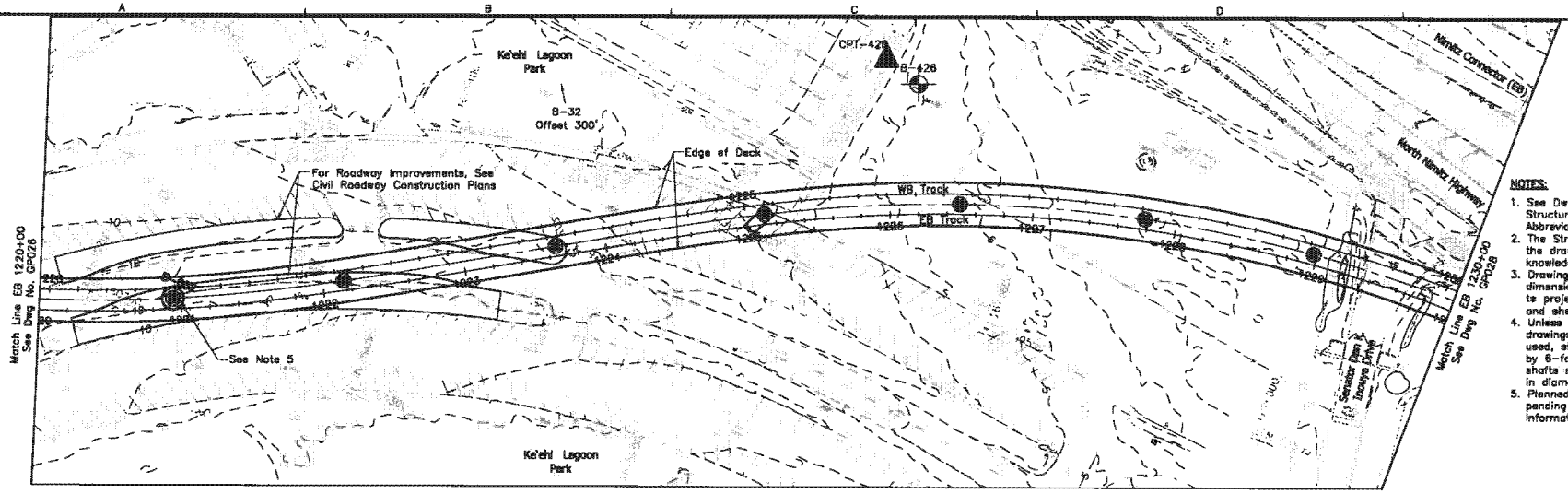

NOTES:

1. See Dwg Nos. SG001 and SG002 for Structural General Notes, Symbols and Abbreviations.
2. The Structural Facilities information on the drawings represents current knowledge without guarantee of accuracy.
3. Drawings shall not be scaled. Facilities dimensions, elevations, and relationship to project stationing are approximate and shall be verified by the Designer.
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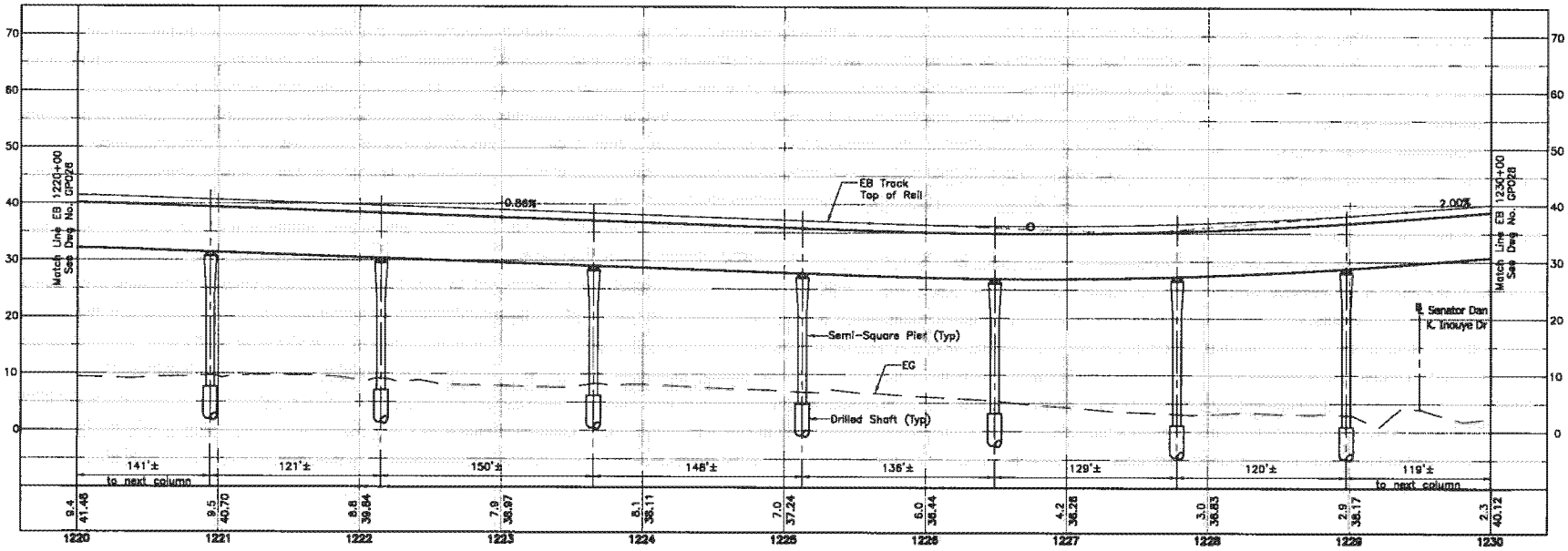
5. Planned geotechnical investigation pending site access and permitting. Information to be provided via addendum.



Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: D Yavorsky
Drawn: T Cochran
Checked: T Kimura
Approved: A Barst
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

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AIRPORT GUIDEWAY & UTILITIES

STRUCTURAL PLAN AND PROFILE

EB 1220+00 TO EB 1230+00

Contract No.: SV-430
CADD File: AP-G04-GP027
Drawing No: GP027 Rev.
Scale: 1"=40' H, 1"=10' V
Page No. 48 of 193

2010-09-27 10:00 AM K:\CADD\08 Structural\Segment J_Airport\AP-G04-GP021.dwg

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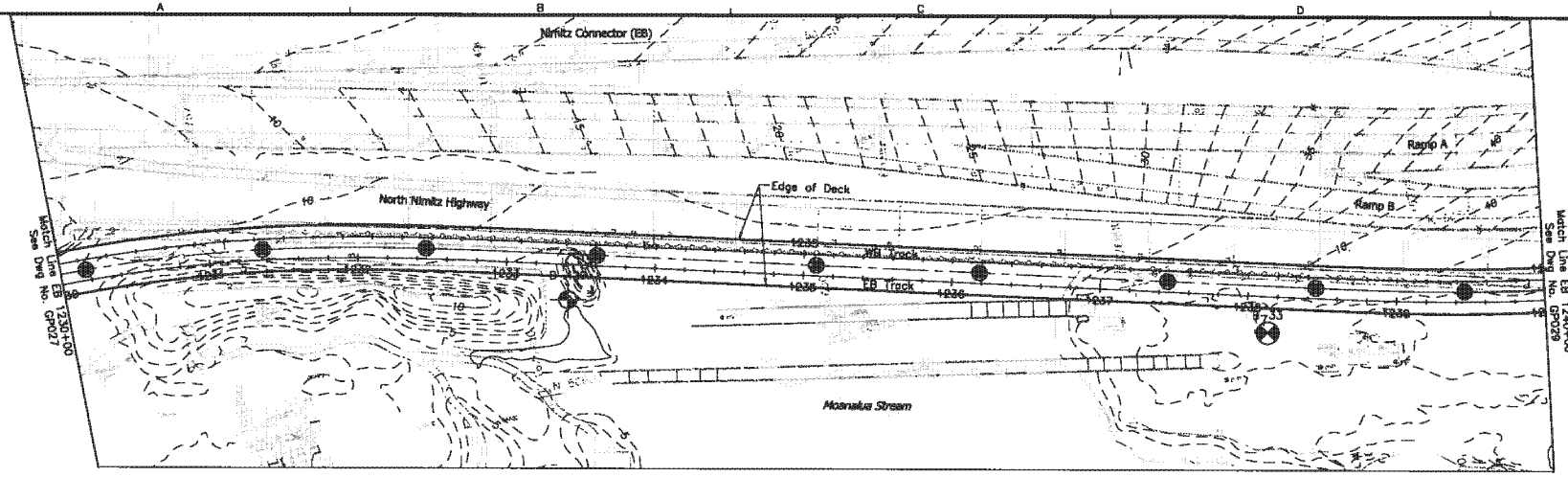

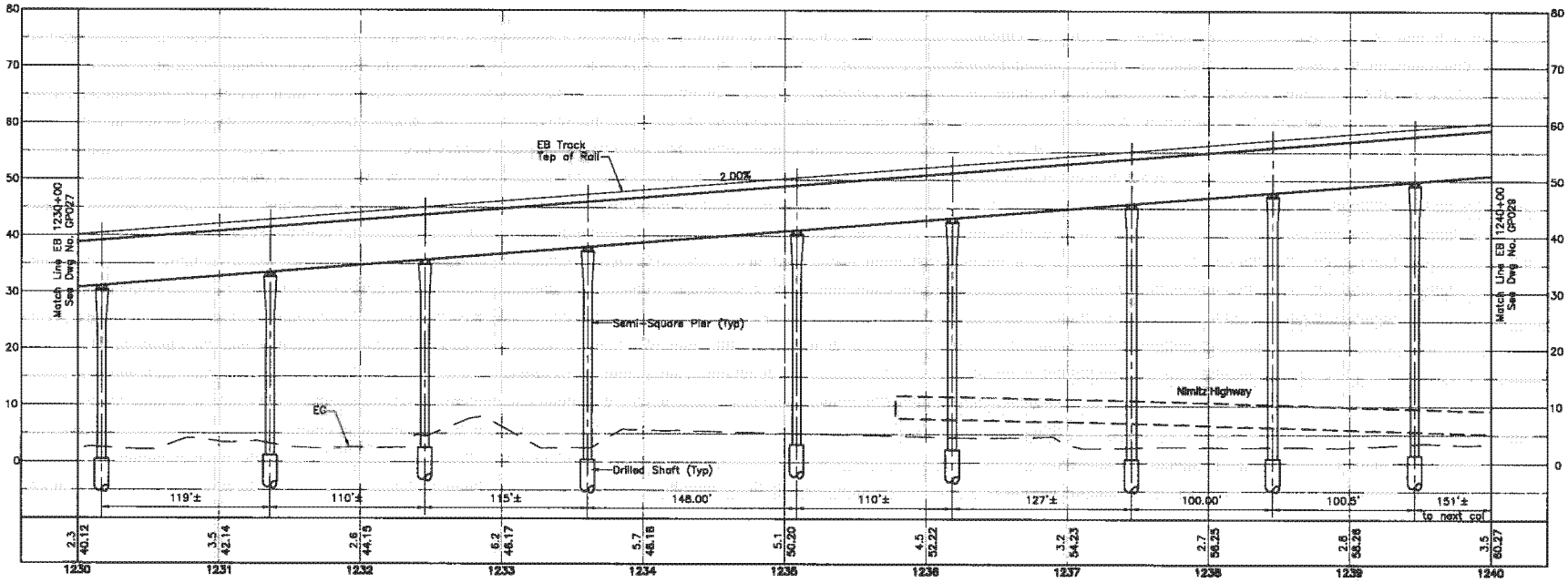

NOTES:

1. See Dwg Nos. SG001 and SG002 for Structural General Notes, Symbols and Abbreviations.
2. The Structural Facilities information on the drawings represents current knowledge without guarantee of accuracy.
3. Drawings shall not be scaled. Facilities dimensions, elevations, and relationship to project stationing are approximate and shall be verified by the Designer.
4. Unless shown otherwise on the drawings, the semi-square columns, if used, shall not be less than 6-foot by 6-foot, and the associated drilled shafts shall not be less than 8-foot in diameter.

Rev	By	Date	Description

2010-08-27 10:00 AM K:\CADD\08 Structural\Segment J_Airport\AP-G04-GP021.dwg

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: D Yavorsky
Drawn: T Cochran
Checked: T Kimura
Approved: A Borst
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 — Honolulu, HI 96813

Subconsultant:

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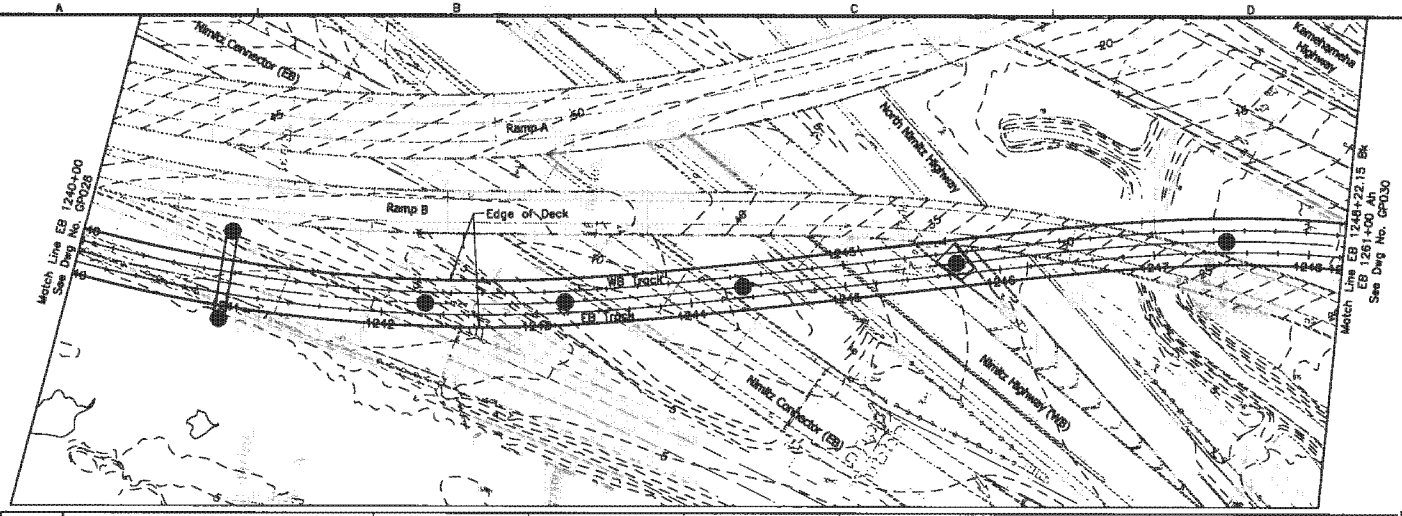
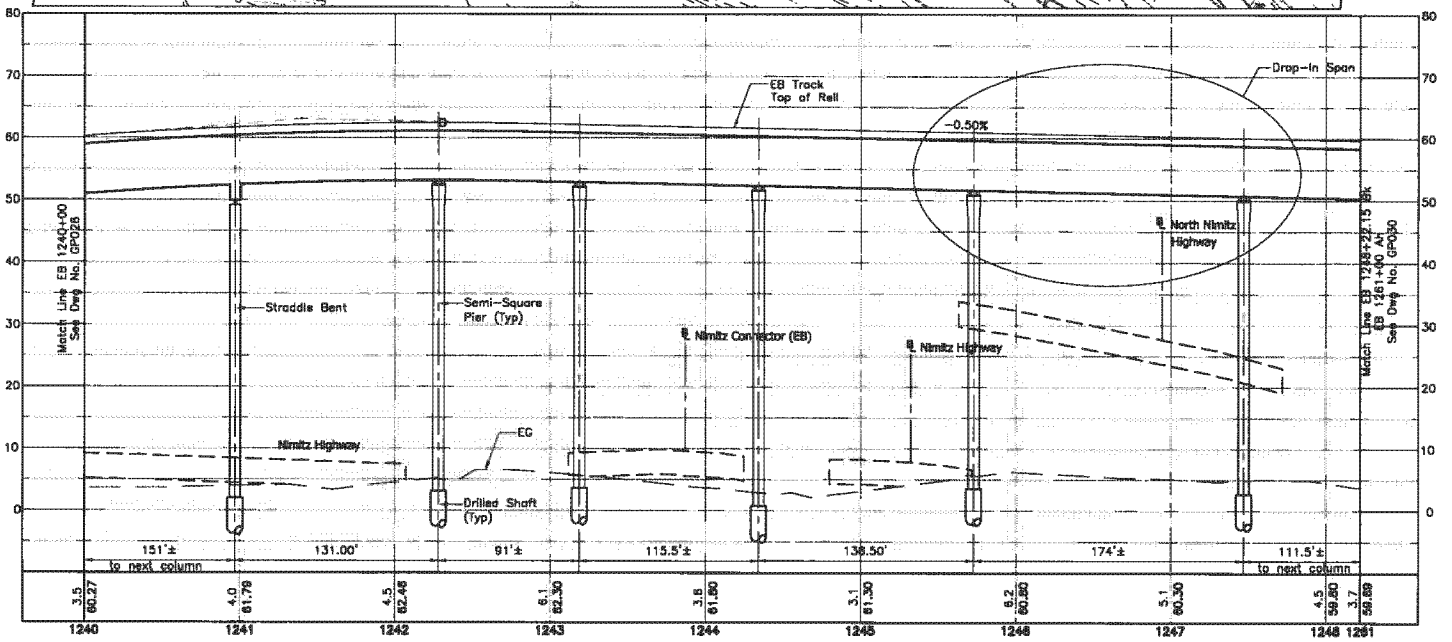
AIRPORT GUIDEWAY & UTILITIES

STRUCTURAL PLAN AND PROFILE

EB 1230+00 TO EB 1240+00

Contract No.: SV-430
CADD File: AP-G04-GP028
Drawing No: GP028 Rev.
Scale: 1"=40' H, 1"=10' V
Page No. 49 of 193





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NOTES:

1. See Dwg Nos. SG001 and SG002 for Structural General Notes, Symbols and Abbreviations.
2. The Structural Facilities information on the drawings represents current knowledge without guarantee of accuracy.
3. Drawings shall not be scaled. Facilities dimensions, elevations, and relationship to project stationing are approximate and shall be verified by the Designer.
4. Unless shown otherwise on the drawings, the semi-square columns, if used, shall not be less than 6-foot by 6-foot, and the associated drilled shafts shall not be less than 8-foot in diameter.

40' 0 40'

10' 0 10'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: D Yavorsky
Drawn: T Cochran
Checked: T Kimura
Approved: A Barat
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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AIRPORT GUIDEWAY & UTILITIES

STRUCTURAL PLAN AND PROFILE

EB 1240+00 TO EB 1248+22.15 Bk

Contract No.: SV-430
CADD File: AP-G04-GP028
Drawing No: GP029 Rev.
Scale: 1"=40' H, 1"=10' V
Page No. 50 of 193

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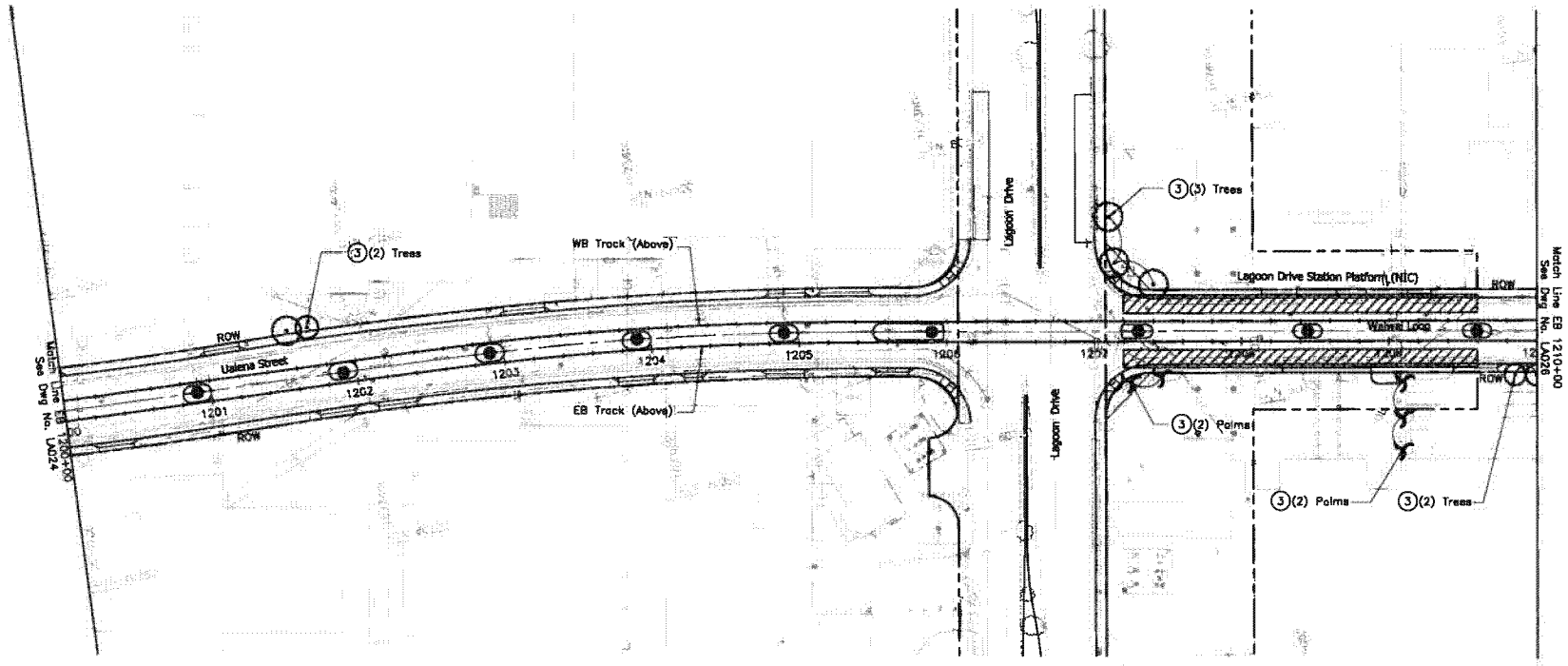

N

NOTES:

1. For General Landscape Notes, Symbols, and Abbreviations, see Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.
3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding.

LEGEND:

- Proposed Guideway Column
- Existing tree
- Existing palm

CONSTRUCTION NOTES:

1. Salvage tree or palm for transplanting. Deliver to project nursery.
2. Remove tree or palm including grinding stump 18" below finish grade.
3. Protect tree or palm in place (See Detail 1-LA201). Prune per Arborists Instructions.

40' 0 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: C Hironaka
Drawn: B Tenimura
Checked: L Kalilos
Approved: A Akau
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 — Honolulu, HI 96813

Subconsultant:

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AIRPORT GUIDEWAY AND UTILITIES

LANDSCAPE DEMOLITION PLAN

EB 1200+00 TO EB 1210+00

Contract No.: SV-430
CADD File: AP-J02-LA025
Drawing No: LA025 Rev.
Scale: 1"=40'
Page No. 120 of 193

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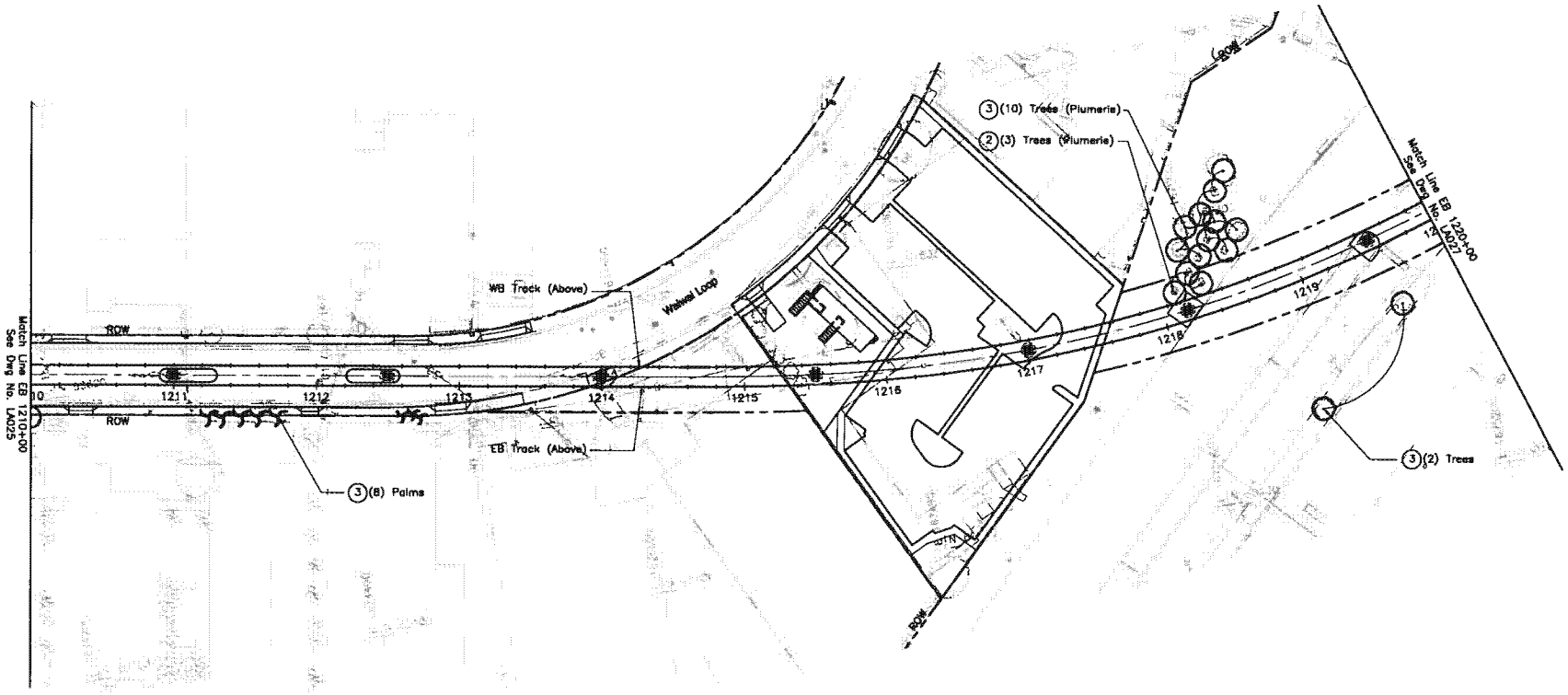

NOTES:

1. For General Landscape Notes, Symbols, and Abbreviations, see Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.
3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding.

LEGEND:

- Proposed Guideway Column
- Existing tree
- Existing palm

CONSTRUCTION NOTES:

1. Salvage tree or palm for transplanting. Deliver to project nursery.
2. Remove tree or palm including grinding stump 18" below finish grade.
3. Protect tree or palm in place (See Detail 1-LA201). Prune per Arborists instructions.

40' 0 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: C Hironaka
Drawn: B Tanimura
Checked: L Kellioa
Approved: A Akau
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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AIRPORT GUIDEWAY AND UTILITIES

LANDSCAPE DEMOLITION PLAN

EB 1210+00 TO EB 1220+00

Contract No.: SV-430
CADD File: AP-J02-LA026
Drawing No: LA026 Rev.
Scale: 1"=40'
Page No. 121 of 193

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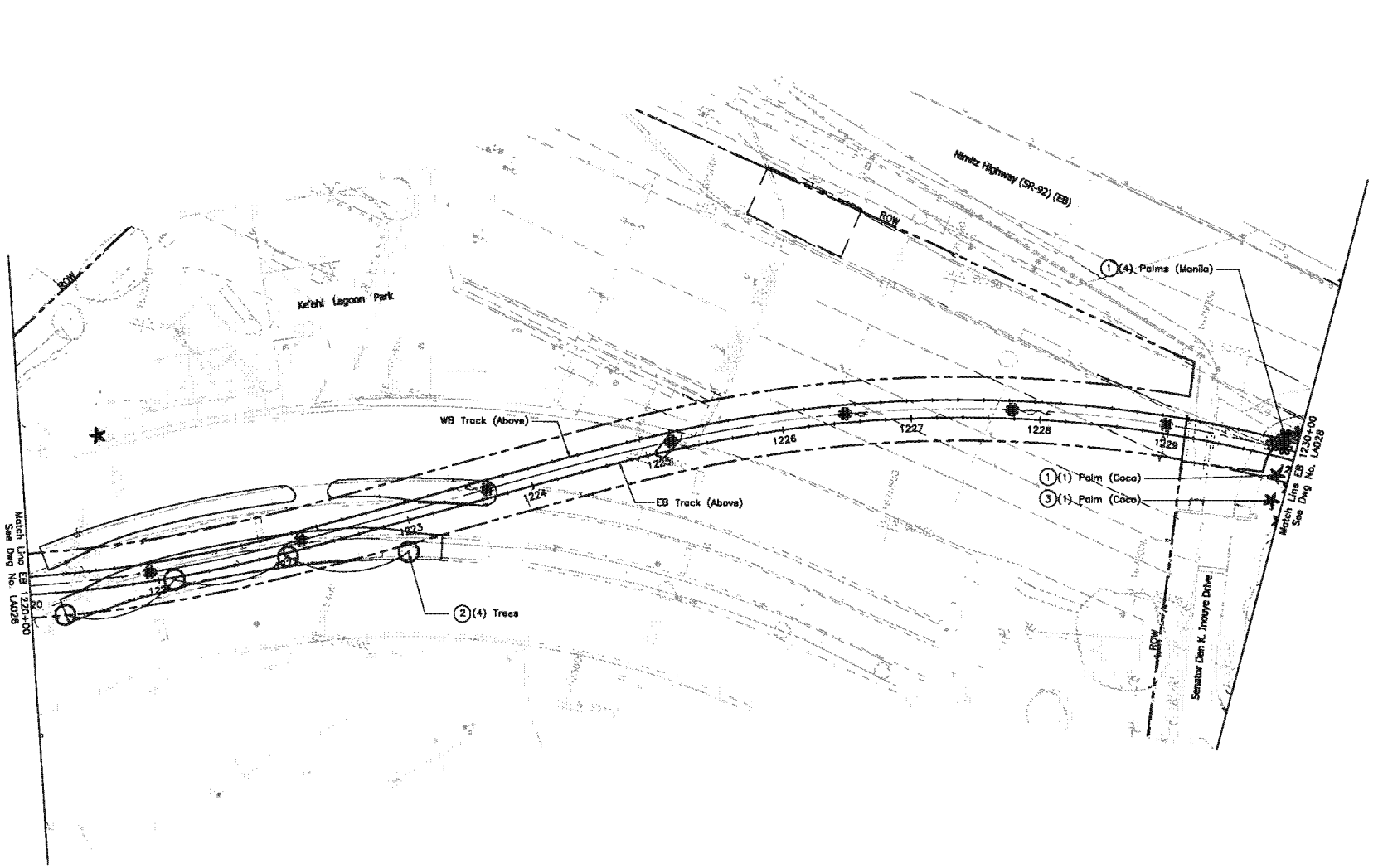

NOTES:

1. For General Landscape Notes, Symbols, and Abbreviations, see Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.
3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding.

LEGEND:

- Proposed Guideway Column
- Existing tree
- Existing palm

CONSTRUCTION NOTES:

1. Salvage tree or palm for transplanting. Deliver to project nursery.
2. Remove tree or palm including grinding stump 18" below finish grade.
3. Protect tree or palm in place (See Detail 1-LA201). Prune per Arborists instructions.

40' 0 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: C Hironaka
Drawn: B Tenimura
Checked: L Kalilea
Approved: A Akau
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: PLANNING • CIVIL ENGINEERING LANDSCAPE ARCHITECTURE ENVIRONMENTAL CONSULTING Belt Collins Hawaii LLC 2153 North King Street, Suite 200 Honolulu, Hawaii 96819 T: 808.521.5361 • F: 808.521.7820 www.beltcollins.com

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AIRPORT GUIDEWAY AND UTILITIES

LANDSCAPE DEMOLITION PLAN

EB 1220+00 TO EB 1230+00

Contract No.: SV-430
CADD File: AP-J02-LA027
Drawing No: LA027 Rev.
Scale: 1"=40'
Page No. 122 of 193

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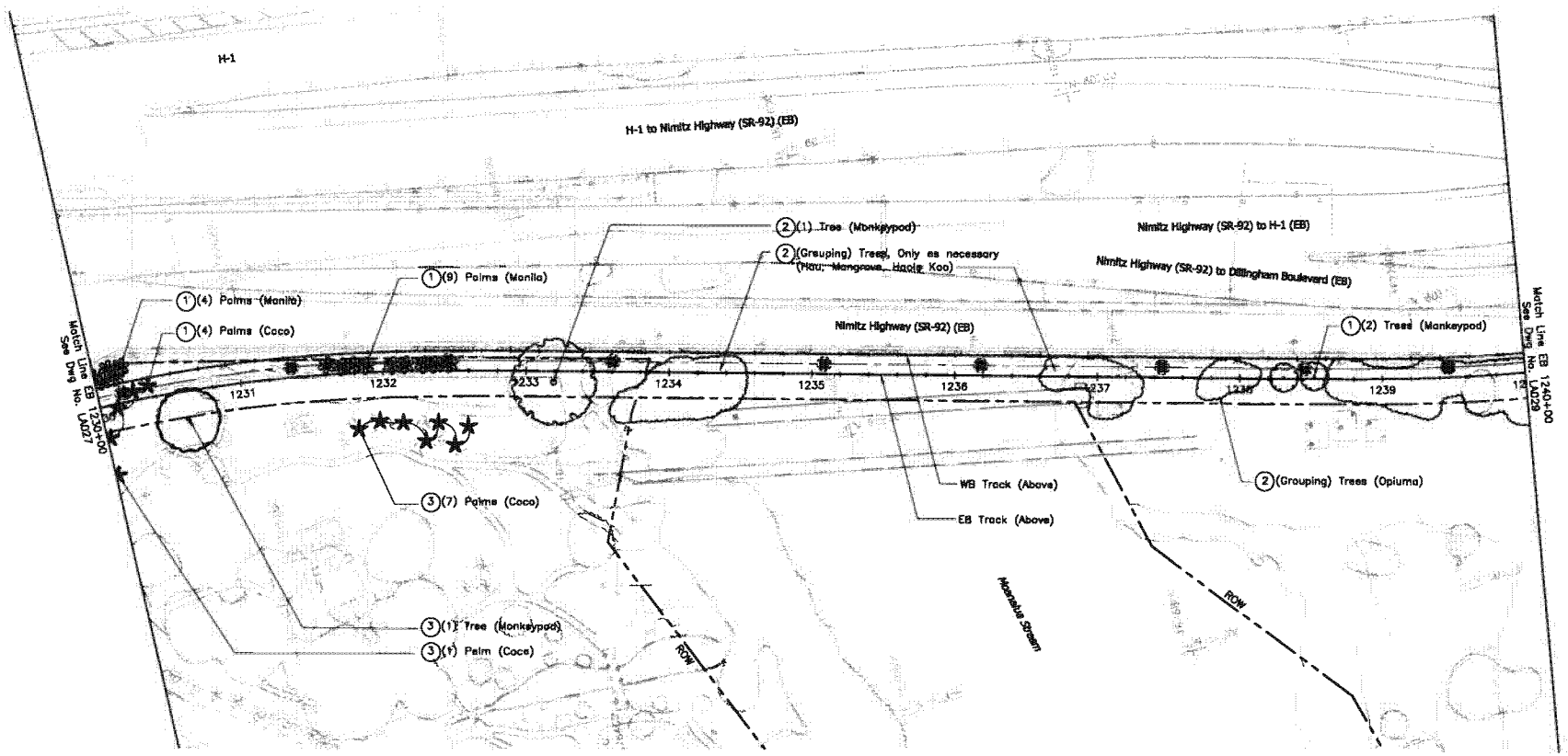

NOTES:

1. For General Landscape Notes, Symbols, and Abbreviations, see Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.
3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding.

LEGEND:

- Proposed Guideway Column
- Existing tree
- Existing palm
- Existing vegetation

CONSTRUCTION NOTES:

1. Salvage tree or palm for transplanting. Deliver to project nursery.
2. Remove tree or palm including grinding stump 18" below finish grade.
3. Protect tree or palm in place (See Detail 1-LA201). Prune per Arborists instructions.

40' 0 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: C Hironaka
Drawn: B Tanimura
Checked: L Keliiaa
Approved: A Akau
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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AIRPORT GUIDEWAY AND UTILITIES

LANDSCAPE DEMOLITION PLAN

EB 1230+00 TO EB 1240+00

Contract No.: SV-430
CADD File: AP-J02-LA028
Drawing No: LA028 Rev.
Scale: 1"=40'
Page No. 123 of 193

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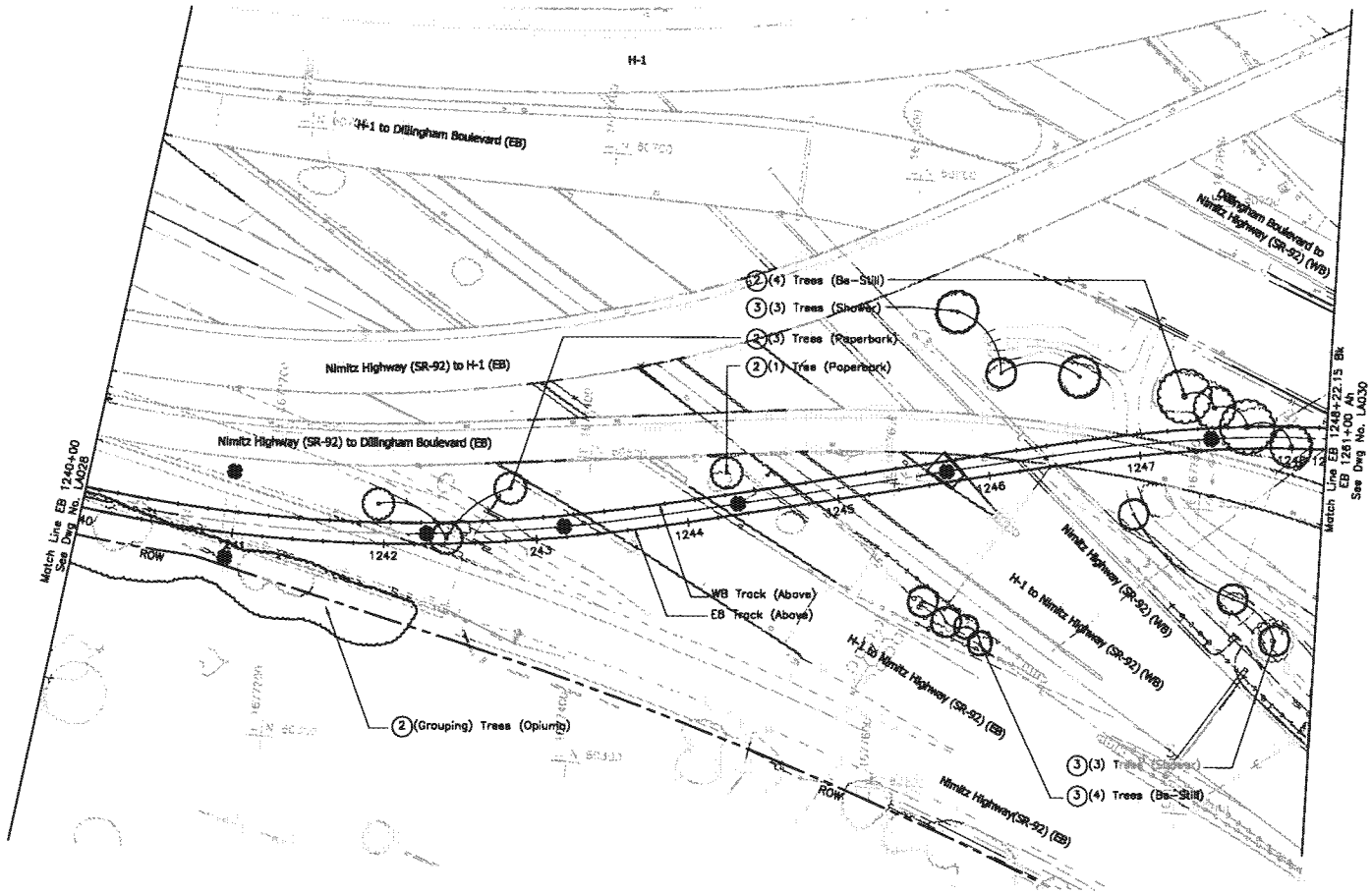

NOTES:

1. For General Landscape Notes, Symbols, and Abbreviations, see Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.
3. Tree species information are shown for reference only and shall be field verified by certified arborist prior to proceeding.

LEGEND:

- Proposed Guideway Column
- Existing tree
- Existing vegetation

CONSTRUCTION NOTES:

1. Salvage tree or palm for transplanting. Deliver to project nursery.
2. Remove tree or palm including grinding stump 18" below finish grade.
3. Protect tree or palm in place (See Detail 1-LA201). Prune per Arborists instructions.

40' 0 40'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: C Hironoka
Drawn: B Tenimura
Checked: L Keliiaa
Approved: A Akau
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 — Honolulu, HI 96813

Subconsultant:

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AIRPORT GUIDEWAY AND UTILITIES

LANDSCAPE DEMOLITION PLAN

EB 1240+00 TO EB 1248+22.15 Bk

Contract No.: SV-430
CADD File: AP-J02-LA029
Drawing No: LA029 Rev.
Scale: 1"=40'
Page No. 124 of 193

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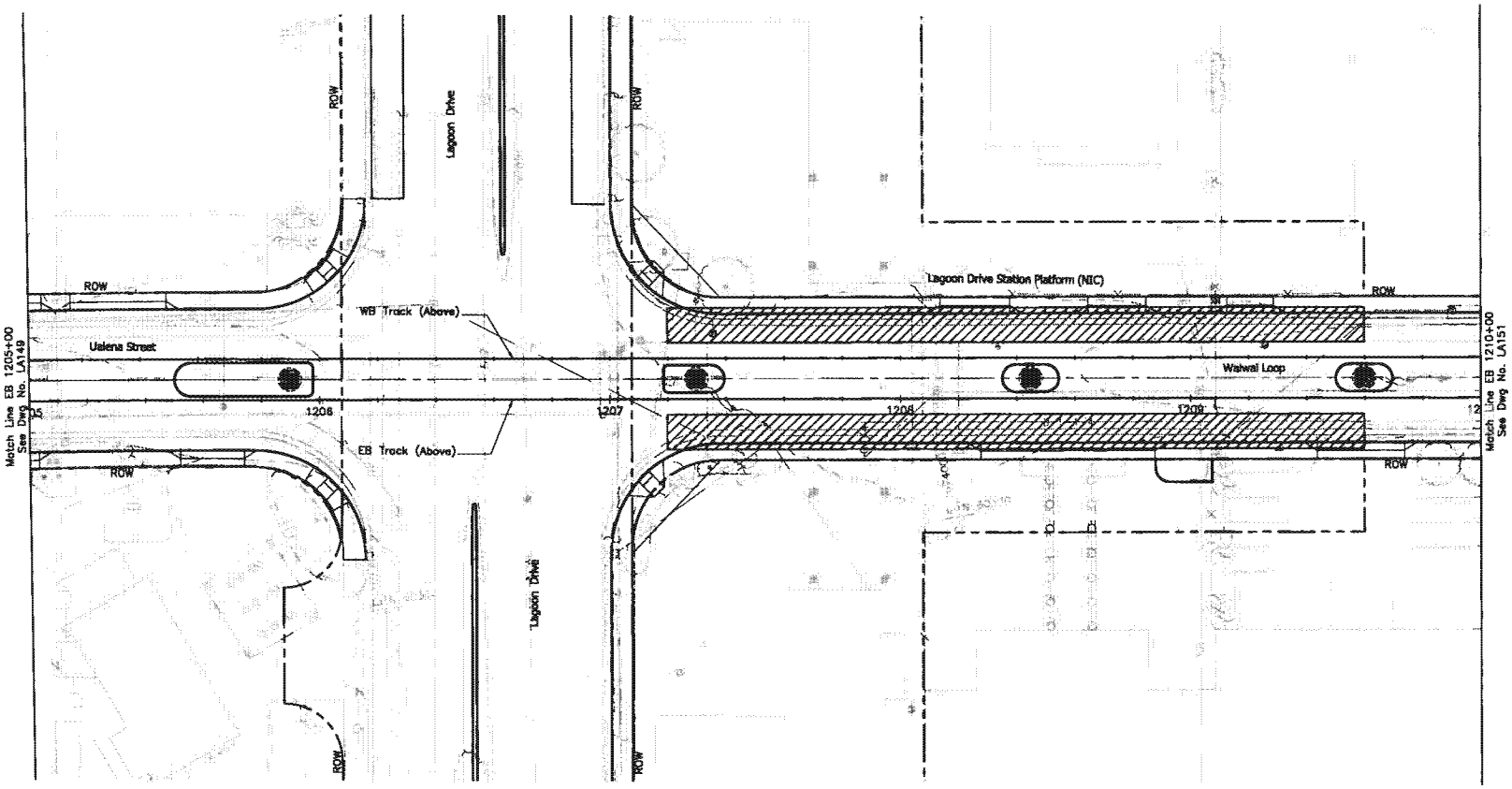

NOTES:

1. For General Landscape Notes, Symbols, and Abbreviations, See Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.

20' 0 20'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: C Hironaka
Drawn: B Tanimura
Checked: L Keliiaa
Approved: A Akau
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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AIRPORT GUIDEWAY AND UTILITIES

LANDSCAPE PAVING AND PLANTING PLAN

EB 1205+00 TO EB 1210+00

Contract No.: SV-430
CADD File: AP-J04-LA150
Drawing No: LA150 Rev.
Scale: 1"=20'
Page No. 169 of 193

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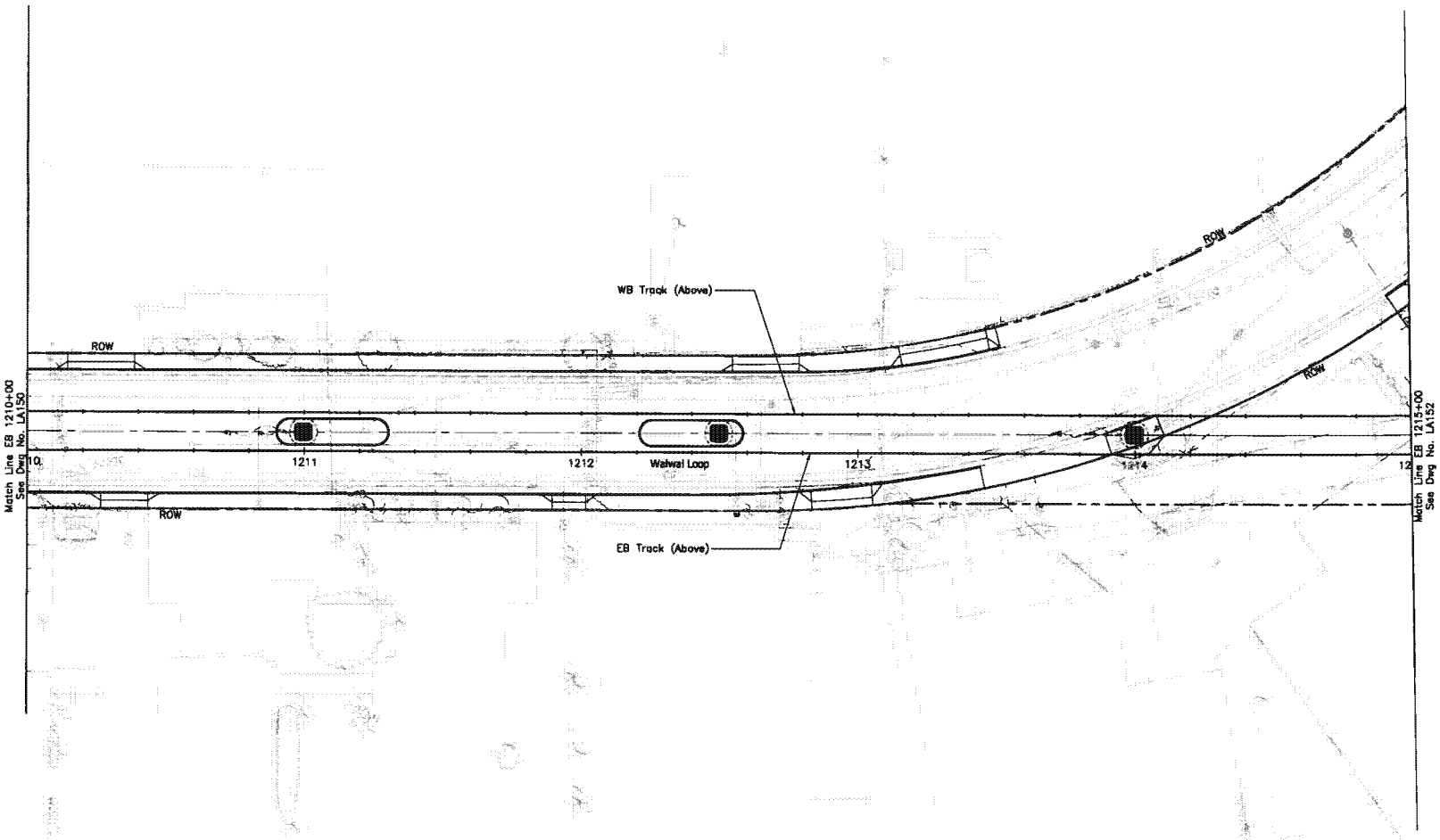

N

NOTES:

1. For General Landscape Notes, Symbols, and Abbreviations, See Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.

20' 0 20'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: C Hironaka
Drawn: B Tanimura
Checked: L Kellico
Approved: A Akau
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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AIRPORT GUIDEWAY AND UTILITIES

LANDSCAPE PAVING AND PLANTING PLAN

EB 1210+00 TO EB 1215+00

Contract No.: SV-430
CADD File: AP-J04-LA151
Drawing No: LA151 Rev.
Scale: 1"=20'
Page No. 170 of 193

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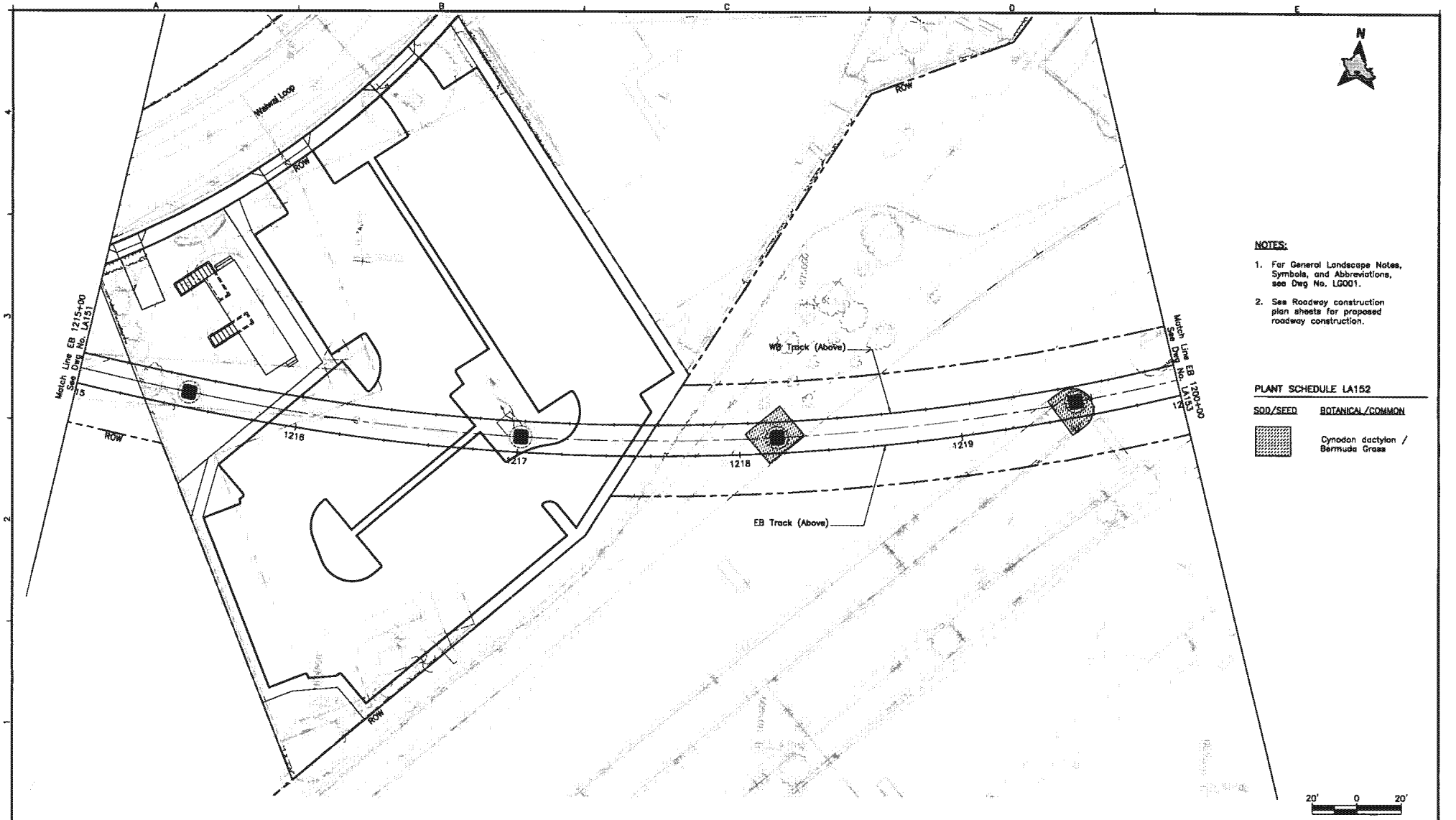

NOTES:

1. For General Landscape Notes, Symbols, and Abbreviations, see Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.

PLANT SCHEDULE LA152

SOD/SEED	BOTANICAL/COMMON
	Cynodon dactylon / Bermuda Grass

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: C Hironaka
Drawn: B Tanimura
Checked: L Kellaa
Approved: A Akau
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: PLANNING - CIVIL ENGINEERING LANDSCAPE ARCHITECTURE ENVIRONMENTAL CONSULTANTS

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AIRPORT GUIDEWAY AND UTILITIES

LANDSCAPE PAVING AND PLANTING PLAN

EB 1215+00 TO EB 1220+00

Contract No.: SV-430
CADD File: AP-J04-LA152
Drawing No: LA152 Rev.
Scale: 1"=20'
Page No. 171 of 193

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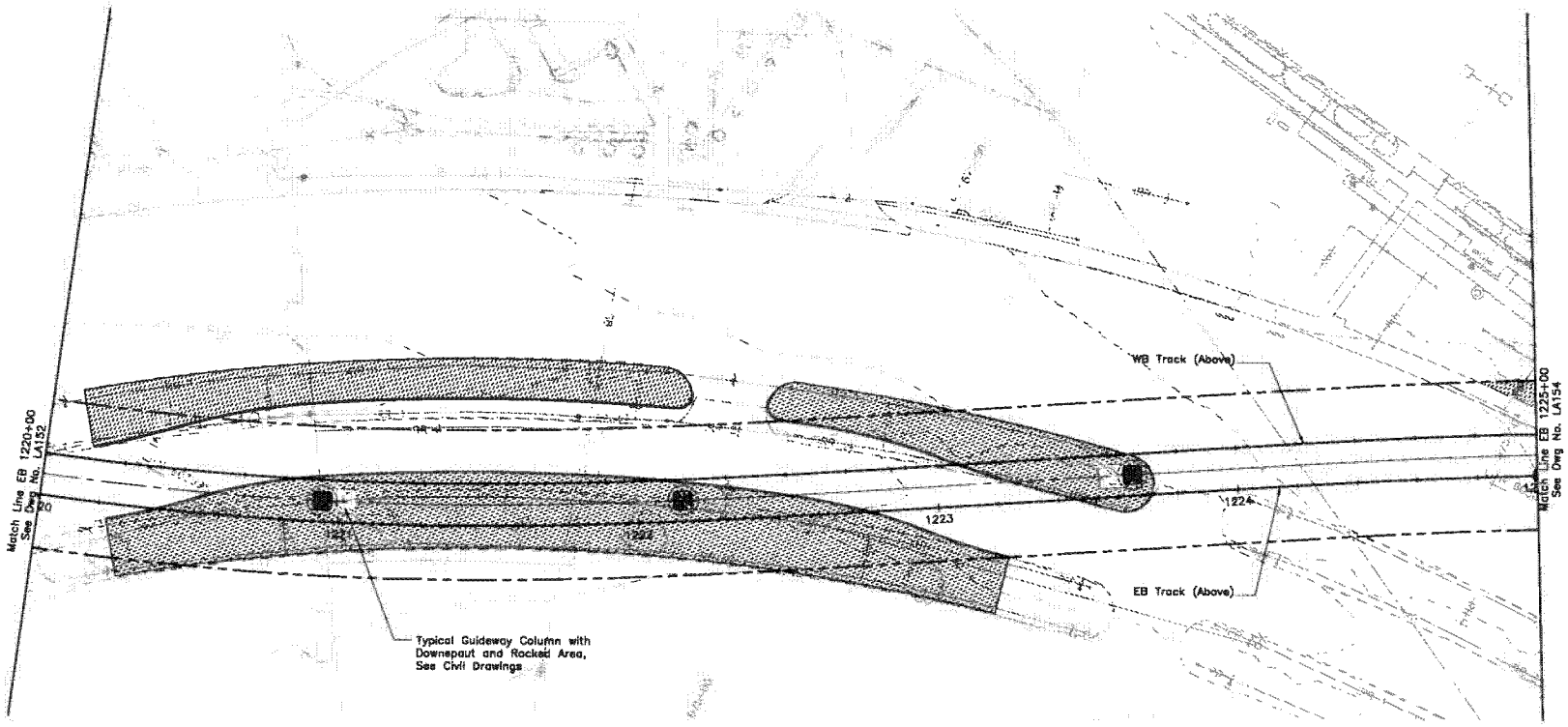

NOTES:

1. For General Landscape Notes, Symbols, and Abbreviations, See Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.

PLANT SCHEDULE LA153

SOD/SEED	BOTANICAL/COMMON
	Cynodon dactylon / Bermuda Grass

20' 0 20'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: C Hironaka
Drawn: B Tanimura
Checked: L Kellioa
Approved: A Akau
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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AIRPORT GUIDEWAY AND UTILITIES

LANDSCAPE PAVING AND PLANTING PLAN

EB 1220+00 TO EB 1225+00

Contract No.: SV-430
CADD File: AP-J04-LA153
Drawing No: LA153 Rev.
Scale: 1"=20'
Page No. 172 of 193

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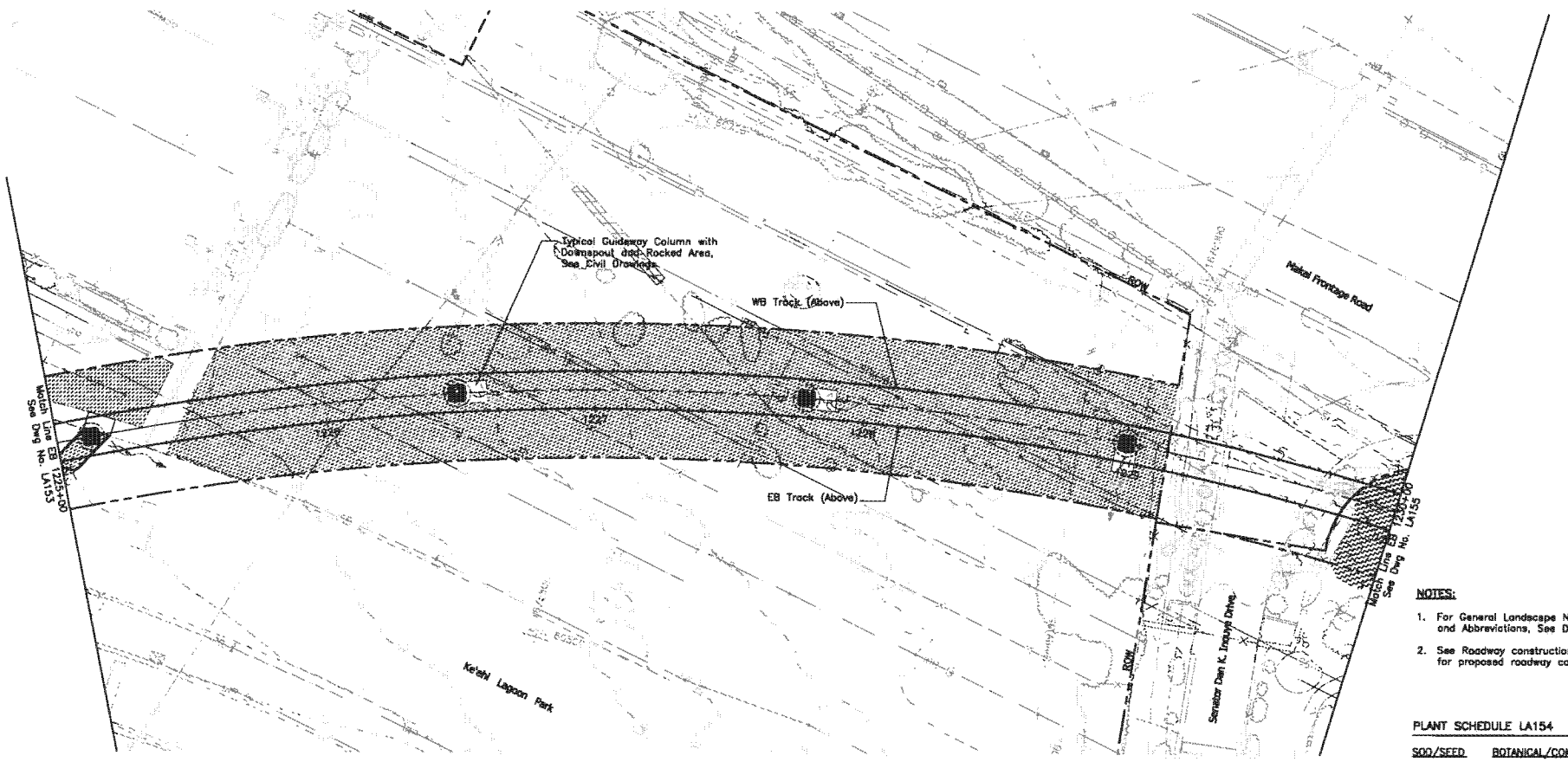

NOTES:

1. For General Landscape Notes, Symbols, and Abbreviations, See Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.

PLANT SCHEDULE LA154

SOD/SEED	BOTANICAL/COMMON
	Cynodon dactylon / Bermuda Grass

20' 0 20'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: C Hironaka
Drawn: B Tonimura
Checked: L Keliiaa
Approved: A Akau
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant:

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AIRPORT GUIDEWAY AND UTILITIES

LANDSCAPE PAVING AND PLANTING PLAN

EB 1225+00 TO EB 1230+00

Contract No.: SV-430
CADD File: AP-J04-LA154
Drawing No: LA154 Rev.
Scale: 1"=20'
Page No. 173 of 193

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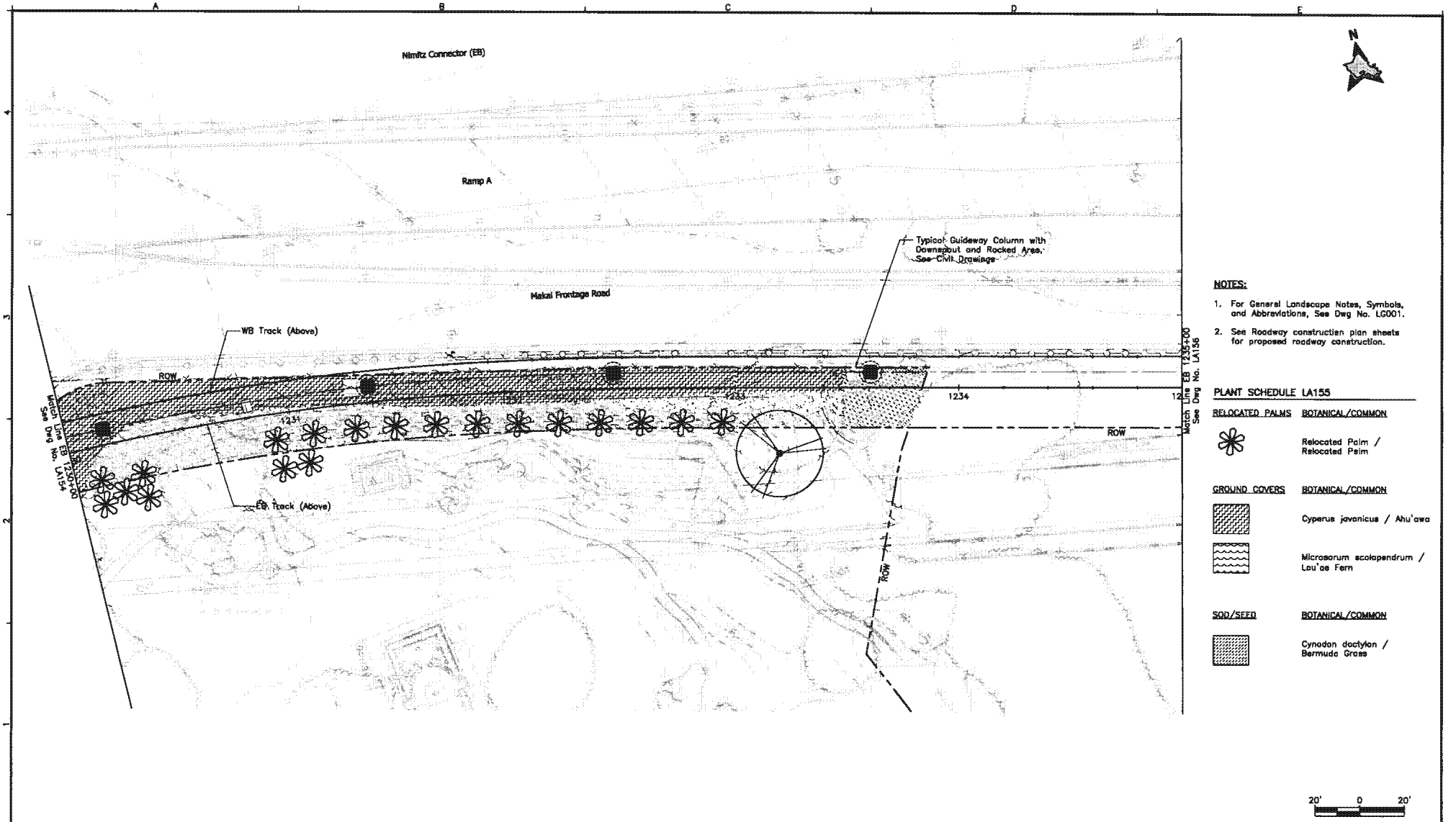

NOTES:

1. For General Landscape Notes, Symbols, and Abbreviations, See Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.

PLANT SCHEDULE LA155

RELOCATED PALMS	BOTANICAL/COMMON
	Relocated Palm / Relocated Palm

GROUND COVERS	BOTANICAL/COMMON
	Cyperus javanicus / Ahu'awa
	Microsorum scolopendrum / Lau'ae Fern

SOD/SEED	BOTANICAL/COMMON
	Cynodon dactylon / Bermuda Grass

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: C Hironaka
Drawn: B Tanimura
Checked: L Keliiaa
Approved: A Akau
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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AIRPORT GUIDEWAY AND UTILITIES

LANDSCAPE PAVING AND PLANTING PLAN

EB 1230+00 TO EB 1235+00

Contract No.: SV-430
CADD File: AP-J04-LA155
Drawing No.: LA155 Rev.
Scale: 1"=20'
Page No. 174 of 193

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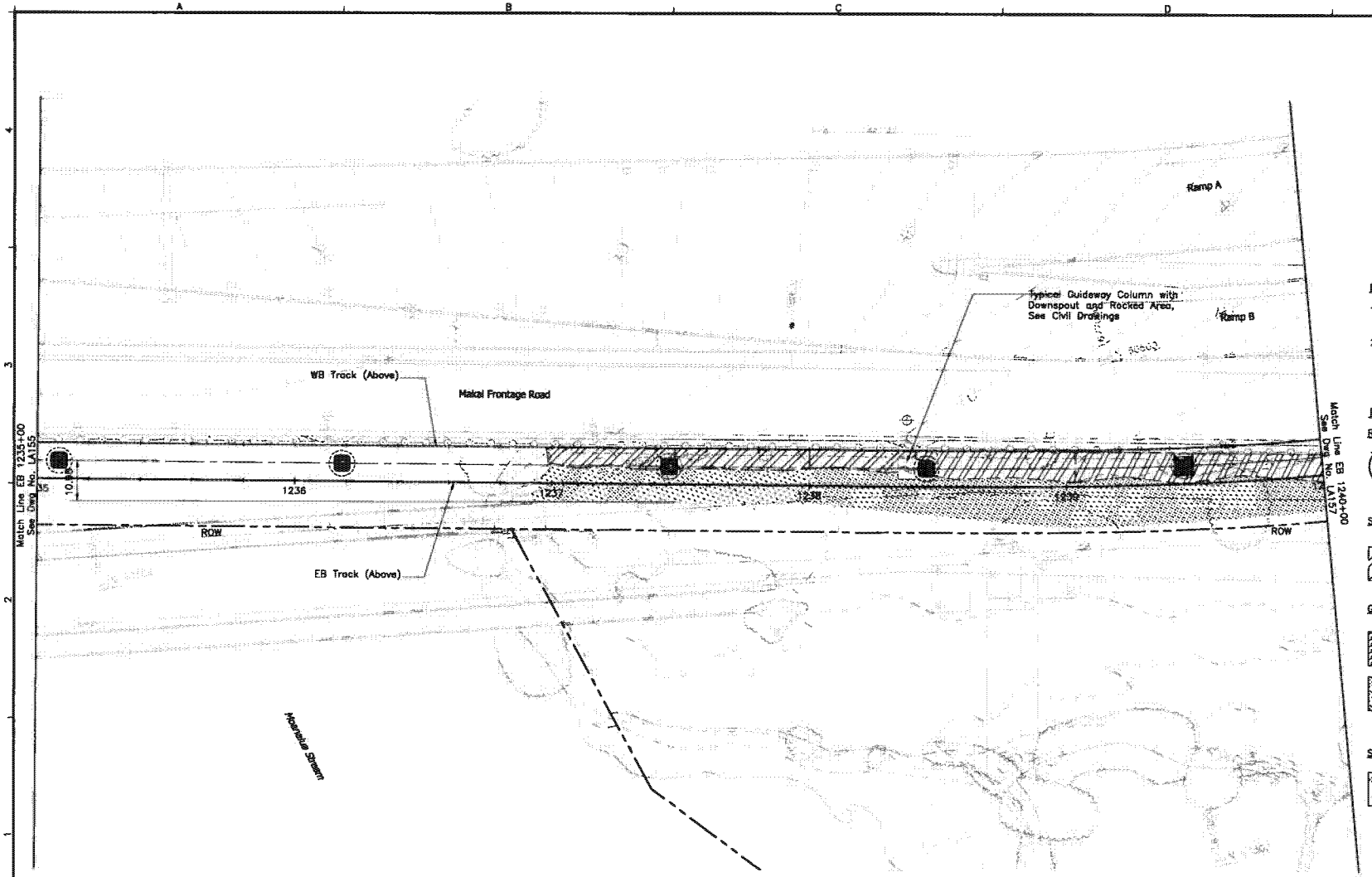

NOTES:

1. For General Landscape Notes, Symbols, and Abbreviations, See Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.

PLANT SCHEDULE LA156

RELOCATED TREE	BOTANICAL/COMMON
	Relocated Tree Large / Relocated Tree
SHRUB AREAS	**BOTANICAL/COMMON**
	Bidens cosmoides / Po'ola Nui
GROUND COVERS	**BOTANICAL/COMMON**
	Cyperus javanicus / Ahu'owa
	Sesuvium portulacastrum / 'Akulikuli
SOD/SEED	**BOTANICAL/COMMON**
	Stenotaphrum secundatum / St. Augustine Grass

20' 0 20'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: C Hiranoka
Drawn: B Tanimura
Checked: L Kellioa
Approved: A Akau
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT
CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

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

Subconsultant: PLANNING • CIVIL ENGINEERING LANDSCAPE ARCHITECTURE ENVIRONMENTAL CONSULTING

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AIRPORT GUIDEWAY AND UTILITIES

LANDSCAPE PAVING AND PLANTING PLAN

EB 1235+00 TO EB 1240+00

Contract No.: SV-430
CADD File: AP-J04-LA156
Drawing No: LA156
Rev.
Scale: 1"=20'
Page No. 175 of 193

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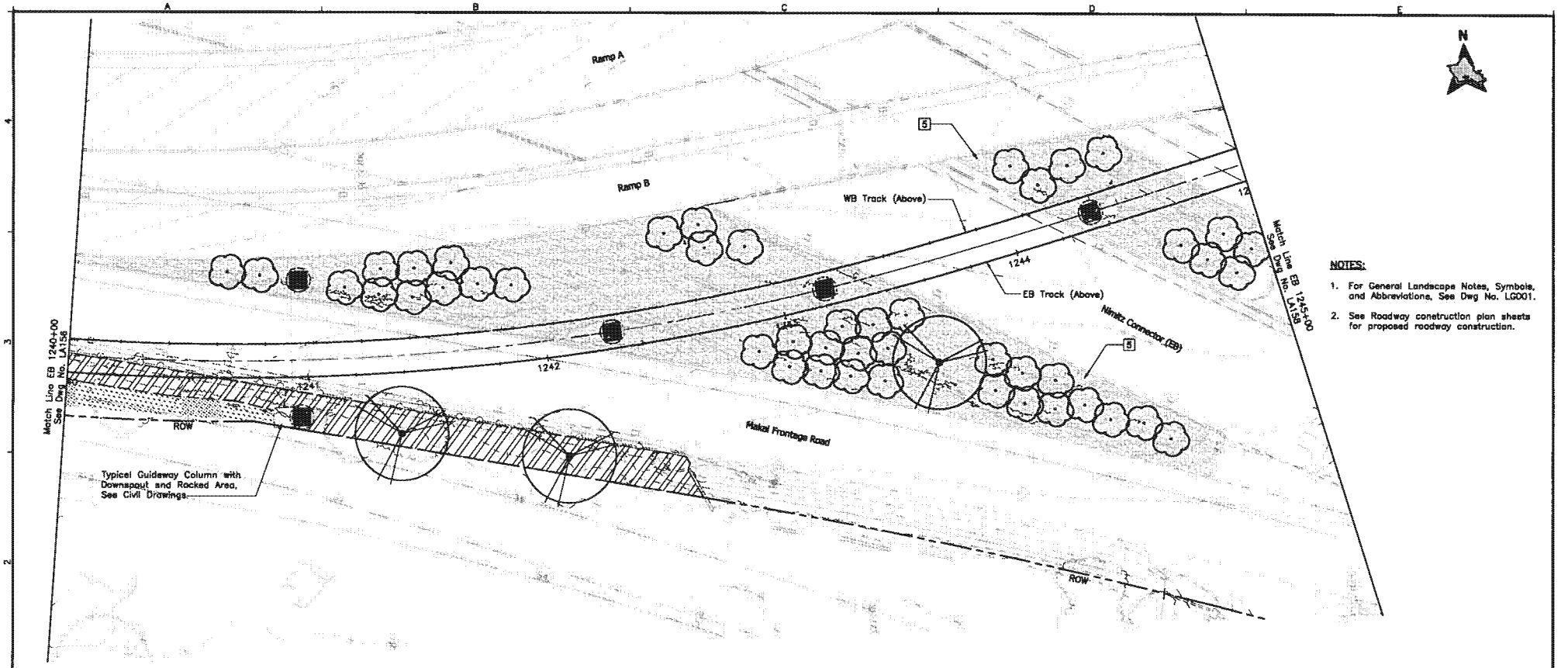

NOTES:

1. For General Landscape Notes, Symbols, and Abbreviations, See Dwg No. LG001.
2. See Roadway construction plan sheets for proposed roadway construction.

PLANT SCHEDULE LA157

TREES	BOTANICAL/COMMON
	Thevetia peruviana / Be-Still

RELOCATED TREE	BOTANICAL/COMMON
	Relocated Tree Large / Relocated Tree

SHRUB AREAS	BOTANICAL/COMMON
	Bidens cosmoides / Po'ola Nui

GROUND COVERS	BOTANICAL/COMMON
	Sesuvium portulacastrum / 'Akulikuli

REFERENCE NOTES SCHEDULE LA157

SYMBOL	DESCRIPTION
5	Gravel Mulch: 3in Layer Crushed Gravel Over Landscape Weed Barrier Fabric

20' 0 20'

Rev	By	Date	Description

PRELIMINARY ENGINEERING SUBJECT TO REVISION

Designed: C Hironaka
Drawn: B Tanimura
Checked: L Kelliaa
Approved: A Akau
Date: 10-01-10

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

CITY & COUNTY OF HONOLULU - DEPARTMENT OF TRANSPORTATION SERVICES - RAPID TRANSIT DIVISION

Prime Consultant: PB PARSONS BRINCKERHOFF
1003 Bishop Street, Suite 2250 – Honolulu, HI 96813

Subconsultant:

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AIRPORT GUIDEWAY AND UTILITIES

LANDSCAPE PAVING AND PLANTING PLAN

EB 1240+00 TO EB 1245+00

Contract No.: SV-430
CADD File: AP-J04-LA157
Drawing No.: LA157 Rev.
Scale: 1"=20'
Page No. 176 of 193

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Attachment H:

Preliminary Engineering Project Drawings, SMA D: Ke‘ehi Lagoon Beach Park

- D-00 to D-06: SMA Line Plan Sheets
- D-HR: Historic Resources
- D-FZ: Flood Zones
- D-FZ2: Flood Zones – 2011

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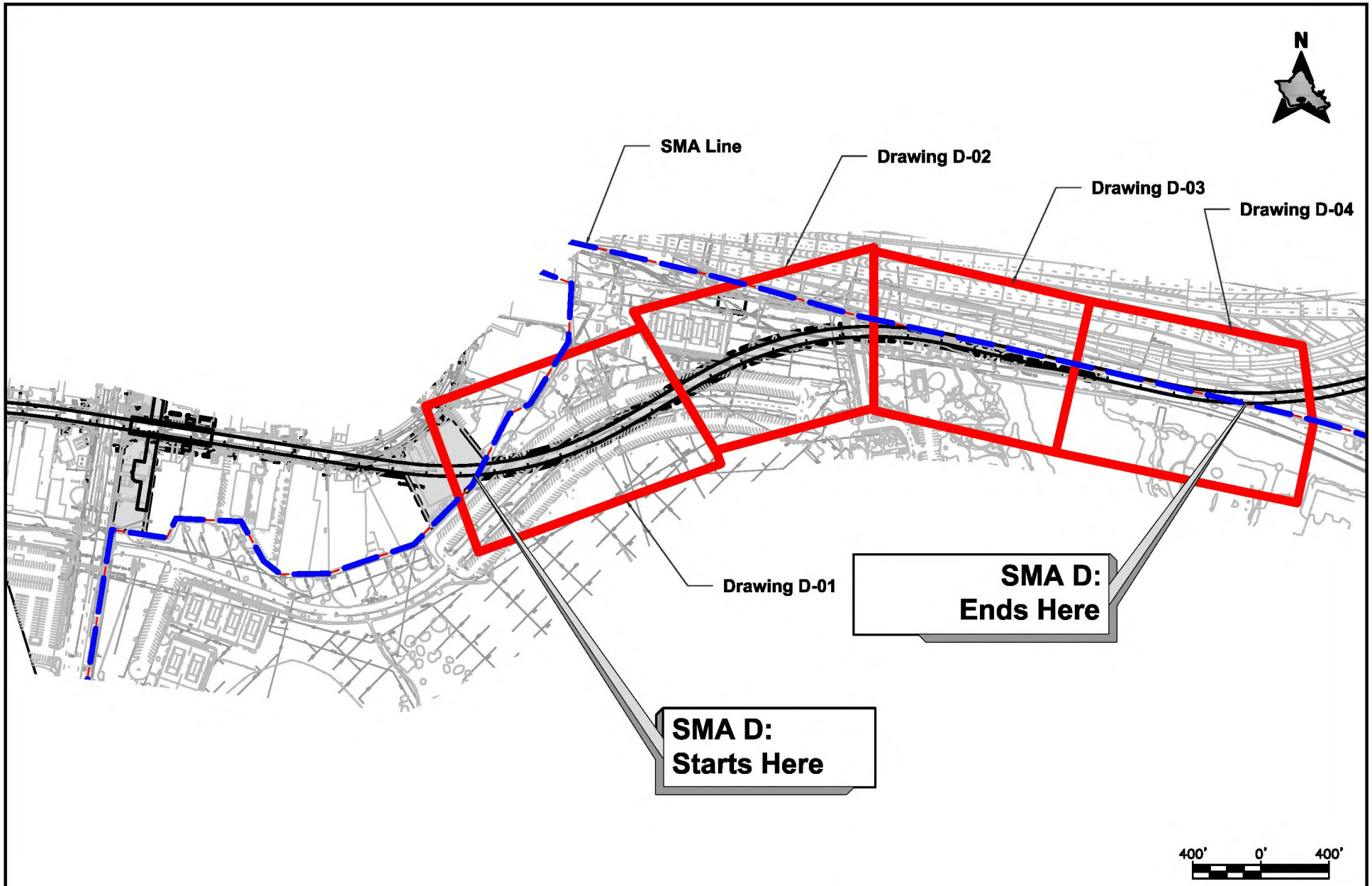


CITY & COUNTY OF HONOLULU
DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

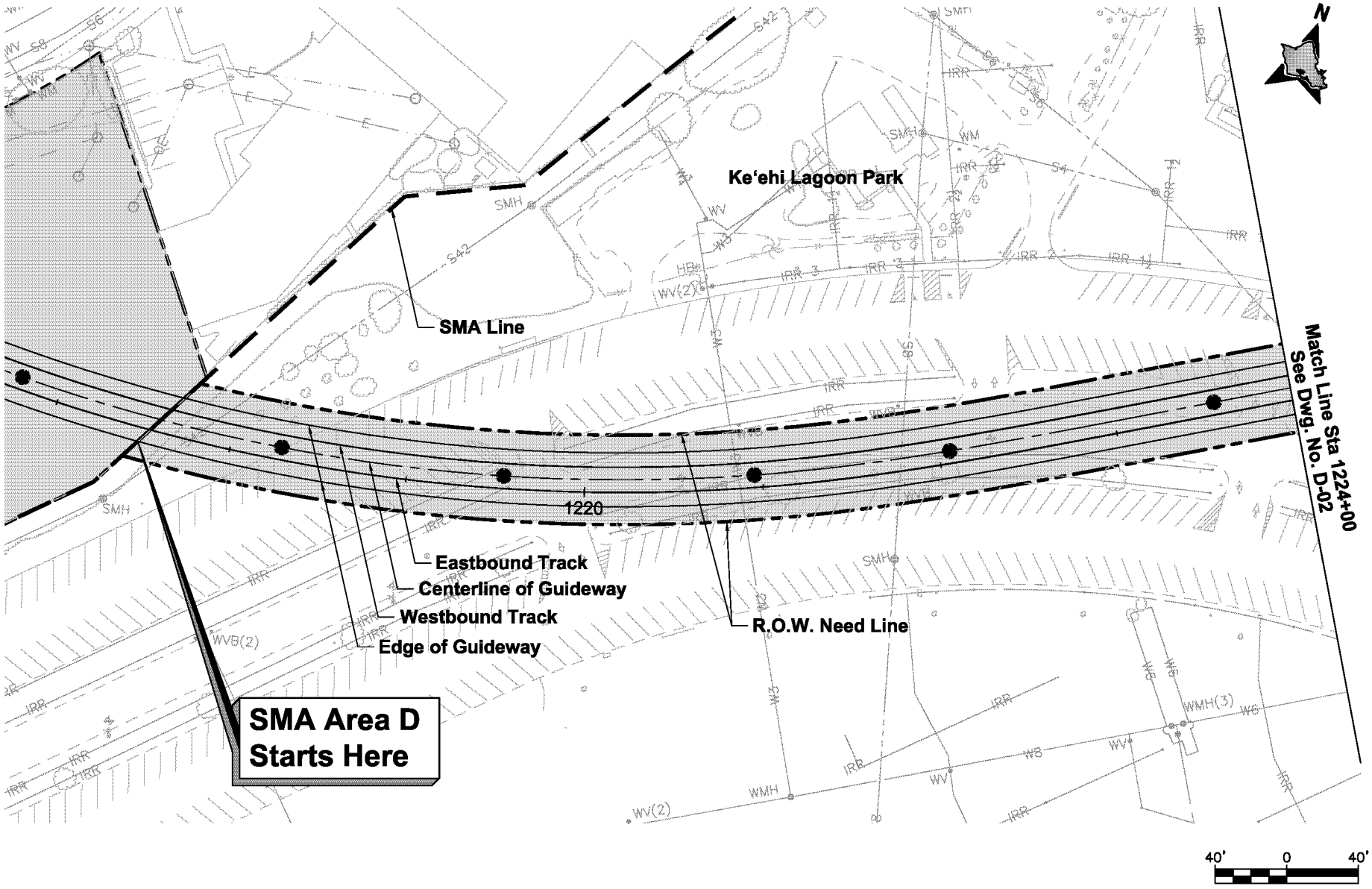
HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES
SMA AREA D
PLAN

STA 1217+00 TO STA 1241+00

Drawing No: **D-00**

Date: 04/07/2010



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

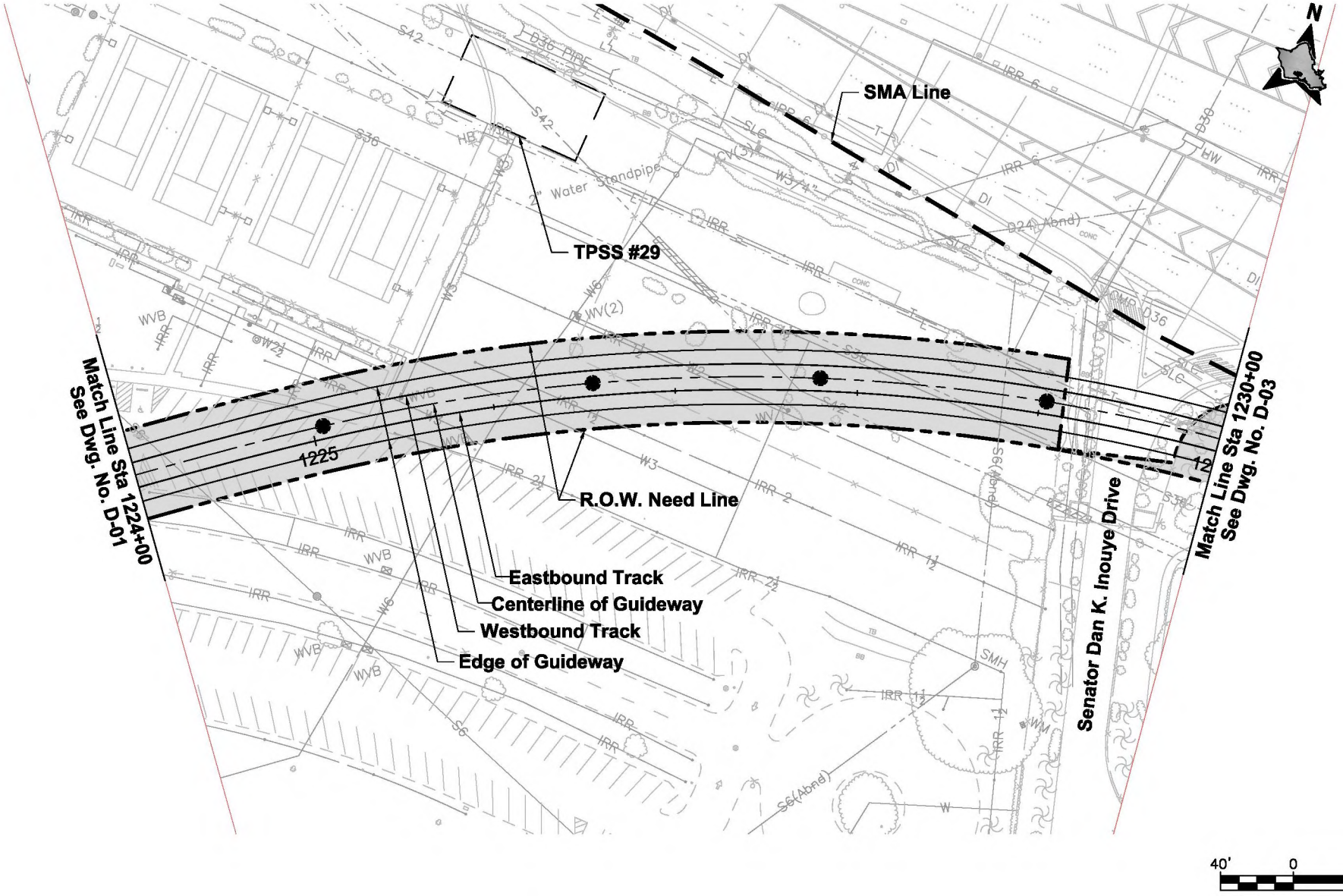
SMA AREA D

PLAN

STA 1217+00 TO STA 1224+00

Drawing No: **D-01**

Date: 04/07/2010



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA D

PLAN

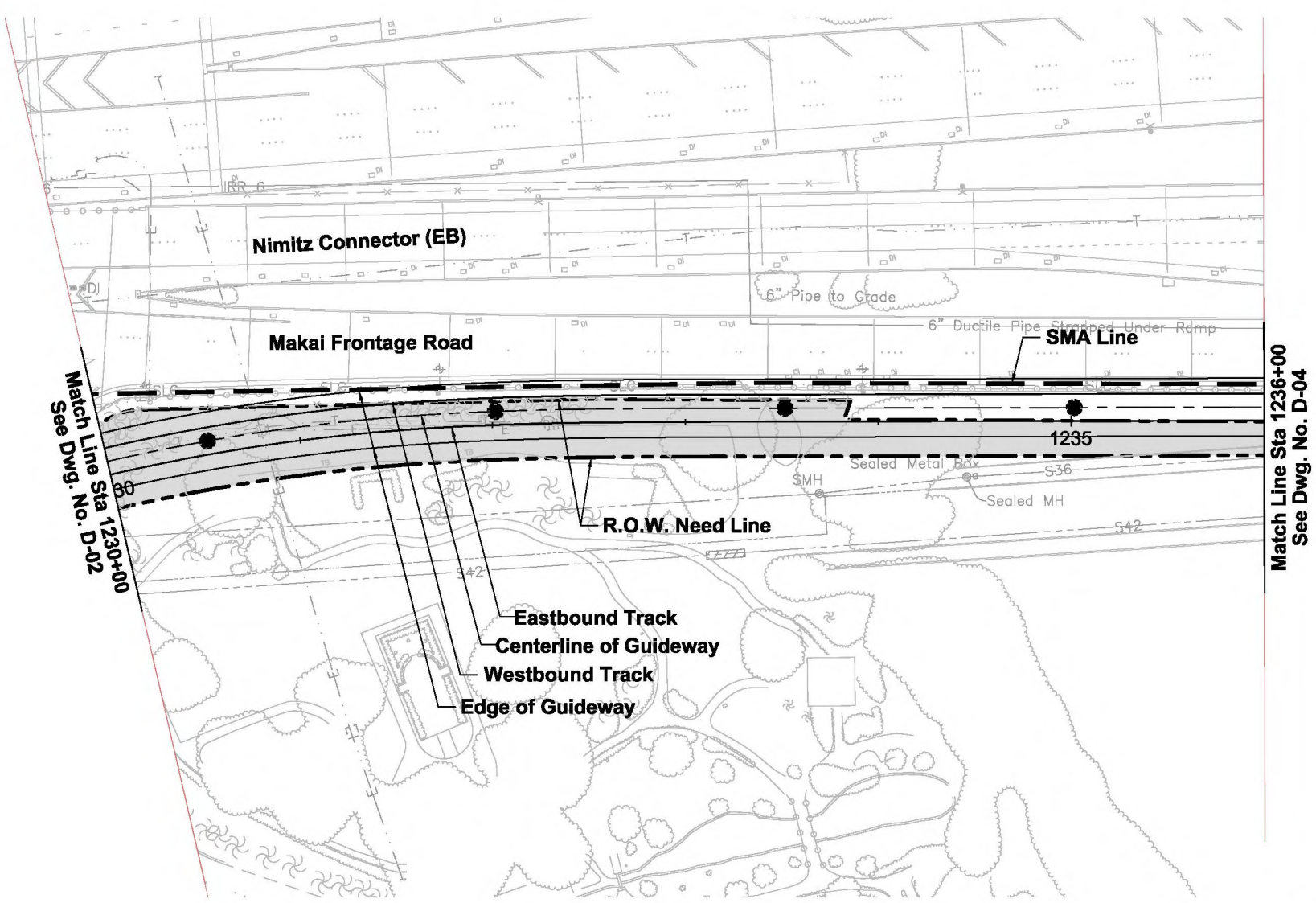
STA 1224+00 TO STA 1230+00

Drawing No:

D-02

Date:
04/07/2010

AR00078138



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA D

PLAN

STA 1230+00 TO STA 1236+00

Drawing No: **D-03**

Date: 04/07/2010

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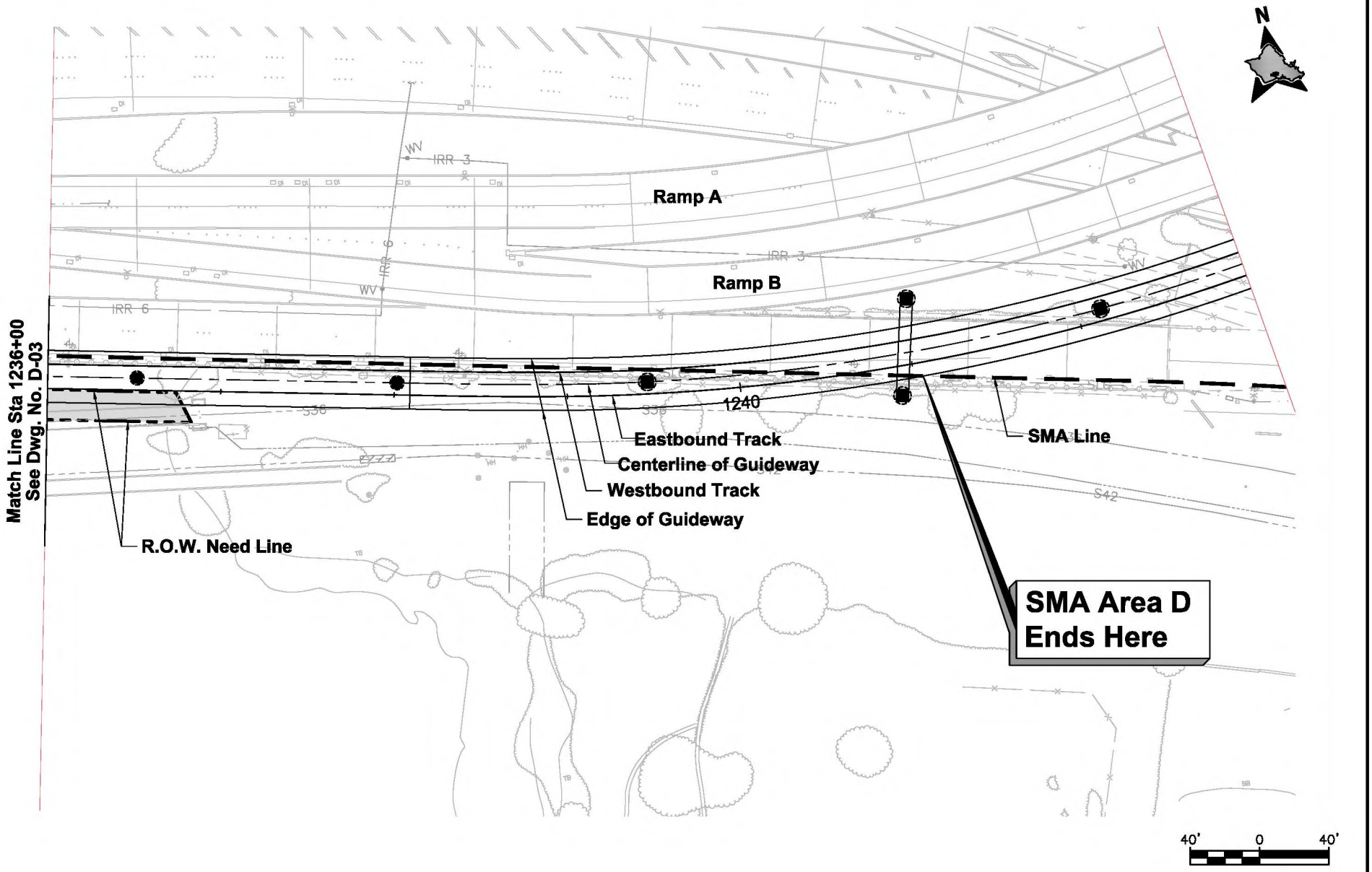


CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES

SMA AREA D

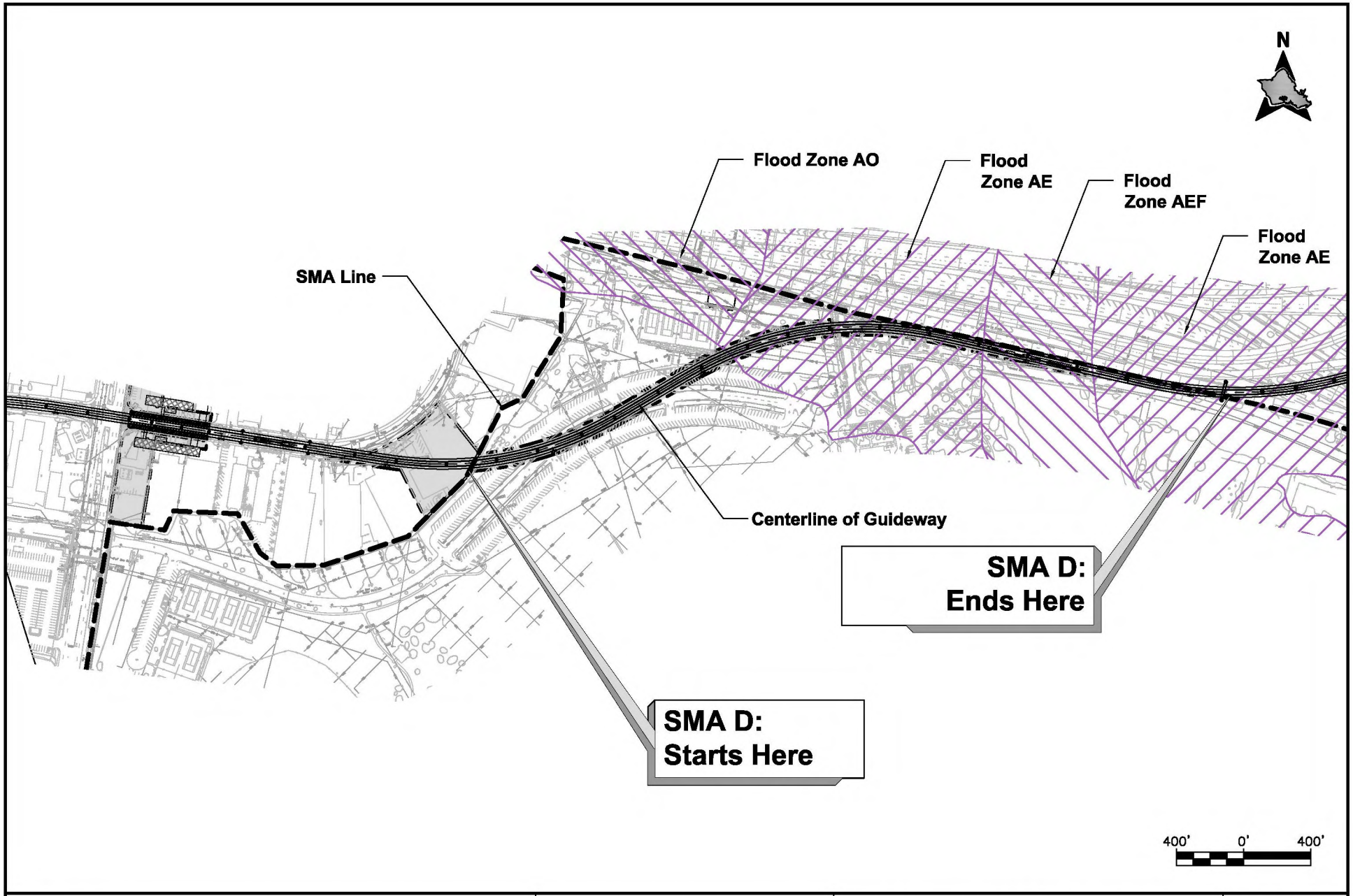
PLAN

STA 1236+00 TO STA 1241+00

Drawing No:

D-04

Date:
04/07/2010



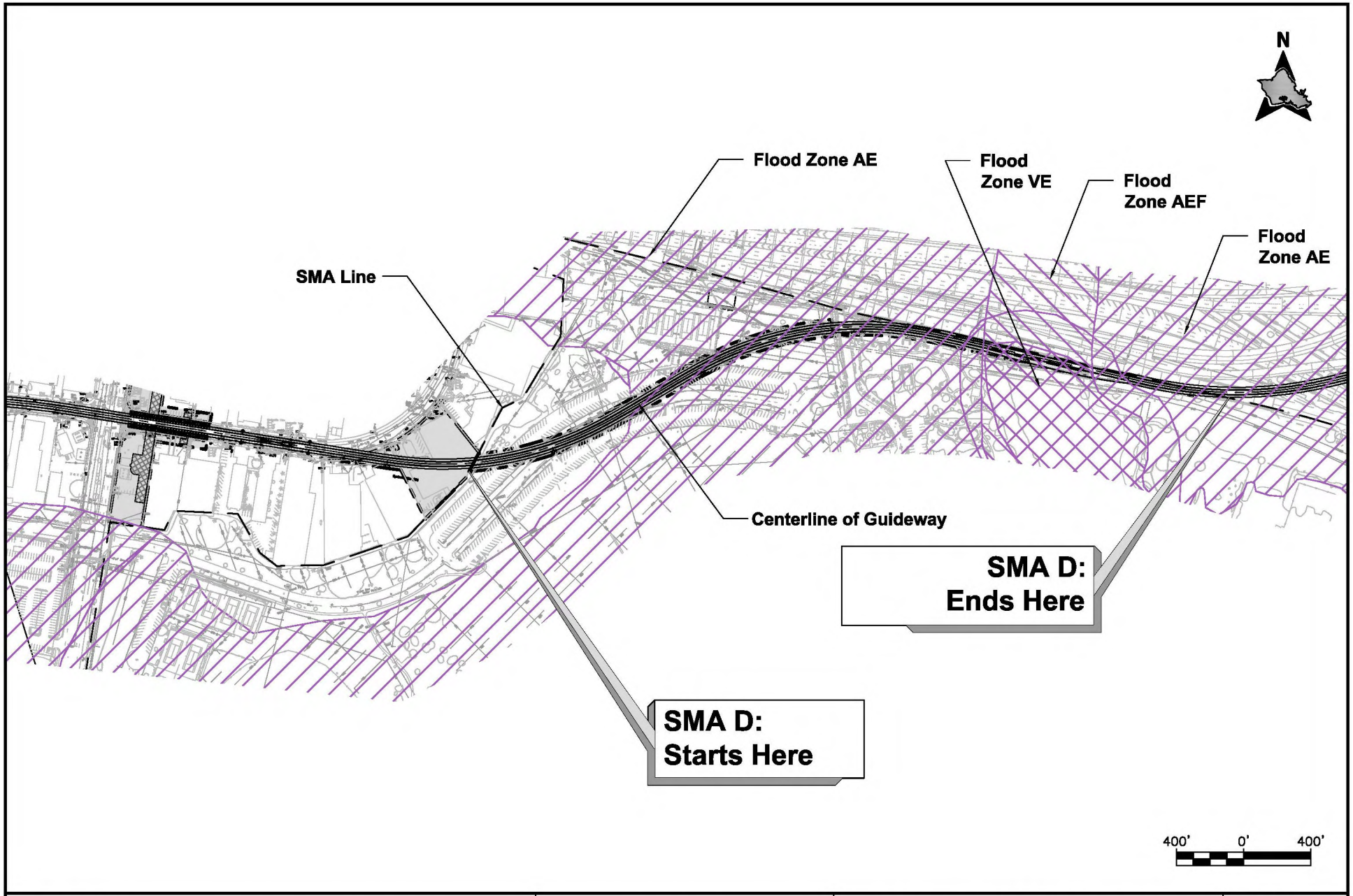
CITY & COUNTY OF HONOLULU
DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES
SMA AREA D
PLAN
STA 1217+00 TO STA 1241+00

Drawing No: D-FZ

Date: 04/07/2010



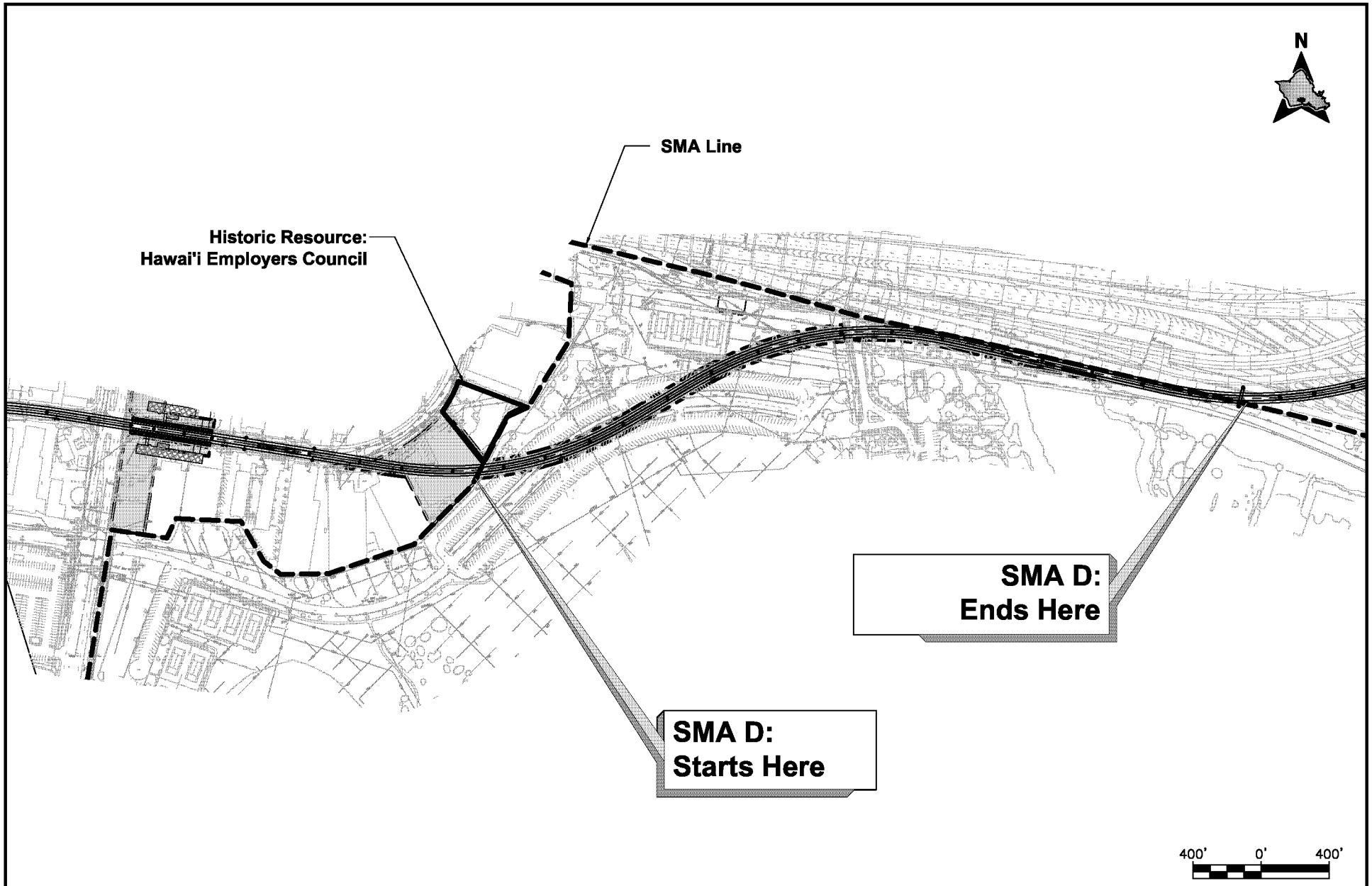
CITY & COUNTY OF HONOLULU
DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

SPECIAL MANAGEMENT AREA LINES
SMA AREA D
FLOOD ZONES 2011
STA 1217+00 TO STA 1241+00

Drawing No: **D-FZ2**

Date: 10/04/10



CITY & COUNTY OF HONOLULU

DEPARTMENT OF TRANSPORTATION SERVICES
RAPID TRANSIT DIVISION

HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

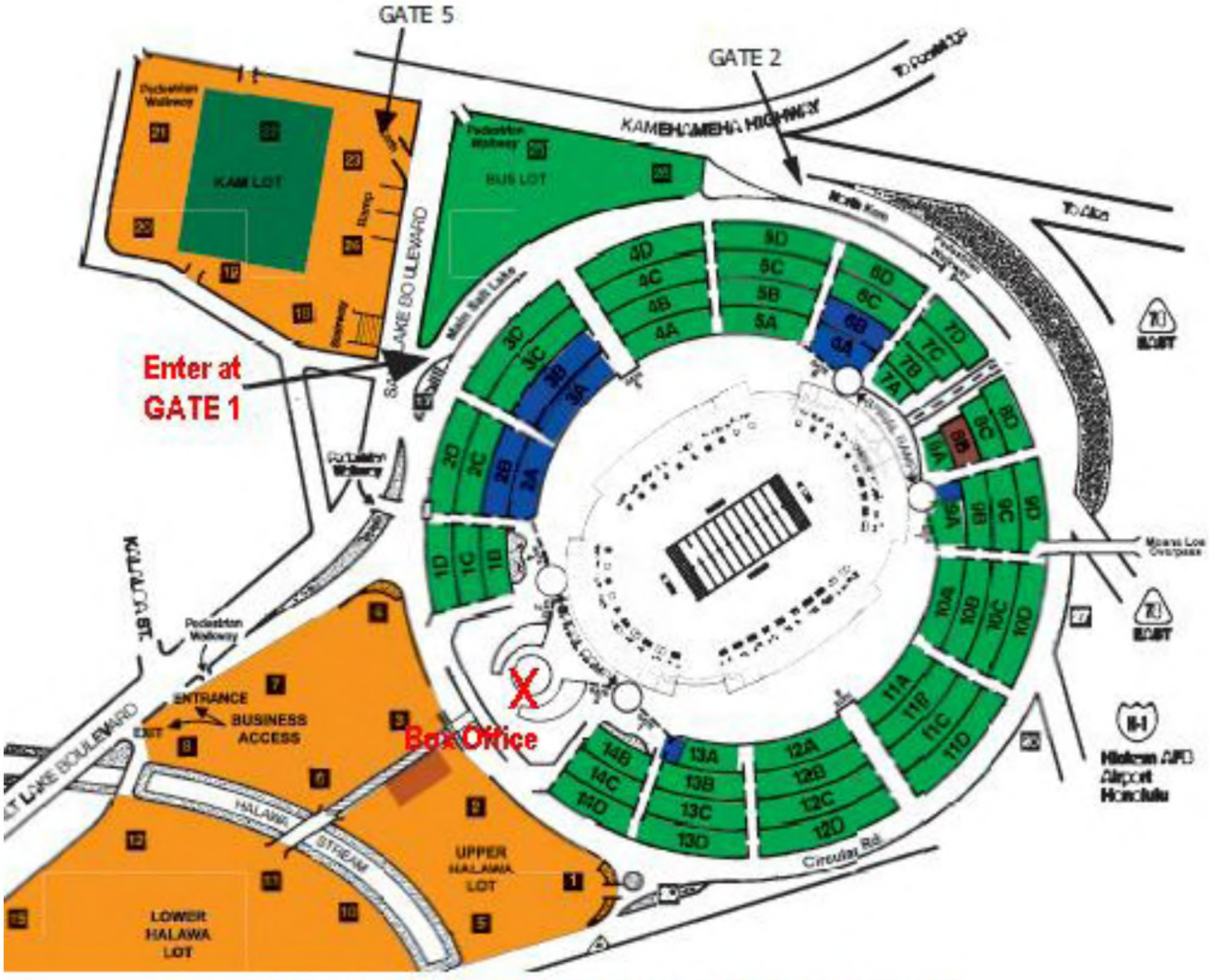
SPECIAL MANAGEMENT AREA LINES

SMA AREA D PLAN

STA 1217+00 TO STA 1241+00

Drawing No: **D-HR**

Date: 04/07/2010



Aloha Stadium Parking/Entry Fee $1
Check-in at Security Desk located at the
right hand side of the Stadium Box Office.

(posted on website)