

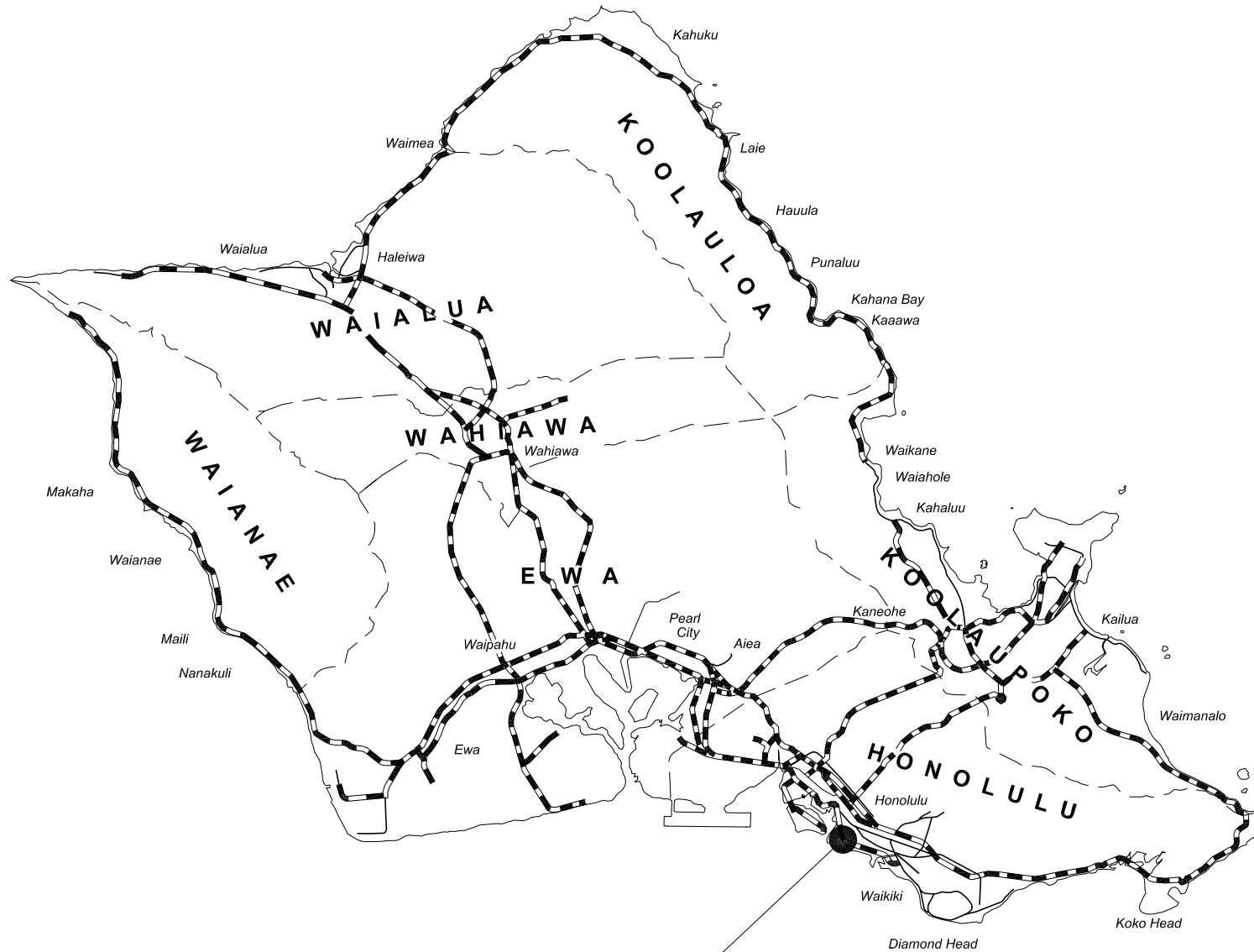
# **ATTACHMENT A**

## **Kakaako District MS4 Location and Site Maps**

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- A1-A: Kakaako Location Map
- A1-B: Kakaako Location Map
- A2-A: Outfall Map
- A2-B: Outfall Map
- A3: Maps of HCDA Drainage Structures





**KAKAAKO COMMUNITY  
DEVELOPMENT DISTRICT**

**ISLAND OF OAHU**

HAWAII COMMUNITY DEVELOPMENT AUTHORITY  
STATE OF HAWAII

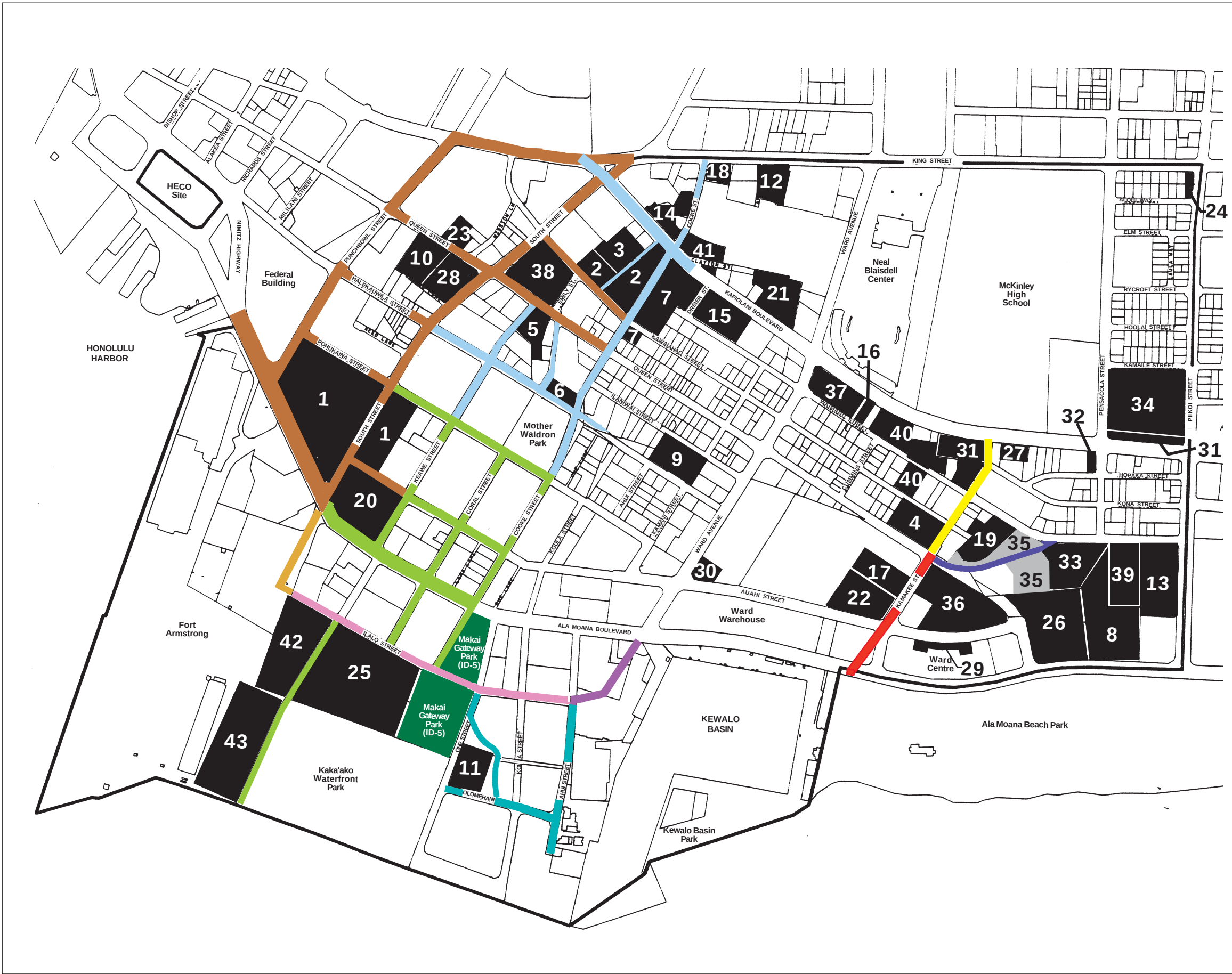
**KAKA'AKO COMMUNITY  
DEVELOPMENT DISTRICT**

**Attachment A1-A  
LOCATION MAP**

Hawaii Community Development Authority  
DEVELOPMENT PROJECTS IN KAKA'AKO

- Completed Projects**
1. One Waterfront Plaza & Towers
  2. Pacific Park Plaza
  3. Royal Capitol Plaza
  4. Kamakee Vista (Affordable Rentals)
  5. Pohulani (Affordable Elderly Rental)
  6. Na Lei Hulu Kupuna (Affordable Elderly Rental)
  7. The Imperial Plaza
  8. Nauru Tower
  9. Kauhale Kaka'ako (Affordable Rentals)
  10. Honuakaha (Affordable Elderly Rentals/ Affordable Condos)
  11. Children's Discovery Center
  12. One Archer Lane
  13. Hawaiki Tower
  14. Servco/Lexus Showroom
  15. BMW on Kapiolani
  16. Altres Building
  17. Nordstrom Rack
  18. Tesoro Gas Express
  19. 1133 Waimanu (Affordable Condos)
  20. CompUSA
  21. Theo Davies
  22. Ward Entertainment Center
  23. Word of Life Sanctuary
  24. Sub-Zero Showroom
  25. UH John A. Burns School of Medicine
  26. Hokua
  27. Kapiolani Express
  28. Honolulu Fire Dept. Headquarters/Museum
  29. Ward Centre Auahi Street Shops
  30. Ward Gateway Retail Shops
  31. Public Storage
  32. Wedding Ring Shop
  33. Ko'olani (Nauru Phase 3)
  34. Moana Pacific
- Current and Future Projects**
35. Queen Street Extension Park
  36. Ward Village Shops
  37. 909 Kapiolani
  38. Keola La'i
  39. Nauru Phase 4
  40. Moana Vista
  41. 720 Kapiolani Blvd. Project (NCR Bldg. Renovation)
- In Negotiations**
42. Cancer Research Center of Hawaii
  43. OHA Headquarters/Hawaiian Cultural Center Project

- INFRASTRUCTURE IMPROVEMENT PROJECTS**
- Improvement District 1 (1988)
  - Improvement District 2 (1990)
  - Improvement District 3 (1993)
  - Improvement District 4 (1999)
  - Improvement District 5 (Gateway Park) (1998)
  - Improvement District 6 (2000)
  - Improvement District 7 (2002)
  - Improvement District 8 (2003)
  - Improvement District 9 (2003)
  - Improvement District 10 (2004)
  - Improvement District 12 (2007)











**LEGEND:**



**KAKA'AKO COMMUNITY  
DEVELOPMENT DISTRICT  
BOUNDARIES**

#

**ELEVATION**

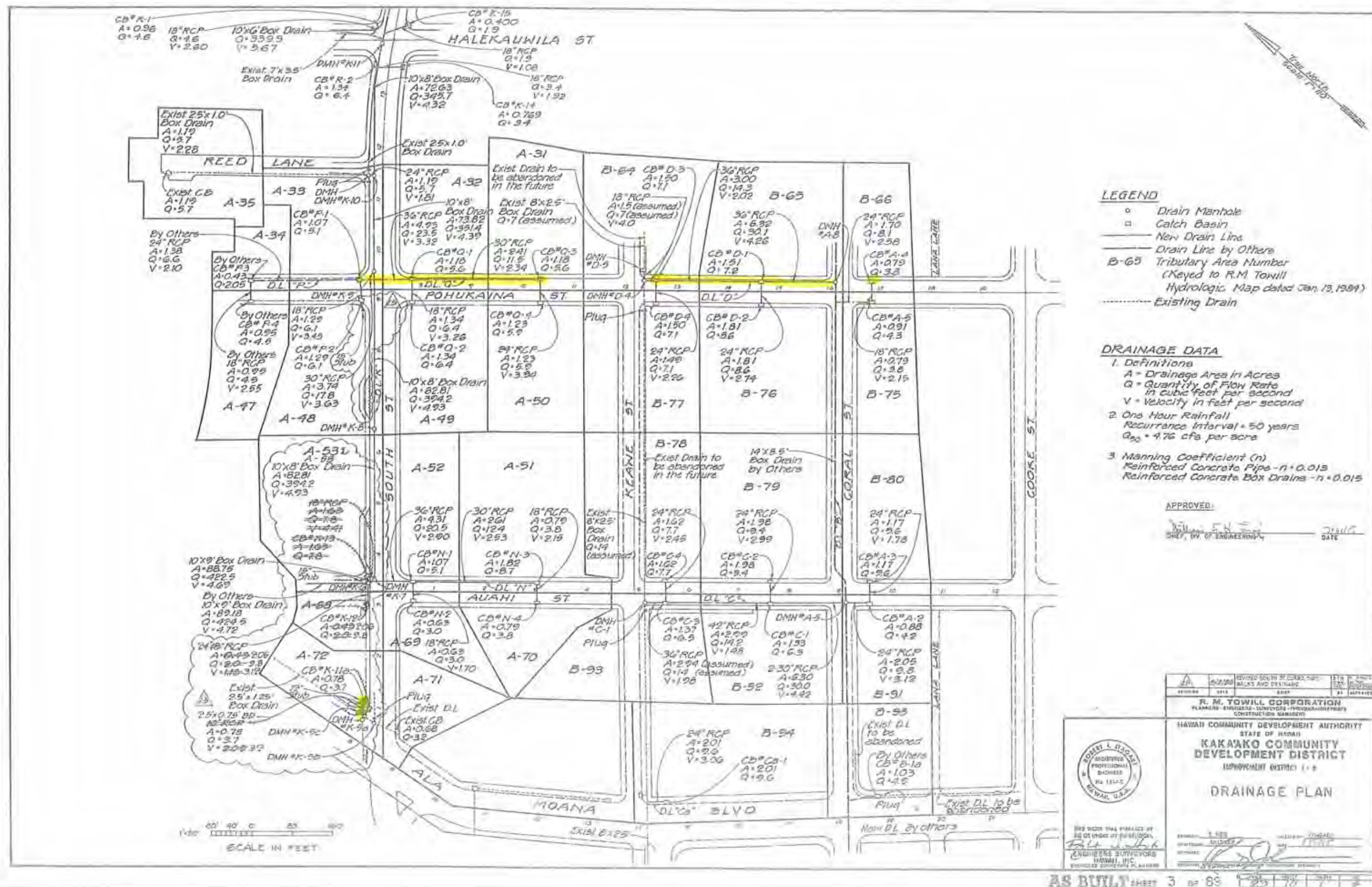


HAWAII COMMUNITY DEVELOPMENT AUTHORITY  
STATE OF HAWAII

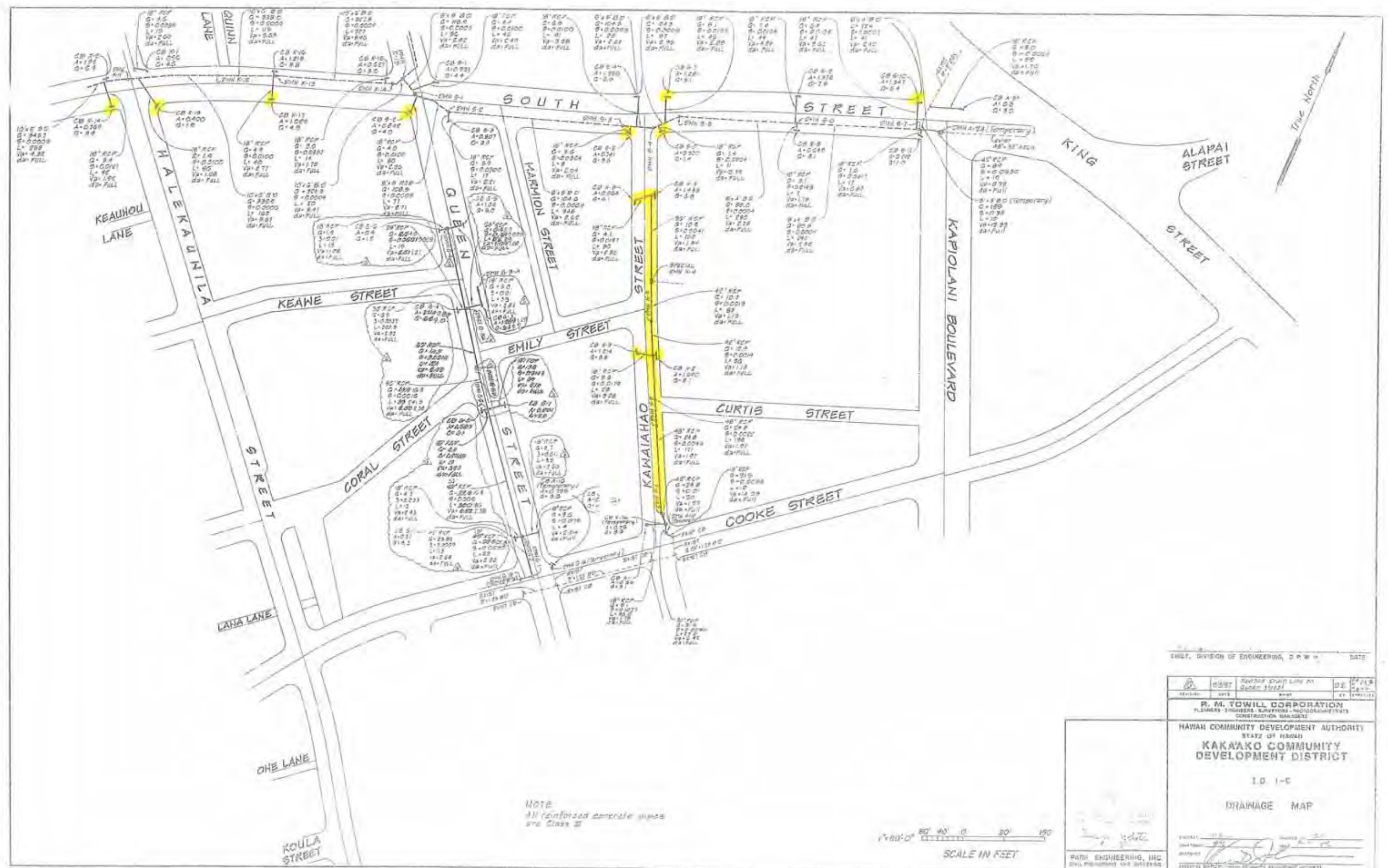
**KAKA'AKO COMMUNITY  
DEVELOPMENT DISTRICT**

**ATTACHMENT A2-B  
OUTFALL MAP**

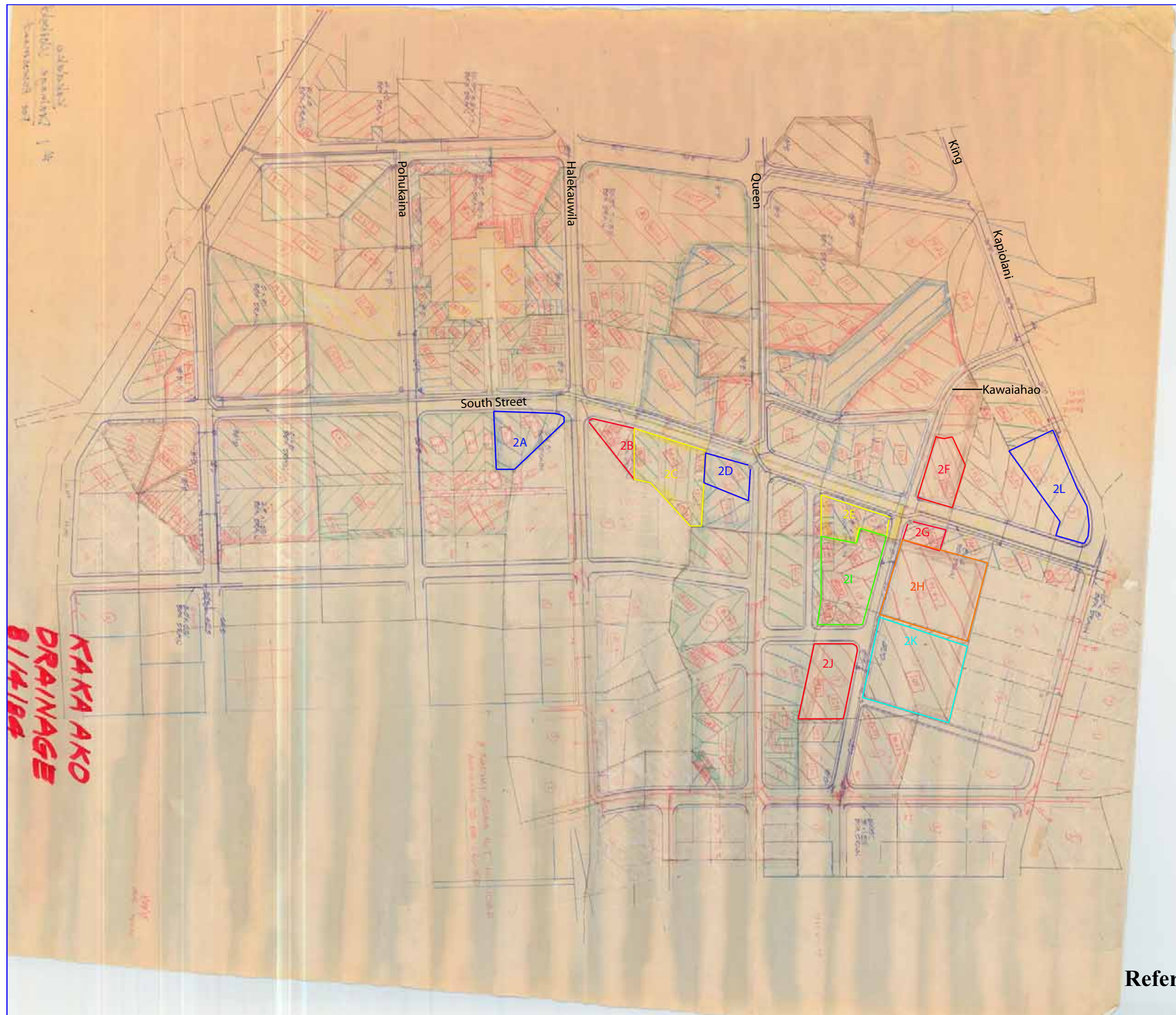












Reference Map No. 2 DA





**DRAINAGE PLAN 'A'**  
SCALE - 1" = 200'

Approved:

*Mein T. Fukagawa*  
Chief, Division of Engineering, D.P.W.

9/25/87  
Date

1" = 200'  
200 100 0 200 400  
SCALE IN FEET



THIS WORK WAS PREPARED BY  
ME OR UNDER MY SUPERVISION  
DATE: 9/25/87  
WILSON DELAMONTE & ASSOC.  
ENGINEERS, ARCHITECTS, LANDSCAPE ARCHITECTS

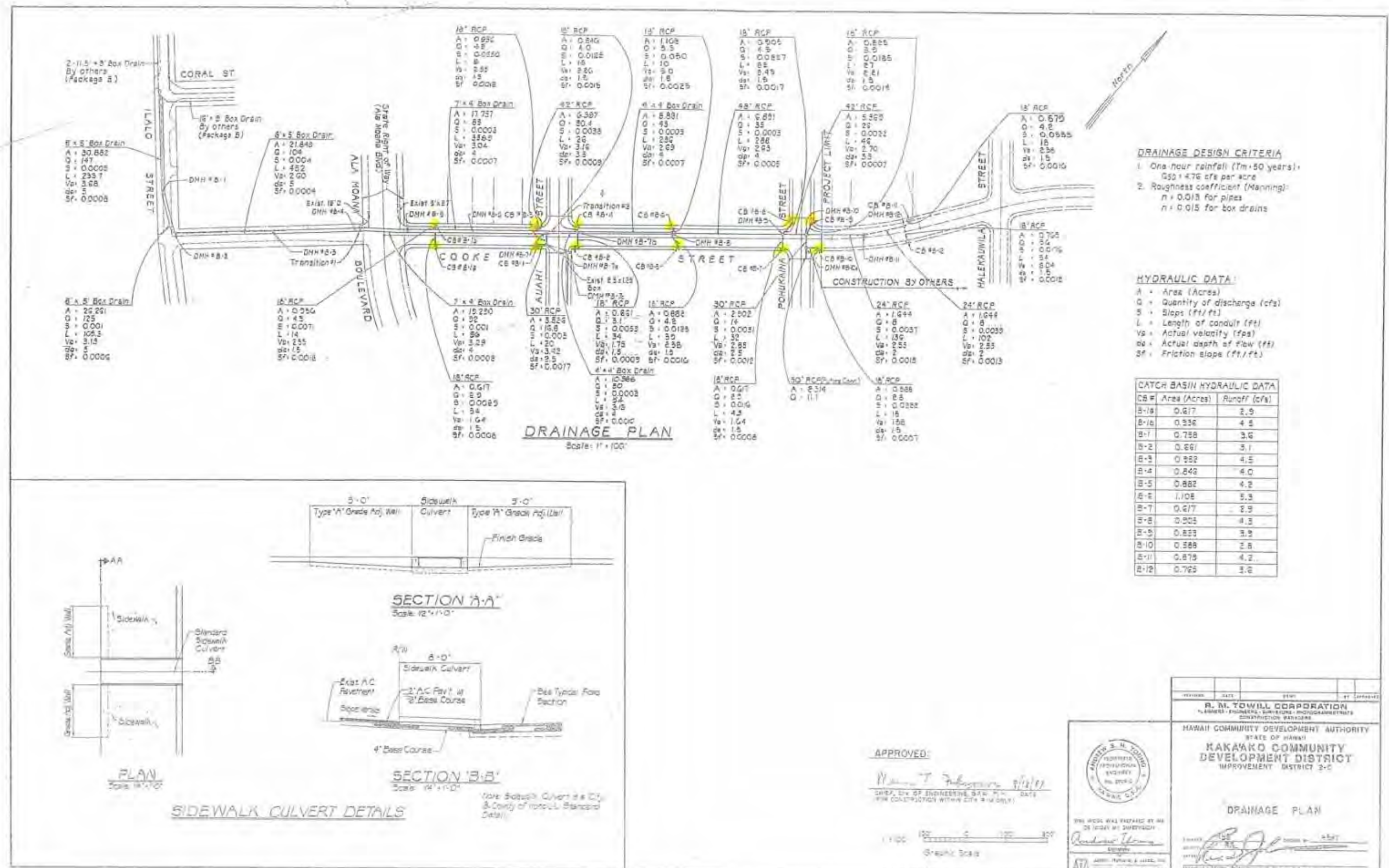
|                                                                                                                                                      |            |      |             |
|------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------|-------------|
| PROJECT NO.                                                                                                                                          | DATE       | BY   | APPROVED BY |
| R. M. TOWILL CORPORATION<br>PLANNERS, ENGINEERS, SURVEYORS, PHOTOGRAMMETRISTS<br>CONSTRUCTION MANAGERS                                               |            |      |             |
| HAWAII COMMUNITY DEVELOPMENT AUTHORITY<br>STATE OF HAWAII<br>KAKA'AKO COMMUNITY<br>DEVELOPMENT DISTRICT<br>IMPROVEMENT DISTRICT 2-0<br>DRAINAGE PLAN |            |      |             |
| DESIGNED BY                                                                                                                                          | CHECKED BY | DATE | BY          |
| DRIVEN BY                                                                                                                                            | DATE       | BY   | BY          |

SS BUILT

C-5 SHEET 5 OF 5

Reference Map No. 3

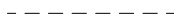




Sources: State of Hawaii, 1985, City & County of Honolulu, 2008, HCDA, 2008, M&E Pacific, Inc., 2008.



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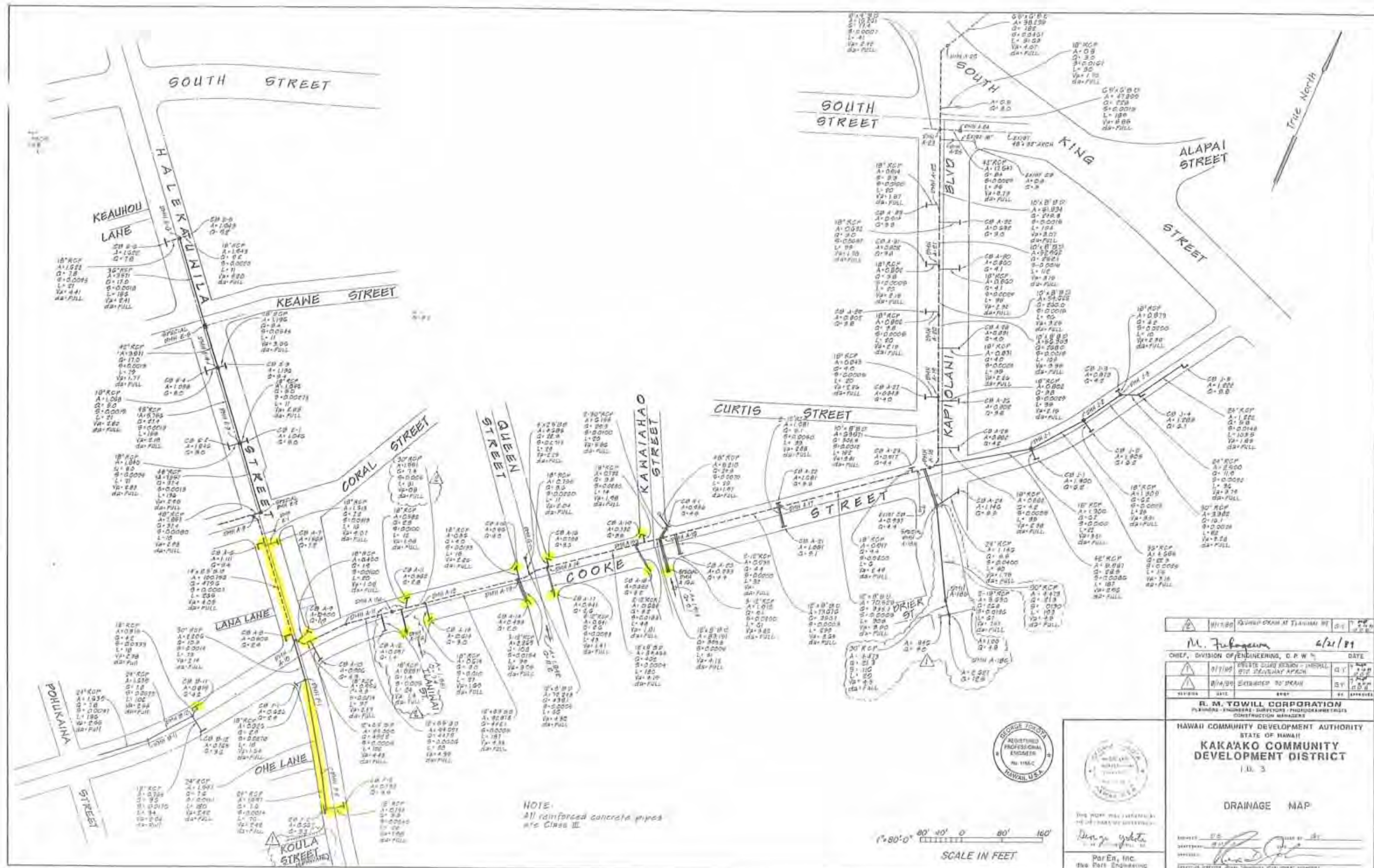
-  HCDA DRAINAGE STRUCTURES
-  DRAINAGE AREAS
-  STORM DRAIN CONDUIT



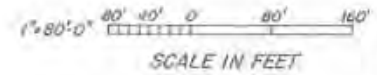
METCALF&EDDY | AECOM

**REFERENCE MAP 4 DA**





NOTE:  
All reinforced concrete pipes  
are Class III



|                                                                                                                |                           |                     |            |
|----------------------------------------------------------------------------------------------------------------|---------------------------|---------------------|------------|
| M. Tufegovic                                                                                                   |                           | 4/21/01             |            |
| CHIEF, DIVISION OF ENGINEERING, D.P.W.                                                                         |                           | DATE                |            |
| 1/1/00                                                                                                         | REVIS: DRAINAGE - INITIAL | 1/1/00              | BY: J.P.H. |
| 1/1/00                                                                                                         | REVIS: DRAINAGE - FINAL   | 1/1/00              | BY: J.P.H. |
| R. M. TOWILL CORPORATION<br>PLANNING - ENGINEERING - SURVEYING - PHOTOGRAMMETRY<br>CONSTRUCTION MANAGEMENT     |                           |                     |            |
| HAWAII COMMUNITY DEVELOPMENT AUTHORITY<br>STATE OF HAWAII<br>KAKA'AKO COMMUNITY DEVELOPMENT DISTRICT<br>I.D. 3 |                           |                     |            |
| DRAINAGE MAP                                                                                                   |                           |                     |            |
| DESIGNED BY: J.P.H.                                                                                            |                           | CHECKED BY: J.P.H.  |            |
| DRAWN BY: J.P.H.                                                                                               |                           | APPROVED BY: J.P.H. |            |
| Par En, Inc.<br>194 East Engineering                                                                           |                           | 1/1/00              |            |

Sources: State of Hawaii, 1985, City & County of Honolulu, 2008, HCDA, 2008, M&E Pacific, Inc., 2008.



LEGEND:

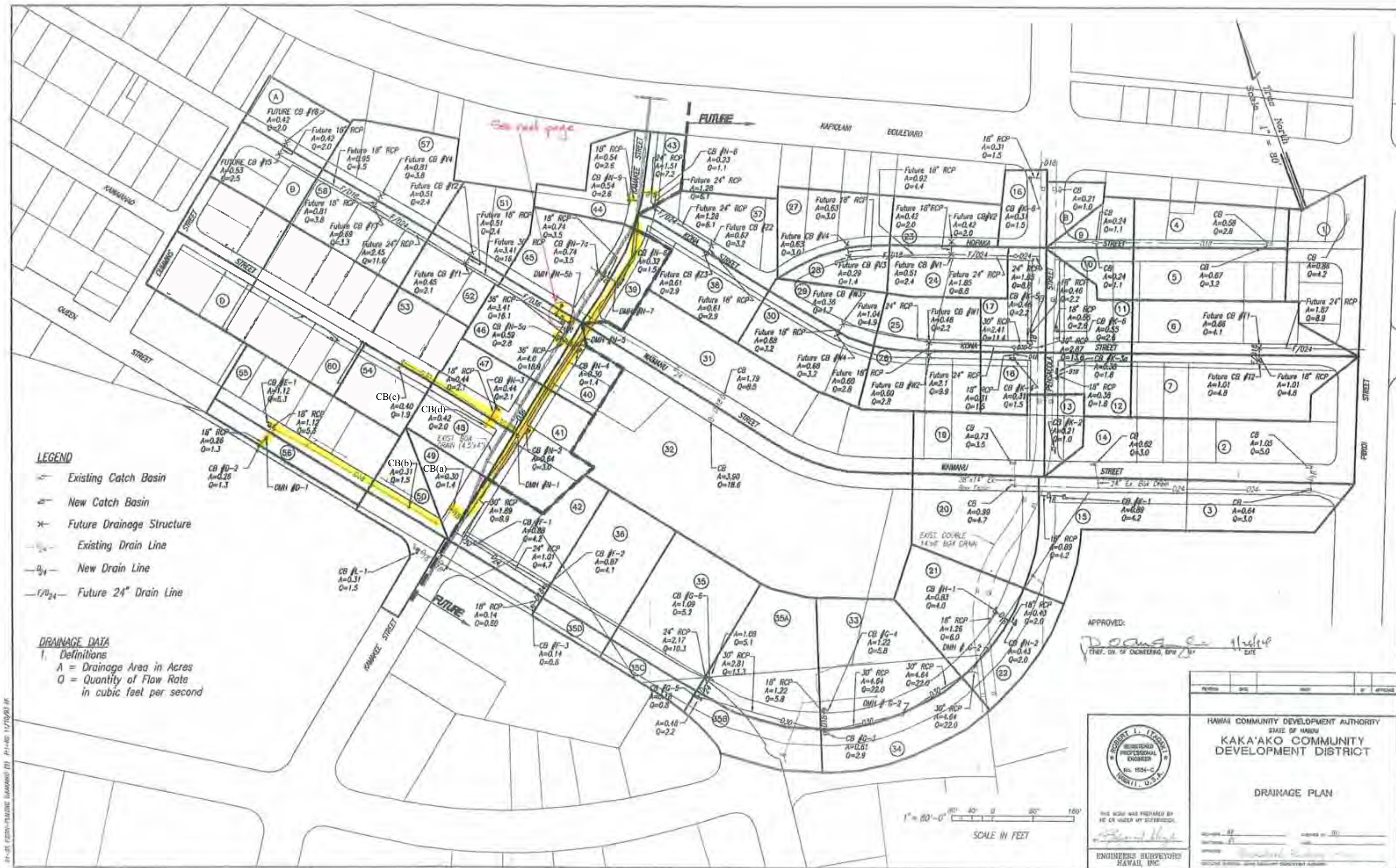
-  HCDA DRAINAGE STRUCTURES
-  DRAINAGE AREAS
-  STORM DRAIN CONDUIT



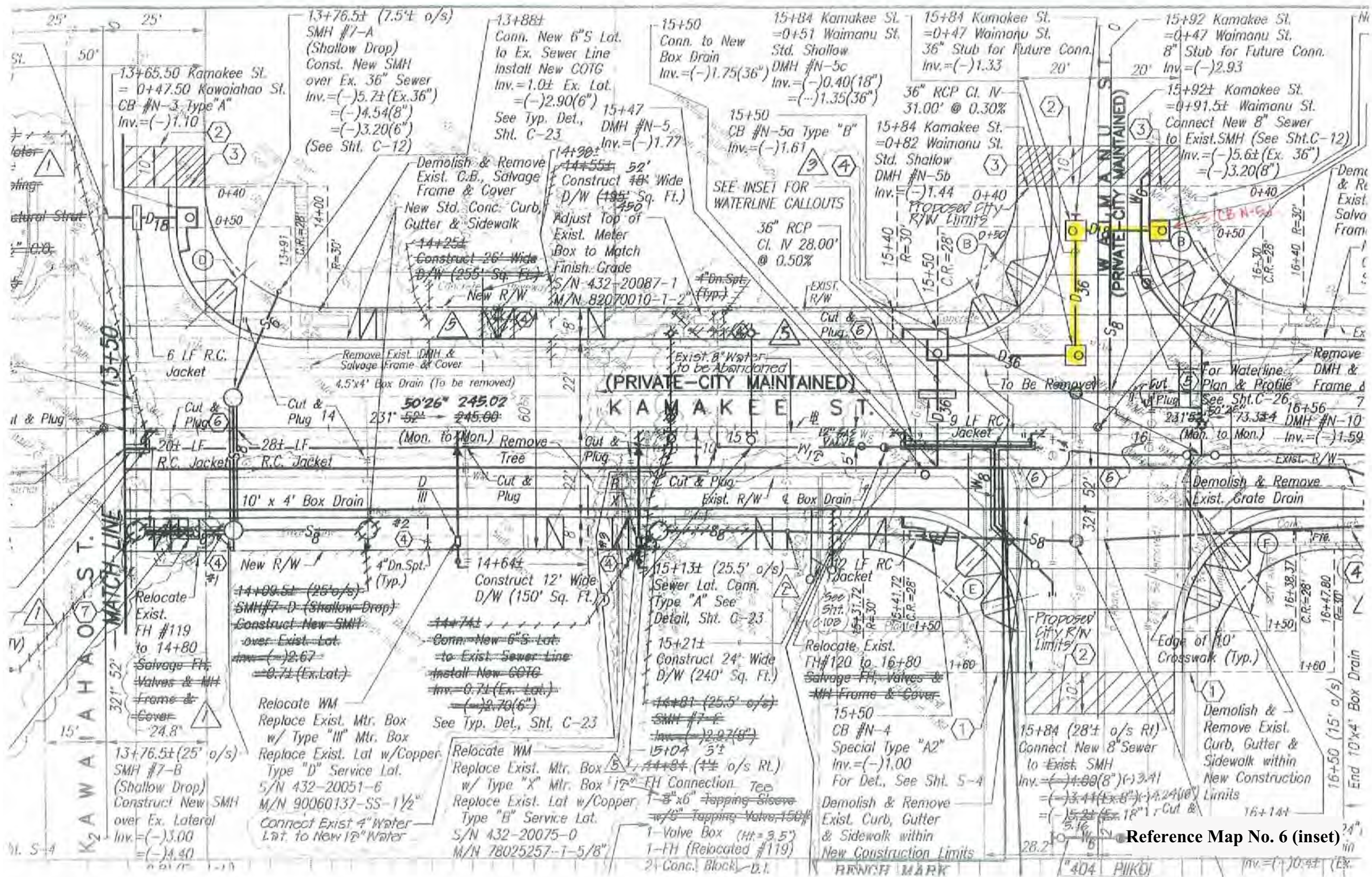
METCALF&EDDY | AECOM

**REFERENCE MAP 5 DA**

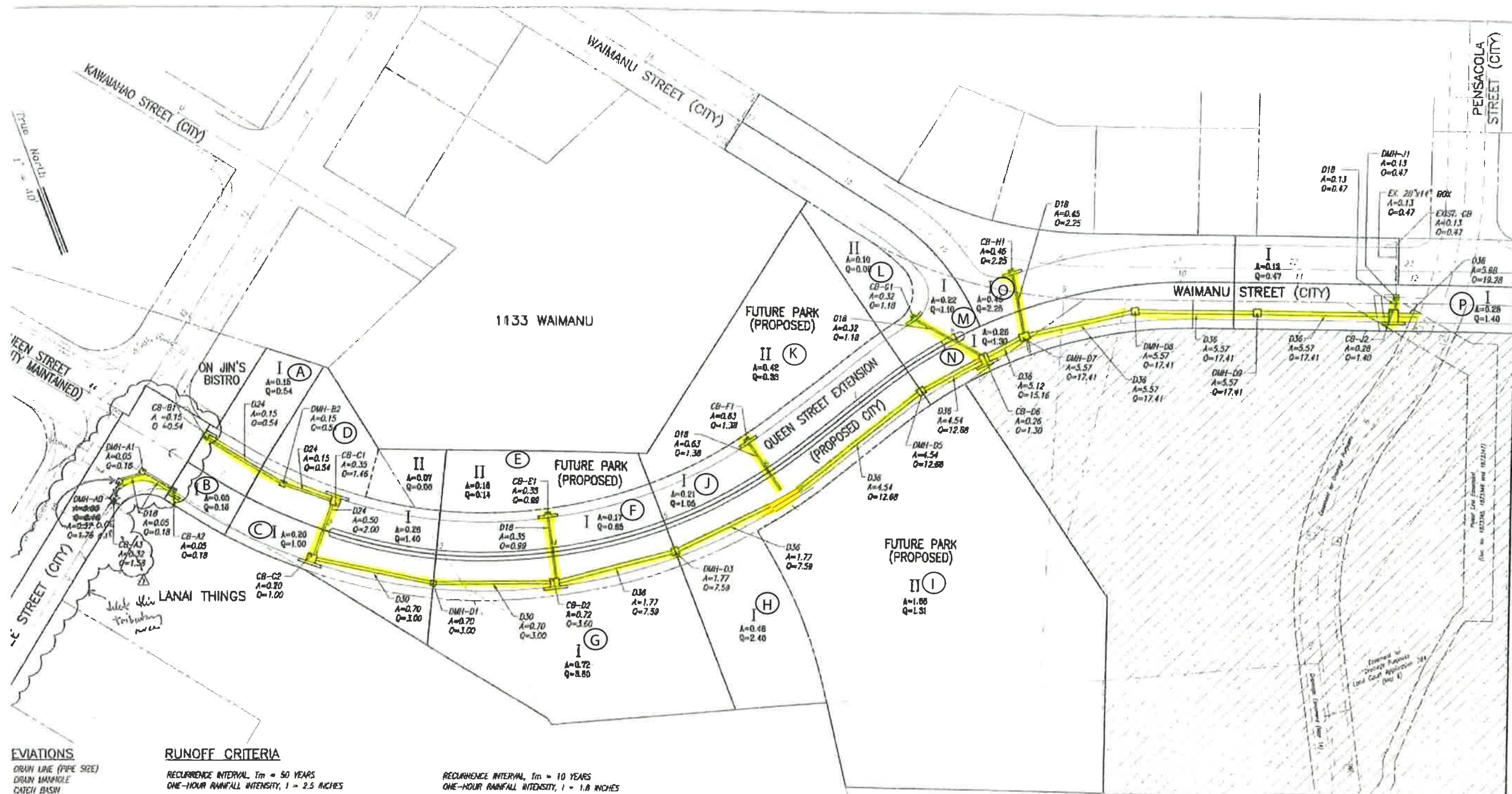












### NOTATIONS

- DRAIN LINE (PIPE SIZE)
- DRAIN MANHOLE
- CATCH BASIN
- TRIBUTARY AREA (ACRES)
- RUNOFF (CFS)

NO

- TRIBUTARY AREA
- EXISTING DRAINAGE SYSTEM
- NEW DRAINAGE SYSTEM
- AREA TO BE DRAINED BY DRAINAGE

### RUNOFF CRITERIA

RECURRENTIAL INTERVAL,  $T_m = 50$  YEARS  
 ONE-HOUR RAINFALL INTENSITY,  $I = 2.5$  INCHES

AREA I - QUEEN STREET EXTENSION/WAIMANU STREET  
 RUNOFF COEFFICIENT,  $C = 0.8$  (LIGHT INDUSTRIAL)  
 RAINFALL INTENSITY,  $I = 0.25$  INCHES/HOUR  
 TRIBUTARY AREA,  $A = 3.27$  ACRES  
 TOTAL RUNOFF,  $Q = 18.35$  CFS  
 RUNOFF/ACRE,  $q = 5.00$  CFS/ACRE

AREA II - PARK SITES  
 RUNOFF COEFFICIENT,  $C = 0.175$  (PARK/MEADOW)  
 RAINFALL INTENSITY,  $I = 4.50$  INCHES/HOUR  
 TRIBUTARY AREA,  $A = 2.53$  ACRES  
 TOTAL RUNOFF,  $Q = 1.82$  CFS  
 RUNOFF/ACRE,  $q = 0.72$  CFS/ACRE

RECURRENTIAL INTERVAL,  $T_m = 10$  YEARS  
 ONE-HOUR RAINFALL INTENSITY,  $I = 1.8$  INCHES

AREA I - QUEEN STREET EXTENSION/WAIMANU STREET  
 RUNOFF COEFFICIENT,  $C = 0.8$  (LIGHT INDUSTRIAL)  
 RAINFALL INTENSITY,  $I = 4.50$  INCHES/HOUR  
 TRIBUTARY AREA,  $A = 0.28$  ACRES  
 TOTAL RUNOFF,  $Q = 1.01$  CFS  
 RUNOFF/ACRE,  $q = 3.60$  CFS/ACRE

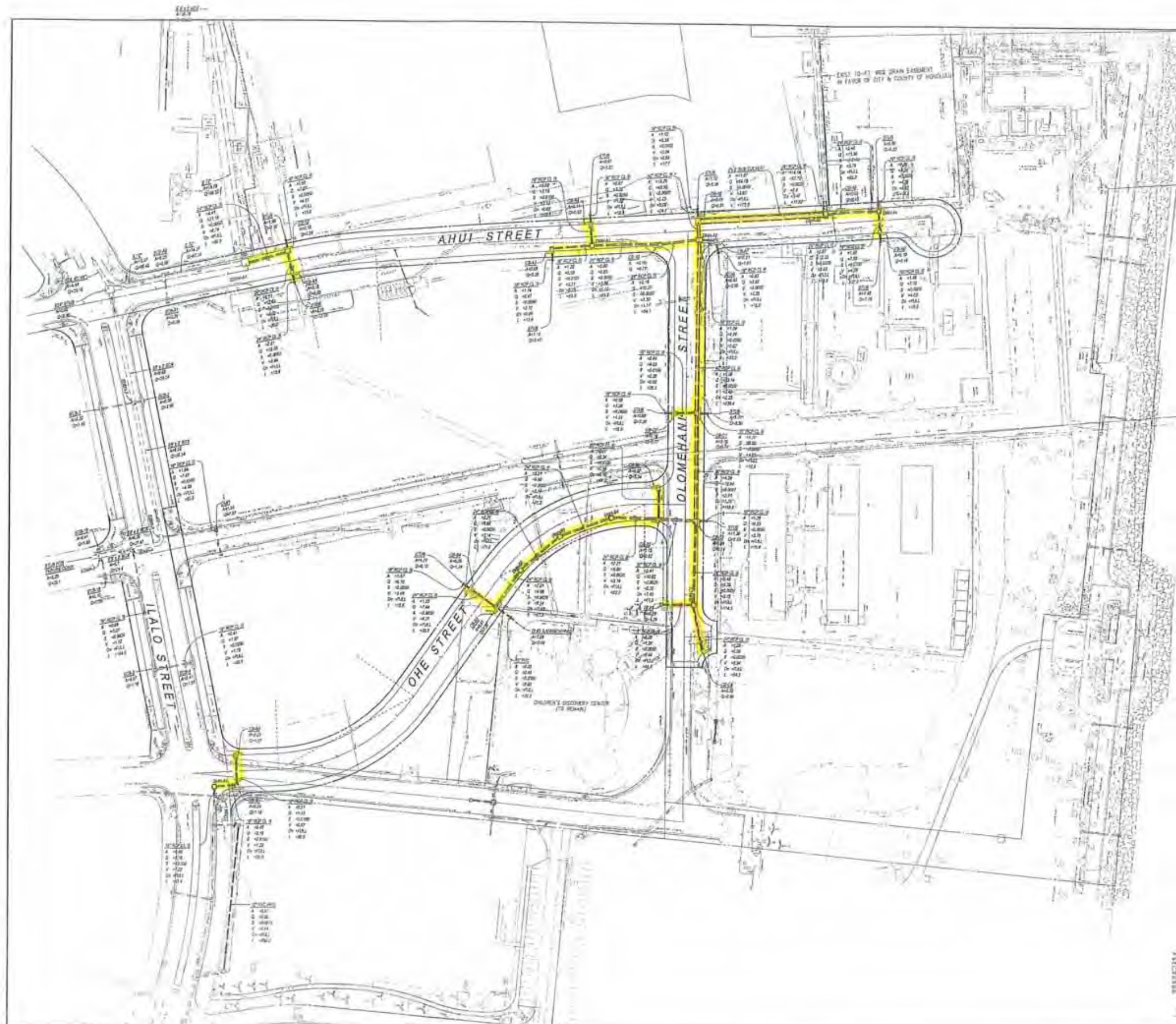
AREA II - PARK SITES  
 RUNOFF COEFFICIENT,  $C = 0.175$  (PARK/MEADOW)  
 RAINFALL INTENSITY,  $I = 3.24$  INCHES/HOUR  
 TRIBUTARY AREA,  $A = 0.00$  ACRES  
 TOTAL RUNOFF,  $Q = 0.00$  CFS  
 RUNOFF/ACRE,  $q = 0.57$  CFS/ACRE



HAWAII COMMUNITY DEVELOPMENT AUTHORITY  
 STATE OF HAWAII  
**KAKA'AKO COMMUNITY DEVELOPMENT DISTRICT**  
**IMPROVEMENT DISTRICT 10**  
**QUEEN STREET EXTENSION**  
 DRAINAGE PLAN

Reference Map No. 8





APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

PROPOSED PUBLIC ROAD

| REVISION | DATE | DESCRIPTION | MADE BY | APPROVED |
|----------|------|-------------|---------|----------|
| 1        |      |             |         |          |

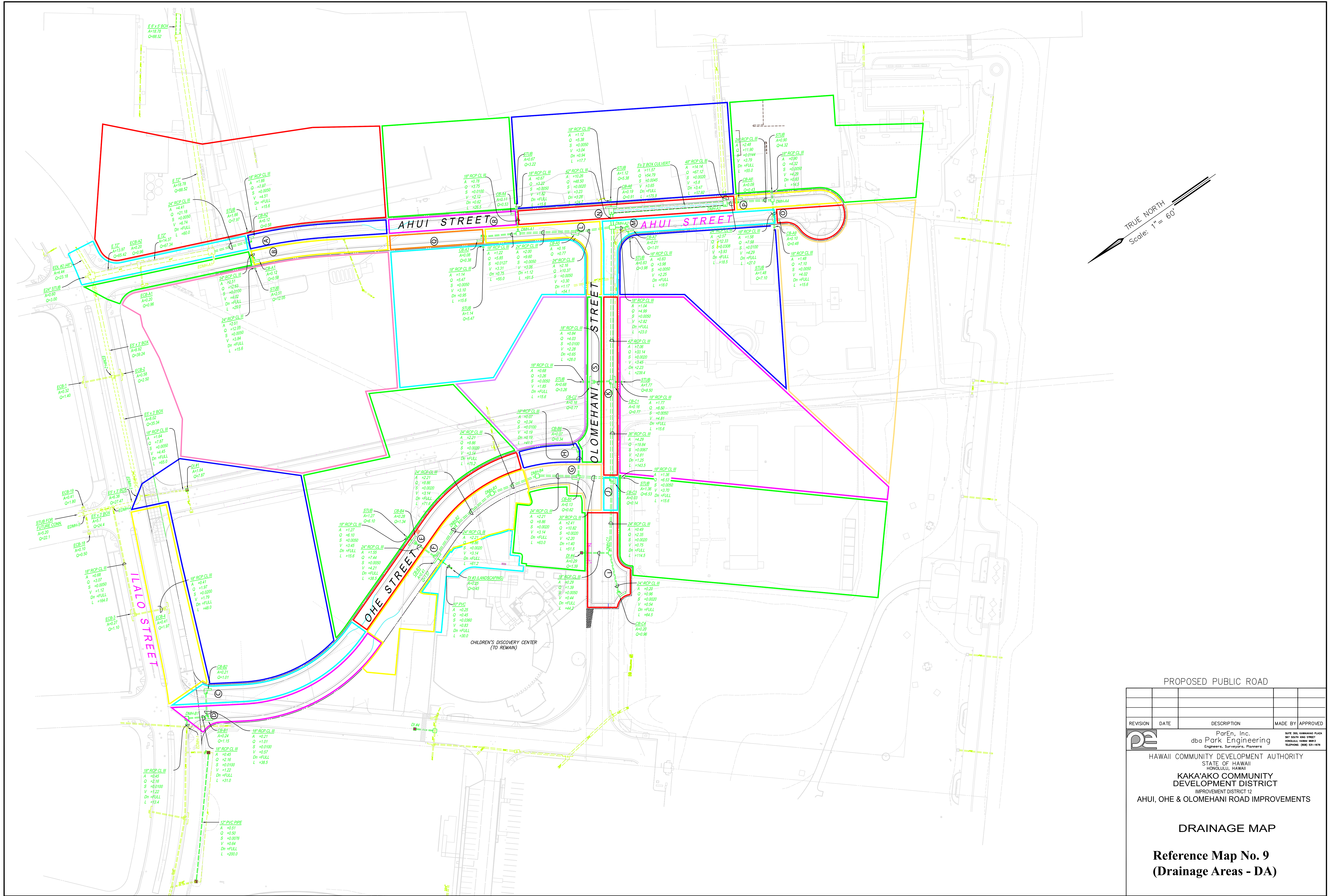
**ParEn, Inc.**  
 State of Hawaii  
 KAKA'AKO COMMUNITY  
 DEVELOPMENT DISTRICT  
 IMPROVEMENT DISTRICT 13  
 AHUI, OHE & OLOMEHANE ROAD IMPROVEMENTS



THIS MAP WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THE PROJECT HAS BEEN MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE HAWAIIAN ENGINEERING ACT, CHAPTER 100, HRS. I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF HAWAII. I AM NOT PROVIDING ANY GUARANTEE OR WARRANTY FOR THE ACCURACY OF THE INFORMATION CONTAINED HEREIN. I AM NOT PROVIDING ANY GUARANTEE OR WARRANTY FOR THE ACCURACY OF THE INFORMATION CONTAINED HEREIN.

**DRAINAGE MAP**  
 SHEET No. 7 OF 7 SHEET Reference Map No. 9





TRUE NORTH  
Scale: 1" = 60'

PROPOSED PUBLIC ROAD

| REVISION | DATE | DESCRIPTION | MADE BY | APPROVED |
|----------|------|-------------|---------|----------|
|          |      |             |         |          |

**ParEn, Inc.**  
dba Park Engineering  
Engineers, Surveyors, Planners

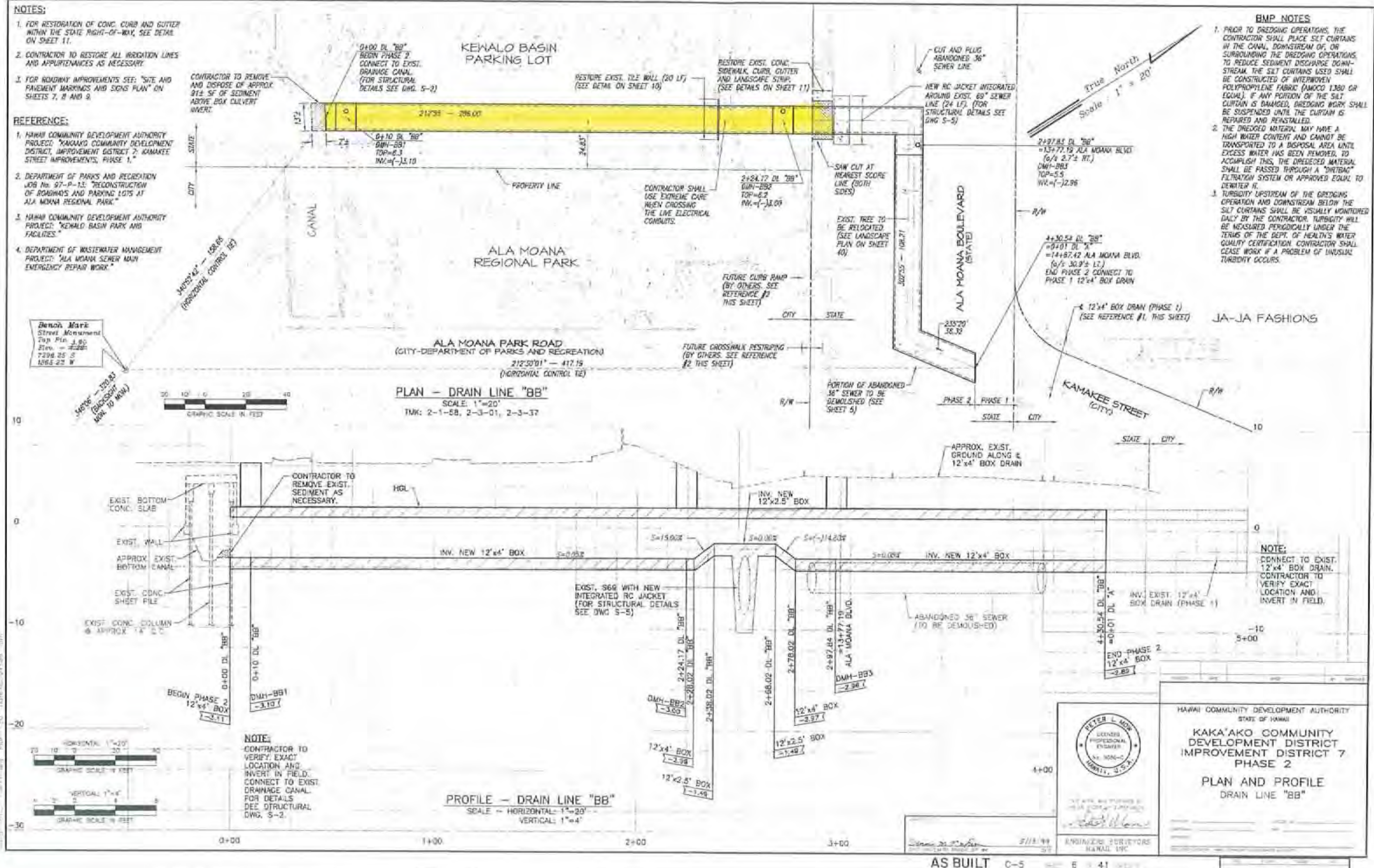
**HAWAII COMMUNITY DEVELOPMENT AUTHORITY**  
STATE OF HAWAII  
KAKA'AKO COMMUNITY DEVELOPMENT DISTRICT  
IMPROVEMENT DISTRICT 12  
AHUI, OHE & OLOMEHANI ROAD IMPROVEMENTS

**DRAINAGE MAP**

**Reference Map No. 9**  
**(Drainage Areas - DA)**

DATE: 06/20/2018  
BY: [Signature]  
CHECKED: [Signature]  
HONOLULU, HAWAII 96813  
TELEPHONE: (808) 531-1874





Reference Map No. 10



