DEPARTMENT OF HAWAIIAN HOME LANDS
STATE OF HAWAII

FEBRUARY 29, 2012

ADDENDUM NO. 1 TO

PROPOSAL, SPECIFICATIONS, CONTRACT AND BOND FOR
IFB NO.: IFB-12-HHL-001

KAKAINA SUBDIVISION, WAIMANALO

LOCATION: ISLAND OF OAHU, HAWAII
TAX MAP KEY: 4-1-08: 10, 81, & 91

NOTICE TO ALL PROSPECTIVE BIDDERS

This addendum is hereby made a part of the contract documents for KAKAINA SUBDIVISION, WAIMANALO, OAHU, HAWAII, and it shall amend the said contract documents as detailed within this Addendum document.

APPROVED:

Date: February 29, 2012

Albert "Alapaki" Nahale-A, Chairman
Hawaiian Homes Commission

Please detach, execute, and return immediately, the receipt below, to the Department of Hawaiian Home Lands, P. O. Box 1879, Honolulu, HI 96805, or by facsimile to 620-9299.

Receipt of Addendum No. 1 for KAKAINA SUBDIVISION, WAIMANALO, OAHU, HAWAII, is hereby acknowledged.

Signed_____ Title_____

Firm_____ Date_____

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TO PROPOSAL, SPECIFICATIONS, CONTRACT AND BOND FOR
KAKAINA SUBDIVISION, WAIMANALO, OAHU, HAWAII
TAX MAP KEY: 4-1-08: 10, 81, & 91
IFB-12-HHL-001

IFB-11-HHL-001 is revised as follows:

CONTRACTOR'S SUBMITTALS - BID OFFER FORM

1. Delete the Bid Offer Form in its entirety and replace with Addendum No. 1 (February29, 2011) Bid Offer Form, Attachment 1 to this addendum.

TECHNICAL SPECIFICATIONS

1. Replace Technical Specification Section 02731 – Sanitary Sewer System in its entirety and replace with Addendum No. 1 (February 29, 2012) Section 02731 – Sanitary Sewer System, Attachment 2 to this addendum.

CONSTRUCTION PLANS

1. Replace Sheets 1, 2, 4, 7, 8, 15, 20, 21, 22, 25, 28 and 42 with (Attachment 3 to this addendum):

    - Sheet 1 – Title Sheet
    - Sheet 2 – General Notes
    - Sheet 4 – General Notes
    - Sheet 7 – General Layout
    - Sheet 8 – Grading Plan
    - Sheet 15 – Erosion Control Plan
    - Sheet 20 – Plan & Profile Road "A" – Sta 0+00 to 5+00
    - Sheet 21 – Plan & Profile Road "A" – Sta 5+00 to End
    - Sheet 22 – Plan & Profile Road "B"
    - Sheet 25 – Plan Poalima&Mekia Street
    - Sheet 28 – Drainage Details
    - Sheet 42 – Water Details 20" Waterline External Corrosion Protection & Trench Repavement

DHHL SPECIAL CONDITIONS

1. In the DHHL Sample Contract, replace the following Special Conditions with those on Attachment 4 to this addendum.

    - SC-05 Surveying Services,
    - SC-17 Geotechnical Engineeering,
    - SC-42 Pre-Construction/Post-Construction Site Crack and Photo Survey,
    - SC-43 Geotechnical Investigation Associated with Drain Line "B"

NA KUPA'A SPECIAL CONDITIONS

1. In the Na Kupa'a Supplementary Conditions, delete, in it's entirety, Section SC-18.13 regarding American Recovery and Reinvestment Act (ARRA).

PRE-BID MEETING

1. Agenda and sign-in sheet from the Pre-Bid Meeting are on Attachment 5 to this addendum.

REQUESTS FOR CLARIFICATION

1. Questions asked at the Pre-Bid Meeting and Site Inspection

When does the dust fence come down?

- The pay item has been reworded to include removal and maintenance.
- Plans indicate when to remove as part of grading sequence.

When can silt basin be removed?

- The pay item has been reworded to include removal and maintenance.
- Plans indicate when to remove as part of grading sequence.

When can temporary berms be removed?

- The pay item has been reworded to include removal and maintenance.
- Plans indicate when to remove as part of grading sequence.

What should the contractor do with staging area after demobilization?

- Plans have been revised to indicate the staging area
- A separate pay item has been added for the grassing of the staging area after demobilization
- Contractor to install chain link fence (CLF) with double swing gate (permanent) around the site as indicated in the addendum set plans. Pay items added for the CLF and gate.

Explain further on requirements of photo survey.

- Photo survey should document the existence (or non-existence) of damage to the existing structures in question.
- The photo survey is a tool to protect both the Contractor and the DHHL from potential claims of damage due to construction.
- Acceptance of pre-construction report prior to the start of work and post-construction report at the completion of work by the Department of Hawaiian Home Lands
- SC-42 shall be considered incidental to the contract
- Deleted pay item for photo survey

Will the Contractor be required to conduct In-house documentation?

- The lots are not DHHL property, but DHHL will make every effort to contact the homeowner (and tenant) prior to issuance of notice to proceed.

- Entry into homes will be at the homeowner's discretion.
- Contractor will be required to do follow up with the homeowner prior to the start of construction

Who is the responsible party for approaching homeowner?

- The easement is in favor of the City, and in this instance the DHHL will act on behalf of the City to initiate contact with the homeowner(s).
- Contractor will be required to do follow up with the homeowner prior to the start of construction

What are pay items for drain line "B"?

- Refer to the Addendum #1 Proposal Schedule items for pay items associated with the construction of Drain Line "B" within the existing roadways and easement area:
  Section III. DRAINAGE SYSTEM
  Items 42, 44, 45, 46, 48, 55, 56, 58, 60, 61, 66, 67, 68 & 69
  Note that some items are only partially for work associated with Drain Line "B".

How is the contractor supposed to bid LS mitigation measure if the investigation is not done?

- Please refer to revised special conditions section SC-43.
- A boring log and location plan from a previous City project are Attachment 6 to this addendum.
- The bid for mitigation measure will remain as LS.

Is it possible to change LS to allowance so contractor can discuss possible C.O. if not sufficient?

- See response to question above.

General Conditions – when are the subcontractors' tax clearances supposed to be submitted?

- Tax clearances for subcontractors are submitted at time of contract execution. General contractor submits with bid, and again when executing contract.

When is the start of construction?

- Current schedule:
  Bid opening: March 8, 2012
  Contracting: March – May, 2012
  Notice to Proceed: Mid/late-May, 2012

Will there be a separate line item for removal of expansive soils?

- No, this is included in item #2

In reference to CCP work, Ameron has shut down operations so no manufacturers are available in state to provide CCP.

- It has been confirmed that Ameron does not produce CCP in the State of Hawaii.

- The engineer is currently working with the BWS on a change of pipe & fitting material. The modification to plans were not available at the issuance of the addendum and therefore Contractors shall bid the project "as is".

Can contractor remove any existing trees/grass planted and maintained by existing homeowners that are within the Kakaina Subdivision site?

- Yes, but DHHL will make attempts to see if homeowners want to remove the existing trees/grass/landscaping prior to the start of construction.

What about tree removal?

- Yes, but DHHL will make attempts to see if homeowners want to remove the existing trees/grass/landscapingprior to the start of construction.

What should be done about the concrete barrier/pilings along Hihimanu?

- This is DHHL property – DHHL is working on coordinating what should be done with the concrete barrier/pilings.

What should the Contractor do about encroaching walls/fences?

- For Lot 28, the design avoids the existing CRM wall. DHHL will need to execute an encroachment agreement with the homeowner.
- Any chain link fences on DHHL property that is interfering can be removed by the Contractor.

Should the Contractor salvage the coconut trees?

- Yes, but DHHL will make attempts to see if homeowners want to remove the existing trees/grass/landscaping.
- It is possible that the DHHL will want the coconut trees for use on other project sites.

Will there be a pay item for restoration of easement area after construction?

- A separate pay item has been added for the clearing of existing structures/landscaping within the easement area.
- An allowance item has been added for restoration of landscaping/grassing
- A separate lump sum pay item has been added for restoration of the existing driveway/fence/mailbox as LS pay item

2. Other questions received as of February 24, 2012.

Grading Plans show Wall "A" & Wall "B", with details on Sheet 43. Will this be included in scope of work? Will there be a bid item added to the proposal to account for this item?

- Separate line items have been added to the proposal schedule for both Wall "A" & Wall "B".

The geotechnical investigation associated with Drain Line "B" is to be covered by the contractor. Is this work to be included in the 275 calendar day contract duration? Will

contract duration be extended to account for the delay resulting from the geotechnical investigation?

- This work is to be included in the 275 calendar day contract duration.

Technical specs state VCP for the sewer line, plans show PVC. What is the specification for the PVC pipe on the sewer line?

- Sewer line shall be PVC. The technical specification has been revised to reflect PVC material.

Bid Form

Project Identification: **Kakaina Subdivision**

Contract Identification and Number: **IFB-12-HHL-001**

TABLE OF ARTICLES

ARTICLE 1 - BID RECIPIENT

1.01 This Bid is submitted to: Department of Hawaiian Home Lands, 91-5420 Kapolei Parkway, Kapolei, Hawaii 96707

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in the Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 - BIDDER'S ACKNOWLEDGMENTS

2.01 Bidder accepts all of the terms and conditions of the Advertisement and Instructions to Bidders, including without limitations those dealing with the dispositions of Bid security. The Bid will remain subject to acceptance for 120 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 - BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

Addendum No.	Addendum Date
1	02/29/201

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all Federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in SC-4.02, and (2) reports and drawings of Hazard Environmental Conditions, if any, at the Site that have been identified in SC-4.06 as containing reliable "technical data."

E. Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs.

F. Based on the information and observations referred to in Paragraph 3.01.E above, Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.

G. Bidder is aware of the general nature of the Work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.

I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

J. Bidder will submit written evidence of its authority to do business in the State or other jurisdiction where the Project is located not later than the date of its execution of the Agreement.

ARTICLE 4 - BIDDER'S CERTIFICATION

4.01 Bidder further represents that:

A. This Bid is genuine and not made in the interest of or on the behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation;

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 - BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

Item No.	Estimated Quantity	Description	Unit Price	Total
		I. MASS GRADING		
		The prices bid herein for the following items shall include furnishing all materials, labor, tools, equipment, machinery and all incidentals necessary to install or to construct these items in place complete, all in accordance with the plans and specifications.		
1	9	Acres, Clearing and Grubbing of subdivision site, including removal of debris and grubbed material from the site.		
			Per Acre $ _____	$ _____
2	47,500	Cu. yds., Unclassified Mass Excavation for Roadways and Lots including removal and disposal of uncompacted fill and expansive soils, and placement compaction and grading of the suitable excavated material placed 4.0 below lot finish grade and 3.0 feet below residential street pavement section. The licensed surveyor selected in Special Conditions (SC-05) shall be retained by the Contractor to accurately compute quantities of site excavation by the average area end method under the pay item. When site excavation quantities by average area end method cannot be computed, the Construction Manager will determine the use computation methods that will produce an accurate quantity. The licensed surveyor shall perform a topographic survey of the existing site conditions, after clearing and grubbing is completed, but before excavation. The level of detail provided by the survey shall require concurrence by DHHL prior to excavation activities. The cost of the surveyor is incidental to this pay item. Payment shall be at the contract price pay unit as shown in the proposal schedule. The total shown on the bid proposal cost shall be used for bid comparison purposes only.		
			Per Cu. Yd. $ _____	$ _____
3	28,270	Sq. yds., Fine Grading of lot areas, including transformer easement and cluster mail box easement locations.		
			Per Sq. Yd. $ _____	$ _____

4	41,900	Cu. yds., Imported low-expansion impermeable borrow fill, in place complete. The difference between the excavation survey and the final grading survey shall be used to compute the quantities of fill material. The licensed surveyor for Pay Item No. 2 shall be used to accurately compute quantities of import fill by the average area end method under this pay item. When imported fill quantities by average area end method cannot be computed, the Construction Manager will determine and use computation methods that will produce an accurate quantity. Payment shall be at the contract price pay unit as shown in the proposal schedule. The total shown on the bid proposal cost shall be used for bid comparison purposes only.	Per Cu. Yd.	$ _____	$ _____
5	30,763	Sq. Ft., Hydromulch with seeds for grassing of slope banks, lot swales and ditches.	Per Sq. Ft.	$ _____	$ _____
6	221,990	Sq. Ft., Hydromulch with seeds for grassing of lot pads.	Per Sq. Ft.	$ _____	$ _____
7	30,935	Sq. Ft., Hydromulch with seeds for grassing of remainder lot after the Contractor's use as a baseyard/staging area	Per Sq. Ft.	$ _____	$ _____
8	1,710	Lin. Ft., Dust Screen & Silt Fence combination, in place complete, including maintenance and removal as specified and required.	Per Lin. Ft.	$ _____	$ _____
9	1,410	Lin. Ft., Dust Screen, in place complete, including maintenance and removal as specified and required.	Per Lin. Ft.	$ _____	$ _____
10	L.S.	Temporary Erosion Control (inclusive of but not limited to, sediment basins, earth berms, NPDES permit requirements, roadway cleaning and other erosion control measures, including maintenance and removal as specified and required.	Lump Sum		$ _____

11	2	Temporary storm drain inlet protection "Dandy Bag" sediment filter (by Dandy Products, Inc. or equal). Per Each	$	$
12	730	Lin. Ft., 6-foot high chain link fence around remainder lot. Per Lin. Ft.	$	$
13	1	Each., 6-foot high double swing gate at remainder lot. Per Each	$	$
14	728	Lin. Ft., Grade Adjustment Wall “A” Per Lin. Ft.	$	$
15	151	Lin. Ft., Grade Adjustment Wall “B” Per Lin. Ft.	$	$
16	L.S.	Items related to maintaining a Fire Contingency Plan as specified in the Special Conditions (SC-31 & SC-32) Lump Sum		$
17	L.S.	Field Office, including installation and removal, in place complete. Lump Sum		$
		SUB-TOTAL FOR MASS GRADING (Items 1 to 17 inclusive)		$

II. ROADWAYS

The prices bid herein for the following items shall include furnishing all materials, labor, tools, equipment, machinery and all incidentals necessary to install or to construct these items in place complete, all in accordance with the plans and specifications.

18	7,080	Sq. Yds., Fine Grading of Right of Way areas. Per Sq. Yd.	$	$
19	3,360	Sq. Yds., Asphaltic Concrete Pavement, Mix No. 4, 2 inches thick. Per Sq. Yd.	$	$
20	3,360	Sq. Yds., Asphalt Concrete Base Course, 3 inches thick, including prime coat. Per Sq. Yd.	$	$
21	3,360	Sq. Yds., Untreated Aggregate Base Course, 6 inches thick. Per Sq. Yd.	$	$

22	L.S.	Connection to existing Poalima Street including smooth riding connection to the existing pavement		
		Lump Sum		$ _____
23	190	Sq. Yds., Asphalt Concrete Base Course, 4 inches thick (Poalima Street)		
		Per Sq. Yd.	$ _____	$ _____
24	190	Sq. Yds., Aggregate Base Course, 12 inches thick (Poalima Street)		
		Per Sq. Yd.	$ _____	$ _____
25	190	Sq. Yds., 2 inches Asphaltic Concrete Pavement, including cold planing (Poalima Street)		
		Per Sq. Yd.	$ _____	$ _____
26	L.S.	Connection to existing Hihimanu Street including smooth riding connection to the existing pavement		
		Lump Sum		$ _____
27	530	Sq. Yds., Asphalt Concrete Base Course, 4 inches thick (Hihimanu Street)		
		Per Sq. Yd.	$ _____	$ _____
28	530	Sq. Yds., Aggregate Base Course, 12 inches thick (Hihimanu Street)		
		Per Sq. Yd.	$ _____	$ _____
29	530	Sq. Yds., 2 inches Asphaltic Concrete Pavement, including cold planing (Hihimanu Street)		
		Per Sq. Yd.	$ _____	$ _____
30	L.S.	Connection to existing Kakaina Street including smooth riding connection to the existing pavement		
		Lump Sum		$ _____
31	1,770	Sq. Yds., Asphalt Concrete Base Course, 4 inches thick (Kakaina Street)		
		Per Sq. Yd.	$ _____	$ _____
32	1,770	Sq. Yds., Aggregate Base Course, 12 inches thick (Kakaina Street)		
		Per Sq. Yd.	$ _____	$ _____

33	1,770	Sq. Yds., 2 inches Asphaltic Concrete Pavement, including cold planing (Kakaina Street)		
		Per Sq. Yd.	$	$
34	13	Each, Standard City & County of Honolulu street survey monument		
		Per Each	$	$
35	3	Each, Standard City & County of Honolulu street centerline monument		
		Per Each	$	$
36	4,110	Lin. Ft., Standard integral concrete curb and gutter, including curb & gutter transition.		
		Per Lin. Ft.	$	$
37	19,370	Sq. Ft., Class "B" Concrete sidewalk, 4 inches thick		
		Per Sq. Ft.	$	$
38	2,690	Sq. Ft., Class "B" Concrete curb ramp, 4 inches thick		
		Per Sq. Ft.	$	$
39	5,940	Sq. Ft., Reinforced concrete driveway apron, 4 inches thick		
		Per Sq. Ft.	$	$
40	21,580	Sq. Ft., Topsoil, 4 inches thick		
		Per Sq. Ft.	$	$
41	3	Each, 6' x 6' USPS Concrete Pad		
		Per Each	$	$

SUB-TOTAL FOR ROADWAY (Items 18 to 41 inclusive)	$

III. DRAINAGE SYSTEM

The prices bid herein for the following items shall include furnishing all labor, equipment, tools, materials and all incidental work necessary to construct the drainage system in place complete, including excavating for catch basins and manholes, trenching for pipes, removing and disposing of unsuitable material and replacing with select material for pipe cushion, sheeting and shoring as required, backfilling, all in accordance with the plans and specifications.

42	1,500	Cu. Yds., Unclassified excavation for drain lines, catch basins, drain manholes, concrete ditch, inlets, and underground detention system, including backfill and pipe cushion		
		Per Cu. Yds.	$ _____	$ _____
43	445	Lin. Ft., 24" Reinforced concrete pipe, Class III		
		Per Lin. Ft.	$ _____	$ _____
44	1,210	Lin. Ft., 18" Reinforced concrete pipe, Class III		
		Per Lin. Ft.	$ _____	$ _____
45	460	Lin. Ft., 3' x 1.25' Reinforced concrete box culvert		
		Per Lin. Ft.	$ _____	$ _____
46	125	Lin. Ft., 3' x 2' Reinforced concrete box culvert		
		Per Lin. Ft.	$ _____	$ _____
47	8	Each, Standard reinforced concrete catch basin, Type A		
		Per Each	$ _____	$ _____
48	12	Each, Standard reinforced concrete catch basin, Type B		
		Per Each	$ _____	$ _____
49	1	Each, Special Type "B" reinforced concrete catch basin "B8" on Road "B"		
		Per Each	$ _____	$ _____
50	1	Each, Special Type "B" reinforced concrete catch basin "D1" over existing 42" drain line		
		Per Each	$ _____	$ _____
51	1	Each, Standard shallow drain manhole for sidewalk area, 4' - 4.99'		
		Per Each	$ _____	$ _____

52	2	Each, Standard shallow drain manhole for pavement area, 7' - 7.99'	Per Each	$	$
53	2	Each, Standard shallow drain manhole for pavement area, 6' - 6.99'	Per Each	$	$
54	1	Each, Standard shallow drain manhole for pavement area, 5' - 5.99'	Per Each	$	$
55	3	Each, Standard shallow drain manhole for pavement area, 4' - 4.99'	Per Each	$	$
56	3	Each, Standard shallow drain manhole for pavement area, 3' - 3.99'	Per Each	$	$
57	327	Lin. Ft., Reinforced concrete ditch	Per Lin. Ft.	$	$
58	3	Each, Drain inlet with grate	Per Each	$	$
59	L.S.	Demolition of existing drain inlet on Hihimanu Street	Lump Sum		$
60	L.S.	Drain Outlet "B"	Lump Sum		$
61	14	Lin. Ft., 6' High Chain Link Fence, including fabric, posts, top rail, bracings, fittings, tension wires, excavation and backfill, concrete footings and other incidentals.	Per Lin. Ft.	$	$
62	680	Cu. Yds., Unclassified excavation for Underground Detention System (bottom of uncompacted fill to bottom of Detention System)	Per Cu. Yd.	$	$
63	486	Cu. Yds., 3B fine compacted aggregate backfill (hand tamp) for Underground Detention System	Per Cu. Yd.	$	$

64	106	Cu. Yds., Suitable native backfill material (95% compaction, hand tamp) for Underground Detention System Per Cu. Yd.	$	$
65	L.S.	Underground Detention System with access ports Lump Sum		$
66	L.S.	Protective measures (ie: underpinning, shoring, etc.) necessary to mitigate damage to surrounding buildings during the removal of the existing drain line and construction of Drain Line "B" through exsiting 10' wide easement Lump Sum		$
67	L.S.	Clearing of easement area including removal of debris from construction site at TMK 4-1-23:47 Lump Sum		$
68	L.S.	Restore existing concrete driveway, property fence and mailbox for lot at TMK 4-1-23:47 as necessary. Lump Sum		$
69	Allowance	Restoration of landscaping within easement area at TMK 4-1-23:47 as necessary. Allowance		$2,000.00

SUB-TOTAL FOR DRAINAGE SYSTEM (Items 42 to 69 inclusive)	$

IV. TRAFFIC

The prices bid herein for the following items shall include furnishing all labor, equipment, tools materials and all incidental work necessary to construct all necessary traffic control devices in place complete, all in accordance with the plans and specifications.

70	4	Each, Pair Street name sign with post Per Each	$	$
71	5	Each, R1-1 "STOP" sign. Per Each	$	$
72	1	Each, W14-1 "DEAD END" sign Per Each	$	$

73	3	Each, R2-1(20) "SPEED LIMIT 20 M.P.H." sign Per Each	$	$
74	4	Each, R2-1(25) "SPEED LIMIT 25 M.P.H." sign Per Each	$	$
75	2	Each, Relocate existing "SPEED LIMIT 25 M.P.H." sign Per Each	$	$
76	3	Each, Removal of existing sign Per Each	$	$
77	16	Each, "NO PARKING" sign Per Each	$	$
78	3	Each, "NO PARKING BEGIN" sign Per Each	$	$
79	2	Each, "NO PARKING END" sign Per Each	$	$
80	70	Lin. Ft., 12 inch solid white line Per Lin. Ft.	$	$
81	1,440	Lin. Ft., 4 inch solid double yellow stripe w/ type "D" rpm @ 20' o.c. Per Lin. Ft.	$	$
82	1	Lump Sum, Traffic control work including traffic control devices, special duty police officers, flag men, placement and removal of devices, cleanup, restoration and incidentals per the effective traffic control plans. Lump Sum		$
83	1	Allowance, Additional traffic control work including traffic control devices, special duty police officers, flag men, placement and removal of devices, cleanup, restoration and incidentals as directed by the Engineer or Owner's Representative. Allowance		$16,000.00
		SUB-TOTAL FOR TRAFFIC (Items 70 to 83 inclusive)		$

V. LANDSCAPING

The prices bid herein for the following items shall include all labor, tools and equipment, materials, appurtenances, and incidentals necessary to install or to construct the following items in place and complete in accordance with the plans, specifications, and to the satisfaction of the Owner. The prices do not include bonding costs.

84	24	Each, Installation of 25 Gal., Silver Buttonwood (3" min. caliper, 8'-10' height), in place complete.	Per Each $ _____	$ _____
85	15	Each, Installation of 25 Gal., Tulipwood Tree (3" min. caliper, 8'-10' height), in place complete.	Per Each $ _____	$ _____
86	20,730	Sq. Ft., Installation of Seashore Paspalum Grass (hydroseed), in place complete.	Per Sq. Ft. $ _____	$ _____
87	255	Cu. yds., Installation of 4" layer topsoil under all planting areas, in place complete.	Per Cu. Yd. $ _____	$ _____
88	610	Lin. Ft., Installation of root barrier, in place complete.	Per Sq. Ft. $ _____	$ _____
89	3	Months, Formal Landscape Maintenance Period, in place complete.	Per Month $	$ _____
		SUB-TOTAL FOR LANDSCAPING (Items 84 to 89 inclusive)		$

VII. ELECTRICAL

The prices bid herein for the following items shall include all labor, tools and equipment, materials except that to be supplied by the utility companies, appurtenances and incidentals necessary to install or to construct the following items in place and complete in accordance with the drawings and specifications and standard practices of Hawaiian Electric Co. (HECO), Sandwich Isles Communications, Inc. (SIC), Hawaiian Telcom (HTCO), Oceanic Time Warner Cable (OCEANIC), and the City & County of Honolulu Department of Design & Construction, and to the satisfaction of the Developer.

90	140	Lin. Ft., Furnish and Install One 2-Inch Concrete Encased HECO Conduit. Work shall consist of excavation and providing 2" diameter conduit, with spacers, couplings, appurtenances, and concrete jacket, backfilled per HECO requirements, complete and in place.	Per Lin. Ft. $ _____	$ _____

91	400	Lin. Ft., Furnish and Install Two 2-Inch Concrete Encased HECO Conduits. Work shall consist of excavation and providing 2" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per HECO requirements, complete and in place.		
		Per Lin. Ft.	$	$
92	150	Lin. Ft., Furnish and Install Two 2-Inch Direct Buried HECO Conduits. Work shall consist of excavation and providing 2" diameter conduits, with spacers, couplings, and appurtenances, backfilled per HECO requirements, complete and in place.		
		Per Lin. Ft.	$	$
93	1,500	Lin. Ft., Furnish and Install One 3-Inch Concrete Encased HECO Conduit. Work shall consist of excavation and providing 3" diameter conduit, with spacers, couplings, appurtenances, and concrete jacket, backfilled per HECO requirements, complete and in place.		
		Per Lin. Ft.	$	$
94	60	Lin. Ft., Furnish and Install One 3-Inch Direct Buried HECO Conduit. Work shall consist of excavation and providing 3" diameter conduit, with spacers, couplings and appurtenances, backfilled per HECO requirements, complete and in place.		
		Per Lin. Ft.	$	$
95	10	Lin. Ft., Furnish and Install Two 3- Inch Direct Buried HECO Conduit. Work shall consist of excavation and providing 3" diameter conduit, with spacers, couplings and appurtenances, backfilled per HECO requirements, complete and in place.		
		Per Lin. Ft.	$	$
96	10	Lin. Ft., Furnish and Install Three 3- Inch Direct Buried HECO Conduit. Work shall consist of excavation and providing 3" diameter conduit, with spacers, couplings and appurtenances, backfilled per HECO requirements, complete and in place.		
		Per Lin. Ft.	$	$

97	300	Lin. Ft., Furnish and Install Two 2- Inch And One 3-Inch Concrete Encased HECO Conduit. Work shall consist of excavation and providing 2 & 3" diameter conduit, with spacers, couplings and appurtenances, backfilled per HECO requirements, complete and in place.		
		Per Lin. Ft.	$	$
98	400	Lin. Ft., Furnish and Install Two 2- Inch And One 3-Inch Direct Buried HECO Conduit. Work shall consist of excavation and providing 2 & 3" diameter conduit, with spacers, couplings and appurtenances, backfilled per HECO requirements, complete and in place.		
		Per Lin. Ft.	$	$
99	50	Lin. Ft., Furnish and Install Two 2- Inch And Two 3-Inch Direct Buried HECO Conduit. Work shall consist of excavation and providing 2 & 3" diameter conduit, with spacers, couplings and appurtenances, backfilled per HECO requirements, complete and in place.		
		Per Lin. Ft.	$	$
100	100	Lin. Ft., Furnish and Install One 4-Inch Concrete Encased CATV Conduit. Work shall consist of excavation and providing 4" diameter conduit, with spacers, couplings, appurtenances, and concrete jacket, backfilled per Oceanic Cable requirements, complete and in place.		
		Per Lin. Ft.	$	$
101	400	Lin. Ft., Furnish and Install One 1/4-Inch Concrete Encased Street Light Conduit. Work shall consist of excavation and providing 1/4" diameter conduit, with spacers, couplings, appurtenances, and concrete jacket, backfilled per HECO requirements, complete and in place.		
		Per Lin. Ft.	$	$
102	350	Lin. Ft., Furnish and Install One 1/2-Inch Concrete Encased Street Light Conduit. Work shall consist of excavation and providing 1/2" diameter conduit, with spacers, couplings, appurtenances, and concrete jacket, backfilled per HECO requirements, complete and in place.		
		Per Lin. Ft.	$	$

103	50	Lin. Ft., Furnish and Install One 2-Inch Concrete Encased Street Light Conduit. Work shall consist of excavation and providing 2" diameter conduit, with spacers, couplings, appurtenances, and concrete jacket, backfilled per HECO requirements, complete and in place.		
		Per Lin. Ft.	$	$
104	10	Each, Furnish and Install 17"x 30" Non-Concrete HECO Pullbox, cover with locking device and extension, provided in accordance with HECO standard drawing No. 30-2006 and 011314, complete and in place.		
		Per Each	$	$
105	4	Each, Furnish and Install 13"x 24" Non-Concrete HECO Pullbox, cover with locking device, provided in accordance with HECO standard drawing No. 30-2006, complete and in place.		
		Per Each	$	$
106	13	Each, Furnish and Install 2'x 4' Reinforced Concrete HECO Pullbox with precast concrete covers, provided in accordance with HECO standard drawing No. 30-2005, complete and in place.		
		Per Each	$	$
107	6	Each, Furnish and Install 3'x 5' Reinforced Concrete HECO Handhole with precast concrete covers, provided in accordance with HECO standard drawing No. 15501, complete and in place.		
		Per Each	$	$
108	1	Each, Furnish and Install 4'x 6' Reinforced Concrete HECO Handhole with precast concrete covers, provided in accordance with HECO standard drawing No. 18842, complete and in place.		
		Per Each	$	$
109	1	Each, Furnish and Install 2'x 4' Reinforced Concrete HTCO Pullbox with two piece checkered steel plate covers, similar to HTCO standard drawing No. 34056 except with "CATV" inscribed on cover, complete and in place. Provide additional base if more than two 4" conduits enter the "short" end.		
		Per Each	$	$

110	2	Each, Furnish and Install Type "A" Precast Concrete Street Light Pullbox (City) with polymer cover, provided in accordance with the City & County of Honolulu Dept. of Transportation Services Type "A" standard pullbox drawing.		
		Per Each	$	$
111	5	Each, 6'x 7' HECO Transformer Pad Lot. Work shall consist of reinforced concrete transformer pad and ground rod, provided as indicated on the drawings and in accordance with HECO standard drawing No. 30-5001 and 011249, complete and in place.		
		Per Each	$	$
112	1	Each, Install CATV Power Supply Pedestal, FRP Pad, and Plastic Support Box furnished by Oceanic Cable.		
		Per Each	$	$
113	7	Each, Furnish and Install Street Lighting Luminaire (100W) and Bracket Arm. Work shall consist of providing street lighting luminaire and bracket arm, mounted on utility pole, in accordance with the City & County of Honolulu Mechanical/Electrical Division Standards and as indicated on the drawings, complete and in place.		
		Per Each	$	$
114	2	Each, Furnish and Install Street Lighting Luminaire (100W), Bracket Arm, and Pole. Work shall consist of excavating, constructing reinforced concrete foundation, and backfilling for new pole, and providing street lighting luminaire and bracket arm, mounted on utility new pole, in accordance with the City & County of Honolulu Mechanical/Electrical Division Standards and as indicated on the drawings, complete and in place.		
		Per Each	$	$
115	18	Each, Furnish and Install Street Lighting Standard (70W IES Type III). Work shall consist of excavating, constructing reinforced concrete foundation, backfilling, and providing street lighting standard, luminaire and bracket arm in accordance with the City & County of Honolulu Mechanical/Electrical Division Standard and as indicated on the drawings, complete and in place.		
		Per Each	$	$

116	800	Lin. Ft., Street Lighting Circuit(s) (Multiple System). Work shall consist of providing cables and accessories from street lighting standards to nearest HECO secondary cables, complete and in place. Per Lin. Ft.	$	$
117	1	Each, Remove Street Lighting Luminaire & Bracket Arm. Work shall consist of removing existing pole mounted street light luminaire and bracket arm, and disposing in a lawful manner. Per Each	$	$
118	2	Each, Furnish and Install 2" HECO Conduit Risers. Provide conduit risers up utility pole per HECO requirements, complete and in place. Per Each	$	$

SUB-TOTAL FOR ELECTRICAL (Items 90 to 118 inclusive)	$

VII. HIHIMANU STREET 20-INCH WATER MAIN RELOCATION

The prices bid herein for the following items shall include furnishing all labor, equipment, tools materials and all incidental work necessary to construct the water system in place complete, including excavating for water lines and appurtenances, pipe cushion, backfilling, sheeting and shoring as required, all in accordance with the plans and specifications.

119	381	Cu. yds., Unclassified excavation for water mains, manholes and appurtenances, including backfill, and pipe cushion (high resistance cushion material).		
		Per Cu. Yd.	$ _____	$ _____
120	333	Lin. ft., 20-inch Ductile iron pipe, Class 52 including bonded tape coating		
		Per Lin. Ft.	$ _____	$ _____
121	13	Lin. ft., 20-inch Concrete Cylinder Pipe		
		Per Lin. Ft.	$ _____	$ _____
122	24	Lin. ft., 8-inch Ductile iron pipe, Class 52 including bonded tape coating.		
		Per Lin. Ft.	$ _____	$ _____
123	16	Lin. Ft., 8" Polyvinyl chloride pipe, C900, Class 150.		
		Per Lin. Ft.		
124	2	Each, 8-inch Gate Valve including bonded tape coating		
		Per Each	$ _____	$ _____
125	2	Each, Standard C.I. valve box and cover.		
		Per Each	$ _____	$ _____
126	2	Each, 20-inch Resilient Gate Valve with Dismantling Joint 4-inch by-pass line including bonded tape coating		
		Per Each	$ _____	$ _____
127	2	Each, Type A Manhole for Butterfly Gate Valves		
		Per Each	$ _____	$ _____
128	1	Each, Offset Air Relief Valve for 20" Main		
		Per Each	$ _____	$ _____
129	1	Each, Type D Manhole for Offset Air Relief Valve		
		Per Each	$ _____	$ _____

130	15	Cu. yds., DWS 2500 concrete including reinforced steel wherever necessary for pipe reaction and test blocks.			
			Per Cu. Yd.	$	$
131	29	Lin. ft., Reinforced concrete jacket.			
			Per Lin. Ft.	$	$
132	8,405	Pounds, Cast iron fittings including bonded tape coating			
			Per Lb.	$	$
		2 - 20"x8" Tee, MJ @ 845		1,690	
		1 - 20" 1/4 Bend MJ @ 790		790	
		2 - 20" 1/8 Bend, MJ @ 595		1,190	
		4 - 20" 1/16 Bend MJ @ 605		2,420	
		2 - 20" 1/32" Bend, MJ @ 610		1,220	
		2 - 20" Coupling (CCP to D.I.) @ 125		250	
		2 - 20" Insulated Coupling @ 135		270	
		1 - 8" Tee, MJ @ 185		185	
		1 - 8" 1/4 Bend MJ @ 125		125	
		1 - 8" 1/16 Bend MJ @ 110		110	
		1 - 8" 1/32 Bend MJ @ 110		110	
		1 - 8" Plug @ 45		45	
			TOTAL	8,405	
133	1	Concrete Cylinder Pipe Fittings 20" Bend (52°19'31")			
			Per Each	$	$
134	1	Concrete Cylinder Pipe Fittings 20" Bend (56°31'30")			
			Per Each	$	$
135	25	Electronic Markers			
			Per Each	$	$
136	2	Each, Connection to existing 20-inch main			
			Per Each	$	$
137	1	Each, Connection to existing 8 inch service main.			
			Per Each	$	$
138	2	Each, 4-inch Cleanout Assembly			
			Per Each	$	$
139	5	Each, Cut and Plug existing 20-inch main			
			Per Each	$	$
140	268	Sq. Yds., 2 inches Asphaltic Concrete Pavement, including cold planning (Hihimanu Street)			
			Per Sq. Yds.	$	$

141	268	Sq. Yds., Asphalt Concrete Base Course, 4 inches thick (Hihimanu Street) Per Sq. Yd.	$	$
142	268	Sq. Yds., Aggregate Base Course, 12 inches thick (Hihimanu Street) Per Sq. Yd.	$	$
143	L.S.	Remove existing 20-inch main within private property, plug existing to be abandoned in-place Lump Sum		$
144	L.S.	Remove existing 6-inch main within private property, plug existing to be abandoned in-place Lump Sum		$
145	L.S.	Pipe Joint Bonding at the joints of all buried metallic pipe, including vault and manhole piping and all fittings except joints specified to be threaded, welded or insulated. Also includes electrical continuity testing as specified in BWS Water System External Corrosion Control Standards Lump Sum		$
146	3	Each, Flush Mounted Test Station type "I" per BWS standard corrosion control detail 9 including testing as specified in BWS Water System External Corrosion Control Standards Per Each	$	$
147	1	Each, Flush Mounted Test Station type "T" with 18 lb zinc anode (ASTM-B-418 Type II),1.4"x1.4"x36", per BWS standard corrosion control detail 8 including testing as specified in BWS Water System External Corrosion Control Standards Per Each	$	$
148	3	Each, Galvanic Anode Installation using 18 lb zinc anode (ASTM-B-418 Type II),1.4"x1.4"x36", per BWS standard corrosion control detail 13 including testing as specified in BWS Water System External Corrosion Control Standards Per Each		$
149	L.S.	Flushing, testing and chlorination of the entire system. Lump Sum		$
150	L.S.	Temporary Erosion Control Lump Sum		$
		SUB-TOTAL FOR HIHIMANU ST. 20-INCH WATER MAIN RELOCATION (Items 119 to 150 inclusive)		$

VIII. SEWER SYSTEM

The prices bid herein for the following items shall include furnishing all labor, equipment, tools materials and all incidental work necessary to construct the sewer system in place complete, including excavating for pipes and manholes, crushed rock cradle, rungs, frame and cover for manholes, sheeting and shoring as required, backfilling, all in accordance with the plans and specifications.

151	751	Cu. Yds., Unclassified excavation for sewer lines, cradles and manholes, including backfill and manhole seals.	Per Cu. Yds.	$	$
152	1,215	Lin. Ft., 8" PVC pipe	Per Lin. Ft.	$	$
153	1,092	Lin. Ft., 6" PVC pipe	Per Lin. Ft.	$	$
154	30	Each, 8" x 6" PVC sewer pipe wye.	Per Each	$	$
155	38	Each, 6" PVC sewer pipe 1/8 bend.	Per Each	$	$
156	44	Each, 2" PVC Marker	Per Each	$	$
157	44	Each, 6" x 4" Extra heavy cast iron soil pipe reducer with 4" T.C. Cap.	Per Each	$	$
158	1,215	Lin. Ft., Crushed rock cradle for 8" sewer pipe.	Per Lin. Ft.	$	$
159	1,092	Lin. Ft., Crushed rock cradle for 6" sewer pipe.	Per Lin. Ft.	$	$
160	99	Lin. Ft., Plain concrete jacket for 6" sewer pipe.	Per Lin. Ft.	$	$
161	40	Lin. Ft., Reinforced concrete jacket for 6" sewer pipe.	Per Lin. Ft.	$	$
162	39	Lin. Ft., Reinforced concrete jacket for 8" sewer pipe.	Per Lin. Ft.	$	$
163	8	Each, Reinforced concrete manhole base	Per Each	$	$

164	8	Each, C.I. manhole frame and cover	Per Each	$	$
165	1	Each, Standard plain manhole, 6' - 6.99'	Per Each	$	$
166	4	Each, Standard plain manhole, 7' - 7.99'	Per Each	$	$
167	2	Each, Standard plain manhole, 8' - 8.99'	Per Each	$	$
168	1	Each, Standard plain manhole, 10' -10.99'	Per Each	$	$
169	1	Each, Adjust existing sewer manhole to grade	Per Each	$	$
170	L.S.	Connection new 8" sewer to existing SMH in Hihimanu Street at Station 3+52.96 Hihimanu Street, including excavation and backfilling.	Lump Sum	$	$
171	L.S.	Connection of new SMH over existing 8” sewer in Poalima Street at Station 3+48.78 Road B, including excavation and backfilling.	Lump Sum		$
172	4	Each, Double Wye	Per Each		$
		SUB-TOTAL FOR SEWER SYSTEM (Items 151 to 172 inclusive)			$

IX. WATER SYSTEM

The prices bid herein for the following items shall include furnishing all labor, equipment, tools materials and all incidental work necessary to construct the water system in place complete, including excavating for water lines and appurtenances, pipe cushion, backfilling, sheeting and shoring as required, all in accordance with the plans and specifications.

173	515	Cu. Yds., Unclassified excavation for water mains and appurtenances, including backfill and pipe cushion.			
			Per Cu. Yds.	$ _____	$ _____
174	1,430	Lin. Ft., 8" Polyvinyl chloride pipe, C900, Class 150.			
			Per Lin. Ft.	$ _____	$ _____
175	80	Lin. Ft., 6" Polyvinyl chloride pipe, C900, Class 150.			
			Per Lin. Ft.	$ _____	$ _____
176	90	Lin. Ft., 4" Polyvinyl chloride pipe, C900, Class 150.			
			Per Lin. Ft.	$ _____	$ _____
177	170	Lin. Ft., 8" Ductile iron pipe., CL 52			
			Per Lin. Ft.	$ _____	$ _____
178	30	Lin. Ft., 4" Ductile iron pipe., CL 52			
			Per Lin. Ft.	$ _____	$ _____
179	4,320	Lbs., Ductile Iron Fittings			
			Per Lb.	$ _____	$ _____
		1 - 8" CROSS		235	
		4 - 8" x 6" TEE, M.J.		700	
		3 - 8" 1/8 BEND, M.J.		330	
		25 - 8" 1/16 BEND, M.J.		2,750	
		2 - 8" 1/32 BEND, M.J.		220	
		1 - 6" 1/4 BEND, M.J.		85	
			TOTAL	4,320	
180	19	Each, Deflection coupling			
			Per Each	$ _____	$ _____
181	4	Each, 8" Gate valve, Class 150			
			Per Each	$ _____	$ _____
182	4	Each, 6" Gate valve, Class 150			
			Per Each	$ _____	$ _____
183	6	Each, 3/4" Air release valve including meter box and all appurtenances			
			Per Each	$ _____	$ _____

184	1	Each, Fire Hydrant, 5.5' curb to invert	Per Each	$	$
185	1	Each, Fire Hydrant, 4.5' curb to invert	Per Each	$	$
186	2	Each, Fire Hydrant, 4.0' curb to invert	Per Each	$	$
187	78	Sq. Ft., 4" thick concrete slab for fire hydrant	Per Sq. Ft.	$	$
188	16	Each, 1-1/2" Service lateral with Type C-1 service connection.	Per Each	$	$
189	12	Each, 1" Service lateral with Type A service connection.	Per Each	$	$
190	44	Each, Type "X" meter box	Per Each	$	$
191	4	Each, Blue reflector FH pavement marker	Per Each	$	$
192	8	Each, Cast iron valve box & cover	Per Each	$	$
193	60	Cu. Yds., Class "B" concrete for reaction blocks, gate valve anchor blocks, etc.	Per Cu. Yd.	$	$
194	1	Each, 4" Cap tapped for 2-1/2" I.P.T. w/ 2-1/2" Cleanout assembly & 1-1/2" lateral connection	Per Each	$	$
195	170	Lin. Ft., Reinforced concrete jacket for 8" water main	Per Lin. Ft.	$	$
196	30	Lin. Ft., Reinforced concrete jacket for 4" water main	Per Lin. Ft.	$	$
197	L.S.	Connect new 8" water main to existing 12" water main (Kakaina St.)	Lump Sum		$
198	L.S.	Connect new 8" water main to existing 6" water main (Poalima St.)	Lump Sum		$

199	L.S.	Chlorination and testing of the entire system Lump Sum		$
200	61	Each, Electronic markers Per Each	$	$
201	4	Each, Adjust existing water lateral Per Each	$	$
202	2	Each, Cut & plug existing lateral at main. Remove existing water meter, box, valve & cover. Abandon existing lateral in place. Per Each	$	$
203	5	Each, Adjust existing water valve box to finish grade. Per Each	$	$
		SUB-TOTAL FOR WATER SYSTEM (Items 173 to 203 inclusive)		$

X. SANDWICH ISLE COMMUNICATIONS

The prices bid herein for the following items shall include all labor, tools and equipment, materials except that to be supplied by Sandwich Isles Communications, Inc. (SIC), appurtenances and incidentals necessary to install or to construct the following items in place and complete in accordance with the drawings and specifications and standard practices of Sandwich Isles Communications, Inc., Hawaiian Telecom (HTCO), and the City & County of Honolulu Department of Public Works, and to the satisfaction of the DHHL.

204	62	Lin. Ft., Furnish and Install Two 1-Inch Direct Buried SIC Conduits - UD(2X1-1"). Work shall consist of excavation and providing 1" diameter conduits, with spacers, couplings and appurtenances, backfilled per SIC requirements, complete and in place. Per Lin. Ft.	$	$
205	1,070	Lin. Ft., Furnish and Install Two 1-Inch Concrete Encased SIC Conduits - UD(2X1-1")E. Work shall consist of excavation and providing 1" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per SIC requirements, complete and in place. Per Lin. Ft.	$	$
206	322	Lin. Ft., Furnish and Install Four Concrete Encased SIC Conduits - UD (2X2-1")E. Work shall consist of excavation and providing 1" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per SIC requirements, complete and in place. Per Lin. Ft.	$	$
207	56	Lin. Ft., Furnish and Install Six Concrete Encased SIC Conduits - UD (3X2-1")E. Work shall consist of excavation and providing 1" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per SIC requirements, complete and in place. Per Lin. Ft.	$	$
208	750	Lin. Ft., Furnish and Install Two 4-Inch Concrete Encased SIC Conduits - UD(1X2-4")E. Work shall consist of excavation and providing 4" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per SIC requirements, complete and in place. Per Lin. Ft.	$	$

209	30	Lin. Ft., Furnish and Install Six 4-Inch Concrete Encased SIC Conduits - UD(3X2-4")E. Work shall consist of excavation and providing 4" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per SIC requirements, complete and in place.		
			Per Lin. Ft. $	$
210	250	Lin. Ft., Furnish and Install Two 4-Inch & Two 1-Inch Concrete Encased SIC Conduits - UD(2X1-4") & UD(2X1-1")ED. Work shall consist of excavation and providing 4" and 1" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per SIC requirements, complete and in place.		
			Per Lin. Ft. $	$
211	112	Lin. Ft., Furnish and Install Two 4-Inch & Four 1-Inch Concrete Encased SIC Conduits - UD(2X1-4") & UD(2X2-1")ED. Work shall consist of excavation and providing 4" & 1" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per SIC requirements, complete and in place.		
			Per Lin. Ft. $	$
212	158	Lin. Ft., Furnish and Install Two 4-Inch & Six 1-Inch Concrete Encased SIC Conduits - UD(2X1-4") & UD(3X2-1")ED. Work shall consist of excavation and providing 4" & 1" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per SIC requirements, complete and in place.		
			Per Lin. Ft. $	$
213	22	Lin. Ft., Furnish and Install Two 4-Inch & Eight 1-Inch Concrete Encased SIC Conduits - UD(2X1-4") & UD(4X2-1")ED. Work shall consist of excavation and providing 4" & 1" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per SIC requirements, complete and in place.		
			Per Lin. Ft. $	$

214	6	Each, Furnish and Install 13”x 24”x 36” Polymer Concrete Pullbox Type UHC 13x24x36 with 20K “traffic” rated polymer concrete covers, and cable racks, provided in accordance with SIC standard requirements, complete and in place.		
		Per Each	$	$
215	8	Each, Furnish and Install 30"x 48" x 33" Type UHC 30x48 Polymer Concrete Handhole with 20K “traffic” rated polymer concrete covers, and cable racks, provided in accordance with SIC standard requirements, complete and in place.		
		Per Each	$	$
216	1	Each, Furnish and Install 3'-9"x 5'-9"x 4'-2.5" Type UH 3x5 Reinforced Concrete Handhole, with two piece hinged traffic rated covers, and cable racks, provided in accordance with SIC standard requirements, complete and in place.		
		Per Each	$	$
217	1	Each, Furnish and Install Housing Ground Assembly Unit BM 2(5/8)(8), with copper clad ground rod, ground rod clamp and the required length of bare #6 AWG tinned copper ground wire connected to an auxiliary grounding connector within the housing, provided in accordance with SIC standard requirements, complete and in place.		
		Per Each	$	$
218	1	Each, Furnish and Install Underground Manhole Rearrangement Unit(W-UM). Place new ducts into existing manhole using available knock out or core drilling side wall. Contractor to provide bell ends and duct plugs. Contractor shall patch manhole and backfill per SIC specifications. Location of entering conduit will be determined by project manager at time of construction.		
		Per Each	$	$
219	22	Lin. Ft., Furnish and Install One 4-Inch Direct Buried HTCO Conduit. Work shall consist of excavation and providing 4” diameter conduit, with spacers, couplings, and appurtenances, backfilled per HTCO requirements, complete and in place.		
		Per Lin. Ft.	$	$

220	1	Each, Furnish and Install 2'x4' Precast Concrete HTCO Pullbox with two piece steel "slip-not" grip or polymer "non-skid" covers and ground rod, provided in accordance with HTCO standard drawing No. 34056. A minimum of two precast concrete pullbox sections shall be required at each pullbox. Per Each	$	$
221	1	Each, Furnish and Install 4" HTCO Conduit Risers. Provide conduit risers up utility pole per HTCO requirements, complete and in place. Per Each	$	$

SUB-TOTAL FOR SANDWICH ISLES COMMUNICATIONS (Items 204 to 221 inclusive)	$

RECAPITULATION

DHHL Work

I. Mass Grading (Items 1 to 17, inclusive)	$_____	
II. Roadways (Items 18 to 41, inclusive)	$_____	
III. Drainage System (Items 42 to 69 inclusive)	$_____	
IV. Traffic (Items 70 to 83, inclusive)	$_____	
VI. Landscaping (Items 84 to 89, inclusive)	$_____	
VII. Electrical (Items 90 to 118 inclusive)	$_____	
VIII. Hihimanu Street 20-Inch Water Main Relocation (Items 119 to 150, inclusive)	$_____	
TOTAL DHHL WORK		$_____

Na Kupaa Work

VIII. Sewer System (Items 151 to 172, inclusive)	$_____	
IX. Water System (Items 173 to 203, inclusive)	$_____	
TOTAL NA KUPAA WORK		$_____

Sandwich Isles Communications, Inc. Work

Section X. (Items 204 to 221, inclusive)		$_____
TOTAL SUM BID		**$_____**

Unit Prices have been computed in accordance with paragraph 11.03.B of the General Conditions.

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the contract Documents.

ARTICLE 6 - TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with paragraph 4.02 of the Agreement Between Owner and Contractor for Construction Contract and Section SC-03 of the DHHL Special Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damage.

ARTICLE 7 - ATTACHMENTS TO THIS BID

7.01 The following documents are attached to and made a condition of the Bid:

A. Required Bid security in the form of a Bid Bond (EJCDC No. C-430) or Certified Check (circle type of security provided);

B. List of Joint Contractors or Subcontractors;

C. Hawaii Products Preference schedule.

D. If applicable, Certification Form 1 verifying the participation in an apprenticeship program registered with the State Department of Labor and Industrial Relations (DLIR).

E. Tax Clearance Certificate from State Department of Taxation and Internal Revenue Service.

F. If Bid amount exceeds $10,000, signed Compliance Statement (RD 400-6). Refer to specific equal opportunity requirements set forth in paragraph 18.10 of the General Conditions;

G. If Bid amount exceeds $25,000, signed Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions (AD-1048);

H. If Bid amount exceeds $100,000, signed RD Instruction 1940-Q, Exhibit A-1, Certification for Contracts, Grants, and Loans.

ARTICLE 8 - DEFINED TERMS

8.01 The terms used in this Bid with the initial capital letters have the meanings indicated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 - BID SUBMITTAL

9.01 This Bid is submitted by:

*_____

Exact Legal Name of Company (Bidder)

The Bidder represents that it is: **(Check √ one only)**

☐ A **Hawaii business** incorporated or organized under the laws of the State of Hawaii; **OR**

☐ A **Compliant Non-Hawaii business** not incorporated or organized under the laws of the State of Hawaii, is or shall be registered at the State of Hawaii Department of Commerce and Consumer Affairs Business Registration Division (DCCA-BREG) to do business in the State of Hawaii.

State of incorporation: _____

Bidder is:

☐ Sole Proprietor ☐ Partnership ☐ Corporation ☐ Joint Venture ☐ Other: _____

Federal I.D. No.: Hawaii General Excise Tax ID No.:

State Contractor License No. _____.

Business address

_____

(Street Address, City, State, Zip Code)

Payment address (other than street address above)

_____

(Street Address, City, State, Zip Code)

Telephone No.: ( ) Fax No.: ( ) E-Mail address:

If Bidder is:

An Individual

Name (typed or printed): _____ SEAL, if required by State

By: _____
(Individual's signature)

Doing business as:
_____

A Partnership

Partnership Name: _____ SEAL, if required by State

By: _____
(Signature of general partner -- attach evidence of authority to sign)

Name (typed or printed):
_____

A Corporation

Corporation Name:
_____

State or Jurisdiction of Incorporation: _____

Type (General Business, Profession, Service, Limited Liability):
_____

By: _____
(Signature -- attach evidence of authority to sign)

Name (typed or printed):
_____

Title: _____ CORPORATE SEAL, if required by State

Attest _____
(Signature of Corporate Secretary)

Date of Qualification to do business in _____ [State or other jurisdiction where Project is located] is ___/___/_____

A Joint Venture

Name of Joint Venture:
_____

First Joint Venture Name: _____ SEAL, if required by State ___

By: _____
(Signature of joint venture partner -- attach evidence of authority to sign)

Name (typed or printed):
_____

Title: _____

Second Joint Venture Name:
_____ SEAL, if required by State

By: _____
(Signature of joint venture partner -- attach evidence of authority to sign)

Name (typed or printed):
_____

Title: _____

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is party to the venture should be in the manner indicated above.)

Phone and FAX Numbers, and Address for receipt of official communications, if different from Business contact information:

_____

_____

9.02 Bid submitted on _____, 20___.

ALL JOINT CONTRACTORS OR SUBCONTRACTORS TO BE ENGAGED ON THIS PROJECT

The Bidder certifies that the following is a complete listing of all joint Contractors or Subcontractors covered under Chapter 444, Hawaii Revised Statutes, who will be engaged by the Bidder on this project to perform the nature and scope of work indicated pursuant to Section 103D-302, Hawaii Revised Statutes, and understands that failure to comply with this requirement shall be just cause for rejection of the bid.

The Bidder further understands that only those joint Contractors or Subcontractors listed shall be allowed to perform work on this project and that all other work necessary shall be performed by the Bidder with his own employees. If no joint Contractor or Subcontractor is listed, it shall be construed that all of the work shall be performed by the Bidder with his own employees.

The Bidders must be sure that they possess and that the Subcontractors listed in the proposal possess all the necessary licenses needed to perform the work for this project. The bidder shall be solely responsible for assuring that all the specialty licenses required to perform the work are covered in his bid.

The Bidder shall include the license number of the joint Contractors or Subcontractors listed below. Failure to provide the correct names and license numbers as registered with the Contractor's Licensing Board may cause rejection of the bid submitted.

Complete Firm Name of Joint Contractor or Subcontractor for Total Sum Bid	License Number	Nature and Scope of Work to be Performed

(Add additional sheets if necessary)

HAWAII PRODUCTS PREFERENCE

Section 103D-1002, Hawaii Revised Statutes (HRS), as amended by Act 175 (Session Laws of Hawaii 2009), provides preference for Hawaii products. The previous Hawaii products list established pursuant to HRS §103D-1002 was suspended effective July 1, 2009, and a new list has been published by the State Procurement Office (SPO). DHHL will be supplementing the list with additional approved products for this solicitation.

Pursuant to HRS §103D-1002(b) (2) and Procurement Circular No. 2009-13, bidders intending to use Hawaii products should distribute the attached SPO-38, *Certification for Hawaii Product Preference*, to each of the manufacturers and producers of such products which bidders intend to use if the manufacturers and producers and their products are not listed on the SPO Hawaii Products List or in the DHHL's list below. The manufacturers and producers must complete and submit SPO-38 to DHHL. The form must be received by DHHL no later than **2:00 p.m., February 23, 2012**. Submittal by facsimile (808 620-9299) is acceptable. If DHHL receives and approves SPO-38s relating to this solicitation DHHL will issue an addendum listing the additional certified and qualified Hawaii products by **4:00 p.m., February 29, 2012.**

Bidders may claim a Hawaii product preference for products that it manufactures or produces with its own workforce and equipment. The SPO-38, *Certification for Hawaii Product Preference*, must be submitted in accordance with the procedures described above in order for Bidder to claim a Hawaii product preference for such Hawaii products Bidder intends to use in this work.

A partial list of approved products is provided below. The complete current list as compiled by the State Procurement Office is available at:

http://www4.hawaii.gov/spoh/HiProducts/hiProducts.htm

PREFERENCES, HAWAII PRODUCTS
CONSTRUCTION PRODUCTS AND SOIL AMENDMENTS/PRODUCTS

Aggregates – Basaltic Termite Barrier

Product Subcategory *as applicable*	Effective Date	Revised Date	Manufacturer	Oahu	Maui	Hawaii	Kauai
	11/03/09		Ameron International Corporation	X	X		

Aggregates and Sand – Basalt, Rock, Cinder, Limestone and Coral

Product Subcategory *as applicable*	Effective Date	Revised Date	Manufacturer	Oahu	Maui	Hawaii	Kauai
	11/03/09		Ameron International Corporation	X	X		
	10/23/09		CTS Earthmoving, Inc.			X	
	11/03/09	1/20/10	Delta Construction Corporation	X			
	12/14/09		Edwin Deluz Trucking & Gravel LLC			X	
	01/28/10		Goodfellow Bros., Inc.	X			

	11/02/09		Grace Pacific	X		X	X
	4/26/11		GW Construction			X	
	11/03/09		Hawaiian Cement	X	X		
	12/15/09		Jas. W. Glover, Ltd.			X	X
	06/30/10		Kauai Aggregates				X
	10/20/09	07/22/10	Sanford's Service Center, Inc.			X	
	11/05/09		Tileco, Inc.	X	X	X	X
	11/03/09		West Hawaii Concrete			X	
	11/02/09		Yamada and Sons, Inc.			X	

Aggregates – Recycled Asphalt and Concrete

Product Subcategory *as applicable*	Effective Date	Revised Date	Manufacturer	Oahu	Maui	Hawaii	Kauai
	12/15/09		Glover Honsador				X
	11/02/09		Grace Pacific	X			
	12/15/09		Jas. W. Glover, Ltd.	X		X	
	10/18/10		West Oahu Aggregate Co. Inc.	X			

Asphalt and Paving Materials - HI Products

Product Subcategory *as applicable*	Effective Date	Revised Date	Manufacturer	Oahu	Maui	Hawaii	Kauai
	06/15/10		Black Maui Rose LLC		X		
	12/22/09		Black Plumeria LLC	X			
	10/21/09	11/02/09	Grace Pacific Corporation	X		X	X
	12/05/09		Jas. W. Glover, Ltd.			X	X
	11/03/11		Maui Asphalt X-IV, LLC		X		
	10/28/09		Maui Paving LLC		X		
	11/20/09		Walker-Moody Pavement Products and Equipment	X	X	X	X
	11/22/09		Yamada and Sons, Inc. dba YS Rock and Con-Agg of Hawaii			X	

Cement and Concrete Products

Product Subcategory *as applicable*	Effective Date	Last Revised Date	Manufacturer	Oahu	Maui	Hawaii	Kauai
	11/03/09		Ameron International Corporation	X			
	01/19/10		BOMAT, Ltd.	X	X	X	X
	12/15/09		Glover Honsador				X
	11/03/09		Hawaiian Cement	X	X		
	12/15/09		Jas. W. Glover, Ltd.			X	X
	12/15/09		Kohala Coast Concrete & Precast LLC			X	
	06/30/10		O. Thronas, Inc.				X
	11/05/09		Tileco, Inc.	X	X	X	X
	11/03/09		West Hawaii Concrete			X	

Precast Concrete Products

Product Subcategory *as applicable*	Effective Date	Revised Date	Manufacturer	Oahu	Maui	Hawaii	Kauai
	7/12/10		Aloha Precast, Inc.	X	X	X	X
	11/03/09	04/15/10	Ameron International Corporation	X			
	08/02/10		GPRM Prestress, LLC	X	X	X	X
	11/03/09		Hawaii Concrete Products, Inc.	X			
	12/15/09		Kohala Coast Concrete & Precast LLC			X	
	11/03/09		Ramtek Fabrication Co., Inc.	X	X	X	X
	06/30/10	02/26/10	Walker Industries, Ltd.	X	X	X	X

Environmental Sewage-Treatment Innovative System (ESIS) Individual Wastewater System which utilizes anaerobic/aerobic processing to treat wastewater to R-2 quality at discharge

Product Subcategory *as applicable*	Effective Date	Revised Date	Manufacturer	Oahu	Maui	Hawaii	Kauai
	11/20/09		Environmental Waste Management Systems, Inc.	X	X	X	X
Septic Tanks	11/03/09		Ameron International Corporation	X			
	11/05/09	02/26/10	Walker Industries, Ltd.	X	X	X	X

Hot Dip Galvanizing

Product Subcategory *as applicable*	Effective Date	Revised Date	Manufacturer	Oahu	Maui	Hawaii	Kauai
	03/03/10		Universal Associates, Inc.	X			

Pipes-Aluminum and Galvanized

Product Subcategory *as applicable*	Effective Date	Revised Date	Manufacturer	Oahu	Maui	Hawaii	Kauai
Pipes-Miscellaneous	11/03/09		Ameron International Corporation	X			

Aluminum Docks, Floating, etc. - Miscellaneous

Product Subcategory *as applicable*	Effective Date	Revised Date	Manufacturer	Oahu	Maui	Hawaii	Kauai
	05/25/10	06/14/10	Bluewater Marine and Dock Specialties	X	X	X	X

Playground Surfaces

Product Subcategory as applicable	Effective Date	Revised Date	Manufacturer	Oahu	Maui	Hawaii	Kauai
	01/07/10		Innovative Playgrounds and Recreation, Inc.	X	X	X	X

Signs - Traffic, Regulatory and Construction

Product Subcategory *as applicable*	Effective Date	Revised Date	Manufacturer	Oahu	Maui	Hawaii	Kauai
	12/14/09		GP Roadway Solutions, Inc.	X	X	X	X
	11/20/09		Safety Systems Hawaii, Inc.	X	X	X	X

Veneer

Product Subcategory as applicable	Effective Date	Revised Date	Manufacturer	Oahu	Maui	Hawaii	Kauai
	11/14/11		Big Rock Manufacturing	x	x	x	x

Soil Amendments, Mulch, Compost

Product Subcategory *as applicable*	Effective Date	Revised Date	Manufacturer	Oahu	Maui	Hawaii	Kauai
	10/16/09		Kauai Nursery & Landscaping, Inc.	X	X	X	X
	10/20/09		Sanford's Service Center, Inc.			X	

Compost Filter

Product Subcategory *as applicable*	Effective Date	Revised Date	Manufacturer	Oahu	Maui	Hawaii	Kauai
	01/25/10		EnviroTech BioSolutions Hawaii, Inc.	X	X	X	X
	6/02/11		Certified Erosion Control Hawaii LLC	X	X	X	X

DESIGNATION OF HAWAII PRODUCTS TO BE USED		
Description	Manufacturer	Cost FOB Jobsite, Unloaded Including Applicable General Excise and Use Taxes
		$_____
		$_____
		$_____
		$_____
		$_____
		$_____
		$_____
		$_____
		$_____
		$_____
		$_____
		$_____

(Add additional sheets if necessary)

The Bidder agrees that preference for Hawaii products shall be taken into consideration to determine the low Bidder in accordance with said sections and the rules promulgated; however, the award of contract will be in the amount of the bid offered exclusive of any preferences.

It is further understood by the Bidder that if upon being granted Hawaii Products, and being awarded the contract, if the Bidder fails to use such products or meet the requirements of such preference, the Bidder shall be subject to penalties, if applicable.

APPRENTICESHIP AGREEMENTS

Section 103-55.6, Hawaii Revised Statutes (HRS), was added by Act 17 (Special Legislative Session 1, 2009), and provides the 5% bid adjustment for bidders that are parties to apprenticeship agreements. To be eligible for the preference, the bidder shall:

1. State the trades the bidder will employ to perform the work.

2. For each trade to be employed to perform the work, the bidder shall submit a completed signed original *Certification Form 1* verifying the participation in an apprenticeship program registered with the State Department of Labor and Industrial Relations (DLIR).

3. The *Certification Form 1* shall be authorized by an apprenticeship sponsor of the DLIR list of registered apprenticeship programs. The authorization shall be an original signature by an authorized official of the apprenticeship sponsor.

4. The completed *Certification Form 1* for each trade must be submitted by the bidder with the proposal. Previous certifications shall not apply.

Upon receiving *Certification Form 1*, DHHL will verify with DLIR that the apprenticeship program is on the list of apprenticeship programs registered with DLIR. If the program(s) are not confirmed by DLIR, the bidder will not qualify for the preference.

SECTION 02731 – SANITARY SEWER SYSTEM

PART 1 – GENERAL

1.01 GENERAL CONDITIONS: The General Conditions and Special Provisions preceding these specifications shall govern this section of the work.

1.02 WORK INCLUDED: Furnish all labor, materials, tools, equipment and related items necessary to complete, in place, the sewersystem in conformity with the dimensions, profiles, sections, and details shown on the plans. Work relating to the sanitary sewer system shall be governed by the Standard Specifications for Public Works Construction dated September 1986 except as modified in the plans.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Sewer Pipe: Polyvinyl Chloride (PVC) plastic sewer pipe C-900/C-905 (DR-18)

B. Materials for the sewer system shall be in accordance with the sections of the Standard Specifications noted hereinafter.

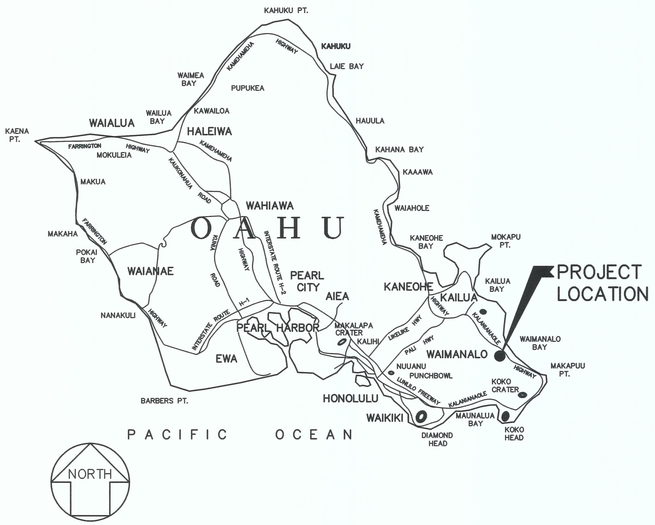
PART 3 – EXECUTION

3.01 INSTALLATION: Install the sewer system in accordance with the sections of the Standard Specifications noted hereinbefore.

3.02 The Contractor shall be responsible for precisely laying out the sewer line shown on the contract plans. The location shown on the contract plans of the various existing utility lines which the new lines are to cross over or under or connect to were determined on the basis of the best information available; however, no assurance can be provided that the actual locations will be precisely as shown on the contract plans.

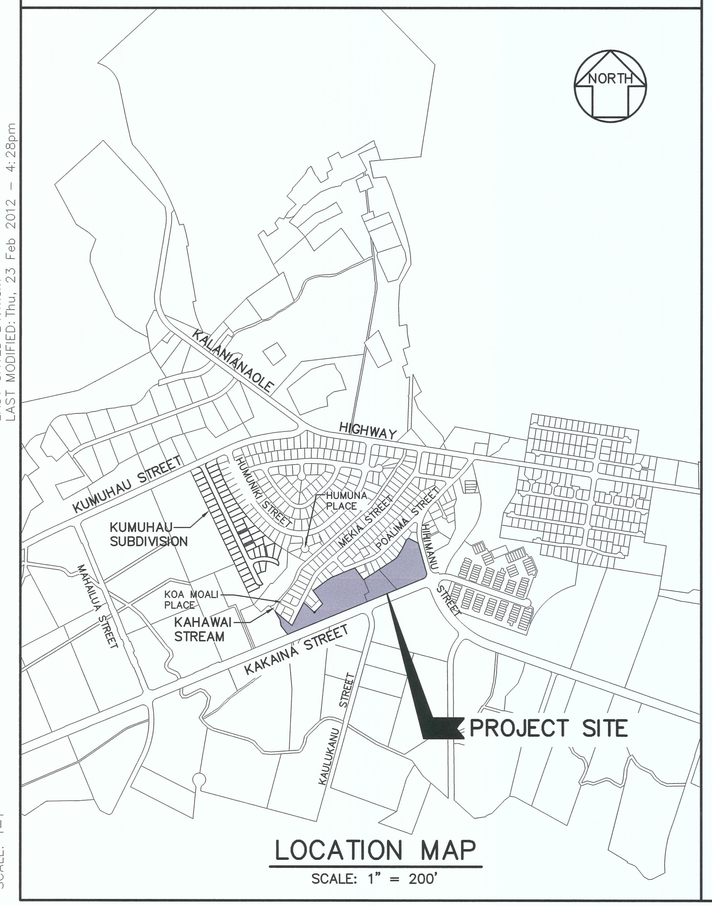
3.03 In performing all work, the Contractor shall exercise due care and caution necessary to avoid any damage to and impairment in the use of any existing utility lines. Any damage inflicted on existing lines resulting from the Contractor's operations shall be immediately repaired and restored as directed by the Engineer at the Contractor's expense.

END OF SECTION



GRAPHIC SCALE IN MILES
1 0 1 2 3 6 9

ISLAND MAP



LOCATION MAP

SCALE: 1" = 200'

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

KAKAINA SUBDIVISION

DEVELOPED UNDER THE HAWAIIAN HOMES COMMISSION ACT

WAIMANALO, KOOLAUPOKO, OAHU, HAWAII

TAX MAP KEY: 4–1–08: 10, 81, 91 & 92

(SUB'D. FILE NO. 2011/SUB–23)

PREPARED BY
AKINAKA & ASSOCIATES, LTD.
CONSULTING ENGINEERS
HONOLULU, HAWAII

APPROVED:

CHAIRMAN, DEPARTMENT OF HAWAIIAN HOME LANDS — DATE
STATE OF HAWAII

DIRECTOR, DEPARTMENT OF PLANNING AND PERMITTING — DATE
CITY & COUNTY OF HONOLULU

MANAGER AND CHIEF ENGINEER, BOARD OF WATER SUPPLY — DATE
(FOR WORK AFFECTING BWS FACILITIES IN CITY/STATE R/W AND BWS EASEMENTS ONLY)
CITY & COUNTY OF HONOLULU

CHIEF, ENVIRONMENTAL MANAGEMENT DIVISION, DEPARTMENT OF HEALTH — DATE
STATE OF HAWAII

INDEX TO DRAWINGS

ADDENDUM #1

FEBRUARY 29, 2012

KAKAINA SUBDIVISION

PREFIX:G:\DHHL06-02 Kumuhau & Kakaina Subd\ACAD\KAKAINA\Addendum#1\
FILE:DHHL0602KA01.dwg
BEGIN: 02/11/2000
SCALE: 1=1
CURRENT OPR: msm
CURRENT TIME: Feb 27, 2012 – 8:59am
LAST SAVED BY:msm
LAST MODIFIED: Thu, 23 Feb 2012 – 4:28pm

FILE	POCKET	FOLDER	NO.

CONSTRUCTION NOTES

1. ALL APPLICABLE CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE HAWAII STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND PUBLIC WORKS CONSTRUCTION, DATED 1994 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 AND ALL APPLICABLE UPDATES.

2. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR 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 CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.

3. NO CONTRACTOR SHALL PERFORM ANY CONSTRUCTION OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW INTO EXISTING CITY DRAINAGE SYSTEMS, OR ADJOINING PROPERTIES, STREETS OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE CONTRACTOR MAY BE CITED AND THE CONTRACTOR SHALL IMMEDIATELY MAKE ALL REMEDIAL ACTIONS NECESSARY.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER QUALITY AND WATER POLLUTION CONTROL STANDARDS CONTAINED IN HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS", AND TITLE 11, CHAPTER 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.

5. THE CONTRACTOR SHALL NOTIFY THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING, AT 768-8084 TO ARRANGE FOR INSPECTIONAL SERVICES AND SUBMIT TWO (2) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK.

6. THE CONTRACTOR MAY SUBMIT A SUBSTITUTION REQUEST TO PRECAST ANY CITY OWNED AND/OR MAINTAINED DRAINAGE STRUCTURE (EX., CATCH BASINS, DRAIN MANHOLES, DRAIN INLETS, CULVERTS, ETC). HOWEVER, PRIOR TO CONSTRUCTION AND INSTALLATION OF ANY PRECAST STRUCTURE, THE CONTRACTOR SHALL A) SUBMIT SIX (6) SETS OF SHOP DRAWINGS TO THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING AND OBTAIN WRITTEN APPROVAL AND B) NOTIFY THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING AT 768-8084 TO ARRANGE FOR INSPECTIONAL SERVICES. NON-COMPLIANCE WITH ANY OF THESE REQUIREMENTS SHALL MEAN IMMEDIATE SUSPENSION OF ALL PRECAST CONSTRUCTION WORK AND REJECTION OF ALL PRECAST STRUCTURES ALREADY CONSTRUCTED.

7. 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 CONTRACTOR 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).

8. PURSUANT TO CHAPTER 6E, HRS, IN THE EVENT ANY ARTIFACTS OR HUMAN REMAINS ARE UNCOVERED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND WORK AND NOTIFY THE HONOLULU POLICE DEPARTMENT, THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES-HISTORIC PRESERVATION DIVISION (692-8015). IN ADDITION, FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL INFORM THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING (768-8084); AND FOR CITY PROJECTS, NOTIFY THE RESPONSIBLE CITY AGENCY.

9. FOR BENCH MARK, SEE SHEET 7.

10. TOPOGRAPHIC INFORMATION OBTAINED FROM "TOPOGRAPHIC SURVEY AT KAKAINA SUBDIVISION" PREPARED BY ACE LAND SURVEYING LLC. ON 04/20/07.

GRADING NOTES

1. ALL GRADING WORK SHALL BE DONE IN ACCORDANCE WITH CHAPTER 14, ARTICLES 13, 14, 15 AND 16, AS RELATED TO GRADING, SOIL EROSION AND SEDIMENT CONTROL OF THE REVISED ORDINANCES OF HONOLULU, 1990, AS AMENDED, AND SOILS REPORT BY FEWELL GEOTECHNICAL ENGINEERING, LTD. DATED JULY 9, 2007.

2. NO CONTRACTOR SHALL PERFORM ANY GRADING OPERATION 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 CONTRACTOR MAY BE CITED AND THE CONTRACTOR SHALL IMMEDIATELY MAKE ALL REMEDIAL ACTIONS NECESSARY.

3. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 60.1, "AIR POLLUTION CONTROL".

4. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.

5. ADEQUATE PROVISIONS SHALL BE MADE TO PREVENT SURFACE WATERS FROM DAMAGING THE CUT FACE OF AN EXCAVATION OR THE SLOPED SURFACES OF A FILL. FURTHERMORE, ADEQUATE PROVISIONS SHALL BE MADE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE SITE.

6. ALL SLOPES AND EXPOSED AREAS SHALL BE SODDED OR PLANTED AS SOON AS FINAL GRADES HAVE BEEN ESTABLISHED. PLANTING SHALL NOT BE DELAYED UNTIL ALL GRADING WORK HAS BEEN COMPLETED. GRADING TO FINAL GRADE SHALL BE CONTINUOUS, AND ANY AREA WITHIN WHICH WORK HAS BEEN INTERRUPTED OR DELAYED SHALL BE PLANTED.

7. FILLS ON SLOPES STEEPER THAN 5:1 SHALL BE KEYED.

8. THE CITY SHALL BE INFORMED OF THE LOCATION OF THE BORROW/DISPOSAL SITE FOR THE PROJECT WHEN THE APPLICATION FOR A GRADING PERMIT IS MADE. THE BORROW/DISPOSAL SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.

9. NO GRADING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS AT ANY TIME WITHOUT PRIOR NOTICE TO THE DIRECTOR, D.P.P., PROVIDED SUCH GRADING WORK IS ALSO IN CONFORMANCE WITH THE COMMUNITY NOISE CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 46, "COMMUNITY NOISE CONTROL".

10. THE LIMITS OF THE AREA TO BE GRADED SHALL BE FLAGGED BEFORE THE COMMENCEMENT OF THE GRADING WORK.

11. ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER QUALITY AND WATER POLLUTION CONTROL STANDARDS CONTAINED IN HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS", AND TITLE 11, CHAPTER 55, "WATER POLLUTION CONTROL", AND IF APPLICABLE, THE NPDES PERMIT FOR THE PROJECT. BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED AT ALL TIMES DURING THE CONSTRUCTION PERIOD.

12. WHERE APPLICABLE AND FEASIBLE THE MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY EARTH MOVING PHASE OF THE GRADING IS INITIATED.

13. TEMPORARY EROSION CONTROLS SHALL NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN-PLACE AND ESTABLISHED.

14. TEMPORARY EROSION CONTROL PROCEDURES SHALL BE SUBMITTED FOR APPROVAL PRIOR TO APPLICATION FOR GRADING PERMIT.

15. IF THE GRADING WORK INVOLVES CONTAMINATED SOIL, THEN ALL GRADING WORK SHALL BE DONE IN CONFORMANCE WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS.

16. FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL NOTIFY THE CIVIL ENGINEERING BRANCH, D.P.P. AT 768-8084 TO ARRANGE FOR INSPECTIONAL SERVICES AND SUBMIT TWO (2) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK. FOR CITY PROJECTS, THE CONTRACTOR SHALL COORDINATE INSPECTIONAL SERVICES WITH THE RESPONSIBLE CITY AGENCY.

17. PURSUANT TO CHAPTER 6E, HRS, IN THE EVENT ANY ARTIFACTS OR HUMAN REMAINS ARE UNCOVERED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND WORK AND NOTIFY THE HONOLULU POLICE DEPARTMENT, THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES-HISTORIC PRESERVATION DIVISION (692-8015). IN ADDITION, FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL INFORM THE CIVIL ENGINEERING BRANCH, D.P.P. (768-8084); AND FOR CITY PROJECTS, NOTIFY THE RESPONSIBLE CITY AGENCY.

18. FOR ALL PROJECTS, WHICH WILL DISTURB ONE (1) ACRE OR MORE OF LAND, THE CONTRACTOR SHALL NOT START CONSTRUCTION UNTIL A NOTICE OF GENERAL PERMIT COVERAGE (NGPC) IS RECEIVED FROM THE DEPARTMENT OF HEALTH, STATE OF HAWAII, AND HAS SATISFIED ANY OTHER APPLICABLE REQUIREMENTS OF THE NPDES PERMIT PROGRAM. ALSO, FOR NON-CITY AND OTHER NONGOVERNMENTAL AGENCY PROJECTS, THE CONTRACTOR SHALL PROVIDE A WRITTEN COPY OF THE NGPC TO THE PERMITTING AND INSPECTION SECTION, CIVIL ENGINEERING BRANCH, D.P.P., AT LEAST SEVEN (7) CALENDAR DAYS BEFORE THE START OF THE CONSTRUCTION. FOR CITY OR OTHER GOVERNMENTAL PROJECTS, THE CONTRACTOR SHOULD PROVIDE A WRITTEN COPY OF THE NGPC TO THE APPROPRIATE CITY DEPARTMENT OR GOVERNMENTAL AGENCY PER THEIR REQUIREMENTS.

GRADING NOTES CONT'D.

19. ALL GRADING AND CONSTRUCTION WORK SHALL IMPLEMENT MEASURES TO ENSURE THAT THE DISCHARGE OF POLLUTANTS FROM THE CONSTRUCTION SITE WILL BE REDUCED TO THE MAXIMUM EXTENT PRACTICABLE AND WILL NOT CAUSE OR CONTRIBUTE TO AN EXCEEDANCE OF WATER QUALITY STANDARDS.

20. NON-COMPLIANCE TO ANY OF THE ABOVE REQUIREMENTS SHALL MEAN IMMEDIATE SUSPENSION OF ALL WORK, AND REMEDIAL WORK SHALL COMMENCE IMMEDIATELY. ALL COSTS INCURRED SHALL BE BILLED TO THE VIOLATOR. FURTHERMORE, VIOLATORS SHALL BE SUBJECTED TO ADMINISTRATIVE, CIVIL AND/OR CRIMINAL PENALTIES.

21. FOR BENCH MARK, SEE SHEET 7.

TEMPORARY DUST CONTROL

1. THE GRADED OR PROJECT SITE THAT IS CLEARED OF VEGETATION SHALL BE KEPT DAMP.

2. THE GRADED OR PROJECT SITE THAT IS CLEARED OF VEGETATION SHALL BE KEPT DAMP FOR SEVEN (7) DAYS A WEEK. AT THE END OF EACH DAY, THE SITE SHALL BE SUFFICIENTLY DAMPENED SO THAT THE SITE WILL REMAIN MOISTENED DURING THE NIGHT.

3. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS SO THAT EXCAVATION, EMBANKMENT AND IMPORTED MATERIAL SHALL BE DAMPENED TO PREVENT DUST PROBLEMS.

4. IN APPLYING FOR A GRADING PERMIT, THE CONTRACTOR SHALL SUBMIT PLANS, SCHEDULES AND/OR WRITTEN MEASURES WHICH PROVIDE FOR DUST CONTROL. THE DUST CONTROL MEASURES SHALL CONTAIN POSITIVE STATEMENTS WHICH REQUIRE ACTION OR WORK THAT PREVENTS DUST PROBLEMS.

SPECIAL NOTES:

1. THE CONTRACTOR SHALL INSTALL THE DUST SCREEN AND OTHER TEMPORARY EROSION CONTROL MEASURES PRIOR TO CLEARING & GRUBBING.

2. THE CONTRACTOR SHALL CONSTRUCT EROSION CONTROL BERM PRIOR TO GRADING.

3. THE CONTRACTOR SHALL ASSURE THAT NO FILL MATERIAL IS DEPOSITED INTO EXISTING DRAINAGE SYSTEM.

HISTORIC PRESERVATION NOTE

PURSUANT TO CHAPTER 6E, HRS, IN THE EVENT ANY ARTIFACTS OR HUMAN REMAINS ARE UNCOVERED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND WORK IN THE IMMEDIATE VICINITY OF THE FIND AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE HONOLULU POLICE DEPARTMENT, THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES-HISTORIC PRESERVATION DIVISION (692-8015), WHICH WILL ACCESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND AND APPROPRIATE MITIGATION MEASURE IF NECESSARY. IN ADDITION, FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL INFORM THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING & PERMITTING (768-8084); AND FOR CITY PROJECTS, NOTIFY THE RESPONSIBLE CITY AGENCY.

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
2/24/2012	REVISE NOTES	A&A	

JONI C. TANIMOTO
LICENSED PROFESSIONAL ENGINEER
No.11878-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION
LICENSE EXPIRES 4/30/12

DEPARTMENT OF HAWAIIAN HOME LANDS

KAKAINA SUBDIVISION

TAX MAP KEY: 4-1-08: 10, 81, 91 & 92

WAIMANALO, KOOLAUPOKO, OAHU, HAWAII

GENERAL NOTES

APPROVED:

CHIEF, CIVIL ENGINEERING BRANCH, DPP — DATE

AKINAKA & ASSOCIATES, LTD.
CONSULTING ENGINEERS

FILE	POCKET	FOLDER	NO.

SHEET 2 OF 87 SHEETS

Last Save by: MSM
Last Saved: 2/23/2012
Plotted on: 2/27/2012
G:\DHHL06-02 Kumuhau & Kakaina Subd\ACAD\KAKAINA\Addendum #1\DHHL0602KA03.dwg

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 THE 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 CONTRACTOR SHALL NOTIFY THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING, AT 768-8084 TO ARRANGE FOR INSPECTIONAL SERVICES AND SUBMIT FOUR (4) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK. THE CONTRACTOR 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 FIVE (5) FEET FROM THE CITY'S SEWER LINES.

6. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS RESEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR 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 CONTRACTOR SHALL BE RESPONSIBLE AND SHALL PAY FOR ALL DAMAGED UTILITIES.

7. SEWER LATERAL SHALL BE CLEAR OF AND NOT CONFLICTING WITH ANY OTHER UTILITY. MINIMUM HORIZONTAL AND VERTICAL CLEARANCES SHALL BE STRICTLY OBSERVED AND FOLLOWED.

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 CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTINUOUS SEWER SERVICE TO ALL AFFECTED AREAS DURING CONSTRUCTION.

11. THE CONSULTING ENGINEER 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 CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SEWAGE SPILLS CAUSED DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE STATE DEPARTMENT OF HEALTH AND UTILIZE APPROPRIATE SAMPLING AND ANALYZING PROCEDURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PUBLIC NOTIFICATIONS AND PRESS RELEASES.

13. THE CONTRACTOR 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 EPOXY LINERS. ALSO, IF THE VELOCITY EXCEEDS TEN (10) FEET PER SECOND (FPS), THE SEWER MANHOLE SHALL BE EPOXY LINED.

15. THE CONTRACTOR 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 PIPES 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 DETAIL, SHEET 44. 1

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 CONTRACTOR 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.

SEWER NOTES CONT'D.

    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

    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. WHEN CONNECTING TO A LIVE SEWER LINE, THE CONTRACTOR SHALL ABIDE BY ALL CONDITIONS THAT THE STATE DEPARTMENT OF HEALTH SETS FORTH TO MITIGATE ANY WASTEWATER SPILL THAT MAY OCCUR. THE CONTRACTOR SHALL INFORM THE CITY INSPECTOR FIVE (5) WORKING DAYS PRIOR TO THE ACTUAL CONNECTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES AND PENALTIES DUE TO ANY SPILLS RESULTING FROM THE CONNECTION.

22. NO RUNGS SHALL BE INSTALLED INSIDE NEW SEWER MANHOLES.

23. IF CONTRACTOR ENCOUNTERS FLOW MONITORING DEVICES SUCH AS SPECIAL SEWER MANHOLE COVER EMBEDDED WITH SOLAR PANELS; NOTIFY CITY & COUNTY OF HONOLULU, ENV-CSM, AT 768-7272 TO COORDINATE TEMPORARY REMOVAL.

24. CONTRACTOR SHALL MAINTAIN VISIBILITY AND MAINTENANCE ACCESS TO LIVE SEWER MANHOLE LOCATIONS AT ALL TIMES, INCLUDING DURING NON-WORK HOURS AND PAVING OPERATIONS.

25. CONTRACTOR SHALL USE MANHOLE DEBRIS CATCHING DEVICE WHEN PERFORMING MANHOLE HEIGHT ADJUSTMENT WORK AND REMOVE ANY CONSTRUCTION DEBRIS THAT HAS FALLEN INTO THE MANHOLE. DISPOSAL OF CONSTRUCTION DEBRIS IN THE SEWER SYSTEM IS STRICTLY PROHIBITED.

26. FOR PRECAST SEWER MANHOLES, THE CONSULTING ENGINEER SHALL SUBMIT FOUR (4) SETS OF SHOP DRAWINGS TO DPP FOR APPROVAL. AFTER THE SHOP DRAWINGS ARE APPROVED, THE MANUFACTURER SHALL NOTIFY THE INSPECTION SECTION, CIVIL ENGINEERING BRANCH, DPP, AT 768-8084 TO ARRANGE FOR INSPECTION SERVICES FOR CONCRETE POURS MADE AT ITS PLANT SEVEN (7) DAYS PRIOR TO POUR.

SPECIAL PROVISIONS FOR PVC PLASTIC SEWER PIPE (FOR PIPES 6" TO 12" IN DIAMETER ONLY)

1. POLYVINYL CHLORIDE (PVC) PLASTIC SEWER PIPE AND APPURTENANCES USED ON THIS PROJECT SHALL CONFORM TO THE REQUIREMENTS OF SECTION 21 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION DATED SEPTEMBER 1986, EXCEPT AS MODIFIED HEREIN.

    A. GENERAL. PVC GRAVITY SEWER PIPE SHALL CONFORM TO THE REQUIREMENTS OF C-900/C-905. (DR 18 MINIMUM WALL THICKNESS) 1 DELETED "AND FITTINGS"

    B. ACCEPTANCE. THE BASIS FOR ACCEPTANCE SHALL BE THE INSPECTION OF PIPE, FITTINGS AND COUPLINGS, THE TESTS SPECIFIED HEREIN AND IN SECTION 21, AND COMPLIANCE WITH THE SPECIFICATIONS. AT THE TIME OF MANUFACTURE, EACH LOT OF PIPE AND FITTINGS SHALL BE INSPECTED FOR DEFECTS AND TESTED FOR IMPACT, STIFFNESS AND FLATTENING IN ACCORDANCE WITH ASTM D3034. THE ENGINEER MAY REQUIRE CERTIFICATION BY THE MANUFACTURER THAT THE TEST RESULTS COMPLY WITH SPECIFICATION REQUIREMENTS. WHEN THE PIPE IS DELIVERED TO THE JOB SITE, THE ENGINEER MAY REQUIRE THE CONTRACTOR TO PROVIDE ADDITIONAL TESTING TO INSURE THE QUALITY OF THE PIPE AT NO EXPENSE TO THE CITY. PIPE WHICH IS NOT INSTALLED WITHIN 120 DAYS OF THE LATEST FACTORY TEST SHALL NOT BE USED WITHOUT PRIOR APPROVAL OF THE ENGINEER.

    C. SELECTION OF TEST PIPE. WHEN TESTING IS REQUIRED BY THE ENGINEER, ONE TEST PIPE SHALL BE SELECTED AT RANDOM BY THE ENGINEER FROM EACH 1200 LINEAR FEET OR FRACTION THEREOF OF EACH SIZE OF PIPE DELIVERED TO THE JOB SITE BUT NO LESS THAN ONE TEST PIPE PER LOT. A LOT SHALL BE DEFINED AS PIPE HAVING THE SAME IDENTIFICATION MARKING. THE LENGTH OF SPECIMEN OF EACH SELECTED PIPE SHALL BE A MINIMUM OF 8 FEET.

    D. CELL CLASSIFICATION. PIPE SHALL BE MADE OF PVC PLASTIC HAVING A CELL CLASSIFICATION OF 12454-B, 13364-A, OR 13364-B AS DEFINED IN ASTM D1784. THE FITTINGS SHALL BE MADE OF PVC PLASTIC HAVING A CELL CLASSIFICATION D1784. THE FITTINGS SHALL BE MADE OF PVC PLASTIC HAVING A CELL CLASSIFICATION OF 12454-B, 12454-C, OR 13343-C. PVC COMPOUNDS OF OTHER CELL CLASSIFICATIONS SHALL BE PRE-QUALIFIED BY THE MANUFACTURER.

    E. JOINTS. PIPE JOINTS SHALL BE BELL AND SPIGOT TYPE WITH AN ELASTOMERIC GASKET. THE GASKETED JOINTS SHALL BE MANUFACTURED WITH A SOCKET CONFIGURATION WHICH WILL PRECLUDE IMPROPER INSTALLATION OF THE GASKET AND WILL INSURE THE GASKET REMAINS IN PLACE DURING THE JOINING OPERATION. ALL PIPE SHALL HAVE A HOME MARK ON THE SPIGOT END TO INDICATE PROPER PENETRATION WHEN THE JOINT IS MADE.

SPECIAL PROVISIONS FOR PVC PLASTIC SEWER PIPE (FOR PIPES 6" TO 12" IN DIAMETER ONLY)

    F. IDENTIFICATION MARKS. ALL PIPE FITTINGS AND COUPLINGS SHALL BE CLEARLY MARKED AT AN INTERVAL NOT TO EXCEED 5 FEET AS FOLLOWS:
    (1) NOMINAL PIPE DIAMETER.
    (2) PVC CELL CLASSIFICATION.
    (3) COMPANY, PLANT, SHIFT, ASTM, SDR, AND DATE DESIGNATIONS.
    (4) SERVICE DESIGNATION AND LEGEND.

    G. DIMENSIONS AND TOLERANCES:

TABLE - PIPE DIMENSION (INCHES)

NOMINAL SIZE	AVERAGE O.D.	TOLERANCE ON AVERAGE	MINIMUM WALL THICKNESS	APPROX. WT./20' LENGTH (LBS.)
6	6.90 1	±0.011	0.383 1	104 1
8	9.05	±0.012	0.503	178
10	11.10	±0.015	0.617	268
12	13.20	±0.018	0.733	382

    H. CHEMICAL RESISTANCE. THE PVC COMPOUND FAR CELL CLASSIFICATIONS NOT SPECIFICALLY IDENTIFIED IN ITEM D ABOVE SHALL BE PREQUALIFIED BY THE PIPE MANUFACTURER BY MEETING THE CHEMICAL RESISTANCE TESTS WHICH FOLLOW. COMPOUND SAMPLES AND MOLDED TEST SPECIMENS SHALL BE PREPARED IN ACCORDANCE WITH ASTM D543.

    TENSILE AND IZOD IMPACT EXPOSURE SPECIMENS SHALL BE IMMERSED IN THE SOLUTIONS SPECIFIED IN TABLE 2 FOR A PERIOD OF 112 DAYS. TEST SPECIMENS SHALL BE CONDITIONED TO CONSTANT WEIGHT AT 110°F (43.3°C) BEFORE AND AFTER SUBMERSION. THE SOLUTIONS SHALL BE KEPT AT A TEMPERATURE OF 77°F ±5°F (24°C ±3°C). AT 28-DAY INTERVALS, SELECTED SPECIMENS SHALL BE REMOVED, WASHED, SURFACE DRIED AND TESTED.

TABLE 2 - TEST SOLUTIONS

CHEMICAL SOLUTION	CONCENTRATION (%)
SULFURIC ACID	20*
SODIUM HYDROXIDE	5
AMMONIUM HYDROXIDE	5*
NITRIC ACID	1*
FERRIC CHLORIDE	1
SOAP	0.1
DETERGENT (LINEAR ALKYLBENZYL SULFONATE OR LAS)	0.1
BACTERIALOGICAL	BOD NOT LESS THAN 700 PPM

*VOLUMETRIC PERCENTAGES OF CONCENTRATED REAGENTS OF C.P. GRADE

WEIGHT CHANGE SPECIMENS SHALL BE 2 INCHES IN DIAMETER AND MAY BE MOLDED DISCS OR DISCS CUT FROM THE PIPE WALL. SPECIMENS SHALL BE CONDITIONED FOR SEVEN DAYS AT 43° ±2°C, COOLED IN A DESICCATOR FOR THE THREE HOURS AT 23° ±2°C, WEIGHED, AND THEN IMMERSED IN THE SOLUTIONS. AT 4 WEEK INTERVALS, SELECTED SPECIMENS SHALL BE REMOVED, WASHED, SURFACE DRIED AND WEIGHED. THESE SAME SPECIMENS SHALL THEN BE RECONDITIONED FOR SEVEN DAYS AT 43° ±2°C, COOLED IN A DESICCATOR FOR THREE HOURS AT 23° ±2°C AND AGAIN WEIGHED.

INITIAL AND PAST EXPOSURE SPECIMENS SHALL MEET THE FOLLOWING REQUIREMENTS WHEN TESTED AT 23° ±2°C:

PROPERTY	ASTM TEST METHOD	CELL CLASS MINIMUM VALUES 12454	13343	13364
TENSILE STRENGTH (YIELD), PSI	D638	7000	6000	6000
IMPACT STRENGTH, FT-LBS/IN.	D256 METHOD A	0.65	1.5	1.5
WEIGHT CHANGE, %	D543	1.5	1.5	1.5

IF ANY SPECIMEN FAILS TO MEET THE REQUIREMENTS AT ANY TIME DURING THE 112 DAY EXPOSURE PERIOD, THE MATERIAL WILL BE SUBJECT TO REJECTION.

    I. TRENCH EXCAVATION. TRENCHES FOR PVC SEWER PIPE SHALL BE EXCAVATED AND PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 11 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION EXCEPT AS MODIFIED HEREIN.

    (1) OVEREXCAVATION. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE EQUAL TO THE OUTSIDE DIAMETER OF THE PIPE PLUS 18-INCHES FOR PIPE UP TO 12" (I.D.). IF THE TRENCH EXCAVATION EXCEEDS THE COMPUTED MAXIMUM ALLOWABLE TRENCH WIDTH WHETHER BY EXCAVATION, CAVE-IN, OR BY GROUND MOVEMENT, THE CONTRACTOR SHALL PROVIDE AT HIS OWN EXPENSE ADDITIONAL BEDDING, ANOTHER TYPE AT BEDDING, AND/OR A HIGHER STRENGTH OF PIPE DESIGNATED BY THE ENGINEER. WHERE SHORING IS REQUIRED, THE ALLOWABLE WIDTH OF THE TRENCH SHALL BE INCREASED ONLY BY THE THICKNESS OF THE SHEATHING.

APPROVED:

CHIEF, WASTEWATER BRANCH, DPP — DATE
(FOR CONFORMANCE WITH CITY STANDARDS AND WORK IN CITY R/W ONLY)

SPECIAL PROVISIONS FOR PVC PLASTIC SEWER PIPE (FOR PIPES 6" TO 12" IN DIAMETER ONLY) CONT'D

    J. PIPE BEDDING. WHERE UNSUITABLE MATERIAL IS ENCOUNTERED AT THE SUB GRADE AND ADDITIONAL EXCAVATION IS REQUIRED, THE VOID CREATED BY THE ADDITIONAL EXCAVATION SHALL BE FILLED AND COMPACTED WITH BEDDING MATERIAL SPECIFIED ON THE PLANS OR SPECIAL PROVISIONS. WHERE CONCRETE IS SPECIFIED TO BED THE PIPE, THE TOP OF THE CONCRETE SHALL BE CONSIDERED AS THE TOP OF THE BEDDING.

    BEDDING MATERIAL SHALL CONSIST OF ONE OF THE FOLLOWING:

    (1) BEACH SAND.
    (2) NO. 8 OR NO. 67 AGGREGATE CONFORMING TO THE GRADATION REQUIREMENTS OF ASTM C33.
    (3) 3/8" FILTER AGGREGATE.
    (4) NATIVE FREE-DRAINING GRANULAR MATERIAL HAVING A MINIMUM SAND EQUIVALENT OF 30 OR HAVING A COEFFICIENT OF PERMEABILITY GREATER THAN 0.001 CENTIMETER PER SECOND.
    (5) OTHER MATERIAL APPROVED BY THE ENGINEER.

    BEDDING MATERIAL SHALL FIRST BE PLACED SO THAT THE PIPE IS SUPPORTED FOR THE FULL LENGTH OF THE BARREL WITH FULL BEARING ON THE BOTTOM SEGMENT OF THE PIPE EQUAL TO A MINIMUM AT 0.4 TIMES THE OUTSIDE DIAMETER OF THE BARREL. IF THE PIPE IS TO BE LAID IN A ROCK EXCAVATION, THE ROCK SHALL BE REMOVED SUCH THAT NO RIBS, ROCKS, OR SOLID PROJECTIONS SHALL BE WITHIN 6 INCHES OF THE SEWER PIPE HORIZONTALLY AND THERE SHALL BE AT LEAST 4 INCHES OF BEDDING BELOW THE PIPE.

    K. MANDREL TEST OF PVC PIPE. A MANDREL TEST SHALL BE PERFORMED NO SOONER THAN 30 DAYS AFTER THE TRENCH BACKFILL IS COMPLETED. IN ROADWAY AREAS THE 30-DAY PERIOD SHALL BEGIN AFTER INSTALLATION AND COMPACTION OF BEDDING, BACKFILL AND SUBBASE TO WITHIN 2 FEET OF THE FINISHED PAVEMENT GRADE. A RIGID MANDREL SHALL BE PULLED THROUGH THE PIPE BY HAND BETWEEN ADJACENT MANHOLES TO MEASURE FOR OBSTRUCTIONS (DEFLECTIONS, JOINT OFFSETS AND LATERAL PIPE INTRUSIONS). THE MANDREL SHALL HAVE A CROSS SECTION EQUIVALENT TO A CIRCLE HAVING A DIAMETER AT LEAST 95 PERCENT OF THE SPECIFIED AVERAGE INSIDE DIAMETER OF THE PIPE. THE MINIMUM LENGTH OF THE CIRCULAR PORTION OF THE MANDREL SHALL BE EQUAL TO THE NOMINAL DIAMETER OF THE PIPE. THIS TEST SHALL BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER. ALL MATERIAL, EQUIPMENT AND LABOR REQUIRED TO PERFORM THE TEST SHALL BE PROVIDED BY THE CONTRACTOR AT NO COST TO THE CITY. ANY SECTION OF PIPE THAT FAILS TO PERMIT PASSAGE OF THE MANDREL WILL NOT BE ACCEPTED UNTIL PROPERLY REPAIRED OR REPLACED AND RETESTED.

2. BEDDING FOR PVC PIPE SEWER SHALL BE CLASS "B" AS SHOWN ON S-47 OF THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION UNLESS OTHERWISE NOTED.

3. THE MAXIMUM DESIGN DEFLECTION (FLATTENING) FOR PLASTIC PIPE SHALL BE 5 PERCENT. THE MAXIMUM SDR (STANDARD DIMENSION RATIO OF PIPE OUTSIDE DIAMETER TO PIPE WALL THICKNESS) SHALL BE 35.

4. SPECIAL WATERTIGHT MANHOLE COUPLINGS PER STANDARD DETAIL S-48 WILL BE REQUIRED FOR ALL MANHOLE CONNECTIONS. COUPLINGS MAY BE CAST DIRECTLY INTO CAST-IN-PLACE MANHOLES OR GROUTED INTO PRECAST CONCRETE MANHOLES WITH NON-SHRINK OR EXPANSION TYPE GROUT.

5. FOR CONNECTIONS OF PVC LATERAL SEWERS TO MAINS OF DIFFERENT MATERIALS, AN APPROVED SADDLE WYE FITTING CONSTRUCTED OF THE SAME MATERIAL AS THE MAIN LINE SHALL BE INSTALLED. CONNECTION TO THE SADDLE FITTING SHALL BE MADE BY MEANS OF AN APPROVED FLEXIBLE RUBBER COUPLING IN ACCORDANCE WITH THE COUPLING MANUFACTURER'S INSTALLATION RECOMMENDATIONS OR BY OTHER MEANS ACCEPTABLE TO THE ENGINEER.

6. FEWELL GEOTECHNICAL ENGINEERING'S LETTER DATED: XXXXXX RECOMMENDS APPROVAL OF THE USE OF PVC PIPE FOR KAKAINA SUBDIVISION.

7. PVC PIPE SHALL BE LIMITED TO USE IN AGRICULTURAL, RESIDENTIAL AND APARTMENT ZONED AREAS AND IN SIZES FROM 6 INCHES TO 12 INCHES IN DIAMETER.

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
1 2/24/2012	REVISE NOTES	A&A	

DEPARTMENT OF HAWAIIAN HOME LANDS

KAKAINA SUBDIVISION

TAX MAP KEY: 4-1-08: 10, 81, 91 & 92

WAIMANALO, KOOLAUPOKO, OAHU, HAWAII

GENERAL NOTES

JONI C. TANIMOTO — LICENSED PROFESSIONAL ENGINEER — No.11878-C — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION
LICENSE EXPIRES 4/30/12

AKINAKA & ASSOCIATES, LTD.
CONSULTING ENGINEERS

SHEET 4 OF 87 SHEETS

FILE	POCKET	FOLDER	NO.

Last Save by: MSM
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EXIST. KUMUHAU SUBDIVISION

EXIST. DETENTION POND

EXIST. CONC. CHANNEL C&C OF HON. (OWNER)

KAHAWAI STREAM

STATE OF HAWAII (OWNER)

KOA MOALI PLACE (CITY)

MEKIA STREET (CITY)

POALIMA STREET (CITY)

KAKAINA STREET (CITY)

KAULUKANU STREET (CITY)

HIHIMANU STREET (CITY)

ROAD "A" (PROPOSED DHHL OWNED/CITY MAINTAINED)

ROAD "B" (PROPOSED DHHL OWNED/CITY MAINTAINED)

OUTLET "B"

EXIST. 10' WIDE DRAINAGE EASEMENT (IN FAVOR OF CITY)

FOR TRENCH RESTORATION SEE DETAIL SHT 25

DRAIN LINE "B"

D3'x1.25'

CONN. NEW 8" WATER TO EXIST. 6" WATER FOR TRENCH RESTORATION SEE DETAIL SHT 25

A.C. REPAVEMENT (POALIMA STREET IMPROVEMENTS)

5' WIDE DRAINAGE EASEMENT IN FAVOR OF PROPERTY OWNERS

CONN. NEW SEWER TO EXIST. SEWER

CONC. DITCH "E"

NEW CMU WALL "A"

6'x6' EASEMENT IN FAVOR OF U.S. POSTAL SERVICE

NEW CMU WALL "B"

DHHL PROPERTY REMAINDER LOT (BASEYARD/STAGING AREA) (49)

NEW CHAIN LINK FENCE & GATE. SEE SHEET 8

EXIST. SANDWICH ISLES COMMUNICATION (S.I.C.) LINE

DRAIN LINE "A"

NEW UNDERGROUND DETENTION BASIN (DHHL OWNED/MAINTANED) LOT 3 FLOWAGE EASEMENT IN FAVOR OF CITY & COUNTY OF HONOLULU

A.C. REPAVEMENT (HIHIMANU STREET IMPROVEMENTS)

EXIST. DRAINAGE EASEMENT (IN FAVOR OF CITY)

EXIST. OUTLET

CONN. NEW 8" WATER TO EXIST. 20" WATER

6'x6' EASEMENT IN FAVOR OF U.S. POSTAL SERVICE

EXIST. SANDWICH ISLES COMMUNICATION (S.I.C.) LINE

A.C. REPAVEMENT (KAKAINA STREET IMPROVEMENTS)

CONN. NEW 8" WATER TO EXIST. 12" WATER FOR TRENCH RESTORATION SEE DETAIL SHT 25

BENCH MARK
TR KA-4 (MAG NAIL)
ELEV=33.48

TRUE NORTH
SCALE: 1" = 50'

LEGEND

W8	EXISTING WATER LINE
S8	EXISTING SEWER LINE
D42"	EXISTING DRAIN LINE
W8	NEW WATER LINE
S8	NEW SEWER LINE
D18	NEW DRAIN LINE
(27)	LOT NUMBER
	NEW A.C. PAVEMENT
	A.C. REPAVEMENT

APPROVED:

CHIEF, TRAFFIC REVIEW BRANCH, DPP — DATE

CHIEF, WASTEWATER BRANCH, DPP — DATE
(FOR CONFORMANCE WITH CITY STANDARDS AND WORK IN CITY R/W ONLY)

MANAGER AND CHIEF ENGINEER, BWS — DATE
(FOR WORK AFFECTING BWS FACILITIES IN CITY/STATE R/W AND BWS EASEMENTS ONLY)
CITY & COUNTY OF HONOLULU

50' 0 50' 100'
SCALE: 1" = 50'

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REVISION DATE	DESCRIPTION	MADE BY	APPROVED
2/24/2012	DEFINE/LABEL STAGING AREA	A&A	

DEPARTMENT OF HAWAIIAN HOME LANDS

KAKAINA SUBDIVISION

TAX MAP KEY: 4-1-08: 10, 81, 91 & 92
WAIMANALO, KOOLAUPOKO, OAHU, HAWAII

GENERAL LAYOUT

APPROVED:

CHIEF, CIVIL ENGINEERING BRANCH, DPP — DATE

AKINAKA & ASSOCIATES, LTD.
CONSULTING ENGINEERS

SHEET 7 OF 87 SHEETS

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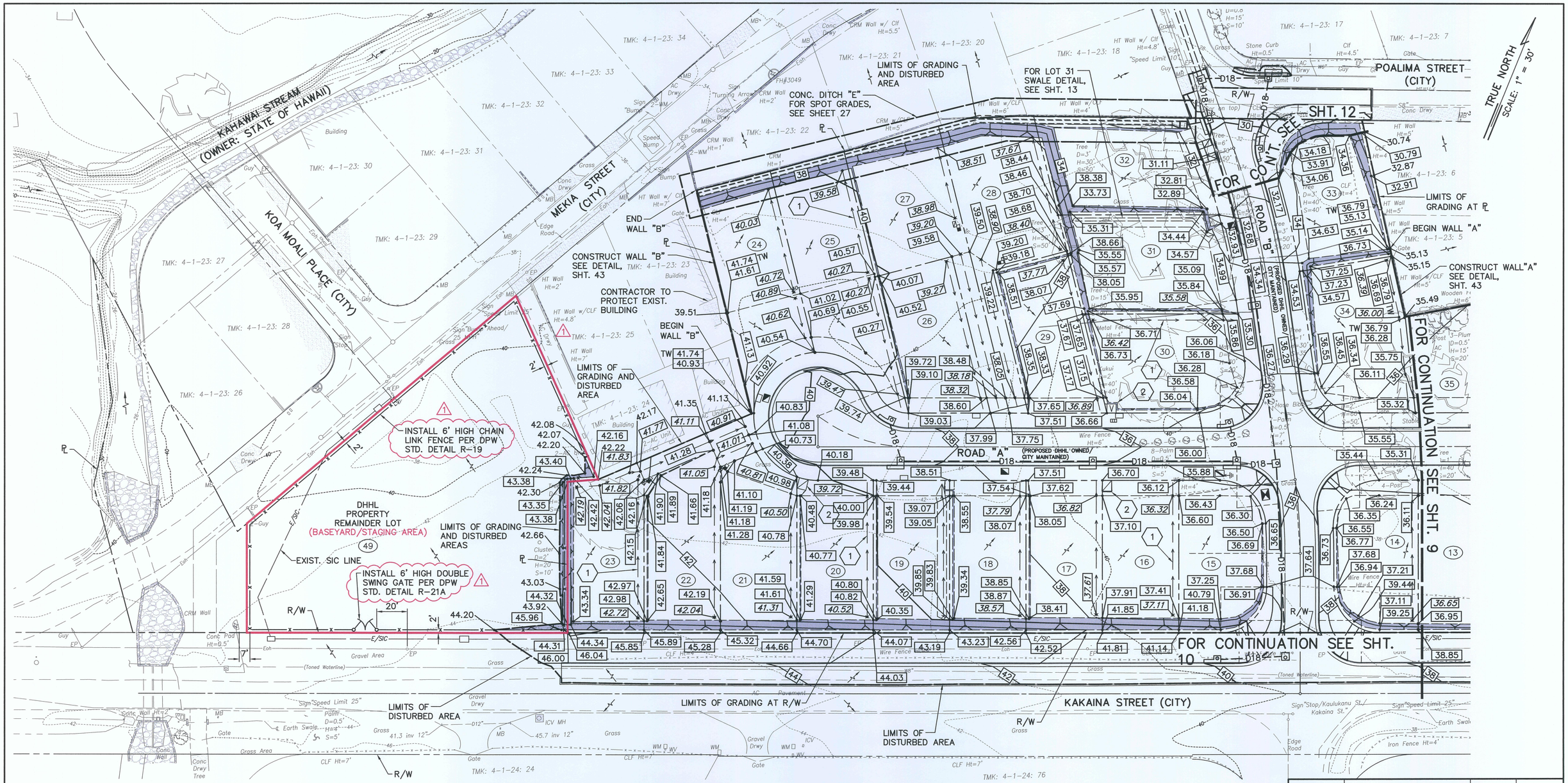

LEGEND

- LIMITS OF GRADING
- 50 EXISTING CONTOUR
- 50 FINISH CONTOUR
- RUN-OFF FLOW DIRECTION
- XX.XX FINISH SPOT GRADES
- XX.XX EXISTING GRADES
- (10) LOT NUMBER
- NEW 2:1 SLOPE
- HIGH PT. EARTH SWALE SEE DETAIL, SHEET 13
- XX.XX SWALE SPOT GRADES
- (1) SWALES FOR LOTS 2, 4–12, 14, 16–30 & 34 SEE DETAIL, SHEET 13
- (2) SEE SHEET 14 FOR GRADING AT TRANSFORMER PADS & CATV POWER SUPPLY EQUIP.

EXIST. LOT / NEW LOT
LIMITS OF GRADING AT ℄
TOP OF WALL ELEV. 41.74 TW
FINISH GROUND ELEV. AT FACE OF WALL 41.61
EXIST. GROUND ELEV. AT FACE OF WALL 39.51

* LOTS 13, 19, 31 & 43–45 REQUIRE SPECIAL SWALE GRADING FOR SWALE DETAILS, SEE SHEETS 13 AND 14

EARTHWORK QUANTITIES

AREA TO BE GRADED = 7.32 ACS.
EXC. = 8,858 C.Y.
EMB. = 6,183 C.Y.

AREA TO BE DISTURBED = 8.46 ACS.

NOTES:

1. EARTHWORK QUANTITIES ARE FOR GRADING PERMIT PURPOSES.
2. QUANTITIES DOES NOT INCLUDE SHRINKAGE AND GRUBBING LOSSES.
3. CONTRACTOR SHALL DEMOLISH AND REMOVE EXIST. STRUCTURES, CONC. SLABS, A.C. PAVEMENTS, FENCE AND TREES WITHIN THE LIMITS OF GRADING UNLESS OTHERWISE NOTED.
4. CONTRACTOR TO VERIFY EXIST. SITE CONDITIONS PRIOR TO BID.

30' 0 30' 60'
SCALE: 1" = 30'

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
2/24/2012	DEFINE/LABEL STAGING AREA	A&A	

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HAWAII, U.S.A.

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LICENSE EXPIRES 4/30/12

DEPARTMENT OF HAWAIIAN HOME LANDS
KAKAINA SUBDIVISION
TAX MAP KEY: 4-1-08: 10, 81, 91 & 92
WAIMANALO, KOOLAUPOKO, OAHU, HAWAII

GRADING PLAN

APPROVED:

CHIEF, CIVIL ENGINEERING BRANCH, DPP DATE

AKINAKA & ASSOCIATES, LTD.
CONSULTING ENGINEERS

FILE	POCKET	FOLDER	NO.

SHEET 8 OF 87 SHEETS

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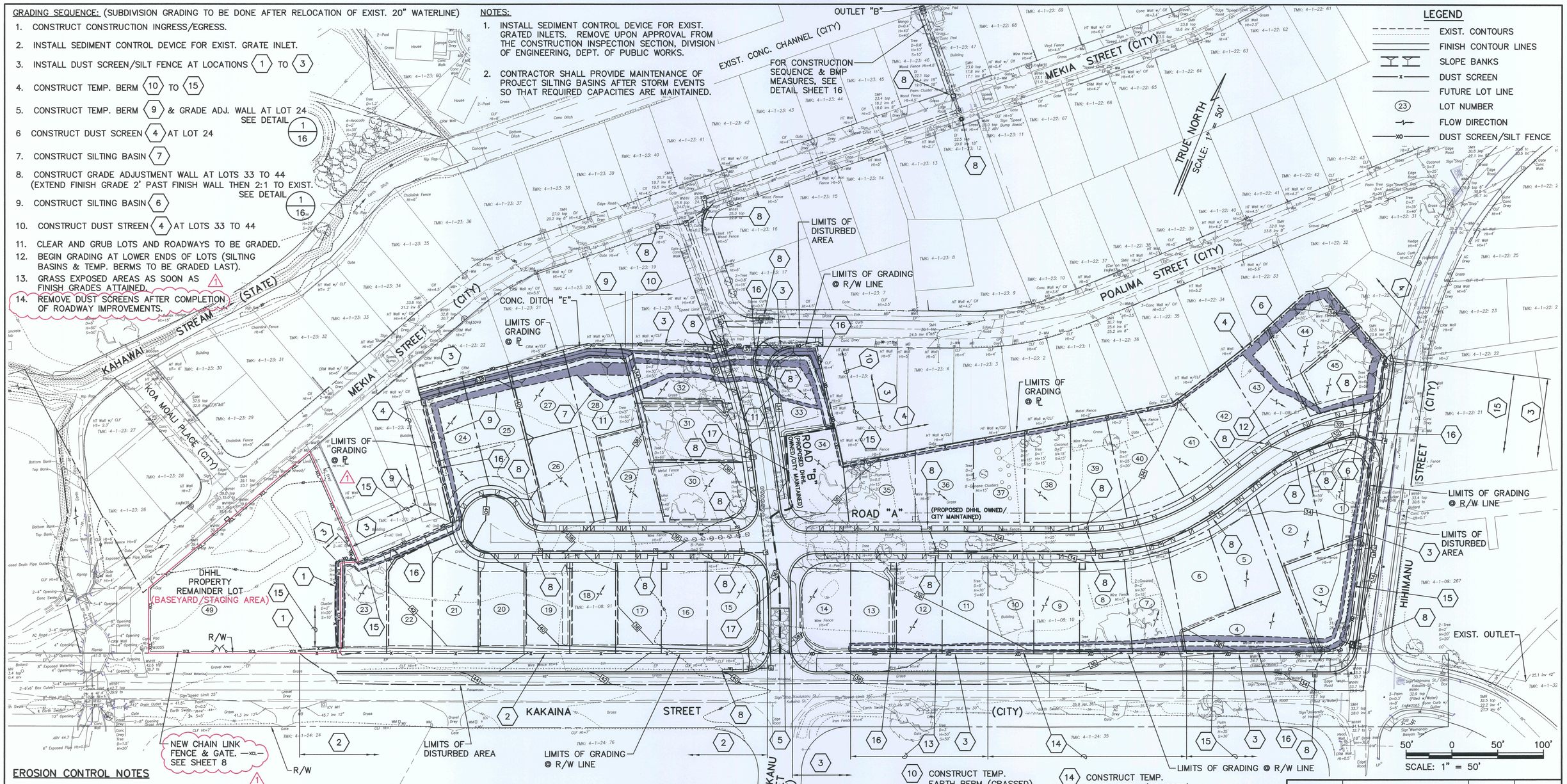
GRADING SEQUENCE: (SUBDIVISION GRADING TO BE DONE AFTER RELOCATION OF EXIST. 20" WATERLINE)

1. CONSTRUCT CONSTRUCTION INGRESS/EGRESS.
2. INSTALL SEDIMENT CONTROL DEVICE FOR EXIST. GRATE INLET.
3. INSTALL DUST SCREEN/SILT FENCE AT LOCATIONS (1) TO (3)
4. CONSTRUCT TEMP. BERM (10) TO (15)
5. CONSTRUCT TEMP. BERM (9) & GRADE ADJ. WALL AT LOT 24 SEE DETAIL 1/16
6. CONSTRUCT DUST SCREEN (4) AT LOT 24
7. CONSTRUCT SILTING BASIN (7)
8. CONSTRUCT GRADE ADJUSTMENT WALL AT LOTS 33 TO 44 (EXTEND FINISH GRADE 2' PAST FINISH WALL THEN 2:1 TO EXIST. SEE DETAIL 1/16
9. CONSTRUCT SILTING BASIN (6)
10. CONSTRUCT DUST STREEN (4) AT LOTS 33 TO 44
11. CLEAR AND GRUB LOTS AND ROADWAYS TO BE GRADED.
12. BEGIN GRADING AT LOWER ENDS OF LOTS (SILTING BASINS & TEMP. BERMS TO BE GRADED LAST).
13. GRASS EXPOSED AREAS AS SOON AS FINISH GRADES ATTAINED. (1)
14. REMOVE DUST SCREENS AFTER COMPLETION OF ROADWAY IMPROVEMENTS.

NOTES:

1. INSTALL SEDIMENT CONTROL DEVICE FOR EXIST. GRATED INLETS. REMOVE UPON APPROVAL FROM THE CONSTRUCTION INSPECTION SECTION, DIVISION OF ENGINEERING, DEPT. OF PUBLIC WORKS.
2. CONTRACTOR SHALL PROVIDE MAINTENANCE OF PROJECT SILTING BASINS AFTER STORM EVENTS SO THAT REQUIRED CAPACITIES ARE MAINTAINED.



LEGEND

- EXIST. CONTOURS
- FINISH CONTOUR LINES
- SLOPE BANKS
- DUST SCREEN
- FUTURE LOT LINE
- (23) LOT NUMBER
- FLOW DIRECTION
- XO DUST SCREEN/SILT FENCE

EROSION CONTROL NOTES

(1) INSTALL DUST SCREEN SEE DETAIL 1/16

(2) INSTALL DUST SCREEN AT R/W SEE DETAIL 1/16

(3) INSTALL DUST SCREEN & SILT FENCE AT LIMITS OF GRADING SEE DETAIL 1/16

(4) INSTALL DUST SCREEN 3' FROM FINISH WALL (@ FINISH GRADE ELEV.) SEE DETAIL 1/16

(5) 20' WIDE x 50' LONG (APPROX.) CONSTRUCTION INGRESS/EGRESS 8" THICK 1" TO 3" COARSE AGGREGATE OR LARGER (7" MAX). PROVIDE FILTER FABRIC BETWEEN SOIL & COARSE AGGREGATE.

(6) CONSTRUCT TEMP. EARTH BERM SILTING BASIN (GRASSED)
TOP = 32.50
BOTTOM = 29.15 (REMOVAL OF UNCOMPACTED FILL/EXPANSIVE SOILS PER SHEET 3)
SILTING BASIN TRIBUTARY AREA = 4.77 ACS.
STORAGE REQ. FOR EROSION CONTROL = 636 CU. YDS.
STORAGE AVAILABLE = 1,282 CU. YDS.

(7) CONSTRUCT TEMP. EARTH BERM SILTING BASIN (GRASSED)
TOP = 34.50
BOTTOM = 32.00 (REMOVAL OF UNCOMPACTED FILL/EXPANSIVE SOILS PER SHEET 3)
SILTING BASIN TRIBUTARY AREA = 3.70 ACS.
STORAGE REQ. FOR EROSION CONTROL = 493 CU. YDS.
STORAGE AVAILABLE = 511 CU. YDS.

(8) INSTALL SEDIMENT CONTROL DEVICE FOR EXIST. GRATE INLETS, NEW GRATE INLETS & NEW CATCH BASINS SEE DETAIL 3/16

(9) CONSTRUCT TEMP. EARTH BERM (GRASSED) TOP = 12" ABOVE FINISH GRADE SEE DETAIL 2/16

(10) CONSTRUCT TEMP. EARTH BERM (GRASSED) TOP = 34.50 SEE DETAIL 2/16

(11) TOP OF TEMP. SILTING BASIN = 34.75 (EXIST.)

(12) TOP OF TEMP. SILTING BASIN = 32.50 (EXIST.)

(13) CONSTRUCT TEMP. EARTH BERM (GRASSED) TOP = 38.00 SEE DETAIL 2/16

(14) CONSTRUCT TEMP. EARTH BERM (GRASSED) TOP = 37.00 SEE DETAIL 2/16

(15) CONSTRUCT TEMP. EARTH BERM (GRASSED) TOP = 12" ABOVE EXIST. GROUND SEE DETAIL 2/16

(16) BOTTOM OF TEMP. EARTH BERM 2' FROM WALL/℄

(17) SILTING TRIBUTARY LIMITS

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REVISION DATE	DESCRIPTION	MADE BY	APPROVED
2/24/2012	DEFINE STAGING AREA, REV. GRAD. SEQ.	A&A	

DEPARTMENT OF HAWAIIAN HOME LANDS

KAKAINA SUBDIVISION

TAX MAP KEY: 4-1-08: 10, 81, 91 & 92

WAIMANALO, KOOLAUPOKO, OAHU, HAWAII

EROSION CONTROL PLAN

JONI C. TANIMOTO LICENSED PROFESSIONAL ENGINEER No.11878-C HAWAII, U.S.A.

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CHIEF, CIVIL ENGINEERING BRANCH, DPP DATE

AKINAKA & ASSOCIATES, LTD.
CONSULTING ENGINEERS

FILE	POCKET	FOLDER	NO.

ROAD NOTES

(R1) P.I. STA. (−)0+22.83 ℄ ROAD "A" = STA. 4+13.77 ℄ HIHIMANU ST. INSTALL ST. SURVEY MON.

(R2) P.I. STA. 0+00 ℄ ROAD "A" INSTALL ℄ MON.

(R3) P.C. STA. 0+18.16 ℄ ROAD "A" INSTALL ST. SURVEY MON.

(R4) P.T. STA. 1+43.04 ℄ ROAD "A" INSTALL ST. SURVEY MON.

(R5) P.C. STA. 1+93.04 ℄ ROAD "A" INSTALL ST. SURVEY MON.

(R6) P.T. STA. 3+51.58 ℄ ROAD "A" INSTALL ST. SURVEY MON.

(R7) 6'x6' CONC. PAD WITH TYPE III (16) CBU SEE DETAIL 1/45

(R8) STA. 0+41.32 O/S 23.97' LT. ℄ ROAD "A" = ℞ P.I.

(R9) STA. 1+27.21 O/S 22' LT. ℄ ROAD "A" = ℞ P.I.

SEWER NOTES

(S1) STA. (−)0+20.59 O/S 14.33' RT. ℄ ROAD "A" = STA. 4+00.56 O/S 6' RT. ℄ HIHIMANU ST. CONSTRUCT SMH "A1" TOP = 32.66 INV. = 24.12

(S2) STA. 0+97 O/S 5' RT. ℄ ROAD "A" CONSTRUCT SMH "A2" TOP = 32.24 INV. = 24.68

(S3) STA. 2+56.35 O/S 5' RT. ℄ ROAD "A" CONSTRUCT SMH "A3" TOP = 33.06 INV. = 25.43

(S4) STA. 3+39.54 O/S 5' RT. ℄ ROAD "A" CONSTRUCT SMH "A4" TOP = 33.47 INV. = 25.81

(S5) 7 L.F. PLAIN CONC. JACKET FOR 6" SEWER

(S6) STA. 0+50.53 O/S 2.94' RT. ℄ ROAD "A" INSTALL DOUBLE WYE

DRAIN NOTES

(D1) STA. (−)0+03.70 O/S 21.84' LT. ℄ ROAD "A" CONSTRUCT DMH "A2" STD. DETAIL D−18 TOP = 32.78 INV. = 27.27

(D2) STA. 0+30.16 ℄ ROAD "A" CONSTRUCT C.B. "A3" TYPE "B" INV. = 28.01 (18") INV. = 27.50 (24")

(D3) STA. 0+24.18 ℄ ROAD "A" CONSTRUCT C.B. "A3A" TYPE "A" INV. = 28.21

(D4) STA. 0+99.71 ℄ ROAD "A" CONSTRUCT C.B. "A4" TYPE "B" INV. = 28.37 (18") INV. = 27.85 (24")

(D5) STA. 1+19.58 ℄ ROAD "A" CONSTRUCT C.B. "A4A" TYPE "A" INV. = 28.56

(D6) STA. 2+12.24 ℄ ROAD "A" CONSTRUCT C.B. "A5" TYPE "B" INV. = 28.41

(D7) STA. 2+74.22 ℄ ROAD "A" CONSTRUCT DMH "A6" STD. DETAIL D−17 INV. = 28.73

(D8) STA. 3+44.70 ℄ ROAD "A" CONSTRUCT C.B. "A7" TYPE "B" INV. = 29.58 (18" N) INV. = 29.10 (18" E & W)

(D9) STA. 3+51.84 ℄ ROAD "A" CONSTRUCT C.B. "A7A" TYPE "A" INV. = 29.81

WATER NOTES

(W1) STA. (−)0+26.86 O/S 14.29' LT. ℄ ROAD "A" INSTALL:
1 − 20" x 8" TEE, D.I. M.J.
1 − 8" G.V., C.L. 150 M.J. W/ ANCHOR BLOCK
1 − CONC. BLOCK
1 − VALVE BOX & COVER

(W2) STA. (−)0+19.04 O/S 12.12' LT. ℄ ROAD "A" DEFLECT PIPE (VERT.)
1 − DEFLECTION COUPLING

(W3) STA. 0+03.91 O/S 5.74' LT. ℄ ROAD "A' DEFLECT PIPE (VERT.)
1 − DEFLECTION COUPLING

(W4) STA. 0+10.36 O/S 3.94' LT. ℄ ROAD "A"
1 − 8" 1/32 BEND, D.I. M.J.
1 − 1 CONC. BLOCK.

(W5) STA. 0+13.67 O/S 3.70' LT. ℄ ROAD "A" INSTALL F.H. CONN.
1 − 8" x 6" TEE, D.I. M.J.
1 − 6" G.V. C.L. 150 W/ ANCHOR BLOCK
1 − DEFLECTION COUPLING
1 − C.I. VALVE BOX & COVER
1 − 6" 1/4 BEND, D.I. M.J.
1 − 6" HYDRANT ELBOW, M.J. x F.E.
1 − F.H. (HT. = 5.5')
1 − F.H. EXTENSION PIECE
1 − F.H. MARKER
23 L.F. 6" PVC PIPE, CL. 150
3 − CONC. BLOCKS
SEE F.H. PROFILE, SHT. 41

(W6) STA. 0+20.68 O/S 3.16' LT. ℄ ROAD "A" DEFLECT PIPE (VERT.)

(W7) 21.2 L.F. REINF. CONC. JACKET FOR 8" WATER, D.I. PIPE

(W8) STA. 0+25.14 O/S 2.74' LT. ℄ ROAD "A" 1 − 8" 1/32 BEND, D.I. M.J.

(W9) STA. 0+33.19 O/S 3.29' LT. ℄ ROAD "A" 1 − 8" 1/16 BEND, D.I. M.J. (B.V.)

(W10) STA. 0+40.06 O/S 3.54' LT. ℄ ROAD "A" 1 − 8" 1/16 BEND, D.I. M.J. (T.V.)

(W11) STA. 0+42.97 O/S 3.59' LT. ℄ ROAD "A" DEFLECT PIPE (HORIZ.) 1 − DEFLECTION COUPLING

(W12) STA. 0+61.25 O/S 3.88' LT. ℄ ROAD "A" DEFLECT PIPE (HORIZ.) 1 − DEFLECTION COUPLING

(W13) STA. 0+87.98 O/S 3.35' LT. ℄ ROAD "A" 1 − 3/4" ARV (APCO) (W.P. = 87.2 P.S.I.) 1 − ARV BOX 1 − 8" BOSSED TEE, D.I. TAPPED FOR 3/4" C.C.T. SEE B.W.S. STD. DETAIL V2

(W14) STA. 0+92.02 O/S 3.13' LT. ℄ ROAD "A" 1 − 8" 1/16 BEND, D.I. M.J. (T.V.)

(W15) STA. 0+98.21 O/S 2.67' LT. ℄ ROAD "A" 1 − 8" 1/16 BEND, D.I. M.J. (B.V.)

(W16) STA. 1+01.22 O/S 2.38' LT. ℄ ROAD "A" 1 − 8" 1/32 BEND, D.I. M.J.

(W17) STA. 1+09.94 O/S 3.01' LT. ℄ ROAD "A" 1 − 8" 1/16 BEND, D.I. M.J. (B.V.)

(W18) 26.1 L.F. REINF. CONC. JACKET FOR 8" WATER, D.I. PIPE

(W19) STA. 1+16.31 O/S 3.27' LT. ℄ ROAD "A" 1 − 8" 1/16 BEND, D.I. M.J. (T.V.)

(W20) STA. 1+28.31 O/S 3.30' LT. ℄ ROAD "A" DEFLECT PIPE (HORIZ.) 1 − DEFLECTION COUPLING

(W21) STA. 1+46.49 O/S 3.00' LT. ℄ ROAD "A" DEFLECT PIPE (HORIZ.) 1 − DEFLECTION COUPLING

(W22) STA. 2+05.13 O/S 3.31' LT. ℄ ROAD "A" DEFLECT PIPE (HORIZ.) 1 − DEFLECTION COUPLING

(W23) STA. 2+36.34 O/S 4.70' LT. ℄ ROAD "A" 1 − 8" 1/32 BEND, D.I. M.J. 1 − CONC. BLOCK

(W24) STA. 2+79.32 O/S 4.79' LT. ℄ ROAD "A" 1 − 8" 1/32 BEND, D.I. M.J. 1 − CONC. BLOCK

(W25) STA. 3+25.74 O/S 4.41' LT. ℄ ROAD "A" 1 − 8" 1/32 BEND, D.I. M.J. 1 − CONC. BLOCK

(W26) STA. 3+31.13 O/S 3.88' LT. ℄ ROAD "A" 1 − 3/4" ARV (APCO) (W.P. = 87.6 P.S.I.) 1 − ARV BOX 1 − 8" BOSSED TEE, D.I. TAPPED FOR 3/4" C.C.T. SEE B.W.S. STD. DETAIL V2

(W27) STA. 3+35.06 O/S 3.58' LT. ℄ ROAD "A" 1 − 8" 1/16 BEND, D.I. M.J. (T.V.)

(W28) STA. 3+41.24 O/S 3.23' LT. ℄ ROAD "A" 1 − 8" 1/16 BEND, D.I. M.J. (B.V.)

(W29) 24.6 L.F. REINF. CONC. JACKET FOR 8" WATER, D.I. PIPE

(W30) STA. 3+51.11 O/S 3.00' LT. ℄ ROAD "A" 1 − 8" 1/16 BEND, D.I. M.J. (B.V.)

(W31) STA. 3+57.41 O/S 3.00' LT. ℄ ROAD "A" 1 − 8" 1/16 BEND, D.I. M.J. (T.V.)

(W32) STA. 3+69.19 O/S 3.00' LT. ℄ ROAD "A" INSTALL F.H. CONN. 1 − 8" x 6" TEE, D.I. M.J. 1 − 6" G.V. C.L. 150 W/ ANCHOR BLOCK 1 − C.I. VALVE BOX & COVER 1 − 6" HYDRANT ELBOW, M.J. x F.E. 1 − F.H. (HT. = 4.0') 1 − F.H. EXTENSION PIECE 1 − F.H. MARKER 17 L.F. 6" PVC PIPE, CL. 150 2 − CONC. BLOCKS SEE F.H. PROFILE, SHT. 41

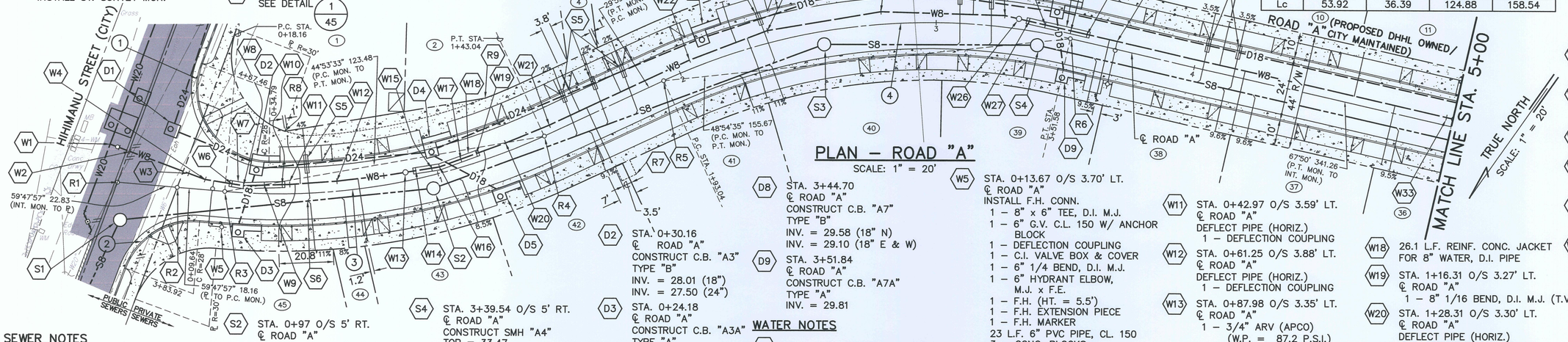
(W33) STA. 4+97.80 O/S 3.00' LT. ℄ ROAD "A" DEFLECT PIPE (VERT.)

CURVE DATA

CURVE	(1)	(2)	(3)	(4)
△	110°19'32"	74°27'57"	29°48'48"	37°50'51"
△/2	55°09'46"	37°13'58.5"	14°54'24"	18°55'25.5"
R	28.00	28.00	240.00	240.00
T	40.23	21.28	63.89	82.28
C	45.96	33.88	123.48	155.67
Lc	53.92	36.39	124.88	158.54

PLAN − ROAD "A"

SCALE: 1" = 20'



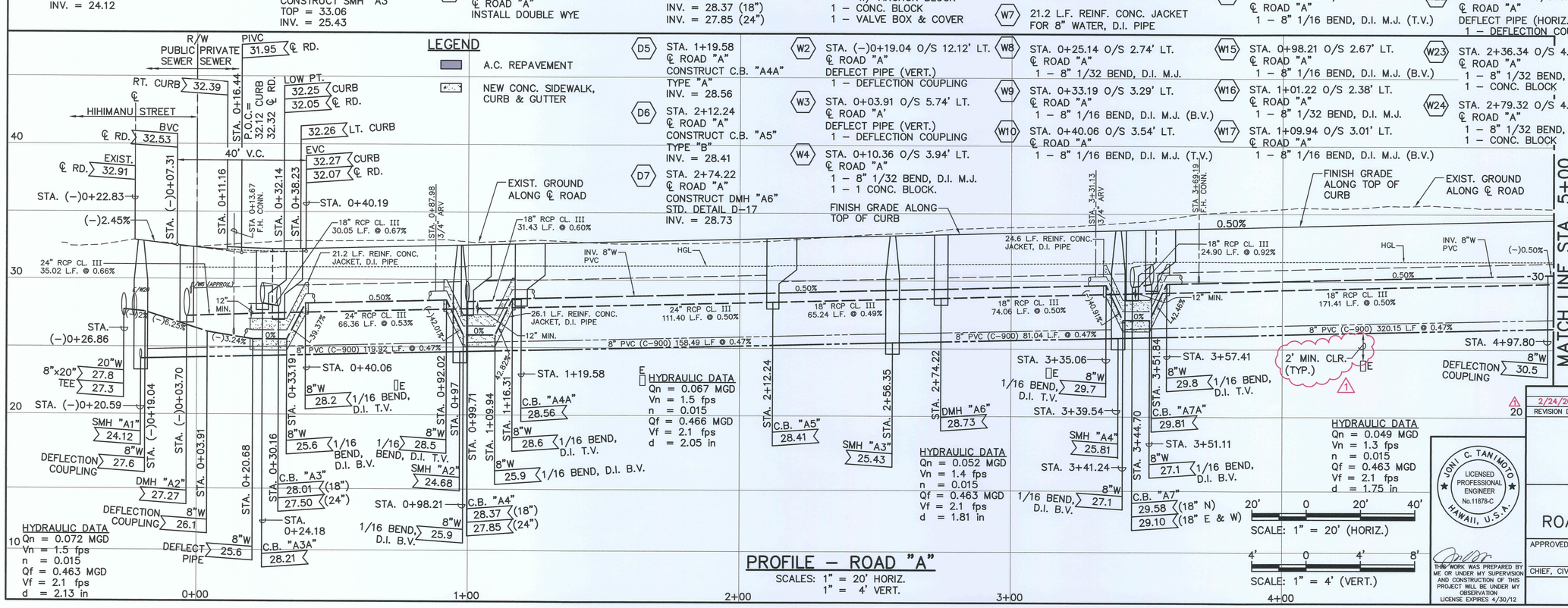
LEGEND

A.C. REPAVEMENT

NEW CONC. SIDEWALK, CURB & GUTTER

PROFILE − ROAD "A"

SCALES: 1" = 20' HORIZ.
1" = 4' VERT.



NOTES:

1. ALL WATER PIPE FITTINGS AND ALL WATER PIPE SECTIONS REQUIRING REINFORCED CONCRETE JACKETING SHALL BE DUCTILE IRON PIPE CLASS 52.
2. FOR DRIVEWAY TIES, SEE SHEET 19
   1 1/2" DOUBLE SERVICE WATER LATERAL W/ TYPE C−1 CONNECTION FOR TWO 3/4" METERS
   1" SINGLE SERVICE WATER LATERAL W/ TYPE A CONNECTION FOR ONE 3/4" METER
3. A.C. REPAVEMENT (EXIST. STREET IMPROVEMENTS)

APPROVED:

CHIEF, WASTEWATER BRANCH, DPP — DATE
(FOR CONFORMANCE WITH CITY STANDARDS AND WORK IN CITY R/W ONLY)

CHIEF, TRAFFIC REVIEW BRANCH, DPP — DATE

MANAGER AND CHIEF ENGINEER, BWS — DATE
(FOR WORK AFFECTING BWS FACILITIES IN CITY/STATE R/W AND BWS EASEMENTS ONLY)
CITY & COUNTY OF HONOLULU

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
2/24/2012	LABEL ELEC. VERT. CLR.	A&A	

DEPARTMENT OF HAWAIIAN HOME LANDS

KAKAINA SUBDIVISION

TAX MAP KEY: 4−1−08: 10, 81, 91 & 92

WAIMANALO, KOOLAUPOKO, OAHU, HAWAII

PLAN & PROFILE ROAD "A" − STA. 0+00 TO 5+00

APPROVED:

CHIEF, CIVIL ENGINEERING BRANCH, DPP — DATE

AKINAKA & ASSOCIATES, LTD.
CONSULTING ENGINEERS

JONI C. TANIMOTO — LICENSED PROFESSIONAL ENGINEER No.11878-C — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION
LICENSE EXPIRES 4/30/12

SHEET 20 OF 87 SHEETS

FILE	POCKET	FOLDER	NO.

Last Save by: MSM
Last Saved: 2/24/2012
Plotted on: 2/27/2012
G:\DHHL06−02 Kumuhau & Kakaina Subd\ACAD\KAKAINA\Addendum #1\DHHL0602KA13.dwg

ROAD NOTES

(R1) P.I. STA. 6+92.84 ℄ ROAD "A" = STA. 1+22.36 ℄ ROAD "B" INSTALL ST. SURVEY MON.

(R2) P.I. STA. 10+02.12 ℄ ROAD "A" INSTALL ST. SURVEY MON.

(R3) STA. 10+02.12 O/S 20' RT. ℄ ROAD "A" INSTALL ST. SURVEY MON.

(R4) 6'x6' CONC. PAD WITH TYPE III (16) CBU SEE DETAIL 1/45

SEWER NOTES

(S1) STA. 6+59.94 O/S 5' RT. ℄ ROAD "A" CONSTRUCT SMH "A5" TOP = 35.21 INV. = 27.31

(S2) STA. 8+71.91 O/S 5' RT. ℄ ROAD "A" INSTALL DOUBLE WYE

(S3) 7 L.F. PLAIN CONC. JACKET FOR 6" SEWER

(S4) STA. 10+09.94 O/S 5' RT. ℄ ROAD "A" CONSTRUCT SHALLOW DROP (EPOXY LINED) SMH "A6" TOP = 39.86 INV. = 31.82 (6" LOTS 23 & 24) INV. = 30.66 (6" LOT 22) INV. = 29.50 (6" LOT 21) INV. = 28.96 (8")

(S5) 7 L.F. REINF. CONC. JACKET FOR 8" SEWER

DRAIN NOTES

(D1) STA. 5+15.83 ℄ ROAD "A" CONSTRUCT C.B. "A8" TYPE "B" INV. = 30.46 (18" IN) INV. = 29.96 (18" OUT)

(D2) STA. 5+22.94 ℄ ROAD "A" CONSTRUCT C.B. "A8A" TYPE "A" INV. = 30.68

(D3) STA. 7+02.28 O/S 10.94' LT. ℄ ROAD "A" CONSTRUCT DMH "B9" STD. DETAIL D-18 TOP = 30.85 (18" S & W) INV. = 29.34 (18" OUT)

(D4) STA. 7+28.06 ℄ ROAD "A" CONSTRUCT C.B. "B10" TYPE "B" INV. = 31.05

(D5) STA. 7+32.70 ℄ ROAD "A" CONSTRUCT C.B. "B10A" TYPE "A" INV. = 31.73

(D6) STA. 8+22.16 ℄ ROAD "A" CONSTRUCT C.B. "B11" TYPE "B" INV. = 32.18

(D7) STA. 9+47.99 ℄ ROAD "A" CONSTRUCT C.B. "B12" TYPE "B" INV. = 34.09

(D8) STA. 9+54.15 ℄ ROAD "A" CONSTRUCT C.B. "B13" TYPE "A" INV. = 34.63

WATER NOTES

(W1) STA. 5+00.85 O/S 3.00' LT. ℄ ROAD "A" 1 – 3/4" ARV (APCO) (W.P. = 86.4 P.S.I.) 1 – ARV BOX 1 – 8" BOSSED TEE, D.I. TAPPED FOR 3/4" C.C.T. SEE B.W.S. STD. DETAIL V2

(W2) STA. 5+09.96 O/S 3.00' LT. ℄ ROAD "A" 1 – 8" 1/8 BEND, D.I. M.J. (T.V.)

(W3) STA. 5+12.41 O/S 3.00' LT. ℄ ROAD "A" 1 – 8" 1/8 BEND, D.I. M.J. (B.V.)

(W4) 20.9 L.F. REINF. CONC. JACKET FOR 8" WATER, D.I. PIPE

(W5) STA. 5+22.41 O/S 3.00' LT. ℄ ROAD "A" 1 – 8" 1/16 BEND, D.I. M.J. (B.V.)

(W6) STA. 5+28.83 O/S 3.00' LT. ℄ ROAD "A" 1 – 8" 1/16 BEND, D.I. M.J. (T.V.)

(W7) STA. 6+57.73 O/S 3.00' LT. ℄ ROAD "A" DEFLECT PIPE (VERT.) 1 – DEFLECTION COUPLING

(W8) STA. 6+84.18 O/S 3.00' LT. ℄ ROAD "A" DEFLECT PIPE (VERT.) 1 – DEFLECTION COUPLING

(W9) STA. 6+95.45 O/S 3.00' LT. ℄ ROAD "A" 1 – 8" CROSS 4 – 8" G.V., C.L. 150 M.J. 4 – VALVE BOXES

(W10) STA. 7+11.95 O/S 3.00' LT. ℄ ROAD "A" 1 – 3/4" ARV (APCO) (W.P. = 85.8 P.S.I.) 1 – ARV BOX 1 – 8" BOSSED TEE, D.I. TAPPED FOR 3/4" C.C.T. SEE B.W.S. STD. DETAIL V2

(W11) STA. 7+15.95 O/S 3.00' LT. ℄ ROAD "A" 1 – 8" 1/16 BEND, D.I. M.J. (T.V.)

(W12) 26.4 L.F. REINF. CONC. JACKET FOR 8" WATER, D.I. PIPE

(W13) STA. 7+22.97 O/S 3.00' LT. ℄ ROAD "A" 1 – 8" 1/16 BEND, D.I. M.J. (B.V.)

(W14) STA. 7+33.95 O/S 3.00' LT. ℄ ROAD "A" 1 – 8" 1/16 BEND, D.I. M.J. (B.V.)

(W15) STA. 7+40.32 O/S 3.00' LT. ℄ ROAD "A" 1 – 8" 1/16 BEND, D.I. M.J. (T.V.)

(W16) STA. 7+68.50 O/S 3.00' LT. ℄ ROAD "A" DEFLECT PIPE (VERT.) 1 – DEFLECTION COUPLING

(W17) STA. 8+66.17 O/S 3.00' LT. ℄ ROAD "A" DEFLECT PIPE (VERT.) 1 – DEFLECTION COUPLING

(W18) STA. 9+29.11 O/S 3.00' LT. ℄ ROAD "A" INSTALL F.H. CONN. 1 – 8" x 6" TEE, D.I. M.J. 1 – 6" G.V. CL. 150 W/ ANCHOR BLOCK 1 – C.I. VALVE BOX & COVER 1 – 6" HYDRANT ELBOW, M.J. x F.E. 1 – F.H. (HT. = 4.0') 1 – F.H. EXTENSION PIECE 1 – F.H. MARKER 17 L.F. 6" PVC PIPE, CL. 150 2 – CONC. BLOCKS 1 – 8" x 4" REDUCER, D.I. M.J. x P.E. SEE F.H. PROFILE, SHT. 41

(W19) STA. 9+33.68 O/S 3.00' LT. ℄ ROAD "A" 1 – 3/4" ARV (APCO) (W.P. = 84.6 P.S.I.) 1 – ARV BOX 1 – 4" BOSSED TEE, D.I. TAPPED FOR 3/4" C.C.T. SEE B.W.S. STD. DETAIL V2

(W20) 27.3 L.F. REINF. CONC. JACKET FOR 4" WATER, D.I. PIPE

(W21) STA. 9+37.68 O/S 3.00' LT. ℄ ROAD "A" 1 – 4" 1/16 BEND, D.I. M.J. (T.V.)

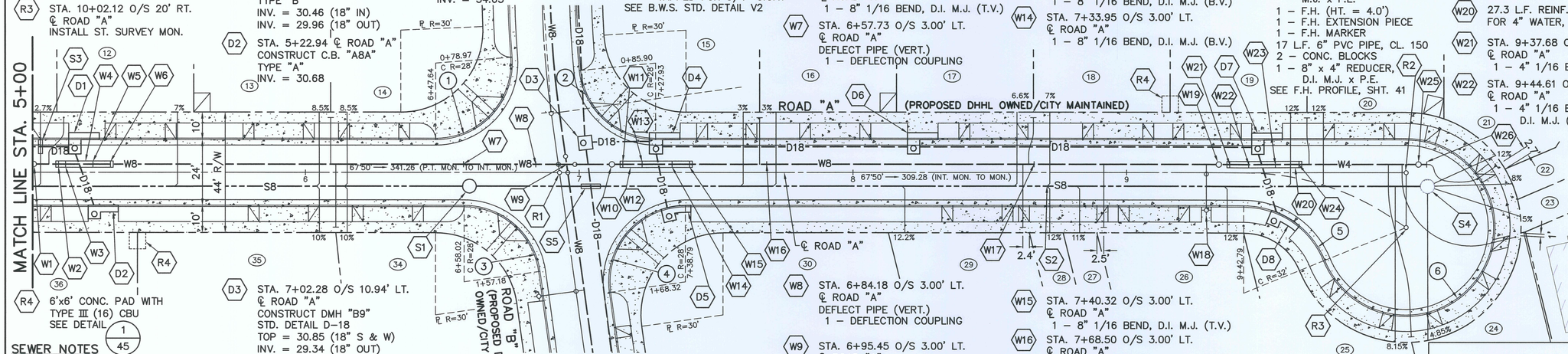
(W22) STA. 9+44.61 O/S 3.00' LT. ℄ ROAD "A" 1 – 4" 1/16 BEND, D.I. M.J. (B.V.)

(W23) STA. 9+54.36 O/S 3.00' LT. ℄ ROAD "A" 1 – 4" 1/16 BEND, D.I. M.J. (B.V.)

(W24) STA. 9+62.98 O/S 3.00' LT. ℄ ROAD "A" 1 – 4" 1/16 BEND, D.I. M.J. (T.V.)

(W25) STA. 10+06.62 O/S 3.00' LT. ℄ ROAD "A" 1 – 3/4" ARV (APCO) (W.P. = 84.6 P.S.I.) 1 – ARV BOX 1 – 4" BOSSED TEE, D.I. TAPPED FOR 3/4" C.C.T. SEE B.W.S. STD. DETAIL V2

(W26) STA. 10+09.62 O/S 3.00' LT. ℄ ROAD "A" END 4" WATER 1 – 4" CAP TAPPED FOR 2 1/2" I.P.T. 1 – CONC. BLOCK 1 – 2 1/2" BRASS C.O. ASSEMBLY 1 – VALVE BOX PROVIDE UNIONS & ADAPTERS AS REQUIRED FOR CONNECTION TO LATERAL



PLAN – ROAD "A"

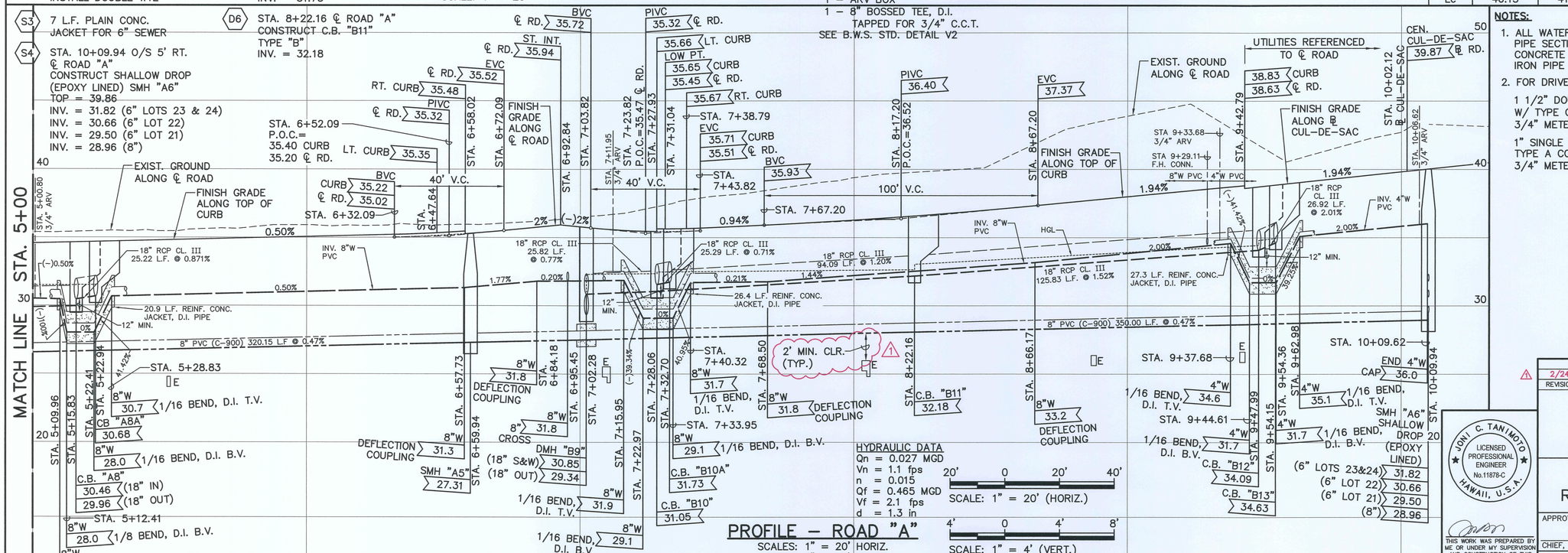
SCALE: 1" = 20'

LEGEND

NEW CONC. SIDEWALK, CURB & GUTTER

CURVE DATA

CURVE	(1)	(2)	(3)	(4)	(5)	(6)
△	94°23'14"	84°28'38"	82°04'30"	97°55'30"	67°58'32"	247°58'32"
△/2	47°11'37"	42°14'19"	41°02'15"	48°57'45"	33°59'16"	123°59'16"
R	28.00	28.00	28.00	28.00	32.00	32.00
T	30.23	25.42	24.37	32.17	21.57	–
C	41.08	37.64	36.77	42.24	35.78	53.07
Lc	46.13	41.28	40.11	47.86	37.96	138.50



HYDRAULIC DATA

Qn = 0.027 MGD
Vn = 1.1 fps
n = 0.015
Qf = 0.465 MGD
Vf = 2.1 fps
d = 1.3 in

SCALE: 1" = 20' (HORIZ.)

SCALE: 1" = 4' (VERT.)

PROFILE – ROAD "A"

SCALES: 1" = 20' HORIZ.
1" = 4' VERT.

NOTES:

1. ALL WATER PIPE FITTINGS AND ALL WATER PIPE SECTIONS REQUIRING REINFORCED CONCRETE JACKETING SHALL BE DUCTILE IRON PIPE CLASS 52.
2. FOR DRIVEWAY TIES, SEE SHEET 19.

1 1/2" DOUBLE SERVICE WATER LATERAL W/ TYPE C-1 CONNECTION FOR TWO 3/4" METERS

1" SINGLE SERVICE WATER LATERAL W/ TYPE A CONNECTION FOR ONE 3/4" METER

APPROVED:

CHIEF, WASTEWATER BRANCH, DPP — DATE
(FOR CONFORMANCE WITH CITY STANDARDS AND WORK IN CITY R/W ONLY)

CHIEF, TRAFFIC REVIEW BRANCH, DPP — DATE

MANAGER AND CHIEF ENGINEER, BWS — DATE
(FOR WORK AFFECTING BWS FACILITIES IN CITY/STATE R/W AND BWS EASEMENTS ONLY)
CITY & COUNTY OF HONOLULU

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
2/24/2012	LABEL ELEC. VERT. CLR.	A&A	

DEPARTMENT OF HAWAIIAN HOME LANDS

KAKAINA SUBDIVISION

TAX MAP KEY: 4–1–08: 10, 81, 91 & 92

WAIMANALO, KOOLAUPOKO, OAHU, HAWAII

PLAN & PROFILE ROAD "A" – STA. 5+00 TO END

APPROVED:

CHIEF, CIVIL ENGINEERING BRANCH, DPP — DATE

AKINAKA & ASSOCIATES, LTD.
CONSULTING ENGINEERS

JONI C. TANIMOTO — LICENSED PROFESSIONAL ENGINEER No.11878-C — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION
LICENSE EXPIRES 4/30/12

FILE	POCKET	FOLDER	NO.

SHEET 21 OF 87 SHEETS

Last Save by: MSM
Last Saved: 2/24/2012
Plotted on: 2/27/2012
G:\DHHL06-02 Kumuhau & Kakaina Subd\ACAD\KAKAINA\Addendum #1\DHHL0602KA13A.dwg

SEWER NOTES

S1 STA. 2+08.47 O/S 6' RT.
℄ ROAD "B"
CONSTRUCT SMH "B2"
TOP = 34.92
INV. = 26.78 (6")
INV. = 26.58 (8")

S2 STA. 3+48.78 O/S 11' RT.
℄ ROAD "B"
CONSTRUCT SMH "B1"
OVER EXIST. 8" SEWER
CHANNELIZE BASE OF NEW SMH
TOP = 29.40
INV. = 23.37 (EXIST. & NEW 8", CONTRACTOR TO FIELD VERIFY)

S3 7 L.F. PLAIN CONC. JACKET FOR 6" SEWER

S4 8 L.F. REINF. CONC. JACKET FOR 6" EXIST. SEWER

S5 5 L.F. REINF. CONC. JACKET FOR EXIST. 8" SEWER

S6 REINF. CONC. JACKET SEE SHEET 25 ⚠1

DRAIN NOTES

D1 STA. (–)0+15.45 O/S 9.67' LT.
℄ ROAD "B"
CONSTRUCT DMH "B9A"
STD. DETAIL D–18
TOP = 38.90
INV. = 34.10 (18" IN)
INV. = 32.22 (18" OUT)

D2 DMH "B9"
STD. DETAIL D–18
SEE SHT. 21

D3 STA. 2+17.45 ℄ ROAD "B"
CONSTRUCT SPECIAL C.B. "B8"
TYPE "B"
INV. = 28.78
SEE DETAIL, SHT. 38

D4 STA. 3+45.27 ℄ ROAD "B"
CONSTRUCT C.B. "B7"
TYPE "B"
INV. = 26.00 (18")

D5 STA. 3+16.64 ℄ ROAD "B"
CONSTRUCT C.B. "B6B"
TYPE "A"
INV. = 27.10

D6 D.I. "B7A" SEE SHT. 27

ROAD NOTES

R1 P.I. STA. (–)0+40.00 ℄ ROAD "B" = STA. 45+72.00 ℄ KAKAINA ST. INSTALL ST. SURVEY MON.

R2 P.I. STA. 0+00 ℄ ROAD "B" INSTALL ℄ MON.

R3 P.C. STA. 0+52.17 ℄ ROAD "B" INSTALL ST. SURVEY MON.

R4 P.T. STA. 1+00.58 ℄ ROAD "B" INSTALL ST. SURVEY MON.

R5 P.I. STA. 1+22.36 ℄ ROAD "B" = STA. 6+92.84 ℄ ROAD "A" ST. SURVEY MON. SEE SHEET 21

R6 P.C. STA. 2+22.66 ℄ ROAD "B" INSTALL ST. SURVEY MON.

R7 P.T. STA. 3+22.22 ℄ ROAD "B" INSTALL ST. SURVEY MON.

R8 P.I. STA. 3+42.85 ℄ ROAD "B" INSTALL ℄ MON.

R9 P.I. STA. 3+92.15 ℄ ROAD "B" = STA. 16+21.40 ℄ POALIMA ST.

R10 P.I. STA. 5+07.37 ℄ ROAD "B"

R11 STA. 3+23.53 ℄ ROAD "B" END CONC. GUTTER PROVIDE 4' A.C. TRANSITION SEE SHT. 12 FOR SPOT ELEV.

R12 STA. 3+28.80 O/S LT.
℄ ROAD "B"
BEGIN TRANSITION TO EXIST. SUPERELEVATION, SEE SHT. 12

R13 END CONC. SIDEWALK AT EXIST. WALL
SEE SHT. 12 FOR SPOT GRADES

R14 STA. 3+51.19 ℄ ROAD "B"
END CONC. CURB & GUTTER
BEGIN 4' DROP CURB & A.C. TRANSITION
SEE SHT. 12 FOR SPOT GRADES

R15 STA. 3+77.33 ℄ ROAD "B"
END NEW A.C. PAVEMENT
SEE SHT. 12
PROVIDE SMOOTH RIDING CONN.
SEE DETAIL, SHT. 44

DRAIN NOTES (CON'T.)

D7 CONCRETE DITCH "E" SEE SHEET 27

D8 STA. 3+71.60 O/S 4.96' LT.
℄ ROAD "B"
CONSTRUCT DMH "B6"
STD. DETAIL D–18
TOP = 28.90
INV. = 24.93 (18" S)
INV. = 24.73 (18" E & 3'x1.25' N)

D9 C.B. "B6A" SEE SHT. 25

D10 STA. 4+86.19 O/S 5.13' LT.
℄ ROAD "B"
CONSTRUCT DMH "B5"
STD. DETAIL D–18
TOP = 25.71 (EXIST.)
INV. = 22.27

D11 STA. 4+92.85
O/S 35.52 LT.
℄ ROAD "B"
CONSTRUCT D.I. "B5A"
TOP = 26.34 (EXIST.)
INV. = 22.45
SEE DETAIL, SHT. 40
FOR PROFILE, SEE SHT. 26

D12 STA. 4+91.54
℄ ROAD "B"
CONSTRUCT C.B. "B4"
TYPE "B"
INV. = 21.90
SEE DETAIL, SHT. 35

D13 18" DRAIN LINE (BRANCH DMH "B6") SEE PROFILE, SHT. 26

WATER NOTES

W1 STA. (–)0+53.70
O/S 30.96' RT. ℄ ROAD "B"
CONN. NEW W8 TO EXIST. W12 (CONTRACTOR TO FIELD VERIFY)
INSTALL:
1 – 12"x8" TAPPING SLEEVE & VALVE, C.L. 150
1 – CONC. BLOCK, W/STRUCTURAL STRUTS
1 – VALVE BOX
1 – 8" SLEEVE, 12" LONG
8± L.F. 8" PVC PIPE, C.L. 150
TEMP FOR TESTING:
1 – 8" CAP TAPPED FOR 2 1/2" I.P.T.
1 – 2 1/2" CLEANOUT
1 – CONC. BLOCK

W2 STA. (–)0+24.01 O/S 3.00' LT.
℄ ROAD "B"
1 – 8" 1/8 BEND, D.I. M.J.
1 – CONC. BLOCK

W3 STA. 0+08.90 O/S 3.00' LT.
℄ ROAD "B"
DEFLECT PIPE (VERT.)
1 – DEFLECTION COUPLING

W4 STA. 0+52.17 O/S 3.00' LT.
℄ ROAD "B"
BEGIN PIPE DEFLECTION
1 – DEFLECTION COUPLING

W5 STA. 1+00.58 O/S 3.00' LT.
℄ ROAD "B"
END PIPE DEFLECTION
1 – DEFLECTION COUPLING

W6 STA. 1+19.75 O/S 3.00' LT.
℄ ROAD "B"
8" CROSS
SEE SHT. 21

W7 STA. 1+66.19 O/S 3.00' LT.
℄ ROAD "B"
INSTALL F.H. CONN.
1 – 8" x 6" TEE, D.I. M.J.
1 – 6" G.V. CL. 150 W/ ANCHOR BLOCK
1 – C.I. VALVE BOX & COVER
1 – 6" HYDRANT ELBOW, M.J. x F.E.
1 – F.H. (HT. = 4.5')
1 – F.H. EXTENSION PIECE
1 – F.H. MARKER
17 L.F. 6" PVC PIPE, CL. 150
2 – CONC. BLOCKS
SEE F.H. PROFILE, SHT. 41

W8 STA. 1+95.83 O/S 3.00' LT.
℄ ROAD "B"
DEFLECT PIPE (VERT.)
1 – DEFLECTION COUPLING

W9 STA. 2+18.84 O/S 3.00' LT.
℄ ROAD "B"
DEFLECT PIPE (HORIZ. & VERT.)
1 – DEFLECTION COUPLING

W10 STA. 2+37.99 O/S 3.63' LT.
℄ ROAD "B"
DEFLECT PIPE (HORIZ.)
1 – DEFLECTION COUPLING

W11 STA. 2+68.20 O/S 4.15' LT.
℄ ROAD "B"
DEFLECT PIPE (HORIZ.)
1 – DEFLECTION COUPLING

W12 STA. 3+28.81 O/S 1.87' LT.
℄ ROAD "B"
DEFLECT PIPE (HORIZ.)
1 – DEFLECTION COUPLING

W13 STA. 3+56.64 O/S 0.69' LT.
℄ ROAD "B"
1 – 8" 1/32 BEND, D.I. M.J.
1 – CONC. BLOCK

W14 STA. 3+61.27 O/S 0.43' RT.
℄ ROAD "B"
1 – 8" 1/8 BEND, D.I. M.J.
1 – CONC. BLOCK

W15 STA. 3+63.38 O/S 3.91' RT.
℄ ROAD "B"
1 – 8" 1/8 BEND, D.I. M.J. (T.V.)

W16 STA. 3+64.92 O/S 6.43' RT.
℄ ROAD "B"
1 – 8" 1/16 BEND, D.I. M.J. (B.V.)

W17 STA. 3+69.08 O/S 13.27' RT.
℄ ROAD "B"
1 – 8" 1/16 BEND, D.I. M.J. (B.V.)

W18 STA. 3+70.30 O/S 15.27' RT.
℄ ROAD "B"
1 – 8" 1/16 BEND, D.I. M.J. (T.V.)

W19 15.3 L.F. REINF. CONC. JACKET FOR 8" WATER, D.I. PIPE

W20 STA. 3+74.67 O/S 22.44' RT.
℄ ROAD "B"
CONN. NEW W8 TO EXIST. W6 (CONTRACTOR TO FIELD VERIFY)
INSTALL:
1 – 6" TAPPING SLEEVE & VALVE, C.L. 150
1 – CONC. BLOCK W/ STRUCTURAL STRUTS
1 – VALVE BOX W/ CONC. COLLAR
1 – 6" SLEEVE, 12" LONG
1 – 8"x6" REDUCER, F.E.xM.J.
TEMP FOR TESTING:
1 – 8" CAP TAPPED FOR 2 1/2" I.P.T.
1 – 2 1/2" CLEANOUT
1 – CONC. BLOCK

W21 ADJUST EXIST. WATER LAT.

W22 ADJUST E/W8 SEE POALIMA PROFILE, SHT. 26

LEGEND

A.C. REPAVEMENT

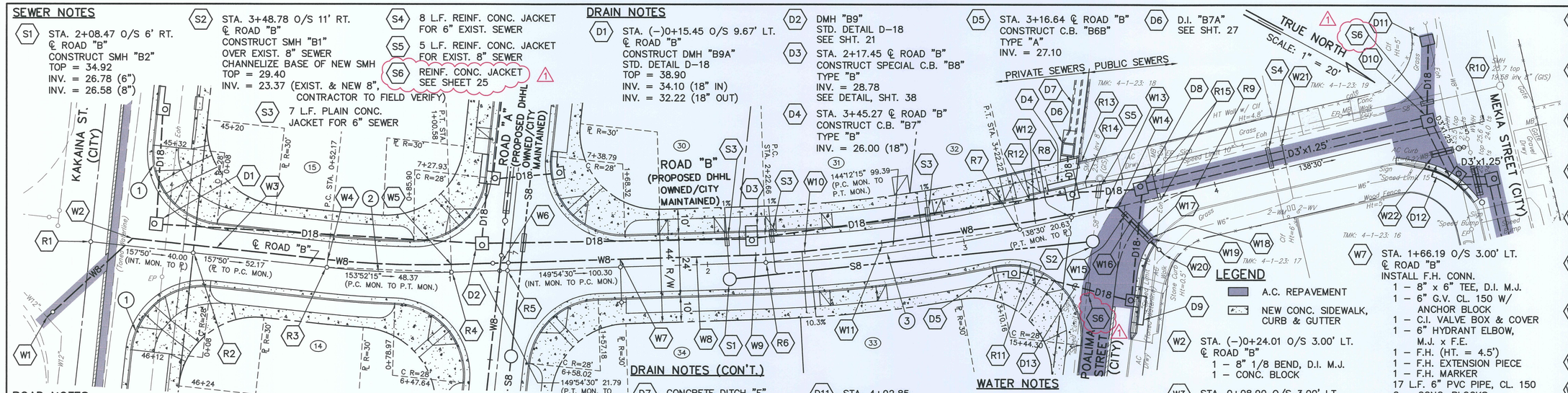
NEW CONC. SIDEWALK, CURB & GUTTER

NOTES:

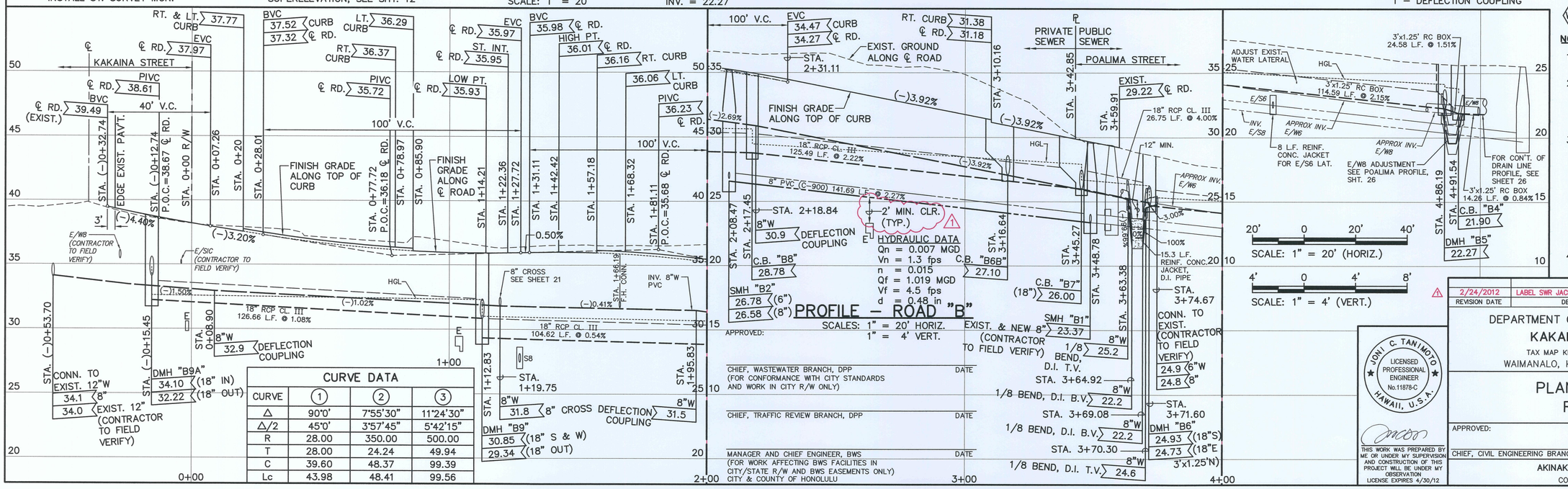
1. FOR ROAD IMPROVEMENTS TO POALIMA STREET, SEE SHT. 25
2. ALL WATER PIPE FITTINGS AND ALL WATER PIPE SECTIONS REQUIRING REINFORCED CONCRETE JACKETING SHALL BE DUCTILE IRON PIPE CLASS 52.
3. FOR DRIVEWAY TIES, SEE SHEET 19

   1 1/2" DOUBLE SERVICE WATER LATERAL W/ TYPE C–1 CONNECTION FOR TWO 3/4" METERS ⟼

   1" SINGLE SERVICE WATER LATERAL W/ TYPE A CONNECTION FOR ONE 3/4" METER ⟼
4. AC REPAVEMENT ▭ (EXIST. STREET IMPROVEMENTS)



CURVE DATA			
CURVE	①	②	③
△	90°0'	7°55'30"	11°24'30"
△/2	45°0'	3°57'45"	5°42'15"
R	28.00	350.00	500.00
T	28.00	24.24	49.94
C	39.60	48.37	99.39
Lc	43.98	48.41	99.56



REVISION DATE	DESCRIPTION	MADE BY	APPROVED
2/24/2012	LABEL SWR JACKET & ELEC. VERT. CLR.	A&A	

DEPARTMENT OF HAWAIIAN HOME LANDS

KAKAINA SUBDIVISION

TAX MAP KEY: 4–1–08: 10, 81, 91 & 92

WAIMANALO, KOOLAUPOKO, OAHU, HAWAII

PLAN & PROFILE
ROAD "B"

APPROVED:

CHIEF, CIVIL ENGINEERING BRANCH, DPP DATE

AKINAKA & ASSOCIATES, LTD.
CONSULTING ENGINEERS

JONI C. TANIMOTO
LICENSED PROFESSIONAL ENGINEER
No.11878-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION
LICENSE EXPIRES 4/30/12

APPROVED:

CHIEF, WASTEWATER BRANCH, DPP DATE
(FOR CONFORMANCE WITH CITY STANDARDS AND WORK IN CITY R/W ONLY)

CHIEF, TRAFFIC REVIEW BRANCH, DPP DATE

MANAGER AND CHIEF ENGINEER, BWS DATE
(FOR WORK AFFECTING BWS FACILITIES IN CITY/STATE R/W AND BWS EASEMENTS ONLY)
CITY & COUNTY OF HONOLULU

FILE	POCKET	FOLDER	NO.

Last Save by: MSM
Last Saved: 2/24/2012
Plotted on: 2/27/2012
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ROAD NOTES

(R1) TR MEK–2 (MAGNAIL) ELEV. = 25.22

(R2) TR HU–4 (MAGNAIL) ELEV. = 28.58

(R3) TR MEK–1 (MAGNAIL) ELEV. = 23.11

(R4) TIE: TR MEK–2 TO (D6) 135°03'01"→ 8.46

(R5) TIE: TR MEK–2 TO (D7) 226°21'28"→ 191.78

(R6) TIE: TR MEK–1 TO (D8) 50°45'16"→ 108.25

(R7) TIE: TR MEK–1 TO (D10) 59°48'37"← 110.35

(R8) P.I. STA. 16+00.54 ℄ POALIMA ST. = STA. 3+64.14 ℄ ROAD "B"

(R9) PROVIDE SMOOTH–RIDING CONNECTION SEE DETAIL, SHT. 44

(R10) STA. 14+96.60 ℄ POALIMA ST. END NEW A.C. PAVEMENT, CURB & GUTTER. PROVIDE SMOOTH RIDING CONNECTION. SEE DETAIL SHEET 44

(R11) CONSTRUCT STD. CONC. CURB

(R12) STA. 15+00.60 ℄ POALIMA ST. BEGIN 4' DROP CURB & END NEW SIDEWALK

(R13) P.I. STA. 3+92.15 ℄ ROAD "B" = P.T. STA. 16+21.40 ℄ POALIMA ST.

(R14) END A.C. PAVEMENT SEE SHEET 22

DRAIN NOTES

(D1) DMH "B6" SEE SHT. 22

(D2) STA. 15+63.88 ℄ POALIMA ST. CONSTRUCT C.B. "B6A" TYPE "B" INV. = 24.95 SEE DETAIL 1/34

(D3) DMH "B5" SEE SHT. 22

(D4) D.I. "B5A" SEE SHT. 22

(D5) C.B. "B4" SEE SHT. 22

(D6) CONSTRUCT DMH "B3" STD. DETAIL D–18 TOP = 25.40 (EXIST.) INV. = 21.78 FOR PROFILE, SEE SHT. 26

(D7) CONSTRUCT DMH "B2" STD. DETAIL D–18 TOP = 23.55 (EXIST.) INV. = 20.16 FOR PROFILE, SEE SHT. 26

(D8) CONSTRUCT DMH "B1" OVER EXIST. 18" DRAIN LINE STD. DETAIL D–18 TOP = 23.07 (EXIST.) INV. = 19.79 (EXIST. 18" IN, CONTRACTOR TO FIELD VERIFY) INV. = 19.51 (3'x1.25' IN) INV. = 19.01 (3'x2' OUT) FOR PROFILE, SEE SHT. 26

(D9) EXIST. D.I. TO REMAIN TOP = 22.5 (EXIST.) INV. = 20.00 (EXIST.)

(D10) DEMOLISH & REMOVE EXIST. D.I. CONSTRUCT D.I. "B0" TOP = 22.18 (EXIST.) INV. = 18.68 SEE DETAIL, SHT. 40 FOR PROFILE, SEE SHT. 26

(D11) CONSTRUCT OUTLET "B" INV. = 18.08 FOR PROFILE, SEE SHT. 26 FOR OUTLET DETAIL, SEE SHT. 28

(D12) DRAIN LINE "B" SEE PROFILE 1/26

(D13) 18" DRAIN LINE (BRANCH DMH "B6") SEE PROFILE 2/26

(D14) 18" DRAIN LINE (BRANCH DMH "B5") SEE PROFILE 3/26

SEWER NOTES

(S1) SMH "B1" SEE SHT. 22

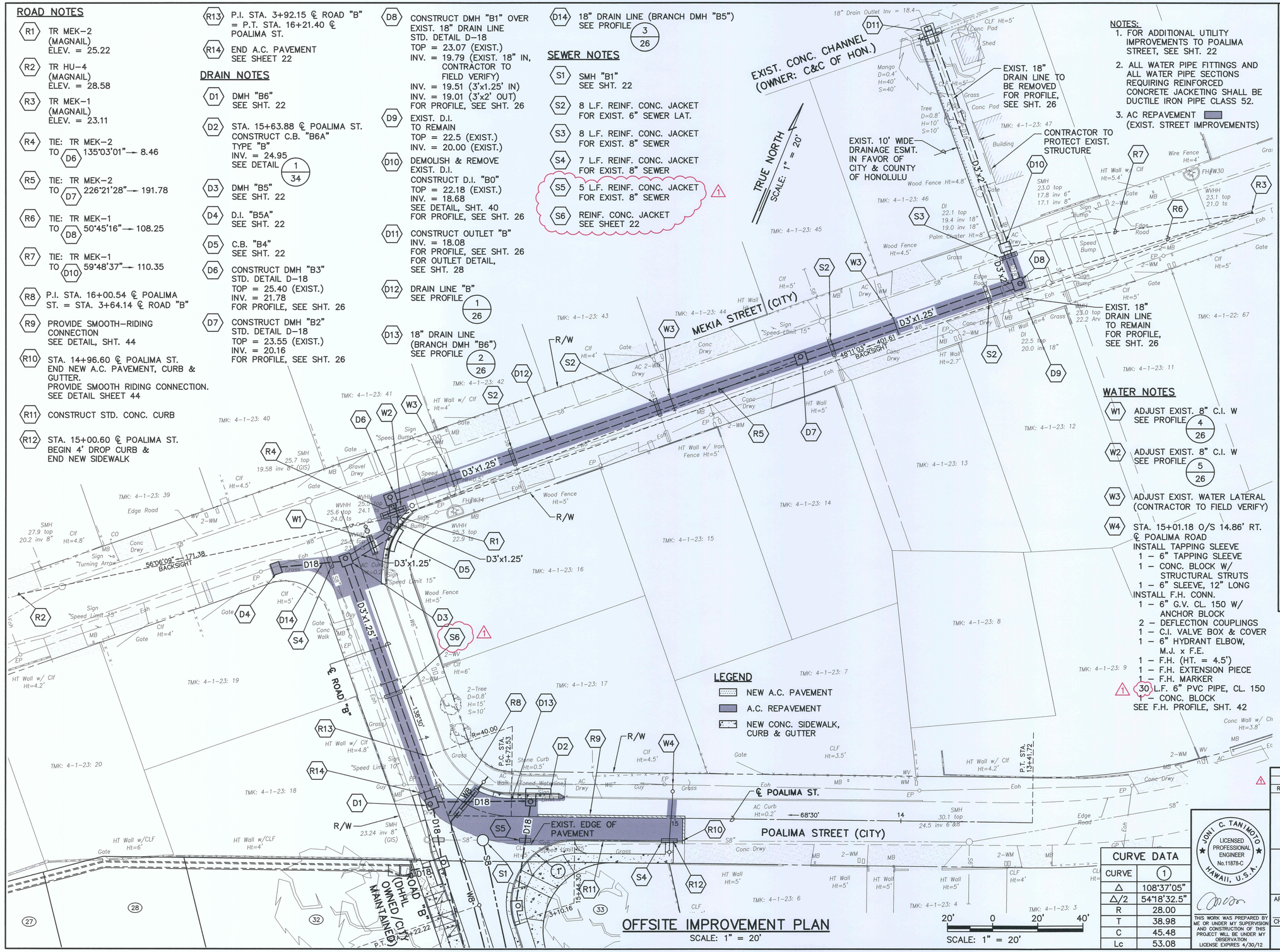
(S2) 8 L.F. REINF. CONC. JACKET FOR EXIST. 6" SEWER LAT.

(S3) 8 L.F. REINF. CONC. JACKET FOR EXIST. 8" SEWER

(S4) 7 L.F. REINF. CONC. JACKET FOR EXIST. 8" SEWER

(S5) 5 L.F. REINF. CONC. JACKET FOR EXIST. 8" SEWER (1)

(S6) REINF. CONC. JACKET SEE SHEET 22



NOTES:

1. FOR ADDITIONAL UTILITY IMPROVEMENTS TO POALIMA STREET, SEE SHT. 22
2. ALL WATER PIPE FITTINGS AND ALL WATER PIPE SECTIONS REQUIRING REINFORCED CONCRETE JACKETING SHALL BE DUCTILE IRON PIPE CLASS 52.
3. AC REPAVEMENT (EXIST. STREET IMPROVEMENTS)

WATER NOTES

(W1) ADJUST EXIST. 8" C.I. W SEE PROFILE 4/26

(W2) ADJUST EXIST. 8" C.I. W SEE PROFILE 5/26

(W3) ADJUST EXIST. WATER LATERAL (CONTRACTOR TO FIELD VERIFY)

(W4) STA. 15+01.18 O/S 14.86' RT. ℄ POALIMA ROAD
INSTALL TAPPING SLEEVE
1 – 6" TAPPING SLEEVE
1 – CONC. BLOCK W/ STRUCTURAL STRUTS
1 – 6" SLEEVE, 12" LONG
INSTALL F.H. CONN.
1 – 6" G.V. CL. 150 W/ ANCHOR BLOCK
2 – DEFLECTION COUPLINGS
1 – C.I. VALVE BOX & COVER
1 – 6" HYDRANT ELBOW, M.J. x F.E.
1 – F.H. (HT. = 4.5')
1 – F.H. EXTENSION PIECE
1 – F.H. MARKER
(1) (30) L.F. 6" PVC PIPE, CL. 150
1 – CONC. BLOCK
SEE F.H. PROFILE, SHT. 42

LEGEND

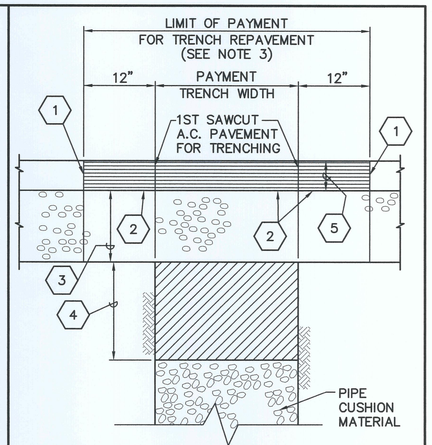
- NEW A.C. PAVEMENT
- A.C. REPAVEMENT
- NEW CONC. SIDEWALK, CURB & GUTTER

OFFSITE IMPROVEMENT PLAN

SCALE: 1" = 20'

SCALE: 1" = 20'

CURVE DATA	
CURVE	(1)
△	108°37'05"
△/2	54°18'32.5"
R	28.00
T	38.98
C	45.48
Lc	53.08



(1) 2ND SAWCUT A.C. PAVEMENT FOR REPAVEMENT AND APPLY TACK COAT

(2) APPLY PRIME COAT (SEE NOTE 2)

(3) 6" MIN. AGGREGATE BASE COURSE

(4) SUBBASE TO MATCH EXISTING

(5) *4" MIN. A.C. PAVEMENT, MIX V

* A.C. PAVEMENT, BASE COURSE AND SUBBASE TO MATCH EXISTING THICKNESS OR THE MINIMUM THICKNESS SHOWN, WHICHEVER IS GREATER

NOTES:

1. PAVEMENT STRUCTURE SHALL BE EQUAL TO OR BETTER THAN EXISTING IN THICKNESS AND QUALITY.
2. FOR ROAD GRADE 0% TO 7.99% AND PRIME COAT IS NOT AVAILABLE, NONE REQUIRED. IF PRIME COAT IS AVAILABLE, USE PRIME COAT.
3. EXCAVATION FOR EXTRA 12" WIDTH OF REPAVING TO BE INCLUDED WITH TRENCH EXCAVATION.

TRENCH REPAVEMENT SECTION WITHIN KAKAINA POALIMA & MEKIA STREET

NOT TO SCALE

APPROVED:

CHIEF, WASTEWATER BRANCH, DPP — DATE
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CHIEF, TRAFFIC REVIEW BRANCH, DPP — DATE

MANAGER AND CHIEF ENGINEER, BWS — DATE
(FOR WORK AFFECTING BWS FACILITIES IN CITY/STATE R/W AND BWS EASEMENTS ONLY)

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
2/24/2012	REVISE POALIMA FH & SWR JACKET	A&A	

DEPARTMENT OF HAWAIIAN HOME LANDS

KAKAINA SUBDIVISION

TAX MAP KEY: 4–1–08: 10, 81, 91 & 92

WAIMANALO, KOOLAUPOKO, OAHU, HAWAII

PLAN – POALIMA & MEKIA STREET

APPROVED:

CHIEF, CIVIL ENGINEERING BRANCH, DPP — DATE

AKINAKA & ASSOCIATES, LTD.

CONSULTING ENGINEERS

JONI C. TANIMOTO LICENSED PROFESSIONAL ENGINEER No.11878-C HAWAII, U.S.A.

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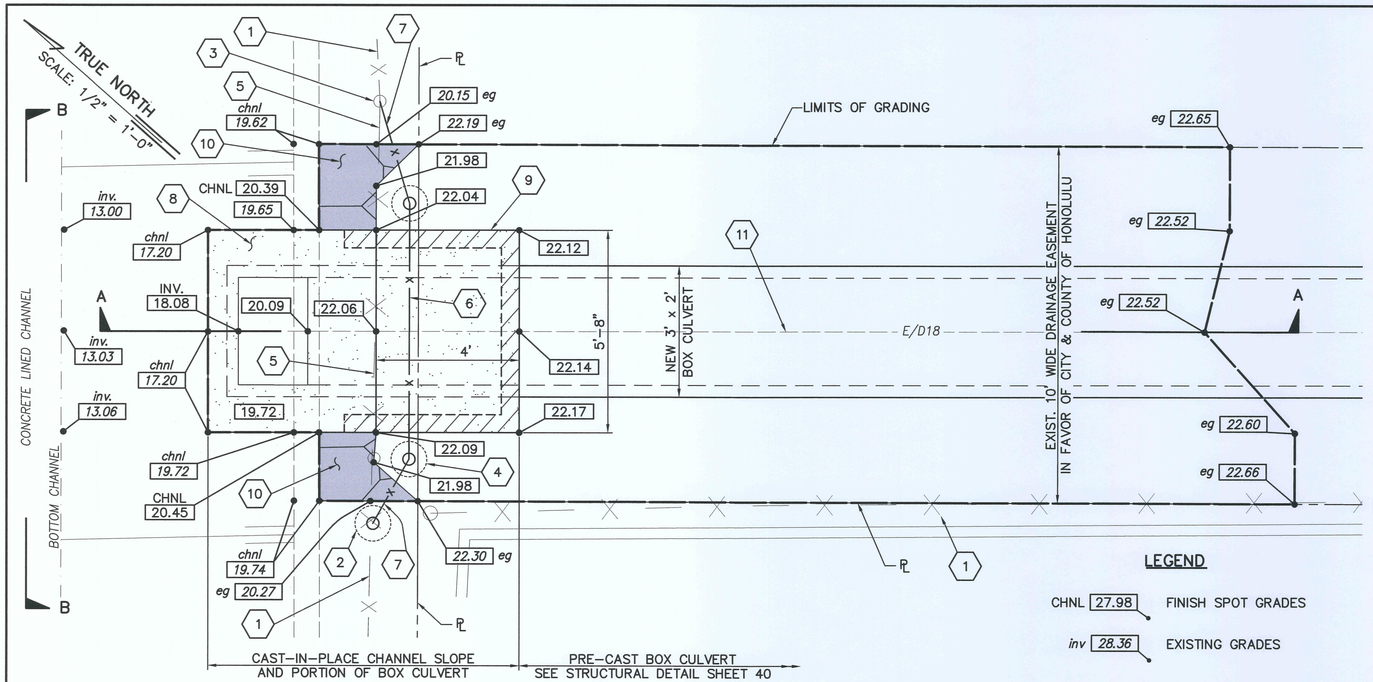


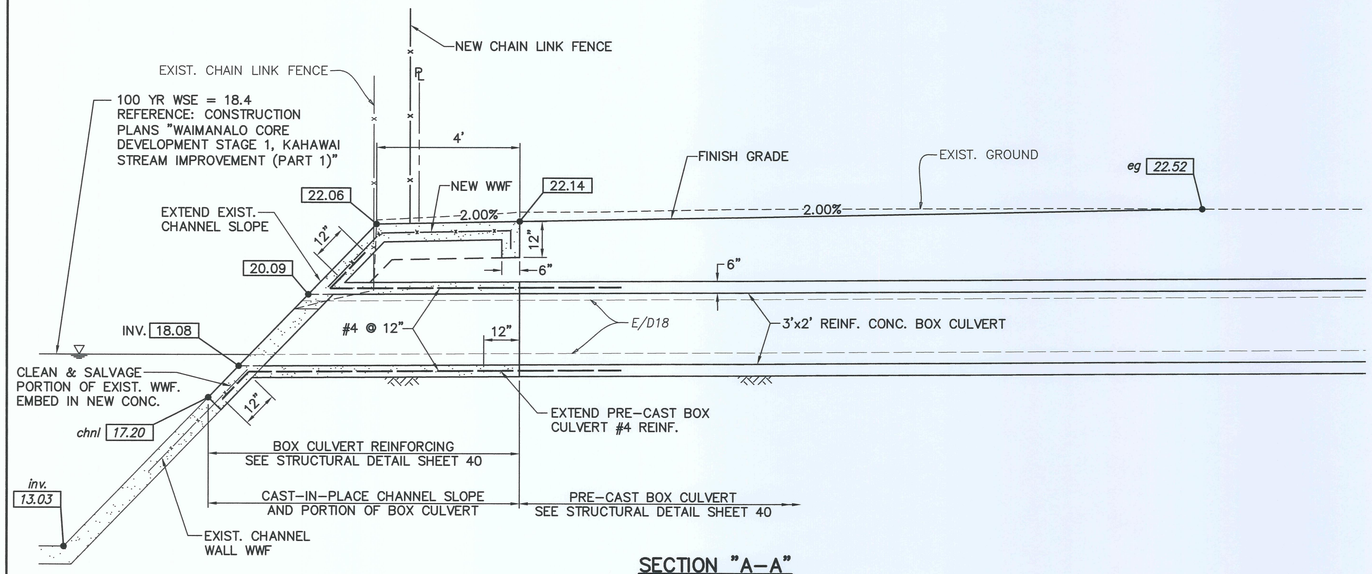
LEGEND

CHNL 27.98 FINISH SPOT GRADES

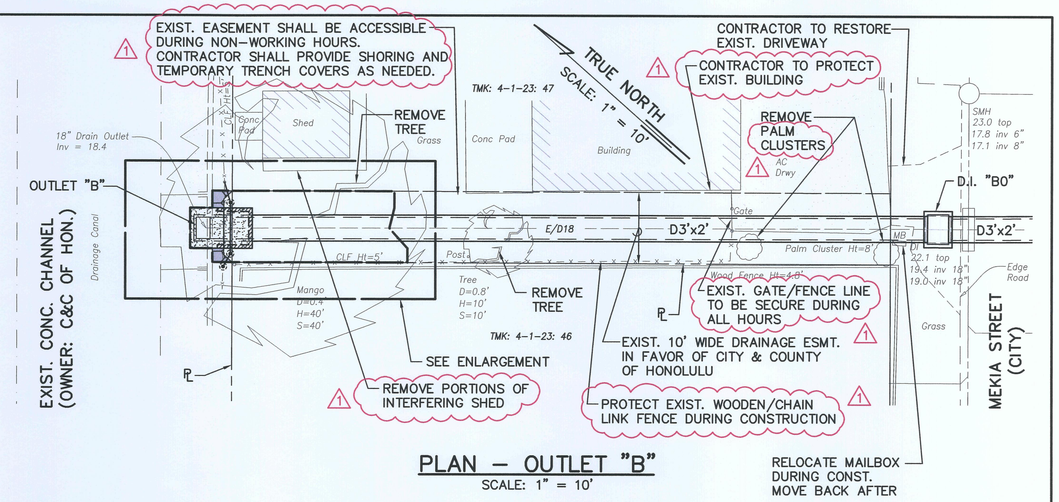
inv 28.36 EXISTING GRADES

1. EXIST. FENCE TO REMAIN
2. NEW FENCE POST. CONNECT NEW & EXIST. FENCE FABRIC TO NEW POST
3. EXIST. FENCE POST TO REMAIN. CONNECT NEW FENCE FABRIC TO EXIST. POST
4. NEW FENCE POST
5. REMOVE EXIST. FENCE WITHIN LIMITS OF NEW FENCE. APPROX. 12 L.F.
6. NEW 6' HIGH CHAIN LINK FENCE PER DPW STD. DET. R-19
7. NEW CHAIN LINK FENCE (MATCH TOP AND BOTTOM OF NEW AND EXIST. FENCE, SEE SECTION "B-B")
8. NEW 6" THICK CLASS "B" CONC. LINED CHANNEL WITH W/6"x6"-W2.9xW2.9 WWF
9. NEW CUT OFF WALL (6" WIDE x 12" DEEP)
10. INSTALL NAG C350 EROSION CONTROL FABRIC (ANCHOR SLOPE PROTECTION PER MANUFACTURER'S RECOMMENDATIONS)
11. REMOVE EXIST. 18" DRAIN LINE

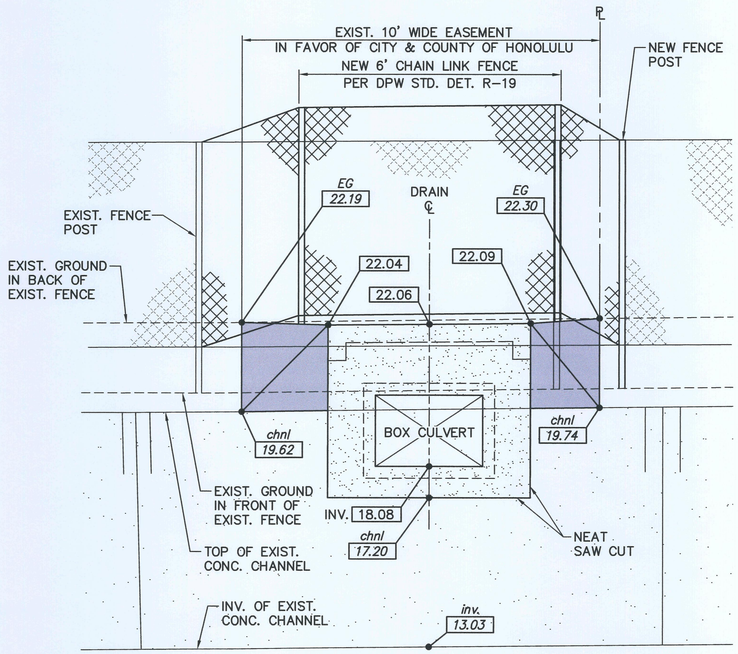
ENLARGEMENT
SCALE: 1/2" = 1'-0"



SECTION "A-A"
SCALE: 1/2" = 1'-0"



PLAN - OUTLET "B"
SCALE: 1" = 10'



SECTION "B-B"
SCALE: 1/2" = 1'-0"

SCALE: 1/2" = 1'-0"

SCALE: 1" = 10'

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
2/24/2012	ADD NOTES FOR CONST. W/IN EASEMENT	A&A	

DEPARTMENT OF HAWAIIAN HOME LANDS

KAKAINA SUBDIVISION

TAX MAP KEY: 4-1-08: 10, 81, 91 & 92

WAIMANALO, KOOLAUPOKO, OAHU, HAWAII

DRAINAGE DETAILS

JONI C. TANIMOTO LICENSED PROFESSIONAL ENGINEER No.11878-C HAWAII, U.S.A.

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SHEET 28 OF 87 SHEETS

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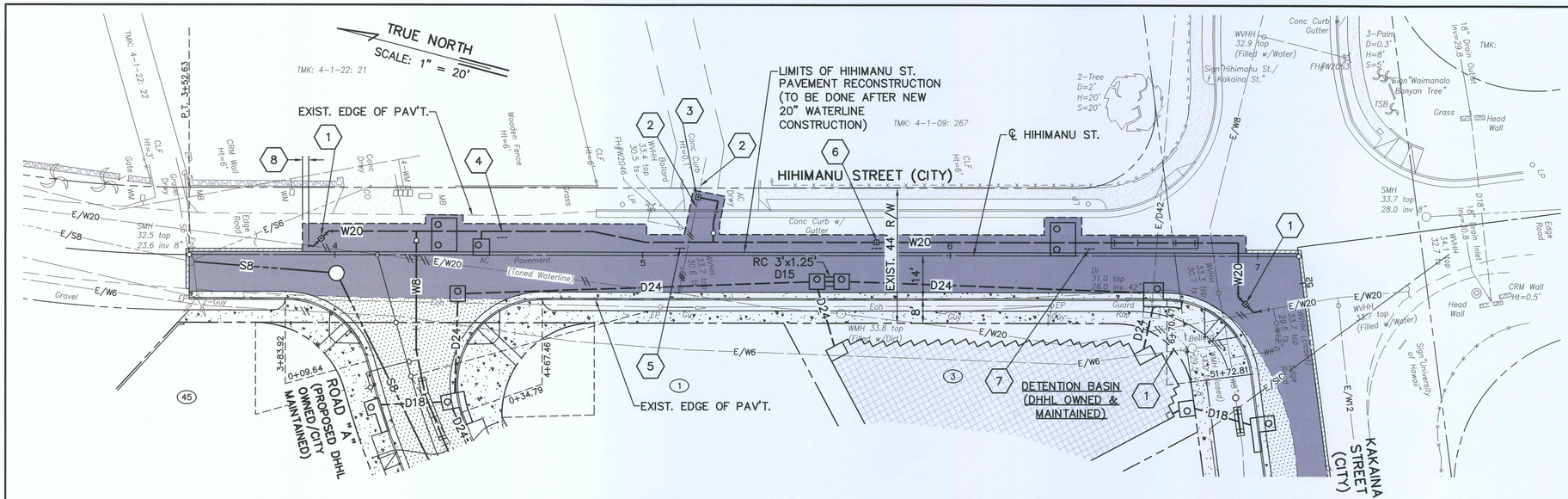
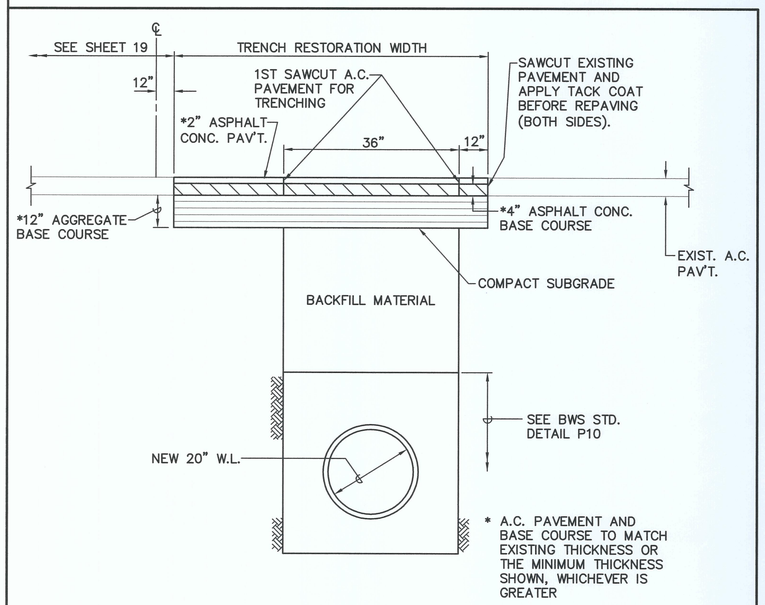


NEW 20" WATERLINE EXTERNAL CORROSION PROTECTION NOTES

1. UNLESS OTHERWISE SPECIFIED, ALL EXTERNAL CORROSION MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY & COUNTY OF HONOLULU BOARD OF WATER SUPPLY'S "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 1991, AND ALL SUBSEQUENT AMENDMENTS AND ADDITIONS.
2. DUCTILE IRON PIPES SHALL BE CLASS 52. ALL DUCTILE PIPES, FITTINGS AND VALVES SHALL BE BONDED COATING, WITH AN EXTERNAL CORROSION CONTROL SYSTEM APPLIED.
3. TO FORM AN ELECTRICALLY CONTINUOUS PIPELINE AND ASSOCIATED VALVES AND FITTINGS, THE JOINTS OF ALL BURIED METALLIC PIPE, INCLUDING VAULT AND MANHOLE PIPE AND ALL FITTINGS SHALL BE ELECTRICALLY BONDED, EXCEPT JOINTS SPECIFIED TO BE THREADED, WELDED OR INSULATED.
4. INSULATED JOINTS SHALL BE INSTALLED TO ELECTRICALLY ISOLATE THE PIPELINE FROM OTHER STRUCTURES.
5. PROVIDE A CATHODIC PROTECTION SYSTEM PER THE CONSTRUCTION PLANS AND THE "WATER SYSTEM EXTERNAL CORROSTION CONTROL STANDARDS", DATED 1991.
6. PROVIDE HIGH RESISTANCE CUSHION MATERIAL. SEE WATER NOTES, SHEET 5.



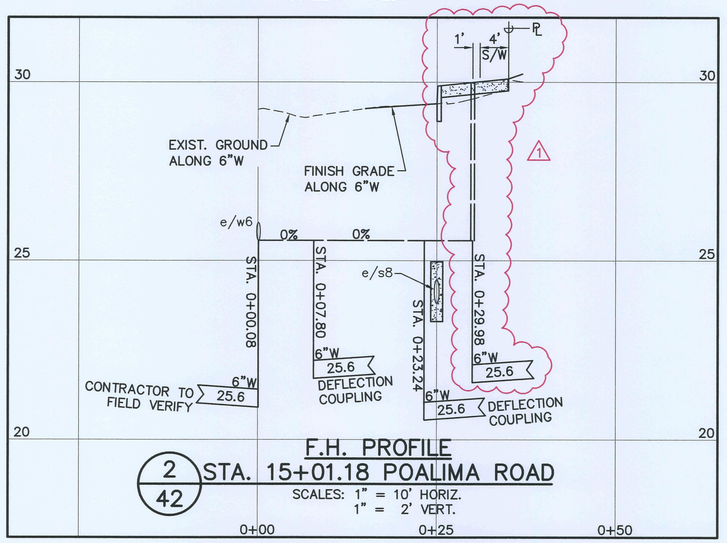
NOTES:

1. PAVEMENT STRUCTURE SHALL BE EQUAL TO OR BETTER THAN EXISTING IN THICKNESS AND QUALITY.
2. ALL DISTURBED PAVEMENT MARKINGS SHALL BE REPLACED AND ALL REQUIRED UTILITY ADJUSTMENTS SUCH AS MANHOLE COVERS ETC. SHALL BE DONE BY THE PERMITTEE.
3. PERMITTEE SHALL COORDINATE WORK WITH ALL OTHER UTILITY ENTITIES AND DEPT. OF FACILITY MAINTENANCE.

1/42 TRENCH REPAVEMENT SECTION FOR NEW 20" WATERLINE
NOT TO SCALE

1. INSTALL FLUSH MOUNTED TEST STATION TYPE "I" PER BWS STD. CORROSION CONTROL DETAIL (9)
   1 – 20" INSULATED COUPLING FOR ELECTRICAL ISOLATION SEE W.L. CONN. NOTES, SHEET 23
2. 8" PVC PIPE FOR ELECTRICAL ISOLATION SEE W.L. CONN. NOTES, SHEET 23
3. INSTALL FLUSH MOUNTED TEST STATION TYPE "I" PER BWS STD. CORROSION CONTROL DETAIL (9)
4. STA. 4+54.36 ℄ HIHIMANU ST. INSTALL GALVANIC ANODE PER BWS STD. CORROSION CONTROL DETAIL (13) ANODE = 18 LBS ZINC ANODE (1.4"x1.4"x36")
5. STA. 5+12.19 ℄ HIHIMANU ST. INSTALL GALVANIC ANODE PER BWS STD. CORROSION CONTROL DETAIL (13) ANODE = 18 LBS ZINC ANODE (1.4"x1.4"x36")
6. STA. 5+76.02 ℄ HIHIMANU ST. INSTALL FLUSH MOUNTED TEST STATION TYPE "T" WITH ANODE OVER NEW 20" WATERLINE PER BWS STD. CORROSION CONTROL DETAIL (8) ANODE = 18 LBS ZINC ANODE (1.4"x1.4"x36")
7. STA. 6+45.21 ℄ HIHIMANU ST. INSTALL GALVANIC ANODE PER BWS STD. CORROSION CONTROL DETAIL (13) ANODE = 18 LBS ZINC ANODE (1.4"x1.4"x36")
8. EXTEND A.C. PAVEMENT FOR TRENCH RESTORATION 2' BEYOND EDGE OF TRENCH

PLAN – HIHIMANU STREET
SCALE: 1" = 20'



2/42 F.H. PROFILE
STA. 15+01.18 POALIMA ROAD
SCALES: 1" = 10' HORIZ.
1" = 2' VERT.

LEGEND

A.C. REPAVEMENT
SEE TYPICAL SECTION, SHT. 19
SEE TRENCH REPAVEMENT DETAIL 1/42

NEW A.C. PAVEMENT

NEW CONC. SIDEWALK, CURB & GUTTER

SCALE: 1" = 20'

SCALE: 1" = 10' (HORIZ.)

SCALE: 1" = 2' (VERT.)

APPROVED:

CHIEF, TRAFFIC REVIEW BRANCH, DPP — DATE

MANAGER AND CHIEF ENGINEER, BWS (FOR WORK AFFECTING BWS FACILITIES IN CITY/STATE R/W AND BWS EASEMENTS ONLY) — DATE

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
2/24/2012	REVISE FH PROFILE	A&A	

DEPARTMENT OF HAWAIIAN HOME LANDS

KAKAINA SUBDIVISION

TAX MAP KEY: 4-1-08: 10, 81, 91 & 92

WAIMANALO, KOOLAUPOKO, OAHU, HAWAII

WATER DETAILS

20" WATERLINE EXTERNAL CORROSION PROTECTION & TRENCH REPAVEMENT

APPROVED:

CHIEF, CIVIL ENGINEERING BRANCH, DPP — DATE

JONI C. TANIMOTO — LICENSED PROFESSIONAL ENGINEER No.11878-C — HAWAII, U.S.A.

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CONSULTING ENGINEERS

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SHEET 42 OF 87 SHEETS

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The following Special Conditions to the Sample DHHL Contract are revised in their entirety:

SC-05 SURVEYING SERVICES

Refer to DHHL Interim General Condition 5.9.3.

The Contractor shall submit the name of the surveyor, who shall be licensed in the State of Hawaii and will be doing this work for it throughout the course of the project, to DHHL prior to beginning work at the site.

Upon request, DHHL shall provide subdivision plat maps to the contractor to enable its surveyor to stake out the various work.

Property pins for the existing lots adjacent to the Kakaina Subdivision may remain intact and may be visible. However, DHHL makes no warranty that these existing pins are accurate or have not been disturbed.

The contractor shall not disturb any existing property pins and is solely responsible for their replacement. The contractor shall accurately replace any existing property pins disturbed or removed by it and shall certify that they have been re-installed in the correct locations at no cost to DHHL.

The Contractor and Contractor's Licensed Professional Land Surveyor shall provide a letter jointly certifying that all work, including the grading, were built to the lines and grades shown on the record drawings.

Except where specifically provided for in the proposal, all work necessary for, or related to surveying services shall be considered incidental to the various contract items.

SC-17 GEOTECHNICAL ENGINEERING

Subsurface soil investigations have been made at specific selected locations within the project. A copy of the complete soils report is included with the bid documents. All subsurface data provided for the project are for general information only and shall not be deemed to represent the precise nature of the subsurface condition.

Contract specifications shall control over the soils report on contradictory requirements.

The services of a geotechnical engineering firm will be retained by the DHHL. A representative of the geotechnical engineer shall be present at the site to observe site grading, road construction, trenching and backfilling work, and other work, and to take field density tests. Also, the geotechnical engineer will perform laboratory testing of Contractor-submitted soils to determine their acceptability for use as base course, subbase and fill materials. The geotechnical engineer shall also perform compaction tests for embankments, subbase, base course and trench and structural backfill. The Geotechnical Engineer's authority shall be as described in DHHL Interim General Condition 5.4.

The Contractor shall request compaction tests a minimum of 48-hours in advance. Sufficient time shall be allotted to perform field and laboratory tests prior to the placement of material. Resultant delays shall be governed by Section 7.21 of the DHHL Interim General Conditions.

The Contractor shall be held responsible for the following geotechnical testing costs:

1. All compaction tests performed in the same area where a test has previously been performed.

2. Delay(s) to the Geotechnical Engineer caused by missing or delaying a scheduled soils test.

The Contractor shall compensate DHHL for all costs associated with any or all of the above situations.

The Geotechnical Engineer will keep a record of the associated cost impacts. These cost impacts will be deducted from the contract price by change order(s).

The density test results will be transmitted to the Contractor and to the Project Manager. Where low density test results are noted, the area shall be reworked by the Contractor and retested by the geotechnical engineer. No additional material shall be placed until the required compaction is attained.

If the field observations and test results, in the opinion of the geotechnical engineer, indicate that the earthwork, road construction, trenching and backfilling work, and other work are not in general conformance to the intent of the plans and geotechnical engineering report (if available), the discrepancy will be reported to the Contractor and the Project Manager for corrective action. The Contractor shall remove and replace the material at the Contractor's own expense and no additional compensation shall be made to the Contractor by the Department.

SC-42 PRE-CONSTRUCTION/POST-CONSTRUCTION SITE CRACK AND PHOTO SURVEY:

The Contractor shall prepare a pre-construction site crack and photo survey of the existing properties prior to the start of any work associated with Drain Line "B". The Contractor shall submit four (4) copies of the report to the Construction Manager (CM). The CM will retain one (1) copy and distribute two (2) copies to the Department of Hawaiian Home Lands (DHHL) and one (1) copy to the Engineer. The pre-construction site crack and photo survey shall be submitted for acceptance by the DHHL prior to the start of any work associated with the construction of Drain Line "B".

The Contractor shall be responsible for a visual survey of the existing properties along with photo documentation with associated dates and captions of the visual survey to document the existence and non-existence of cracks or damage that exists on adjacent properties.

Upon completion of all work associated with Drain Line "B, the Contractor shall prepare a post-construction site crack and photo survey of the existing properties. The Contractor shall submit four (4) copies of the report to the Construction Manager (CM). The CM will retain one (1) copy and distribute two (2) copies to the Department of Hawaiian Home Lands and one (1) copy to the Engineer. The post-construction site crack and photo survey shall be submitted for acceptance by the DHHL upon completion of all work associated with the construction of Drain Line "B".

The DHHL will initiate contact with the homeowners prior to issuance of notice to proceed. The Contractor will be required to follow up with the homeowners prior to the start of construction.

This work, including all necessary labor, materials, equipment, reproduction and notification of DHHL prior to beginning work shall be paid for under Item "Documentation of Existing Improvements" of the Proposal.

SC-43 GEOTECHNICAL INVESTIGATION ASSOCIATED WITH DRAIN LINE "B":

A subsurface investigation in the vicinity of the Drain Line "B" construction within the existing roadways and easement area was not conducted as part of the soils report entitled "Subsurface Investigation Report Kakaina Subdivision, Waimanalo, Oahu, Hawaii"dated July 9, 2007, by Fewell Geotechnical Engineering.

A boring log and location plan from a City & County of Honolulu project were provided to prospective bidders in Addendum No. 1 (February 29, 2012). The location plan and boring log were provided for general information only and shall not be deemed to represent the precise nature of the subsurface condition for the entire Drain Line "B" alignment.

This boring log shall be used in the preparation of protective measures necessary to mitigate existing building damage as outlined in SC-44.

Any additional borings or geotechnical information required by the Contractor shall be at the Contractor's time and expense.

Kakaina Subdivision, Waimanalo
Pre-bid Informational Conference
9:00 a.m., Tuesday, February 14, 2012

Introductions
- Department of Hawaiian Home Lands
- Na Kupa'a o Kuhio
- Akinaka & Associates
- Bowers + Kubota
- Fewell Geotechnical Engineering
- USDA – Rural Development
- Sandwich Isles Communication

Scope of Work:

Grading and construction of roads and appurtenant utility improvements for a 44-lot residential subdivision in Waimanalo, Oahu.

Off-site work includes:
- Hihimanu Street
  - relocation of a portion of the 20-inch water main
  - road widening
  - sewer work
  - drainage work
  - electrical work
- Kakaina Street
  - road widening
  - drainage work
  - electrical work
- Poalima Street: street improvements
- Replacement of the drain line at TMK 4-1-23: 47 (41-619 Mekia Street).

Single project covered by three contracts:
(1) DHHL Work, consisting of mass grading, roadway, drainage system, traffic control, and exterior electrical work;
(2) Na Kupaa Work, consisting of sewer and water system work;
(3) Sandwich Isle Communications ("SIC") Work, consisting of telecommunications infrastructure work.

General Requirements
- DHHL work
  - General Excise Tax exempt
  - Subject to Dept. of Labor and Industrial Relations prevailing wages and salaries
  - Section 103D-310 HRS – upon award, furnish current (not older than six months)
    - Form A-6 Tax Clearance Certificate (must submit with bid), from Contractor and Sub-contractors
    - Certificate of Compliance from Dept. of Labor and Industrial Relations
    - Certificate of Good Standing from Dept. of Commerce and Consumer Affairs
  - Section 103-55.6 HRS – Apprenticeship Agreement Preference
  - Chapter 103B HRS – Employment of State Residents on Construction Projects

Na Kupa'a work - Federal ARRA Funding requirements
Subject to Davis-Bacon wages and salaries
Use of iron, steel, and manufactured goods produced in the U.S.

Special Conditions
SC-03: Completion Schedule and Liquidated Damages
Time to complete: 275 calendar days
Liquidated damages: $1,000 per calendar day
SC-28: Existing Occupied Lots
Vehicular access, utilities
Notification two weeks prior to start
SC-33: Plan Approvals
SC-41: Documentation of Existing Improvements
SC-42: Pre-construction/Post-construction Site Crack and Photo Survey
SC-43: Geotechnical Investigation Associated with Drain Line "B"
SC-44: Protective Measures Necessary to Mitigate Existing Building Damage

Staging Area – Intersection of Kakaina and Mekia Streets

Engineer comments
Requests for clarification received
Addenda contemplated

Deadlines
Substitution/ Hawaii Product Preference requests – Thursday, February 23, 2012
Intent to Bid – Monday, February 27, 2012
Issue addenda – Wednesday, February 29, 2012
Standard of Qualification Questionnaire – Friday, March 6, 2012
Submittals for previous projects not valid
Bid submittal/opening – Thursday, March 8, 2012, 2:00 pm
Deliver to Hale Kalanianaole, 91-5420 Kapolei Parkway

Site Inspection: following pre-bid meeting

Questions and Answers

DHHL Contact: Darrell Ing
Telephone: 620-9276
Fax: 620-9299
e-mail: Darrell.H.Ing@Hawaii.gov

IFB-12-HHL-001

9:00 a.m., Tuesday, February 14, 2012

Pre-Bid Meeting
Kakaina Subdivision, Waimanalo

Name	Company/Agency	Telephone/Fax	e-mail
Michael Kamaka	Bowers + Kubota Consulting	457-8587	mkamaka@bowersandkubota.com
Brian Bowers	Bowers + Kubota Consulting	836-7787	bbowers@bowersandkubota.com
Ivet Figueroa	USDA	658-0201	ivet.figueroa@hi.usda.gov
Rocky Chenelle	USDA	933-8333	rocky.chenelle@hi.usda.gov
Roger Rafanan	Henry's Eq.	696-2879 696-7837	henrysequoole hawaii.rr.com
Peter Sohn	Paradigm	847-1646 847-1647	peters@paradigmhi.com
Bass Tran	Delta	682-1315 682-5629	btran@deltaconstcorp.com
Leonard Leong	Royal	8399006	leke@royalcontracting.com
KEN KAWAKAMI	AKINAKA & ASSOCIATES	836-1900	kck@akinaka.com

Pre-Bid Meeting
Kakaina Subdivision, Waimanalo

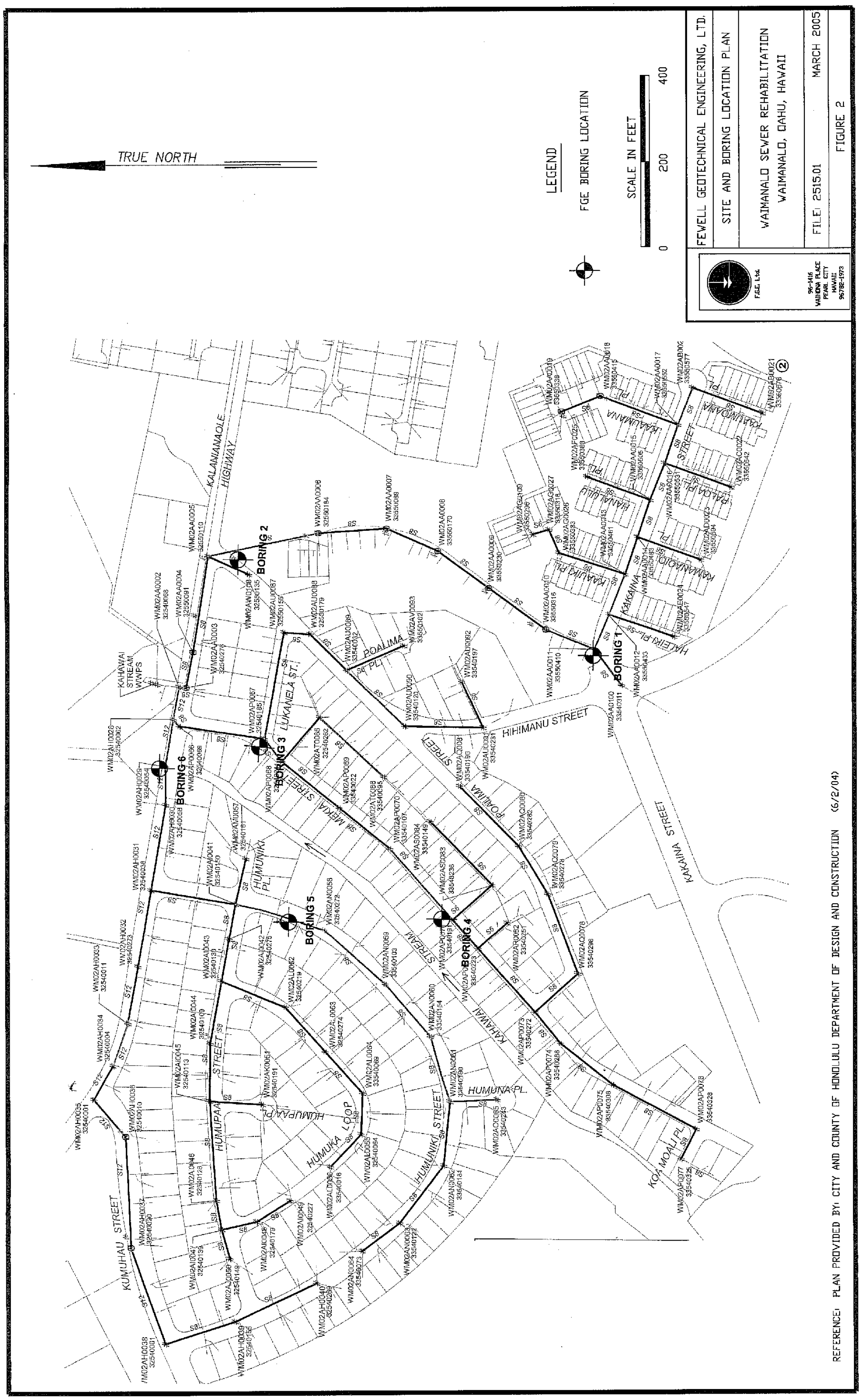
Name	Company/Agency	Telephone/Fax	e-mail
Milton Haitsuka	Ideal Const. Inc	8480562 841 7010 Fax	mhaitsuk@yahoo.com
CHARLES SCHARFENSTEIN	MEGA CONSTRUCTION, INC	8390022 8397191 FX	Charlie@mega-construction.org
DENNY MOORE	AMERON HAWAII	832-9246 832-9440	DENNY.MOORE@NOV.COM
Rodney Kaulupali	Sandwich Isles Comm	540-5751 596-4653	rodneyk@sandwichisles.com
Joni Tanimoto Ben Ganal Ken Kawahara Sheldon Yamasato	AKINAKA & ASSOC., Ltd.	8361900 8368852	jct@akinaka.com bmg@akinaka.com kck@akinaka.com sty@akinaka.com

IFB-12-HHL-001

9:00 a.m., Tuesday, February 14, 2012

Pre-Bid Meeting
Kakaina Subdivision, Waimanalo

Name	Company/Agency	Telephone/Fax	e-mail
K. David Malana	SIC	524-8400	dmalana@sandwichisles.com
JAMES LANGSTON	MID-STATE CONSULTANTS (SIC)	585-6188	JLANGSTON@MSCON.COM
JOEL NOVIO	MEI CORPORATION	232-2004	JOEL@MEICORPORATION LEON@MEICORPORATION.NET
RICK MELCHOR	ALLIANCE CONTRACTING, LLC	682-3030/662-0122	rmelchor@alliancecontracting.co
Alex Kwan Peter Sohn	Paradigm	8491466 ext 1647	alex@paradigmhi.com petes@ c
STEVEN YOSHIDA	DELTA CONSTRUCTION CORP	681-1315	SYOSHIDA@DELTACONSTCORP.com
Dale Burton	RCAC	808-934-0559	drburton@rcac.org
~~Ben Ge~~			


TRUE NORTH
LEGEND
FGE BORING LOCATION
SCALE IN FEET
0
200
400
FEWELL GEOTECHNICAL ENGINEERING, LTD.
SITE AND BORING LOCATION PLAN
WAIMANALO SEWER REHABILITATION
WAIMANALO, OAHU, HAWAII
FILE: 2515.01
MARCH 2005
FIGURE 2
BORING 1
BORING 2
BORING 3
BORING 4
BORING 5
BORING 6
KALANIANAOLE HIGHWAY
KAKAINA STREET
HIHIMANU STREET
KUMUHAU STREET
HUMUPAA STREET
HUMUKA LOOP
HUMUNIKI STREET
REFERENCE: PLAN PROVIDED BY: CITY AND COUNTY OF HONOLULU DEPARTMENT OF DESIGN AND CONSTRUCTION (6/2/04)

F.G.E. Ltd.
96-1416 Waihona Place
Pearl City, Hawaii

Boring: 4
Project: Waimanalo Sewer Rehabilitation
Location: Waimanalo, Oahu, Hawaii
Surface Elevation: 23' ±
Depth to Water: 5.6' (2/10/05 @ 1:35PM)
Date Completed: 2-9-05

File: 2515.01
Project Engineer: AS
Field Engineer: AS/MA
Drafted by: CPD
Date of Drawing: March 2005

LAB TEST RESULTS	MOIST CONT. %	DRY DEN. PCF	BLOWS PER FT.	SAMPLE	DEPTH	CLASSIFICATION
					0	3" ACP over 4" Basalt Silty GRAVEL (GM)
Torv.=3,350psf	35	82	36	1		Gray Clayey SILT (MH) with Gravel and Sand, stiff, damp **(FILL)**
Torv.=1,200psf LL=77, PI=40 Direct Shear: C=80psf Ø=41° Swell=0%	51	66	13 7	2 3	5	At 3.0', grades to medium stiff Gray Clayey SILT (OH), very soft to soft, wet to saturated **(LAGOONAL)**
LL=58, PI=25 Gradation: Gravel=15% Sand=61% Silt/Clay=24%	51		3	4		Brown Silty SAND (SM) with fine Gravel, very loose to loose, saturated **(ALLUVIAL)**
	63	48	8	5	10 15	Gray Clayey SAND (SC), very loose, saturated **(ALLUVIAL)**
LL=55, PI=23 Gradation: Gravel=45% Sand=44% Silt/Clay=11%	36		55	6	20	Gray/Brown Silty SAND and GRAVEL (SM-GM), dense, saturated **(ALLUVIAL)**
Torv.=1,900psf	78	55	15	7	25	Gray Silty CLAY (CH), stiff, saturated **(ALLUVIAL)**
						BOH @ 25.0'
					30 35	