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IFB NOTIFICATION AND INFORMATION

FOR

**PUUKAPU PASTORAL LOTS WATER SYSTEM
OPERATION & MAINTENANCE SERVICES**

PUUKAPU, SOUTH KOHALA, ISLAND OF HAWAII, HAWAII

IFB NO.: IFB-14-HHL-011

PREPARED BY

**STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS**

FEBRUARY 2014

Department of Hawaiian Home Lands - Land Development Division

SIGN-IN SHEET

IFB- 14 -HHL- 011	Project Description: Performing complete operation, maintenance and repair services including inspections and emergency calls for all pumps, reservoirs, distribution water lines, telemetering systems, meters, back flow prevention assemblies, equipment and other appurtenances included under the contract for the Puukapu Pastoral Lots Water System, in accordance with the manufacturer's specifications and recommended time intervals.
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INSTRUCTIONS

Read this packet carefully. If you have any questions, please call Mr. Jeffrey Fujimoto, LDD Project Manager, at (808) 620-9274 or send E-mail to: Jeffrey.y.fujimoto@hawaii.gov.

Note: Please fax this sheet to (808) 620-9299, mail or email to: Jeffrey.Y.Fujimoto@hawaii.gov after downloading this document from the Department of Hawaiian Home Lands website.

Pre-Bid Conference/Site Inspection:	Date: March 8, 2014 Time: 10:00 a.m. Location: Department of Hawaiian Home Lands (DHHL) West Hawaii District Office, 64-756 Mamalahoa Highway, Kamuela, Hawaii 96743
Notice Of Intention To Bid Must Be Received By:	Date: March 18, 2014 Time: 2:00 p.m. Location: DHHL Kapolei, 91-5420 Kapolei Parkway, Kapolei, Hawaii, 96707 Submittal of a Notice of Intention to Bid via facsimile at (808)620-9299 is acceptable.
Bid Offer Form Due Back:	Date: March 28, 2014 Time: 2:00 p.m. Location: DHHL Kapolei, 91-5420 Kapolei Parkway, Kapolei, Hawaii, 96707
Bid Opening:	Date: March 28, 2014 Time: 2:00 p.m. Location: DHHL Kapolei, 91-5420 Kapolei Parkway, Kapolei, Hawaii, 96707
Date: _____	
Company:	_____
Address:	_____ _____ _____
Phone No.	Cell No.
Fax No.	_____
Email Address:	_____
Contact Person:	_____

Signature of Person Downloading Packet (Print Name & Title after signature)

**NOTICE TO BIDDERS
INVITATION FOR BID
Department of Hawaiian Home Lands
Land Development Division
IFB NO.: IFB-14-HHL-011**

SEALED BIDS for IFB No.: IFB-14-HHL-011, PUUKAPU PASTORAL LOTS WATER SYSTEM OPERATION & MAINTENANCE SERVICES, Waimea, South Kohala, Island of Hawaii, State of Hawaii, will be received by the Department of Hawaiian Home Lands (DHHL), at Hale Kalanianaʻole, 91-5420 Kapolei Parkway, Kapolei, Hawaii 96707, until **02:00 p.m., Hawaii Standard Time (H.S.T.) March 28, 2014**, at which time all bids will be publicly opened and read aloud. Bids received after the time fixed for opening or delivered anywhere other than as specified above will not be considered.

This project consists of performing complete operation, maintenance and repair services of the Puukapu Pastoral Lots Water System including inspections and emergency calls for all pumps, reservoirs, distribution water lines, telemetering systems, equipment and other appurtenances included under the contract, in accordance with the manufacturer's specifications and recommended time intervals.

The contract for the operation and maintenance of this system will be administered under the multi-term contracts provision under Section 3-122-149 of the Hawaii Administrative Rules. The initial contract term shall be for twenty-four (24) months, with three (3) options to extend for twelve (12) months each, subject to the appropriation and availability of funds. The maximum term of the contract shall be for sixty (60) months (or 5 years).

To be eligible to submit a bid, the Bidder and/or his subcontractors shall possess all required valid State of Hawaii licenses and specialty licenses needed to perform the work for this project. A surety bid bond will be required for this Invitation for Bids (IFB).

This project is subject to Section 103D, Hawaii Revised Statutes, and to the payment of not less than the prevailing salaries and wages promulgated by the State of Hawaii, Department of Labor and Industrial Relations.

Bid documents may be examined at or obtained from DHHL at the Department of Hawaiian Home Lands website: <http://www.dhhl.hawaii.gov/procurement/>

There is no fee assessment to download the IFB documents from the DHHL website.

It is the responsibility of Interested Bidders to check the DHHL website for any addenda issued by DHHL.

All prospective bidders/offerors are **required** to attend a PRE-BID CONFERENCE to be held 10:00 a.m., H.S.T, on March 8, 2014, at DHHL's West Hawaii District Office, situated at 64-756 Mamalahoa Highway. Failure to attend the mandatory pre-bid conference will result in a disqualification of your bid. Subcontractors and union representatives are invited, but not required to attend. The conference is to provide bidders/offerors with an opportunity to ask questions about the contractual requirements and technical aspects of the project. A site visit of

the project site will follow the pre-bid conference. Attendance of the site visit is not a condition for submitting a bid, but strongly recommended. Persons needing special accommodations due to a disability may submit such requests to Jeffrey Fujimoto, Land Development Division, via facsimile at (808) 620-9299.

A written NOTICE OF INTENTION TO BID is required and shall be received by the DHHL, Land Development Division, at 91-5420 Kapolei Parkway, Kapolei, Hawaii 96707, no later than Tuesday, March 18, 2014. Submittal of a NOTICE OF INTENTION TO BID via facsimile at (808) 620-9299 is acceptable.

A properly executed and notarized STANDARD QUALIFICATION QUESTIONNAIRE FOR OFFERORS, SPO Form-21 ("Questionnaire") is required and shall be submitted to the DHHL for evaluation no later than Tuesday, March 18, 2014. The Questionnaire can be downloaded at the State Forms Central website: <http://hawaii.gov/forms/state-procurement-office>.

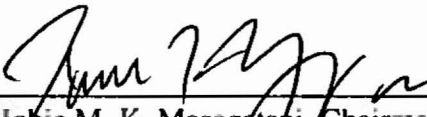
Bids shall comply with the requirements of the IFB. Bids that do not comply with the IFB may be subject to disqualification. DHHL reserves the right to amend the IFB by written addenda, to reject any and all bids, or to waive any defects in said bids where DHHL deems it is in the best interest of the State.

CAMPAIGN CONTRIBUTIONS BY STATE AND COUNTY CONTRACTORS PROHIBITED. If awarded a contract in response to this solicitation, offeror agrees to comply with HRS §11-355, which states that campaign contributions are prohibited from a State and county government contractor during the term of the contract if the contractor is paid with funds appropriated by the legislative body between the execution of the contract through the completion of the contract.

Questions regarding this project may be directed in writing to Jeffrey Fujimoto, Land Development Division, DHHL, 91-5420 Kapolei Parkway, Kapolei, Hawaii 96707 or via facsimile at (808) 620-9299.

Dated at Honolulu, Hawaii, this 26th day of February, 2014.

DEPARTMENT OF HAWAIIAN HOME LANDS



Jobie M. K. Masagatani, Chairman
Hawaiian Homes Commission

Posted on the internet at: <http://spo3.hawaii.gov/notices/notices>

State of Hawaii
DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS
Princess Ruth Ke`elikolani Building
830 Punchbowl Street
Honolulu, Hawaii 96813

September 16, 2013
WAGE RATE SCHEDULE BULLETIN NO. 482

This schedule of wage rates contained herein is recognized by the Director of Labor and Industrial Relations to be prevailing on public construction work for the purposes of Chapter 104, Hawaii Revised Statutes. The schedule of wage rates determines the applicable wage determination for each classification and does not impose any staffing requirements for any classification. The schedule of wage rates is applicable only to those laborers and mechanics employed at the site of work.

As required by law, future wage rates for laborers and mechanics are incorporated into this bulletin based on available information and are subject to change. Whenever the Director determines that the prevailing wage has increased as shown in the wage rate schedule, the contractor must increase the wages accordingly during the performance of the contract. For addenda or additional wage rate schedules, please consult the Internet at <http://labor.hawaii.gov/rs>.

The Apprentice Schedule is available on the Internet or upon request from the Research and Statistics Office. Pursuant to Section 12-22-6 (1), Hawaii Administrative Rules, the Apprentice Schedule is applicable only to apprentices who are parties to apprenticeship agreements registered with or recognized by the Department of Labor and Industrial Relations.

Questions on the schedule should be referred to the Research and Statistics Office at (808) 586-9019.

The next regular schedule will be issued on or about February 15, 2014.

DWIGHT TAKAMINE
Director



STATE OF HAWAII
NEIL ABERCROMBIE, Governor

DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS
DWIGHT TAKAMINE, Director
AUDREY HIDANO, Deputy Director

RESEARCH AND STATISTICS OFFICE
PHYLLIS DAYAO, Research & Statistics Officer

OPERATIONS MANAGEMENT INFORMATION STAFF
Elienne Yoshida, Supervisor
Myra Oshiro
Janet Kaya
Mirasol Valdez

In cooperation with:
WAGE STANDARDS DIVISION
PAMELA MARTIN, Administrator

WAGE RATE SCHEDULE BULLETIN NO. 482

Classification	Current			2013			2014			2015			Remarks See Pg 6-7
	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	
* ASPHALT PAVING GROUP:	9/16/13												
Asphalt Concrete Material Transfer	\$65.49	\$37.42	\$28.07	-	-	-	-	-	-	-	-	-	
Asphalt Raker	\$64.53	\$36.46	\$28.07	-	-	-	-	-	-	-	-	-	
Asphalt Spreader Operator	\$66.01	\$37.94	\$28.07	-	-	-	-	-	-	-	-	-	
Laborer, Hand Roller	\$61.76	\$33.69	\$28.07	-	-	-	-	-	-	-	-	-	
Roller Operator (5 tons and under)	\$64.26	\$36.19	\$28.07	-	-	-	-	-	-	-	-	-	
Roller Operator (over 5 tons)	\$65.69	\$37.62	\$28.07	-	-	-	-	-	-	-	-	-	
Screed Person	\$65.49	\$37.42	\$28.07	-	-	-	-	-	-	-	-	-	
EQUIPMENT OPERATOR:													
Combination Loader/Backhoe (over 3/4 cu. yd.)	\$64.53	\$36.46	\$28.07	-	-	-	-	-	-	-	-	-	
Combination Loader/Backhoe (up to 3/4 cu. yd.)	\$63.55	\$35.48	\$28.07	-	-	-	-	-	-	-	-	-	
Concrete saws and/or Grinder (self-propelled unit on streets, highways, airports and canals)	\$65.49	\$37.42	\$28.07	-	-	-	-	-	-	-	-	-	
Grader, Soil Stabilizer, Cold Planer	\$66.32	\$38.25	\$28.07	-	-	-	-	-	-	-	-	-	
Loader (2-1/2 cu. yds. and under)	\$65.49	\$37.42	\$28.07	-	-	-	-	-	-	-	-	-	
Loader (over 2-1/2 cu. yds. to and including 5 cu. yds.)	\$65.81	\$37.74	\$28.07	-	-	-	-	-	-	-	-	-	
TRUCK DRIVER:													
Assistant to Engineer	\$64.26	\$36.19	\$28.07	-	-	-	-	-	-	-	-	-	
Oil Tanker (double), Hot Liquid Asphalt Tanker	\$65.81	\$37.74	\$28.07	-	-	-	-	-	-	-	-	-	
Semi-Trailer, Semi-Dump, Asphalt Distributor	\$65.49	\$37.42	\$28.07	-	-	-	-	-	-	-	-	-	
Slip-in or Pup	\$65.81	\$37.74	\$28.07	-	-	-	-	-	-	-	-	-	
Single or Rock Cans Tandem Dump Truck (8 cu. yds. & under, water level)	\$64.53	\$36.46	\$28.07	-	-	-	-	-	-	-	-	-	
Single or Rock Cans Tandem Dump Truck (over 8 cu. yds., water level)	\$64.84	\$36.77	\$28.07	-	-	-	-	-	-	-	-	-	
Tractor Trailer (hauling equipment)	\$65.92	\$37.85	\$28.07	-	-	-	-	-	-	-	-	-	
Utility, Flatbed	\$64.26	\$36.19	\$28.07	-	-	-	-	-	-	-	-	-	
BOILERMAKER	2/18/13												
	\$62.88	\$35.20	\$27.68	-	-	-	-	-	-	-	-	-	
* CARPENTER:	9/16/13												
Carpenter; Patent Scaffold Erector (Over 14 feet); Piledriver; Pneumatic Nailer	\$61.17	\$40.75	\$20.42	-	-	-	-	-	-	-	-	-	1
Millwright	\$61.42	\$41.00	\$20.42	-	-	-	-	-	-	-	-	-	1
Power Saw Operator (2 h.p. & above)	\$61.32	\$40.90	\$20.42	-	-	-	-	-	-	-	-	-	1
* CEMENT FINISHER:	9/16/13												
Cement Finisher; Curb Setter; Precast Panel Setter; Manhole Builder	\$60.27	\$36.80	\$23.47	-	-	-	-	-	-	-	-	-	2
Trowel Machine Operator	\$60.42	\$36.95	\$23.47	-	-	-	-	-	-	-	-	-	2
CHAIN-LINK FENCE ERECTOR	2/18/13			9/30/13									
	\$25.75	\$16.75	\$9.00	\$29.17	\$18.00	\$11.17	-	-	-	-	-	-	13
* CHLORINATOR	9/16/13												
	\$27.74	\$25.31	\$2.43	-	-	-	-	-	-	-	-	-	

WAGE RATE SCHEDULE BULLETIN NO. 482

Classification	Current			2013			2014			2015			Remarks See Pg 6-7
	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	
* DIVER:	9/16/13												
Diver (Aqua Lung) (Scuba) - Up to a depth of 30 feet	\$78.64	\$51.13	\$27.51	-	-	-	-	-	-	-	-	-	
Diver (Aqua Lung) (Scuba) - Over a depth of 30 feet	\$88.01	\$60.50	\$27.51	-	-	-	-	-	-	-	-	-	
Stand-By Diver (Aqua Lung) (Scuba)	\$69.26	\$41.75	\$27.51	-	-	-	-	-	-	-	-	-	
Diver (Other than Aqua Lung)	\$88.01	\$60.50	\$27.51	-	-	-	-	-	-	-	-	-	3
Stand-By Diver (Other than Aqua Lung)	\$69.26	\$41.75	\$27.51	-	-	-	-	-	-	-	-	-	3
Tender (Other than Aqua Lung)	\$66.23	\$38.72	\$27.51	-	-	-	-	-	-	-	-	-	
* DRAPERY INSTALLER	9/16/13												
	\$21.64	\$19.93	\$1.71	-	-	-	-	-	-	-	-	-	
* DRYWALL INSTALLER	9/16/13												
	\$61.42	\$41.00	\$20.42	-	-	-	-	-	-	-	-	-	
* ELECTRICIAN: (Note: 2 increases per year)	8/25/13						2/23/14			2/22/15			
Cable Splicer (inside/outside)	\$72.60	\$45.71	\$26.89	-	-	-	\$73.34	\$46.09	\$27.25	\$75.03	\$46.92	\$28.11	4
Ground Worker (outside)	\$53.59	\$31.16	\$22.43	-	-	-	\$54.20	\$31.43	\$22.77	\$55.53	\$31.99	\$23.54	4
Heavy Equipment Operator (outside)	\$61.75	\$37.40	\$24.35	-	-	-	\$62.40	\$37.71	\$24.69	\$63.89	\$38.39	\$25.50	4
Line Installer (outside); Wire Installer (inside)	\$67.17	\$41.55	\$25.62	-	-	-	\$67.88	\$41.90	\$25.98	\$69.46	\$42.65	\$26.81	4
Technician (inside/outside)	\$68.79	\$42.80	\$25.99	-	-	-	\$69.52	\$43.16	\$26.36	\$71.13	\$43.93	\$27.20	4
							8/24/14			8/23/15			
Cable Splicer (inside/outside)	-	-	-	-	-	-	\$74.27	\$46.53	\$27.74	\$75.89	\$47.36	\$28.53	4
Ground Worker (outside)	-	-	-	-	-	-	\$54.94	\$31.73	\$23.21	\$56.22	\$32.29	\$23.93	4
Heavy Equipment Operator (outside)	-	-	-	-	-	-	\$63.22	\$38.07	\$25.15	\$64.66	\$38.75	\$25.91	4
Line Installer (outside); Wire Installer (inside)	-	-	-	-	-	-	\$68.75	\$42.30	\$26.45	\$70.27	\$43.05	\$27.22	4
Technician (inside/outside)	-	-	-	-	-	-	\$70.40	\$43.57	\$26.83	\$71.95	\$44.34	\$27.61	4
Telecommunication Worker	9/1/13												
Licensed Technician	\$37.04	\$25.60	\$11.44	-	-	-	-	-	-	-	-	-	
Technician I / Splicer	\$35.63	\$24.38	\$11.25	-	-	-	-	-	-	-	-	-	
ELEVATOR CONSTRUCTOR MECHANIC	2/18/13												
	\$76.395	\$51.21	\$25.185	-	-	-	-	-	-	-	-	-	
* EQUIPMENT OPERATOR:	9/16/13												
Group 1	\$63.95	\$36.44	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 2	\$64.06	\$36.55	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 3	\$64.23	\$36.72	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 4	\$64.50	\$36.99	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 5	\$64.81	\$37.30	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 6	\$65.46	\$37.95	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 7	\$65.78	\$38.27	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 8	\$65.89	\$38.38	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 9	\$66.00	\$38.49	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 9A	\$66.23	\$38.72	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 10	\$66.29	\$38.78	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 10A	\$66.44	\$38.93	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 11	\$66.59	\$39.08	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 12	\$66.95	\$39.44	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 12A	\$67.31	\$39.80	\$27.51	-	-	-	-	-	-	-	-	-	5

WAGE RATE SCHEDULE BULLETIN NO. 482

Classification	Current			2013			2014			2015			Remarks See Pg 6-7
	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	
FENCE ERECTOR (CHAIN-LINK TYPE)													
See Chain-Link Fence Erector	-	-	-	-	-	-	-	-	-	-	-	-	
* FLOOR LAYER (CARPET, LINOLEUM & SOFT TILE)	9/16/13												
	\$52.05	\$29.14	\$22.91	-	-	-	-	-	-	-	-	-	12
* GLAZIER	9/16/13												
	\$59.73	\$33.65	\$26.08	-	-	-	-	-	-	-	-	-	6
* HELICOPTER WORK:	9/16/13												
Airborne Hoist Operator	\$67.81	\$40.30	\$27.51	-	-	-	-	-	-	-	-	-	
Co-Pilot	\$67.95	\$40.44	\$27.51	-	-	-	-	-	-	-	-	-	
Pilot	\$68.12	\$40.61	\$27.51	-	-	-	-	-	-	-	-	-	
INSULATOR	3/3/13												
	\$61.05	\$37.65	\$23.40	-	-	-	-	-	-	-	-	-	7
IRONWORKER:	9/17/12												
Reinforcing, Structural	\$63.16	\$34.75	\$28.41	-	-	-	-	-	-	-	-	-	8
LABORER:	9/2/13												
Driller	\$49.26	\$33.30	\$15.96	-	-	-	-	-	-	-	-	-	1
Gunite Operator	\$48.76	\$32.80	\$15.96	-	-	-	-	-	-	-	-	-	1
High Scaler (Working Suspended)	\$48.76	\$32.80	\$15.96	-	-	-	-	-	-	-	-	-	
Laborer I	\$48.26	\$32.30	\$15.96	-	-	-	-	-	-	-	-	-	1
Laborer II	\$45.66	\$29.70	\$15.96	-	-	-	-	-	-	-	-	-	1
Light Clean-up (Janitorial) Laborer	\$35.47	\$23.70	\$11.77	-	-	-	-	-	-	-	-	-	1
Powder Blaster	\$49.26	\$33.30	\$15.96	-	-	-	-	-	-	-	-	-	1
Window Washer (Outside) (On bosun's chair, cable-suspended scaffold or work platform)	\$47.76	\$31.80	\$15.96	-	-	-	-	-	-	-	-	-	
LANDSCAPER:	9/2/13						9/1/14						
Landscape & Irrigation Laborer A	\$32.16	\$22.65	\$9.51	-	-	-	\$33.31	\$23.20	\$10.11	-	-	-	
Landscape & Irrigation Laborer B	\$32.66	\$23.15	\$9.51	-	-	-	\$33.81	\$23.70	\$10.11	-	-	-	
Landscape & Irrigation Maintenance Laborer	\$28.66	\$19.15	\$9.51	-	-	-	\$29.81	\$19.70	\$10.11	-	-	-	
* LATHER	9/16/13												
	\$61.42	\$41.00	\$20.42	-	-	-	-	-	-	-	-	-	
* MASON; Bricklayer;	9/16/13												
Cement Blocklayer; Stone Mason; Precast Sill Setter	\$60.32	\$36.85	\$23.47	-	-	-	-	-	-	-	-	-	2
Pointer-Caulker-Weatherproofer	\$60.57	\$37.10	\$23.47	-	-	-	-	-	-	-	-	-	2
* PAINTER:	9/16/13						7/1/14			1/1/15			
Painter; Spray Painter; Sandblaster or Waterblaster	\$60.15	\$34.10	\$26.05	-	-	-	\$60.40	\$34.35	\$26.05	\$60.65	\$34.60	\$26.05	12
										7/1/15			
Painter; Spray Painter; Sandblaster or Waterblaster	-	-	-	-	-	-	-	-	-	\$60.90	\$34.85	\$26.05	12

WAGE RATE SCHEDULE BULLETIN NO. 482

Classification	Current			2013			2014			2015			Remarks See Pg 6-7
	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	
* PLASTERER	9/16/13												
	\$61.11	\$37.64	\$23.47	-	-	-	-	-	-	-	-	-	2
* PLUMBER:	7/7/13						1/5/14						
Plumber; Pipefitter; Refrigeration Fitter; Heating & Air Conditioning Fitter; Sprinkler Fitter; Steamfitter	\$61.86	\$38.10	\$23.76	-	-	-	\$62.11	\$38.35	\$23.76	-	-	-	9,12
ROOFER:	9/1/13						9/7/14			9/6/15			
Shingle, Tile, Built-up Roofing	\$53.98	\$37.10	\$16.88	-	-	-	\$55.23	\$38.10	\$17.13	\$55.98	\$38.85	\$17.13	12
Coal Tar Pitch	\$91.08	\$74.20	\$16.88	-	-	-	\$93.33	\$76.20	\$17.13	\$94.83	\$77.70	\$17.13	12
SANDBLASTER OR WATERBLASTER:													
Use wages of craft to which sand or water blasting is incidental.													
* SHEETMETAL WORKER	9/16/13												
	\$59.98	\$37.25	\$22.73	-	-	-	-	-	-	-	-	-	10
TAPER	2/18/13												
	\$58.65	\$40.00	\$18.65	-	-	-	-	-	-	-	-	-	12
* TERMITE TREATER	9/16/13												
	\$17.20	\$13.85	\$3.35	-	-	-	-	-	-	-	-	-	
* TERRAZZO:	9/16/13												
Terrazzo Setter	\$60.57	\$37.10	\$23.47	-	-	-	-	-	-	-	-	-	2
Terrazzo Base Grinder	\$58.76	\$35.29	\$23.47	-	-	-	-	-	-	-	-	-	2
Certified Terrazzo Floor Grinder and Tender	\$57.21	\$33.74	\$23.47	-	-	-	-	-	-	-	-	-	2
Terrazzo Floor Grinder	\$55.71	\$32.24	\$23.47	-	-	-	-	-	-	-	-	-	2
* TILE SETTER:	9/16/13												
Ceramic Hard Tile; Marble Setter	\$60.57	\$37.10	\$23.47	-	-	-	-	-	-	-	-	-	2
Certified Ceramic Tile & Marble Helper	\$57.21	\$33.74	\$23.47	-	-	-	-	-	-	-	-	-	2
* TRUCK DRIVER:	9/16/13												
Concrete Mixer	\$34.62	\$28.87	\$5.75	-	-	-	-	-	-	-	-	-	
Concrete Mixer/Booster	\$43.05	\$30.53	\$12.52	-	-	-	-	-	-	-	-	-	
Dump Truck, 8 cu. yds. & under (water level); Water Truck (up to & including 2,000 gallons)	\$64.50	\$36.99	\$27.51	-	-	-	-	-	-	-	-	-	
Flatbed, Utility, etc.	\$64.23	\$36.72	\$27.51	-	-	-	-	-	-	-	-	-	
End Dump, Unlicensed (Euclid, Mack, Caterpillar, or similar); Tractor Trailer (hauling equipment)	\$65.89	\$38.38	\$27.51	-	-	-	-	-	-	-	-	-	
Semi-Trailer, Rock Cans, or Semi-Dump	\$65.46	\$37.95	\$27.51	-	-	-	-	-	-	-	-	-	
Slip-in or Pup	\$65.78	\$38.27	\$27.51	-	-	-	-	-	-	-	-	-	
Tandem Dump Truck, over 8 cu. yds. (water level); Water Truck (over 2,000 gallons)	\$64.81	\$37.30	\$27.51	-	-	-	-	-	-	-	-	-	

WAGE RATE SCHEDULE BULLETIN NO. 482

Classification	Current			2013			2014			2015			Remarks See Pg 6-7
	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	
UNDERGROUND LABORER:	9/2/13												
Worker in a raise, shaft, or tunnel.													
Group 1	\$48.86	\$32.90	\$15.96	-	-	-	-	-	-	-	-	-	
Group 2	\$50.36	\$34.40	\$15.96	-	-	-	-	-	-	-	-	-	
Group 3	\$50.86	\$34.90	\$15.96	-	-	-	-	-	-	-	-	-	
Group 4	\$51.86	\$35.90	\$15.96	-	-	-	-	-	-	-	-	-	
Group 5	\$52.11	\$36.15	\$15.96	-	-	-	-	-	-	-	-	-	
Group 6	\$52.21	\$36.25	\$15.96	-	-	-	-	-	-	-	-	-	
Group 7	\$52.46	\$36.50	\$15.96	-	-	-	-	-	-	-	-	-	
Group 8	\$52.91	\$36.95	\$15.96	-	-	-	-	-	-	-	-	-	
* WATER FRONT CONSTRUCTION (DREDGING):	9/16/13												
CLAMSHELL OR DIPPER DREDGES:													
Clamshell or Dipper Operator	\$66.95	\$39.44	\$27.51	-	-	-	-	-	-	-	-	-	11
Mechanic; Welder; Watch Engineer	\$66.29	\$38.78	\$27.51	-	-	-	-	-	-	-	-	-	
Deckmate; Bargemate	\$65.89	\$38.38	\$27.51	-	-	-	-	-	-	-	-	-	
Fire Person; Oiler; Deckhand; Barge Worker	\$64.23	\$36.72	\$27.51	-	-	-	-	-	-	-	-	-	
HYDRAULIC SUCTION DREDGES:													
Lever Operator	\$66.59	\$39.08	\$27.51	-	-	-	-	-	-	-	-	-	
Mechanic; Welder	\$66.29	\$38.78	\$27.51	-	-	-	-	-	-	-	-	-	
Watch Engineer (steam or electric)	\$66.44	\$38.93	\$27.51	-	-	-	-	-	-	-	-	-	
Dozer Operator	\$66.23	\$38.72	\$27.51	-	-	-	-	-	-	-	-	-	
Deckmate	\$65.89	\$38.38	\$27.51	-	-	-	-	-	-	-	-	-	
Winch Operator (stern winch on dredge)	\$65.78	\$38.27	\$27.51	-	-	-	-	-	-	-	-	-	
Fire Person; Oiler; Deckhand (can operate anchor scow under direction of deckmate); Levee Operator	\$64.23	\$36.72	\$27.51	-	-	-	-	-	-	-	-	-	
DERRICKS:													
Operator: Derrick, Piledriver, Crane	\$66.95	\$39.44	\$27.51	-	-	-	-	-	-	-	-	-	
Deckmate; Saurman Type Dragline (up to & including 5 yds.)	\$65.89	\$38.38	\$27.51	-	-	-	-	-	-	-	-	-	
Saurman Type Dragline (over 5 cu. yds.)	\$66.29	\$38.78	\$27.51	-	-	-	-	-	-	-	-	-	
Fire Person; Oiler; Deckhand	\$64.23	\$36.72	\$27.51	-	-	-	-	-	-	-	-	-	
BOAT OPERATORS:													
Master Boat Operator	\$66.59	\$39.08	\$27.51	-	-	-	-	-	-	-	-	-	
Boat Operator	\$66.44	\$38.93	\$27.51	-	-	-	-	-	-	-	-	-	
Boat Deckhand	\$64.23	\$36.72	\$27.51	-	-	-	-	-	-	-	-	-	
* WATER WELL DRILLER:	9/16/13												
Water Well Driller	\$32.90	\$28.00	\$4.90	-	-	-	-	-	-	-	-	-	
Water Well Driller Helper	\$24.58	\$20.00	\$4.58	-	-	-	-	-	-	-	-	-	
WELDER:													
Use wages of craft to which welding is incidental, except for Chain-Link Fence Erector. See remark.													13

Comments: Overtime must be paid at one and one-half times the basic hourly rate plus the hourly cost of required fringe benefits.

* Indicates a wage, fringe benefit, remark, or title change from the previous bulletin.

REMARKS

1. Carpenter, Laborer (excluding High Scaler, Window Washer): \$.50 per hour shall be added to the regular straight-time rate for height pay for each hour while working from a bosun's chair and/or from a cable-suspended scaffold or work platform which is free swinging (not attached to building) for each hour worked on said rig.
2. Cement Finisher, Mason, Plasterer, Terrazzo, Tile Setter: \$1.00 per hour shall be added to the regular straight-time rate for height pay for each hour while working from a bosun's chair and/or from a cable-suspended scaffold or work platform which is free swinging (not attached to building) for each hour worked on said rig.
3. Diver (Other than Aqua Lung), Stand-By Diver (Other than Aqua Lung):
 - A. On any dive exceeding 50 feet, the diver shall in addition be paid the following amount of "depth money":

50 feet to 100 feet	\$1.50 per foot in excess of 50 feet
100 feet to 150 feet	\$100.00 plus \$2.00 per foot in excess of 100 feet
150 feet to 200 feet	\$200.00 plus \$3.00 per foot in excess of 150 feet
 - B. When it is necessary for a Diver to enter any pipe, tunnel or other enclosure, the said Diver shall in addition to the hourly rate, receive a premium in accordance with the following schedule for distance traveled from the entrance of the pipe, tunnel or other enclosure:
 - 1) When able to stand erect, but in which there is no vertical ascent:

5 feet to 50 feet	\$5.00 per day
50 feet to 100 feet	\$7.50 per day
100 feet to 150 feet	\$12.50 per day
Greater than 150 feet	The premium shall be increased an additional \$7.50 for each succeeding 50 feet.
 - 2) When unable to stand erect and in which there is no vertical ascent:

5 feet to 50 feet	\$5.00 per day
50 feet to 100 feet	\$7.50 per day
100 feet to 150 feet	\$12.50 per day
150 feet to 200 feet	\$36.75 per day
200 feet to 300 feet	\$1.00 per foot
300 feet to 450 feet	\$1.50 per foot
450 feet to 600 feet	\$2.50 per foot
4. Electrician:
 - A. One and one-half times the straight-time rate while working in a tunnel under construction; under water with aqualung equipment; in a completed tunnel which has only one entrance or exit providing access to safety and where no other personnel are working; or in an underground structure having no access to safety or where no other personnel are working.
 - B. Double the straight-time rate shall be paid for the following types of hazardous work regardless if fall prevention devices are used:
 - 1) While working from poles, trusses, stacks, towers, tanks, bosun's chairs, swinging or rolling scaffolds, supporting structures, and open platforms, over 70 feet from the ground where the employee is subject to a free fall; provided, however, that when work is performed on stacks, towers or permanent platforms where the employees are on a firm footing within an enclosure, a hazardous condition does not exist regardless of height;
 - 2) While working outside of a railing or enclosure, or temporary platforms extending outside of a building, or from scaffolding or ladder within an enclosure where an employee's footing is within one foot of the top of such railing, and the employee is subject to a free fall of over 70 feet;
 - 3) Working on buildings while leaning over the railing or edge of the building, and is subject to a free fall of 70 feet; or
 - 4) Two hours minimum hazardous pay per day shall be paid while climbing to a stack, tower or permanent platform which exceeds 70 feet from the ground but where the employee is on a firm footing within an enclosure.
 - C. Five percent per hour shall be added to the hourly wage for height pay while working above 9,000 feet elevation.

REMARKS

5. Equipment Operator:

- A. Operators and Assistants to Engineer (climbing a boom) of cranes (under 50 tons) with booms of eighty feet or more (including jib) or of cranes (under 50 tons) with leads of one hundred feet or more, shall receive additional premium according to the following schedule:

	Per Hour
Booms of 80 feet up to, or leads of 100 feet up to, but not including 130 feet	\$0.50
Booms and/or leads of 130 feet up to, but not including 180 feet	\$0.75
Booms and/or leads of 180 feet up to and including 250 feet	\$1.15
Booms and/or leads over 250 feet	\$1.50

Operators and Assistants to Engineer (climbing a boom) of cranes (50 tons and over) with booms of 180 feet or more (including jib) shall receive additional premium according to the following schedule:

	Per Hour
Booms of 180 feet up to and including 250 feet	\$1.25
Booms over 250 feet	\$1.75

Note: The boom shall be measured from the center of the heel pin to the center of the boom or jib point sheave.

- B. \$1.25 per hour shall be added to the hourly wage while operating a rig suspended by ropes or cables or to perform work on a Yo-Yo Cat.
- C. In a raise or shaft, a premium of \$.40 per hour will be paid in addition to the regular straight time wage.
A raise is defined to be an underground excavation (lined or unlined) whose length exceeds its width and the inclination of the grade from the excavation is greater than 20 degrees from the horizontal.
A shaft is defined to be an excavation (lined or unlined) made from the surface of the earth, generally vertical in nature, but may decline up to 75 degrees from the vertical, and whose depth is greater than 15 feet and its largest horizontal dimension. Includes an underground silo.
- D. In a tunnel, a premium of \$.30 per hour will be paid in addition to the regular straight time wages.
A tunnel is defined to be an underground excavation (lined or unlined) whose length exceeds its width and the inclination of the grade from the excavation is no greater than 20 degrees from the horizontal.
6. Glazier: Effective 9/16/13 - \$1.00 per hour shall be added to the hourly wage for height pay for exterior glazing work performed in a walking/working surface with an unprotected side or edge 10 feet or more above a lower level which requires protection from fall hazards by guardrail systems, safety net systems, personal fall arrest systems, position devise systems, fall restraint systems, perimeter safety cables or controlled decking zones.
7. Insulator: Six percent per hour shall be added to the hourly wage for hazardous pay while working from a boatswain chair, staging or free standing scaffolding erected from the ground up or mezzanine floor subject to a free fall and skyclimber suspended from a permanent structure and when working above 40 feet.
8. Ironworker: \$.50 per hour shall be added to the hourly wage while working in tunnels or coffer dams. \$1.00 per hour shall be added to the hourly wage while working under or covered with water (submerged), or on the summits of Mauna Kea, Mauna Loa or Haleakala.
9. Plumber: One and one-half times the straight-time rate for height pay while working from OSHA approved trusses, stacks, towers, tanks, bosun's chair, swinging or rolling scaffolding, supporting structures or on open platforms where the employee is subject to a direct fall of 40 feet or more. Provided, however, that when said work is performed where the employee is on a firm footing within an enclosure, a hazardous condition does not exist regardless of height. \$1.00 per hour shall be added to the straight-time rate while working with flame cutting or any type of welding equipment on any galvanized material or product for at least an hour.
10. Sheetmetal Worker: Add \$.01 to the total fringe benefit hourly rate per Hawaii Revised Statutes, Section 104-2 (b)(2).
11. Water Front Construction: Clamshell or Dipper Operator: \$.50 per hour shall be added to the straight-time rate while working with boom (including jib) over 130 feet.
12. Possible wage/fringe option increases:
Floor Layer: Effective 3/2/14 - \$1.75; 3/1/15 - \$2.00
Painter: Effective 7/1/14 - \$0.25; 1/1/15 - \$0.50; 7/1/15 - \$0.75
Plumber: Effective WRS 483 - \$0.25
Roofer: Effective 9/6/15 - \$0.40
Taper: Effective WRS 483 - \$2.00
13. Chain-Link Fence Erector: \$1.00 per hour shall be added to the hourly wage while performing welding services.

APPRENTICE SCHEDULE BULLETIN NO. 482 September 16, 2013

Rates are applicable only to apprentices who are parties to agreements registered with the Department of Labor
and where the journeyworker to apprentice ratio is met.

Apprentice Classifications	Interval Hrs	BASIC HOURLY RATE										FRINGE BENEFIT HOURLY RATE	Remarks See Pg 7
		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	
BOILERMAKER	1000	\$24.64	\$26.40	\$28.16	\$29.92	\$31.68	\$33.44					\$27.68	
* CARPENTER													
Indentured Prior to 9/1/02	1000	\$16.30										\$12.02	1
"	1000		\$18.34	\$20.38	\$24.45	\$28.53	\$32.60	\$36.68	\$38.71			\$20.42	1
Indentured After 9/1/02	1000	\$16.30										\$8.02	1
"	1000		\$18.34									\$11.72	1
"	1000			\$20.38	\$24.45							\$14.22	1
"	1000					\$28.53	\$32.60					\$16.22	1
"	1000							\$36.68	\$38.71			\$18.22	1
* CEMENT FINISHER													
Indentured Prior to 9/1/03	1000	\$18.40										\$7.12	2
"	1000		\$20.24	\$22.08	\$25.76	\$27.60	\$29.44	\$31.28	\$33.12			\$23.47	2
Indentured On or After 9/1/03	1000	\$18.40	\$20.24	\$22.08	\$25.76	\$27.60	\$29.44	\$31.28	\$33.12			\$10.87	2
CONSTRUCTION CRAFT LABORER (LABORER I)													
Indentured On or After 9/3/02	1000	\$16.15										\$5.60	1
"	1000		\$19.38	\$22.61	\$25.84							\$11.77	1
* CONSTRUCTION EQUIPMENT OPERATOR													
Indentured On or After 9/1/02	1000	\$19.36										\$6.75	3
"	1000		\$21.30									\$16.24	3
"	1000			\$23.23								\$17.11	3
"	1000				\$27.10							\$18.84	3
"	1000					\$30.98						\$20.56	3
"	1000						\$34.85					\$22.29	3
* DRYWALL INSTALLER													
Indentured Prior to 9/1/02	1000	\$16.40										\$12.02	
"	1000		\$18.45	\$20.50	\$24.60	\$28.70	\$32.80	\$36.90	\$38.95			\$20.42	
Indentured After 9/1/02	1000	\$16.40										\$8.02	
"	1000		\$18.45									\$11.72	
"	1000			\$20.50	\$24.60							\$14.22	
"	1000					\$28.70	\$32.80					\$16.22	
"	1000							\$36.90	\$38.95			\$18.22	

APPRENTICE SCHEDULE BULLETIN NO. 482 September 16, 2013

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and where the journeyworker to apprentice ratio is met.

Apprentice Classifications	Interval Hrs	BASIC HOURLY RATE										FRINGE BENEFIT HOURLY RATE	Remarks See Pg 7
		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	
* ELECTRICIAN (WIRE & LINE INSTALLER)	1000	\$14.54										\$8.88	
" "	1000		\$16.62									\$9.18	
" "	1000			\$18.70								\$15.24	4
" "	1000				\$20.78							\$16.18	4
" "	1000					\$22.85						\$17.12	4
" "	1000						\$24.93					\$18.07	4
" "	1000							\$27.01				\$19.01	4
" "	1000								\$29.09			\$19.95	4
" "	1000									\$33.24		\$21.85	4
" "	1000										\$37.40	\$23.74	4
(Effective 2/23/14)													
* ELECTRICIAN (WIRE & LINE INSTALLER)	1000	\$14.67										\$9.14	
" "	1000		\$16.76									\$9.44	
" "	1000			\$18.86								\$15.54	4
" "	1000				\$20.95							\$16.49	4
" "	1000					\$23.05						\$17.43	4
" "	1000						\$25.14					\$18.39	4
" "	1000							\$27.24				\$19.34	4
" "	1000								\$29.33			\$20.28	4
" "	1000									\$33.52		\$22.18	4
" "	1000										\$37.71	\$24.08	4
ELEVATOR CONSTRUCTOR	850	\$25.605										-	
" "	850		\$28.17									\$25.185	
" "	1700			\$33.29	\$35.85	\$40.97						\$25.185	
* FLOOR LAYER													
Indentured After 2/27/94	1000	\$11.66	\$13.11									\$13.91	
" "	1000			\$14.57	\$16.03							\$18.91	
" "	1000					\$17.48	\$18.94	\$21.86	\$24.77			\$22.91	

APPRENTICE SCHEDULE BULLETIN NO. 482 September 16, 2013

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and where the journeyworker to apprentice ratio is met.

Apprentice Classifications	Interval Hrs	BASIC HOURLY RATE										FRINGE BENEFIT HOURLY RATE	Remarks See Pg 7
		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	
* GLAZIER													
Indentured Prior to 7/1/99	1000	\$18.51										\$24.10	5
"	1000		\$20.19									\$24.32	5
"	1000			\$23.56								\$24.76	5
"	1000				\$25.24							\$24.98	5
"	1000					\$26.92						\$25.20	5
"	1000						\$28.60					\$25.42	5
"	1000							\$30.29				\$25.64	5
"	1000								\$31.97			\$25.86	5
Indentured On or After 7/1/99	1000	\$15.14										\$23.66	5
"	1000		\$16.83									\$23.88	5
"	1000			\$18.51								\$24.10	5
"	1000				\$20.19							\$24.32	5
"	1000					\$23.56						\$24.76	5
"	1000						\$25.24					\$24.98	5
"	1000							\$26.92				\$25.20	5
"	1000								\$28.60			\$25.42	5
"	1000									\$30.29		\$25.64	5
"	1000										\$31.97	\$25.86	5
* HEAVY DUTY REPAIRER & WELDER (EQUIP. OPR 9A)													
Indentured Prior to 9/1/02	1000	\$19.36										\$6.75	3
"	1000		\$21.30	\$23.23	\$27.10	\$30.98	\$32.91	\$34.85	\$36.78			\$27.51	3
Indentured On or After 9/1/02	1000	\$19.36										\$6.75	3
"	1000		\$21.30									\$16.24	3
"	1000			\$23.23								\$17.11	3
"	1000				\$27.10							\$18.84	3
"	1000					\$30.98						\$20.56	3
"	1000						\$32.91					\$21.43	3
"	1000							\$34.85				\$22.29	3
"	1000								\$36.78			\$23.16	3
INSULATOR													
Hired After 5/3/95	2000	\$18.83										\$7.70	6
"	2000		\$18.83									\$17.21	6
"	2000			\$22.59								\$17.49	6
"	2000				\$26.36							\$17.78	6
"	2000					\$30.12						\$18.06	6

APPRENTICE SCHEDULE BULLETIN NO. 482 September 16, 2013

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and where the journeyworker to apprentice ratio is met.

Apprentice Classifications	Interval Hrs	BASIC HOURLY RATE										FRINGE BENEFIT HOURLY RATE	Remarks See Pg 7
		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	
IRONWORKER (REINFORCING & STRUCTURAL)													
Indentured After 10/31/93	1000	\$17.37										\$23.67	7
"	1000		\$19.11									\$24.14	7
"	1000			\$20.85								\$24.61	7
"	1000				\$24.32							\$25.56	7
"	1000					\$27.80						\$26.51	7
"	1000						\$31.27					\$27.46	7
MASON													
BRICKLAYER													
Indentured On or After 9/1/03	1000	\$18.43	\$20.27	\$22.11	\$25.80	\$27.64	\$29.48	\$31.32	\$33.17			\$10.87	2
STONE MASON													
Indentured On or After 9/1/03	1000	\$20.27	\$22.11	\$23.95	\$25.80	\$27.64	\$29.48	\$31.32	\$33.17			\$10.87	2
POINTER-CAULKER-WEATHERPROOFER													
Indentured On or After 9/1/03	1000	\$18.55	\$20.41	\$22.26	\$25.97	\$29.68	\$33.39					\$10.87	2
Painter													
"	1000	\$15.35										\$6.85	
"	1000		\$17.05	\$18.76	\$20.46	\$22.17						\$10.35	
"	1000						\$23.87					\$11.35	
"	1000							\$27.28	\$30.69			\$12.10	
(Effective 1/1/14)													
* PAINTER	1000	\$15.35										\$7.10	
"	1000		\$17.05	\$18.76	\$20.46	\$22.17						\$10.60	
"	1000						\$23.87					\$11.60	
"	1000							\$27.28	\$30.69			\$12.35	
* PAVING EQUIPMENT OPERATOR	1000	\$20.58										\$6.75	
"	1000		\$26.19									\$16.70	
"	1000			\$29.94								\$19.42	
"	1000				\$33.68							\$23.04	
PLASTERER													
Indentured On or After 9/1/03	1000	\$15.06	\$16.94	\$18.82	\$20.70	\$22.58	\$26.35	\$30.11	\$33.88			\$10.87	2

APPRENTICE SCHEDULE BULLETIN NO. 482 September 16, 2013

Rates are applicable only to apprentices who are parties to agreements registered with the Department of Labor
and where the journeyworker to apprentice ratio is met.

Apprentice Classifications	Interval Hrs	BASIC HOURLY RATE										FRINGE BENEFIT HOURLY RATE	Remarks See Pg 7
		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	
PLUMBER:													
PLUMBER; FIRE SPRINKLER FITTER; REFRIGERATION													
AIR CONDITIONING; STEAMFITTER-WELDER													
Indentured Prior to 9/2/85	1000	\$13.34										\$17.81	8
"	1000		\$15.24									\$18.26	8
"	1000			\$17.15								\$18.72	8
"	1000				\$19.05							\$19.18	8
"	1000					\$20.96						\$19.64	8
"	1000						\$22.86					\$20.10	8
"	1000							\$24.77				\$20.55	8
"	1000								\$26.67			\$21.01	8
"	1000									\$28.58		\$21.47	8
"	1000										\$30.48	\$21.93	8
Indentured On or After 9/2/85	1000	\$15.32										\$1.40	8
"	1000		\$15.32									\$1.45	8
"	1000			\$18.10								\$2.93	8
"	1000				\$18.10							\$2.93	8
"	1000					\$20.96						\$3.75	8
"	1000						\$20.96					\$3.75	8
"	1000							\$24.77				\$4.58	8
"	1000								\$24.77			\$4.58	8
"	1000									\$28.58		\$5.28	8
"	1000										\$28.58	\$5.28	8
(Effective 1/5/14)													
* PLUMBER:													
PLUMBER; FIRE SPRINKLER FITTER; REFRIGERATION													
AIR CONDITIONING; STEAMFITTER-WELDER													
Indentured Prior to 9/2/85	1000	\$13.42										\$17.81	8
"	1000		\$15.34									\$18.26	8
"	1000			\$17.26								\$18.72	8
"	1000				\$19.18							\$19.18	8
"	1000					\$21.09						\$19.64	8
"	1000						\$23.01					\$20.10	8
"	1000							\$24.93				\$20.55	8
"	1000								\$26.85			\$21.01	8
"	1000									\$28.76		\$21.47	8
"	1000										\$30.68	\$21.93	8
Indentured On or After 9/2/85	1000	\$15.42										\$1.40	8
"	1000		\$15.42									\$1.45	8
"	1000			\$18.22								\$2.93	8
"	1000				\$18.22							\$2.93	8
"	1000					\$21.09						\$3.75	8
"	1000						\$21.09					\$3.75	8
"	1000							\$24.93				\$4.58	8
"	1000								\$24.93			\$4.58	8
"	1000									\$28.76		\$5.28	8
"	1000										\$28.76	\$5.28	8

APPRENTICE SCHEDULE BULLETIN NO. 482 September 16, 2013

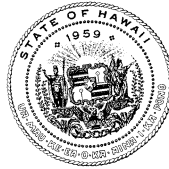
Rates are applicable only to apprentices who are parties to agreements registered with the Department of Labor
and where the journeyworker to apprentice ratio is met.

Apprentice Classifications	Interval Hrs	BASIC HOURLY RATE										FRINGE BENEFIT HOURLY RATE	Remarks See Pg 7
		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	
* ROOFER													
Indentured Prior to 11/1/98	1000	\$16.70	\$18.55	\$22.26								\$12.63	9
"	1000				\$25.97	\$29.68	\$33.39	\$35.25				\$16.88	
Indentured On or After 11/1/98 and Prior to 11/4/12	1000	\$16.70	\$18.55	\$22.26								\$12.63	9
"	1000				\$25.97	\$29.68	\$31.54	\$33.39	\$35.25			\$16.88	
Indentured On or After 11/4/12	2000	\$16.70	\$22.26									\$12.63	9
"	2000			\$29.68	\$33.39							\$16.88	9
* SHEETMETAL WORKER													
"	1000	\$14.90										\$11.04	
"	1000		\$16.76									\$11.20	
"	1000			\$18.63								\$18.13	
"	1000				\$20.49							\$18.58	
"	1000					\$22.35						\$19.03	
"	1000						\$24.21					\$19.50	
"	1000							\$26.08				\$19.96	
"	1000								\$27.94			\$20.43	
"	1000									\$29.80		\$20.88	
"	1000										\$31.66	\$21.35	
TAPER													
"	1000	\$16.00	\$18.00	\$20.00	\$22.00	\$24.00						\$7.25	
"	1000						\$26.00					\$7.75	
"	1000							\$30.00	\$34.00			\$8.25	
TELECOMMUNICATION WORKER (TECHNICIAN I / SPLICER)													
"	1000	\$14.63										\$9.60	
"	1000		\$15.85									\$9.79	
"	1000			\$17.07								\$10.00	
"	1000				\$18.29							\$10.21	
"	1000					\$19.50						\$10.42	
"	1000						\$21.94					\$10.83	
* TILE SETTER													
CERAMIC & HARD TILE													
Indentured Prior to 9/1/03	1000	\$18.55										\$7.12	2
"	1000		\$20.41	\$22.26	\$25.97	\$27.83	\$29.68	\$31.54	\$33.39			\$23.47	2
Indentured On or After 9/1/03	1000	\$18.55	\$20.41	\$22.26	\$25.97	\$27.83	\$29.68	\$31.54	\$33.39			\$10.87	2

* Indicates a wage, fringe benefit, remark, or title change from the previous bulletin.

REMARKS:

1. Carpenter, Construction Craft Laborer: \$.50 per hour shall be added to the regular straight-time rate for height pay for each hour while working from a bosun's chair and/or from a cable-suspended scaffold or work platform which is free swinging (not attached to building) for each hour worked on said rig.
2. Cement Finisher, Mason, Plasterer, Tile Setter: \$1.00 per hour shall be added to the regular straight-time rate for height pay for each hour while working from a bosun's chair and/or from a cable-suspended scaffold or work platform which is free swinging (not attached to building) for each hour worked on said rig.
3. Construction Equipment Operator, Heavy Duty Repairer & Welder: \$1.25 per hour shall be added to the hourly wage while operating a rig suspended by ropes or cables or to perform work on a Yo-Yo Cat.
4. Electrician:
 - A. One and one-half times the straight-time rate while working in a tunnel under construction; under water with aqualung equipment; in a completed tunnel which has only one entrance or exit providing access to safety and where no other personnel are working; or in an underground structure having no access to safety or where no other personnel are working.
 - B. Double the straight-time rate shall be paid for the following types of hazardous work regardless if fall prevention devices are used:
 - 1) While working from poles, trusses, stacks, towers, tanks, bosun's chairs, swinging or rolling scaffolds, supporting structures, and open platforms, over 70 feet from the ground where the employee is subject to a free fall; provided, however, that when work is performed on stacks, towers or permanent platforms where the employees are on a firm footing within an enclosure, a hazardous condition does not exist regardless of height;
 - 2) While working outside of a railing or enclosure, or temporary platforms extending outside of a building, or from scaffolding or ladder within an enclosure where an employee's footing is within one foot of the top of such railing, and the employee is subject to a free fall of over 70 feet;
 - 3) Working on buildings while leaning over the railing or edge of the building, and is subject to a free fall of 70 feet; or
 - 4) Two hours minimum hazardous pay per day shall be paid while climbing to a stack, tower or permanent platform which exceeds 70 feet from the ground but where the employee is on a firm footing within an enclosure.
 - C. Five percent per hour shall be added to the hourly wage for height pay while working above 9,000 feet elevation.
5. Glazier: Effective 9/16/13 - \$1.00 per hour shall be added to the hourly wage for height pay for exterior glazing work performed in a walking/working surface with an unprotected side or edge 10 feet or more above a lower level which requires protection from fall hazards by guardrail systems, safety net systems, personal fall arrest systems, position devise systems, fall restraint systems, perimeter safety cables or controlled decking zones.
6. Insulator: Six percent per hour shall be added to the hourly wage for hazardous pay while working from a boatswain chair, staging or free standing scaffolding erected from ground up or mezzanine floor subject to a free fall and skyclimber suspended from a permanent structure and when working above 40 feet.
7. Ironworker: \$.50 per hour shall be added to the hourly wage while working in tunnels or coffer dams. \$1.00 per hour shall be added to the hourly wage while working under or covered with water (submerged), or on the summits of Mauna Kea, Mauna Loa or Haleakala.
8. Plumber: One and one-half times the straight-time rate for height pay while working from OSHA approved trusses, stacks, towers, tanks, bosun's chair, swinging or rolling scaffolding, supporting structures or on open platforms where the employee is subject to a direct fall of 40 feet or more. Provided, however, that when said work is performed where the employee is on a firm footing within an enclosure, a hazardous condition does not exist regardless of height. \$1.00 per hour shall be added to the straight-time rate while working with flame cutting or any type of welding equipment on any galvanized material or product for at least an hour.
9. Roofer: When an apprentice has accumulated 2500 hours, \$4.25 will be added to his/her pension/annuity plan.
The apprenticeship program for apprentices indentured on or after November 4, 2012, consists of four steps with 2,000 hours for each step.



**STATE OF HAWAII
DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS**

List of Construction Trades in Registered Apprenticeship Programs

Apprenticeship programs for the following construction trades were approved and registered by the State Department of Labor and Industrial Relations in accordance with Chapter 372, Hawaii Revised Statutes, and Title 12, Chapter 30, Hawaii Administrative Rules. Union and non-union programs are listed separately. The minimum requirements are not exclusive as a program sponsor may add other requirements in their selection procedures.

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Boilermaker	Western State Area Joint Apprenticeship Committee						Business Manager
	(International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmith, Forgers, and Helpers and Subordinate, Lodge No. 627, AFL-CIO, and the Western States Joint Apprenticeship Committee, and Association of Boilermaker Employers)	x		03/18/1991	6,000	<ul style="list-style-type: none"> At least 18 years old High school graduate or GED equivalent 	Address: 1414 Dillingham Blvd, Room 205 Honolulu, HI 96817 Phone: (808) 848-7744 Fax: (808) 848-0311
Bricklayer-Mason	Joint Apprenticeship Committee for Bricklayer-Mason						Director of Training or Training Coordinator
	(Masonry Contractors Association of Hawaii and Other Signatory Employers and Local 1 of Hawaii of the Bricklayers and Allied Craftsmen International Union, AFL-CIO)	x		02/10/64	8,000	<ul style="list-style-type: none"> At least 16 years old Physically able to perform duties of the trade 	Address: 2251 N. School Street Honolulu, HI 96819 Phone: (808) 845-5949 Fax: (808) 847-7068 Website: http://www.opcmia.org/

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Carpenter	<p>Carpenters Joint Apprenticeship Committee aka Hawaii Carpenters Apprenticeship and Training Program</p> <p>(General Contractors Association of Hawaii and Building Industry Labor Association and Other Signatory Contractors and the United Brotherhood of Carpenters and Joiners of America, Local 745 AFL-CIO)</p>	x		04/01/64	8,000	<ul style="list-style-type: none"> At least 17 years old High school diploma or equivalent education, or equivalent work experience Pass basic math test Complete questionnaire Able to lift 75 lbs. 	<p>Director of Training</p> <p>Address: 1311 Houghtailing Street Room 201 Honolulu, HI 96817</p> <p>Phone: (808) 848-0794 Ext. 5 Fax: (808) 841-5961 (808) 841-0300 Website: http://www.carpenters.org/</p>
Carpenter	Associated Builders and Contractors Apprenticeship Committee		x	02/08/90	8,000	<ul style="list-style-type: none"> At least 18 years old High school diploma or GED Full-time employee of a member company for a period of not less than six continuous weeks Legally able to work Physically able to perform duties of the trade 	<p>Director of Training</p> <p>Address: 1375 Dillingham Blvd. Suite 200 Honolulu, HI 96817</p> <p>Phone: (808) 845-4887 Fax: (808) 847-7876 Website: http://www.abchawaii.org/</p>
Cement Finisher	<p>Joint Apprenticeship Committee for Cement Finishers</p> <p>(Operative Plasterers and Cement Finishers International Association, Local 630, AFL-CIO, and Local 1 of the International Union of Bricklayers and Allied Craftsmen, AFL-CIO)</p>	x		04/01/61	8,000	<ul style="list-style-type: none"> At least 16 years old Physically able to perform duties of the trade 	<p>Director of Training or Training Coordinator</p> <p>Address: 2251 N. School Street Honolulu, HI 96819</p> <p>Phone: (808) 845-5949 Fax: (808) 847-7068 Website: http://www.opcmia.org/</p>
Construction Craft Laborer	<p>Hawaii Laborers' Joint Apprenticeship Committee</p> <p>(International Union of North America, Local 368, and Signatory Contractors Association)</p>	x		02/11/00	4,000	<ul style="list-style-type: none"> At least 18 years old High school diploma or GED Driver's license Successfully complete Pre-Construction Apprentice Evaluation Course 	<p>Apprenticeship Coordinator</p> <p>Address: 96-138 Farrington Hwy. Pearl City, HI 96782</p> <p>Phone: (808) 455-7979 Fax: (808) 456-8689 Website: http://www.liuna.org/</p>

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Construction Equipment Operator	Hawaii Joint Apprenticeship Committee for Operating Engineers (General Contractors Labor Association and the Building Industry Labor Association and International Union of Operating Engineers, Local Union #3, AFL-CIO)	x		11/14/67	6,000	<ul style="list-style-type: none"> At least 18 years old High school diploma or GED or C-based test Physically able to perform duties of the trade School transcripts Driver's license Current State DOT PUC physical Pass industry or general knowledge test Have reliable transportation 	<p>State Administrator</p> <p>Address: P.O. Box 428 Kahuku, HI 96731-0428</p> <p>Phone: (808) 232-2001 Fax: (808) 232-2217 Website: http://oe3.org/training/</p>
Drywall	Carpenters Joint Apprenticeship Committee aka Hawaii Carpenters Apprenticeship and Training Program (General Contractors Association of Hawaii and Building Industry Labor Association and Other Signatory Contractors and the United Brotherhood of Carpenters and Joiners of America, Local 745, AFL-CIO)	x		04/06/88	8,000	<ul style="list-style-type: none"> At least 17 years old High school diploma or GED Complete questionnaire Pass industry test (8th grade math) Able to lift 100 lbs. 	<p>Director of Training</p> <p>Address: 1311 Houghtailing Street Room 201 Honolulu, HI 96817</p> <p>Phone: (808) 848-0794 Ext. 5 Fax: (808) 848-5961 (808) 841-0300 Website: http://www.carpenters.org/</p>
Electrical Wireperson	PECA-HEW Joint Apprenticeship Committee (Pacific Electrical Contractors Association and the Hawaii Electrical Workers Division of Laborers International, Local 368)	x		11/20/91	10,000	<ul style="list-style-type: none"> At least 16 years old High school diploma or GED Pass color code test Transcript of high school or post high school courses Pass one-year high school Algebra 1 (not pre-Algebra) or higher 	<p>Training Coordinator</p> <p>Address: 1130 Nimitz Highway Suite 204 Honolulu, HI 96817</p> <p>Phone: (808) 845-1986 Fax: (808) 847-7829 Website: N/A</p>

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Electrician	Associated Builders and Contractors Apprenticeship Committee		x	02/08/90	10,000	<ul style="list-style-type: none"> • At least 18 years old • High school diploma or GED • Full-time employee of a member company for a period of not less than six continuous weeks • Legally able to work • Physically able to perform duties of the trade • Pass eye examination for color blindness • Completed one-year high school algebra (not pre-algebra) 	<p>Director of Training</p> <p>Address: 1375 Dillingham Blvd. Suite 200 Honolulu, HI 96817</p> <p>Phone: (808) 845-4887 Fax: (808) 847-7876 Website: http://www.abchawaii.org/</p>
(Electrician) Wireperson	<p>Hawaii Electricians Joint Apprenticeship Committee</p> <p>(International Brotherhood of Electrical Workers (IBEW) Local 1186, AFL-CIO, and Signatory Employers)</p>	x		04/08/47	10,000	<ul style="list-style-type: none"> • At least 18 years old • High school diploma or GED • Complete the National Joint Apprenticeship and Training Committee Math Course or one-year high school Algebra 1 • Transcript of high school or post high school courses • Pass industry aptitude test to qualify for oral interview • Application fee (non-refundable) 	<p>Apprenticeship or Training Coordinator</p> <p>Address: 1935 Hau Street Room 301 Honolulu, HI 96819</p> <p>Phone: (808) 847-0629 Fax: (808) 843-8818 Website: http://www.njatc.org/</p>
Elevator Constructor	<p>International Union of Elevator Constructors Local 126 Joint Apprenticeship Committee</p> <p>(International Union of Elevator Constructors, Local 126 and Signatory Employers)</p>	x		03/27/03	6,800	<ul style="list-style-type: none"> • At least 18 years old • High school diploma or GED • School transcripts • Pass aptitude test (math, reading) • Pass medical exam • Physically able to perform duties of the trade 	<p>Business Representative</p> <p>Address: 707 Alakea Street Room 314 Honolulu, HI 96813</p> <p>Phone: (808) 536-8653 Fax: (808) 537-3779 Website: http://iuec.org/</p>

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Fire Sprinkler Fitter	Honolulu Joint Apprenticeship and Training Committee for the Plumbing and Pipefitting Industry <i>aka</i> JATC of UA Plumbers and Fitters, Local 675, AFL-CIO, and PAMCAH (Plumbing and Mechanical Contractors Association of Hawaii and United Association of Plumbers and Pipefitters Local 675, AFL-CIO)	x		10/19/92	10,000	<ul style="list-style-type: none"> At least 17 years old High school diploma or GED School transcripts Pass placement evaluation with minimum score of 70% Driver's license 	<p>Training Coordinator</p> <p>Address: 97-731 B Kamehameha Hwy. Pearl City, HI 96782</p> <p>Phone: (808) 456-0585 Fax: (808) 456-7131 Website: http://www.ua.org/</p>
Floor Layer	Joint Apprenticeship and Training Committee for Floor Layers (Hawaii Floor Covering Association and Carpet, Linoleum, and Soft Tile Union Local 1926, AFL-CIO)	x		02/17/66	8,000	<ul style="list-style-type: none"> At least 17 years old Driver's license Pass color vision test 	<p>Training Coordinator</p> <p>Address: 2240 Young Street Honolulu, HI 96826</p> <p>Phone: (808) 942-3988 Fax: (808) 946-6667 Website: http://www.iupat.org/</p>
Glazier	Joint Apprenticeship Committee for Glaziers, Architectural Metal and Glassworkers Industry <i>aka</i> Glaziers, Architectural Metal and Glassworkers JATC (Glass/Metal Contractors Association of Hawaii and Other Signatory Contractors and the Glaziers, Architectural Metal and Glassworkers Union Local 1889, AFL-CIO)	x		04/01/01	10,000	<ul style="list-style-type: none"> At least 16 years old High school diploma or GED Driver's license Physically able to perform duties of the trade 	<p>Training Coordinator</p> <p>Address: 2240 Young Street Honolulu, HI 96826</p> <p>Phone: (808) 946-3329 (808) 943-0757 Fax: (808) 946-8736 Website: http://www.iupat.org/</p>
Heat and Frost Asbestos Insulator	Honolulu Joint Apprenticeship Committee for the Heat and Frost Asbestos Insulator Trade (Heat and Frost Insulators and Asbestos Workers, Local 132, and Signatory Participating Employers)	x		07/23/71	10,000	<ul style="list-style-type: none"> At least 16 years old High school diploma or GED Physically able to perform duties of the trade 	<p>Training Coordinator</p> <p>Address: 1019 Lauia Street Bay #4 Kapolei, HI 96707</p> <p>Phone: (808) 521-6405 Fax: (808) 523-9861 Website: http://www.insulators.org/</p>

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Heavy Duty Repairman and Welder	Hawaii Joint Apprenticeship Committee for Operating Engineers (General Contractors Labor Association and the Building Industry Labor Association and International Union of Operating Engineers, Local Union #3, AFL-CIO)	x		11/14/67	8,000	<ul style="list-style-type: none"> At least 18 years old High school diploma or GED or C-based test Physically able to perform duties of the trade School transcripts Driver's license Current State DOT PUC physical Pass industry or general knowledge test Have reliable transportation 	<p>State Administrator</p> <p>Address: P.O. Box 428 Kahuku, HI 96731-0428</p> <p>Phone: (808) 232-2001 Fax: (808) 232-2217 Website: http://oe3.org/training/</p>
Ironworker Shop Fabricator / Welder	Hawaii Shopmen's Local 803 Joint Apprenticeship and Training Committee (International Association of Bridge, Structural and Ornamental Ironworkers, Local 803, AFL-CIO, and Participating Employers)	x		12/31/63	8,000	<ul style="list-style-type: none"> At least 18 years old High school diploma or GED Physically able to perform duties of the trade Must be sponsored by employer who is signatory to the Shopmen's Local 803 collective bargaining agreement 	<p>Training Coordinator</p> <p>Address: 94-497 Ukee Street Waipahu, HI 96797</p> <p>Phone: (808) 671-4344 Fax: (808) 676-1144 Website: http://www.ironworkers.org/</p>
Ironworker (Reinforcing)	Joint Apprenticeship Committee for Ironworker (Reinforcing) aka Ironworkers Joint Apprenticeship Committee (Reinforcing) (International Association of Bridge, Structural and Ornamental Ironworkers, Local 625, AFL-CIO and Participating Employers)	x		06/26/53	6,000	<ul style="list-style-type: none"> At least 16 years old Physically able to perform duties of the trade 	<p>Training Coordinator</p> <p>Address: 94-497 Ukee Street Waipahu, HI 96797</p> <p>Phone: (808) 671-8225 Fax: (808) 676-1144 Website: http://www.ironworkers.org/</p>

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Ironworker (Structural)	Joint Apprenticeship Committee for Ironworker (Structural) aka Ironworkers Joint Apprenticeship Committee (Structural) (International Association of Bridge, Structural and Ornamental Ironworkers, Local 625, AFL-CIO and Participating Employers)	x		03/01/61	6,000	<ul style="list-style-type: none"> At least 16 years old Physically able to perform duties of the trade 	Training Coordinator Address: 94-497 Ukee Street Waipahu, HI 96797 Phone: (808) 671-8225 Fax: (808) 676-1144 Website: http://www.ironworkers.org/
Painter	Joint Apprenticeship and Training Committee for Painters (Painting and Decorating Contractors of Hawaii (PDCA) and the International Union of Painters and Allied Trades (IUPAT) Local 1791, AFL-CIO)	x		09/01/61	8,000	<ul style="list-style-type: none"> At least 16 years old High school diploma or GED Driver's license Physically able to perform the duties of the trade Pass color code vision test 	Training Coordinator Address: 2240 Young Street Honolulu, HI 96826 Phone: (808) 947-6606 Fax: (808) 942-0195 Websites: http://www.dc50.org/ http://www.iupat.org/
Painter	Associated Builders and Contractors Apprenticeship Committee		x	05/02/90	8,000	<ul style="list-style-type: none"> At least 18 years old Full-time employee of a member company for a period of not less than six continuous weeks Legally able to work Physically able to perform duties of the trade Pass physical examination if required by Committee 	Director of Training Address: 1375 Dillingham Blvd. Suite 200 Honolulu, HI 96817 Phone: (808) 845-4887 Fax: (808) 847-7876 Website: http://www.abchawaii.org/
Painter	Color Dynamics, Inc.		x	12/01/89	8,000	<ul style="list-style-type: none"> At least 16 years old Physically fit to perform duties of the trade Must not be color blind 	President Address: 816 Gulick Avenue Honolulu, HI 96819 Phone: (808) 848-7000 Fax: (808) 842-0800 Website: http://www.colordynamics.com

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Painter	Kawika's Painting		x	10/01/84	8,000	<ul style="list-style-type: none"> At least 16 years old Physically fit to perform duties of the trade Must not be color blind 	President Address: 2147 Eluwene Street Honolulu, HI 96819 Phone: (808) 848-0003 Fax: (808) 842-1908 Website: http://www.kawikaspainting.com
Paving Equipment Operator	Hawaii Joint Apprenticeship Committee for Operating Engineers (General Contractors Labor Association and the Building Industry Labor Association and International Union of Operating Engineers, Local Union #3, AFL-CIO)	x		04/29/10	4,000	<ul style="list-style-type: none"> At least 18 years old High school diploma or GED or C-based test Physically able to perform duties of the trade School transcripts Driver's license Current State DOT PUC physical Pass industry or general knowledge test Have reliable transportation 	State Administrator Address: P.O. Box 428 Kahuku, HI 96731-0428 Phone: (808) 232-2001 Fax: (808) 232-2217 Website: http://oe3.org/training/
Plasterer	Joint Apprenticeship Committee for Plasterers (Pacific Bureau for Lathing and Plastering and the Operative Plasterers and Cement Finishers Association of the U.S. and Canada, Local 630, AFL-CIO)	x		06/30/59	8,000	<ul style="list-style-type: none"> At least 16 years old Physically able to perform duties of the trade 	Director of Training Address: 2251 N. School Street Honolulu, HI 96819 Phone: (808) 845-5949 Fax: (808) 847-7068 Website: http://www.opcmia.org/
Plumber	Honolulu Joint Apprenticeship and Training Committee for the Plumbing and Pipefitting Industry <i>aka</i> JATC of UA Plumbers and Fitters, Local 675, AFL-CIO, and PAMCAH (Plumbing and Mechanical Contractors Association of Hawaii and United Association of Plumbers and Pipefitters Local 675, AFL-CIO)	x		11/14/52	10,000	<ul style="list-style-type: none"> At least 17 years old High school diploma or GED School transcripts Pass placement evaluation with a minimum score of 70% Driver's license 	Training Coordinator Address: 97-731 B Kamehameha Hwy. Pearl City, HI 96782 Phone: (808) 456-0585 Fax: (808) 456-7131 Website: http://www.ua.org/

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Plumber	Associated Builders and Contractors Apprenticeship Committee		x	02/02/99	10,000	<ul style="list-style-type: none"> At least 18 years old Full-time employee of a member company for a period of not less than six continuous weeks Legally able to work Physically able to perform duties of the trade Pass physical examination if required by Committee 	Director of Training Address: 1375 Dillingham Blvd. Suite 200 Honolulu, HI 96817 Phone: (808) 845-4887 Fax: (808) 847-7876 Website: http://www.abchawaii.org/
Pointer-Caulker-Weatherproofer	Joint Apprenticeship Committee for Pointer-Caulker-Weatherproofer (Pointing, Caulking and Weatherproofing Contractors and the International Union of Bricklayers and Allied Crafts, Local 1, AFL-CIO)	x		08/23/95	6,000	<ul style="list-style-type: none"> At least 16 years old Physically able to perform duties of the trade 	Director of Training or Training Coordinator Address: 2251 N. School Street Honolulu, HI 96819 Phone: (808) 845-5949 Fax: (808) 847-7068 Website: http://www.opcmia.org/
Refrigeration Air-Conditioning	Honolulu Joint Apprenticeship and Training Committee for the Plumbing and Pipefitting Industry aka JATC of UA Plumbers and Fitters, Local 675, AFL-CIO, and PAMCAH (Plumbing and Mechanical Contractors Association of Hawaii and United Association of Plumbers and Pipefitters Local 675, AFL-CIO)	x		09/04/62	10,000	<ul style="list-style-type: none"> At least 17 years old High school diploma or GED School transcripts Pass placement evaluation with a minimum score of 70% Driver's license 	Training Coordinator Address: 97-731 B Kamehameha Hwy. Pearl City, HI 96782 Phone: (808) 456-0585 Fax: (808) 456-7131 Website: http://www.ua.org/
Roofer	Joint Apprenticeship and Training Committee for Roofers (United Union of Roofers, Waterproofers and Allied Workers, AFL-CIO, Local 221, and All Participating Employers)	x		01/13/68	8,000	<ul style="list-style-type: none"> At least 16 years old High school diploma or GED Driver's license Physically able to perform duties of the trade Able to lift 100 lbs. 	Training Director Address: 2045 Kamehameha IV Rd. Room 203 Honolulu, HI 96819 Phone: (808) 847-5757 Fax: (808) 848-8707 Website: http://www.unionroofers.com

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Roofer	Associated Builders and Contractors Apprenticeship Committee		x	01/09/96	7,000	<ul style="list-style-type: none"> At least 18 years old Full-time employee of a member company for a period of not less than six continuous weeks Legally able to work Physically able to perform duties of the trade Pass physical examination if required by Committee 	<p>Director of Training</p> <p>Address: 1375 Dillingham Blvd. Suite 200 Honolulu, HI 96817</p> <p>Phone: (808) 845-4887</p> <p>Fax: (808) 847-7876</p> <p>Website: http://www.abchawaii.org/</p>
Sheet Metal Worker	<p>Hawaii Joint Apprenticeship Committee for the Sheet Metal Industry</p> <p>(Sheet Metal Contractor's Association and Sheet Metal Workers' International Association, Local 293)</p>	x		01/02/58	10,000	<ul style="list-style-type: none"> At least 18 years old High school diploma or GED Driver's license 	<p>Apprenticeship Coordinator</p> <p>Address: 1405 North King Street Room 403 Honolulu, HI 96817</p> <p>Phone: (808) 841-6106</p> <p>Fax: (808) 841-1842</p> <p>Website: http://www.smwia.org/</p>
Steamfitter/Welder	<p>Honolulu Joint Apprenticeship and Training Committee for the Plumbing and Pipefitting Industry aka JATC of UA Plumbers and Fitters, Local 675, AFL-CIO, and PAMCAH</p> <p>(Plumbing and Mechanical Contractors Association of Hawaii and United Association of Plumbers and Pipefitters Local 675, AFL-CIO)</p>	x		02/05/02	10,000	<ul style="list-style-type: none"> At least 17 years old High school diploma or GED School transcripts Pass placement evaluation with a minimum score of 70% Driver's license 	<p>Training Coordinator</p> <p>Address: 97-731 B Kamehameha Hwy. Pearl City, HI 96782</p> <p>Phone: (808) 456-0585</p> <p>Fax: (808) 456-7131</p> <p>Website: http://www.ua.org/</p>
Stone Mason	<p>Joint Apprenticeship Committee for Stone Mason Industry</p> <p>(Masonry Contractors Association of Hawaii and Local 1 of Hawaii of the Bricklayers and Allied Craftsmen International Union, AFL-CIO, and Other Signatory Employers)</p>	x		02/10/64	8,000	<ul style="list-style-type: none"> At least 16 years old Physically able to perform duties of the trade 	<p>Director of Training or Training Coordinator</p> <p>Address: 2251 N. School Street Honolulu, HI 96819</p> <p>Phone: (808) 845-5949</p> <p>Fax: (808) 847-7068</p> <p>Website: http://www.opcmia.org/</p>

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Taper	Joint Apprenticeship Committee for Tapers (Gypsum Drywall Contractors Association of Hawaii and the International Brotherhood of Painters and Allied Trades Tapers Local Union 1944, AFL-CIO)	x		09/01/67	8,000	<ul style="list-style-type: none"> At least 16 years old Physically able to perform duties of the trade 	Chairman Address: 2240 Young Street Honolulu, HI 96826 Phone: (808) 946-6621 Fax: (808) 946-6623 Website: http://www.dc50.org/
Telecommunication / CATV Installer Technician	Hawaii Electricians Joint Apprenticeship Committee aka Joint Apprenticeship Committee for Telecommunications (International Brotherhood of Electrical Workers Local Union 1186, AFL-CIO, and Signatory Employers)	x		09/16/98	6,000	<ul style="list-style-type: none"> At least 16 years old High school diploma or equivalent or GED High school transcript Pass color code test Physically fit to perform duties of the trade One-year satisfactory completion of high school algebra (not Pre-Algebra) 	Apprenticeship or Training Coordinator Address: 1935 Hau Street Room 301 Honolulu, HI 96819 Phone: (808) 847-0629 Fax: (808) 843-8818 Website: http://www.njatc.org/
Tile Setter	Joint Apprenticeship Committee for Tile Setters (Tile, Marble and Terrazo Contractors Association of Hawaii and Local 1 of Hawaii of the Bricklayers, and Allied Craftsmen International Union of America, AFL-CIO)	x		06/24/58	8,000	<ul style="list-style-type: none"> At least 16 years old Physically able to perform duties of the trade 	Director of Training or Training Coordinator Address: 2251 N. School Street Honolulu, HI 96819 Phone: (808) 845-5949 Fax: (808) 847-7068 Website: http://www.opcmia.org/

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Truck Operator and Driver	Hawaii Joint Apprenticeship Committee for Operating Engineers (General Contractors Labor Association and the Building Industry Labor Association and International Union of Operating Engineers, Local Union #3, AFL-CIO)	x		03/01/91	2,000	<ul style="list-style-type: none"> • At least 18 years old • High school diploma or GED or C-based test • Physically able to perform duties of the trade • School transcripts • Driver's license • Current State DOT PUC physical • Pass industry or general knowledge test • Have reliable transportation 	<p>State Administrator</p> <p>Address: P.O. Box 428 Kahuku, HI 96731-0428</p> <p>Phone: (808) 232-2001 Fax: (808) 232-2217 Website: http://oe3.org/training/</p>

CONTRACTOR'S SUBMITTAL

FOR

**PUUKAPU PASTORAL LOTS WATER SYSTEM
OPERATION & MAINTENANCE SERVICES**

PUUKAPU, SOUTH KOHALA, ISLAND OF HAWAII, HAWAII

IFB NO.: IFB-14-HHL-011

PREPARED BY

**STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS**

FEBRUARY 2014

DEPARTMENT OF HAWAIIAN HOME LANDS

**PUUKAPU PASTORAL LOTS WATER SYSTEM
OPERATION AND MAINTENANCE SERVICES**

South Kohala, Hawaii

IFB NO.: IFB-14-HHL-011

SEALED BID

Submitted by: _____

Address: _____

Date: _____

Bid Package Envelope Cover

Instructions for Bid Submittal

General Instructions for Bid Submittal

The bid offer form must be completed and submitted to the DHHL by the required due date and time, and in the form prescribed by the DHHL. Electronic mail and facsimile transmissions shall not be accepted.

For your convenience, an “IFB Checklist for Bidders” is included in this section for your use.

No supplemental literature, brochures or other unsolicited information should be included in the bid packet.

A written response is required for each item unless indicated otherwise.

Bid documents and all certifications should be written legibly or typed and completed with black ink.

I. PROPOSAL REQUIREMENTS AND CONDITIONS

A. QUALIFICATION OF BIDDERS.

Prospective Bidders must be capable of performing the work for which bids are invited, and must be capable of entering into a public contract of \$25,000 (twenty five thousand dollars) or more.

B. NOTICE OF INTENTION TO BID

1. In accordance with Section 103D-310, Hawaii Revised Statutes, and Section 3-122-108, Hawaii Administrative Rules, a written notice of intention to bid must be submitted to the Chairman, who is the officer charged with letting the contract. The notice may be faxed, hand carried or mailed to the office indicated in the Notice to Contractors.
2. The written notice must be received by the office indicated in the Notice to Contractors no later than 2:00 p.m. on the 10th calendar day prior to the day designated for opening bids. If the 10th calendar day prior to the day designated for opening bids is a Saturday, Sunday, or legal State holiday, then the written notice must be received by the Department no later than 2:00 p.m. on the last working day immediately prior to said Saturday, Sunday, or legal State holiday. The written notice will be time stamped when received by said office. The time designated by the time stamping device in said office shall be official. If the written notice is hand carried, then the bearer is responsible to ensure that the notice is time stamped by said office. If the notice is faxed, the time of receipt by the Department fax machine shall be official.
3. It is the responsibility of the prospective Bidder to ensure that the written notice of intention to bid is received in time and the Department assumes no

responsibility for failure of timely delivery caused by the prospective Bidder or by any method of conveyance chosen by the prospective Bidder.

4. If two (2) or more prospective Bidders desire to bid jointly as a joint venture on a single project, they must file an affidavit of joint venture with their notice of intention to bid. Such affidavit of joint venture will be valid only for the specific project for which it is filed. No further license is required when all parties to the joint venture possess current and appropriate contractor's licenses. Joint ventures are required to be licensed in accordance with Chapter 444 of the Hawaii Revised Statutes, as amended, and the rules and regulations of the Contractor's License Board when any party to the joint venture agreement does not hold a current or appropriate contractor's license. The joint venture must be registered with the office of the Director of Commerce and Consumer Affairs in accordance with Chapter 425 of the Hawaii Revised Statutes, as amended.
5. No persons, firm or corporation may bid where (1) the person, firm, or corporation, or (2) a corporation owned substantially by the person, firm, or corporation, or (3) a substantial stockholder or an officer of the corporation, or (4) a partner or substantial investor in the firm is in arrears in any payment owed to the State of Hawaii or any of its political subdivisions or is in default of any obligation to the State of Hawaii or to all or to any of its political subdivisions, including default as a surety or failure to perform faithfully and diligently any previous contract with the Department.

C. STANDARD QUALIFICATION QUESTIONNAIRE FOR OFFERORS

1. Prospective Bidders shall submit answers to questions contained in the STANDARD QUALIFICATION QUESTIONNAIRE FOR OFFERORS (SPO Form-21), properly executed and notarized, setting forth a complete statement of the experience of such prospective Bidder and its organization in performing similar work and a statement of the equipment proposed to be used, together with adequate proof of the availability of such equipment, no later than 2:00 p.m. on the tenth calendar day prior to the day designated for opening bids. If the tenth calendar day prior to the day designated for opening bids is a Saturday, Sunday, or legal State holiday, then the questionnaire must be received by the Department no later than 2:00 p.m. on the last working day immediately prior to said Saturday, Sunday, or legal State holiday. The questionnaire will be time stamped when received by said office. The time designated by the time stamping device in said office shall be official. If the questionnaire is hand carried, then the bearer is responsible to ensure that the notice is time stamped by said office. E-mail and facsimile (FAX) transmissions are not acceptable in whole or in part, under any circumstances. If the information in the questionnaire proves satisfactory, the Bidder's proposal will be received. All information contained in the answers to the questionnaire shall be kept confidential. The questionnaire will be returned to the Bidder after it has served its purpose.

2. If upon review of the Questionnaire, or otherwise, the Bidder appears not fully qualified or able to perform the intended work, the Chairman shall, after affording the Bidder an opportunity to be heard and if still of the opinion that the Bidder is not fully qualified to perform the work, refuse to receive or to consider any bid offered by the prospective Bidder.
3. Failure to complete and submit the prequalification questionnaire by the designated deadline will be sufficient cause for the Department to disqualify a prospective Bidder.

D. PROPOSAL FORM

1. Prospective Bidders are being furnished with the proposal form giving the location, description, and the contract time of the work contemplated for which a lump sum bid price is asked or containing a schedule of items, together with estimated quantities of work to be performed and materials to be furnished, for which unit bid prices and/or lump sum bid prices are asked.
2. All papers bound with or attached to the proposal form shall be considered a part thereof and shall not be detached or altered when the proposal is submitted.
3. The drawings, specifications and other documents designated in the proposal form will also be considered a part thereof whether attached or not.
4. When quantities for individual items of work are listed in the proposal form for which respective unit prices are asked, said quantities are estimated or approximate and are to be used by the Department only for the purpose of comparing on a uniform basis bids offered for the work. The Department does not, expressly or by implication agree that the actual quantity of work will correspond therewith.
5. On unit price bids, payment will be made only for the actual number of units incorporated into the finished project at the unit price bid, subject to DHHL Construction General Conditions (CGC), Section 4.7, VARIATIONS IN ESTIMATED QUANTITIES.
6. The Bidder's proposal must be submitted on the proposal form furnished by the Department. The proposal must be prepared in full accordance with the instructions herein. The Bidder must state, both in words and numerals, the lump sum price or total sum bid at which the work contemplated is proposed to be done. These prices must be written in ink or typed. In case of a discrepancy between the prices written in words and those written in figures, the words shall govern over the figures. The Bidder shall sign the proposal in the spaces provided with ink.
7. If the proposal is made by an individual, the person's name and post office address must be shown in the space provided. If made by a partnership, the name and post office address of each member of the partnership must be shown and the

proposal signed by all partners or evidence in the form of a partnership agreement must be submitted showing the authority of the partner to enter, on behalf of said partnership, into contract with the Department. If made by a corporation the proposal must show the name, title and business address of the president, secretary and treasurer and also evidence in the form of a corporate resolution must be submitted showing the authority of the particular corporate representative to enter on behalf of said corporation into contract with the Department. If made by a joint-venture the name and post office address of each member of the individual firm, partnership or corporation comprising the joint-venture must be shown with other pertinent information required of individuals, partnerships or corporations as the case may be. The proposal must be signed by all parties to the joint-venture or evidence in the form of a Joint-Venture Agreement must be submitted showing the authority of the joint-venture's representative to enter on behalf of said joint-venture into contract with the Department.

8. Pursuant to the requirements of Section 103D-302, HRS, each Bidder shall include in its bid the name of each person or firm to be engaged by the Bidder on the project as joint contractor or subcontractor indicating also the nature and scope of work to be performed by such joint contractor and/or subcontractor and their respective contractor's license number. A joint contractor or subcontractor performing less than or equal to one percent of the total bid amount is not required to be listed in the proposal. The Bidder shall be solely responsible for verifying that their joint contractor or subcontractor has the proper license at the time of the submitted bid.
9. It is understood and agreed that the Contractor shall make no claim for anticipated profit, loss of profit or unabsorbed field, branch or home office overhead and impact losses due to the exercise of the Departments right to eliminate entire portions of the work or to increase or decrease any or all the quantities shown in the proposal form.
10. By submitting a bid on the proposal form, a Bidder accepts the language therein as its own.

E BID SECURITY

1. Subject to the exceptions in Section 3-122-223(d) HAR, all lump sum bids of \$50,000 (fifty thousand dollars) and higher, or lump sum base bids including alternates of \$50,000 (fifty thousand dollars) and higher, that are not accompanied by bid security are non-responsive. Bid security shall be one of the following: §3-122-222(a) HAR
 - a. Surety bid bond underwritten by a company licensed to issue bonds in this State which shall be substantially in the form of the Surety Bid Bond form in Procurement Circular No. 2007-05; or
 - b. Legal Tender; or

- c. Certificate of Deposit; credit union share certificate; or cashier's, treasurer's, teller's or official check drawn by, or a certified check accepted by, and payable on demand to the State by a bank, a savings institution, or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration.
 - (a) These instruments may be utilized only to a maximum of \$100,000 (one hundred thousand dollars).
 - (b) If the required security or bond amount totals over \$100,000 (one hundred thousand dollars), more than one instrument not exceeding \$100,000 (one hundred thousand dollars) each and issued by different financial institutions shall be accepted.
 - (c) CAUTION - Bidders are cautioned that certificates of deposit or share certificates with an early withdrawal penalty must have a face value sufficient to cover the maximum penalty amount in addition to the proposal guaranty requirement. If the certificate is made out to two names, the certificate must be assigned unconditionally to the Chairman .
- 2. Unless otherwise stated, the bid security shall be in an amount equal to at least five percent (5%) of the lump sum bid or lump sum base bid including all additive alternates or in an amount required by the terms of the federal funding, where applicable.
- 3. If the Bidder is a corporation, evidence in the form of a corporate resolution, authorizing the corporate representative to execute the bond must be submitted with the proposal. (See sample in Appendix.) If the Bidder is a partnership, all partners must sign the bond or evidence in the form of a partnership agreement must be submitted showing the authority of the partner.
- 4. If the Bidder is a joint-venture, all parties to the joint-venture must sign the bond; provided, that one party to the joint-venture may sign on behalf of the joint-venture if evidence in the form of a joint-venture agreement or power of attorney, is submitted showing the authority of the signatory to sign the bond on behalf of the joint-venture.
- 5. In the case where the award will be made on a group or item basis, the amount of bid security shall be based on the total bid for all groups or items submitted.
- 6. Bidders are cautioned that surety bid bonds which place a limit in value to the difference between the bid amount and the next acceptable bid, such value not to exceed the purported amount of the bond, are not acceptable. Also, surety bid bonds which place a time limit on the right of the State to make claim other than allowed by statutes or these GENERAL CONDITIONS are not acceptable. Bidders are hereby notified that a surety bid bond containing such limitation(s) is

not acceptable and a bid accompanied by such surety bid bond will be automatically rejected.

G. BIDDER'S RESPONSIBILITY FOR EXAMINATION OF CONTRACT DOCUMENTS, SITE OF WORK, ETC.

The Bidder shall carefully examine the project site contemplated all Contract Documents and any documents or items referenced therein and contract and bond forms therefore. The submission of a bid shall be considered as a warranty that the Bidder has made such examination and is informed of the conditions to be encountered in performing the Work and of the requirements of the Contract Documents and any documents and items referenced therein, and contract and bonds.

H. ADDENDA AND BID CLARIFICATIONS

1. The terms and requirements of the bid documents (i.e. drawings, specifications and other bid and contract documents) cannot be changed prior to the bid opening except by a duly issued addendum.
2. The Department may alter, increase or decrease the scope of the work or the contract time, provisions and conditions by issuing a written addendum which sets forth such alterations, increase or decrease.
3. If a Bidder discovers what it considers to be a discrepancy, ambiguity, omission or doubt as to the meaning of drawings, specifications and any other bid or contract documents, the Bidder shall request in writing an interpretation from the Chairman.
4. If the Department agrees that a discrepancy, ambiguity, omission or doubt exists, it shall issue a written addendum to the bid documents to all prospective Bidders at the respective offices furnished for such purposes eight (8) days before the bids are opened. The Department may extend the bid opening to allow at least eight (8) days from the notification date of the addendum. Upon notification by the Department, all Bidders/addressees shall be deemed to be on notice of the information therein whether or not the addendum is actually received. All addenda so issued shall become part of the contract documents.
5. No claim for additional compensation and/or time for performance will be allowed if the Contractor discovered, or in the exercise of reasonable care, should have discovered a discrepancy, ambiguity, omission or doubt for which an interpretation was not requested.

I. SUBSTITUTION OF MATERIALS AND EQUIPMENT BEFORE BID OPENING

1. Brand names of materials or equipment are specified or shown on the drawings to indicate a quality, style, appearance or performance and not to limit competition. The Bidder shall base its bid on one of the specified brand names unless alternate brands are qualified as equal or better in an addendum. Qualifications of such proposed alternate brands shall be submitted in writing and addressed to the

Instructions for Bid Submittal

Project Manager. The face of the envelope containing the request must be clearly marked "SUBSTITUTION REQUEST". The request may be hand carried or mailed to DHHL, 91-5420 Kapolei Parkway, Kapolei, Hawaii, 96707. In either case, the written request must be received by DHHL no later than fourteen (14) days before the bid opening date and time specified in the Notice to Bidders. The written request will be time stamped by DHHL. For the purpose of this section, the time designated by the time stamping device in DHHL shall be official. If the written request is hand carried, the bearer is responsible to ensure that the request is time stamped by DHHL.

2. Submit three (3) sets of the written request, technical brochures, and a statement of variances. Refer to the Appendix for the Sample "Request for Substitution."
3. A statement of variances must list all features of the proposed substitution which differ from the drawings, specifications and/or product(s) specified and must further certify that the substitution has no other variant features. The brochure and information submitted shall be clearly marked showing make, model, size, options, etc., and must include sufficient evidence to evaluate each feature listed as a variance. A request will be denied if submitted without sufficient evidence. If after installing the substituted product, an unlisted variance is discovered, Contractor shall immediately replace the product with a specified product at no cost to the Department.
4. Any substitution request not complying with the above requirements will be denied. Substitution requests sent to other agencies and received by Project Manager after the deadline above will be denied.
5. An addendum shall be issued to inform all prospective Bidders of any accepted substitution.

J. DELIVERY OF PROPOSALS.

The entire proposal shall be placed together with the bid security, in a sealed envelope and delivered as indicated in the Notice to Contractors. Bids which do not comply with this requirement may not be considered. Proposals will be received up to the time fixed in the public notice for opening of bids and must be in the hands of the official by the time indicated. The time designated by the time stamping device in DHHL shall be official.

K. WITHDRAWAL OR REVISION OF PROPOSAL. Proposal may be modified prior to the deadline to submit the proposal by any of the following documents:

- 1 Withdrawal of Proposals:
 - (a) A signed, written notice received in the office designated in the solicitation; or
 - (b) A signed written notice faxed to the office designated in the solicitation.
- 2 Modification of Proposals:

- (a) A signed written notice received in the office designated in the solicitation, accompanied by a duly executed certificate of resolution for corporations, partnerships and joint-ventures, stating that a modification to the proposal is submitted; and
- (b) The actual modification sealed securely in a separate envelope or container, accompanying the written notice.

L. PUBLIC OPENING OF PROPOSALS.

Proposals will be opened and read publicly at the time and place indicated in the Notice to Contractors. Bidders, their authorized agents and other interested parties are invited to be present.

K. DISQUALIFICATION OF BIDDERS. Any one or more of the following causes will be considered as sufficient for the disqualification of a Bidder and the rejection of its proposal or proposals:

1. Non-compliance with Section 2.1, QUALIFICATION OF BIDDERS;
2. Evidence of collusion among Bidders;
3. Lack of responsibility and cooperation as shown by past work such as failing to complete all of the requirements to close the project within a reasonable time or engaging in a pattern of unreasonable or frivolous claims for extra compensation;
4. Being in arrears on existing contracts with the State of Hawaii, or having defaulted on a previous contract with the State of Hawaii;
5. Lack of proper equipment and/or sufficient experience to perform the work contemplated, as revealed by the Standard Questionnaire and Financial Statement for Bidders;
6. No contractor's license or a contractor's license which does not cover type of work contemplated;
7. More than one proposal for the same work from an individual, firm, partnership, corporation or joint venture under the same or different name;
8. Delivery of bids after the deadline specified in the advertisement calling for bids;
9. Failure to pay, or satisfactorily settle, all bills overdue for labor and materials of former contracts in force at the time of issuance of proposal forms; and/or
10. Debarment or suspension pursuant to the provisions of Chapters 103D, 104 and 444, Hawaii Revised Statutes, as amended.

L. PROTESTS

1. Protests shall be governed by Section 103D-701, Hawaii Revised Statutes, and amended hereafter, and its implementing rules set forth in Title 3, Chapter 126, Subchapter 1, of the Hawaii Administrative Rules, and as amended hereafter. [2.14.1]
2. The Chairman is the Department's chief procurement officer to whom protests shall be addressed unless specified otherwise in the solicitation. [2.14.2]

M. WRONGFUL REFUSAL TO ACCEPT A BID.

In the event the Chairman, for any reason, wrongfully refuses to accept what would otherwise be a responsive and responsible lowest bid, the exclusive remedy for such lowest Bidder shall be the recovery of the reasonable actual costs of preparing the bid. No other Bidder shall have any claim for damages.

II AWARD AND EXECUTION OF CONTRACT

A. CONSIDERATION OF PROPOSALS; CANCELLATION.

After the proposals are opened and read, the figures will be extended and/or totaled in accordance with the bid prices of the acceptable proposals and the totals will be compared and the results of such comparison shall be made public. In the event of a tie bid, the low Bidder shall be determined by lot. In the comparison of bids, words written in the proposals will govern over figures and unit prices will govern over totals. Until the award of the contract, the Department may cancel the solicitation, reject any and all proposals in whole or part and may waive any defects or technicalities whenever such action is deemed to be in the best interest of the Department.

B. IRREGULAR PROPOSALS.

Proposals will be considered irregular and may be rejected for the following reasons:

1. If the proposal is unsigned.
2. If bid security is not in accordance with Section 2.9, BID SECURITY.
3. If proposal is on a form other than that furnished by the Department; or if the form is altered or any part thereof detached.
4. If the proposal shows any non-compliance with applicable law, alteration of form, additions not called for, conditional bids, incomplete bids, non-initialed erasures, other defects, or if the prices are obviously unbalanced.
5. If the Bidder adds any provisions reserving the right to accept or reject an award.
6. If the Bidder adds any provisions reserving the right to enter into a contract pursuant to an award.

7. When a proposal is signed by an officer or officers of a corporation and a currently certified corporate resolution authorizing such signer(s) to submit such proposal is not submitted with the proposal or when the proposal is signed by an agent other than the officer or officers of a corporation or a member of a partnership and a power of attorney is not submitted with the proposal.
8. Where there is an incomplete or ambiguous listing of joint contractors and/or subcontractors the proposal may be rejected. All work which is not listed as being performed by joint contractors and/or subcontractors must be performed by the Bidder with its own employees. Additions to the list of joint contractors or subcontractors will not be allowed. Whenever there is a doubt as to the completeness of the list, the Bidder will be required to submit within five (5) working days, a written confirmation that the work in question will be performed with its own work force. Whenever there is more than one joint contractor and/or subcontractor listed for the same item of work, the Bidder will be required to either confirm in writing within five (5) working days that all joint contractors or subcontractors listed will actually be engaged on the project or obtain within five (5) working days written releases from those joint contractors and/or subcontractors who will not be engaged.
9. If in the opinion of the Chairman, the Bidder and/or its listed subcontractors do not have the contractor's licenses or combination of contractor's licenses necessary to complete all of the work.

C. CORRECTION OF BIDS AND WITHDRAWAL OF BIDS (§3-122-31 HAR)

1. Corrections to bids after bid openings but prior to award may be made under the following conditions:
 - (a) If the mistake is attributable to an arithmetical error, the Chairman shall so correct the mistake. In case of error in extension of bid price, the unit price shall govern.
 - (b) If the mistake is a minor informality which shall not affect price, quantity, quality, delivery, or contractual conditions, the Bidder shall request correction by submitting proof of evidentiary value which demonstrates that a mistake was made. The Chairman shall prepare a written approval or denial in response to this request. Examples of such mistakes include:
 - (1) Typographical errors;
 - (2) Transposition errors;
 - (3) Failure of a Bidder to sign the bid, but only if the unsigned bid is accompanied by other material indicating the Bidder's intent to be bound.
 - (c) For reasons not allowable under Subsections 3.3.1.1 and 3.3.1.2 when the Chairman determines that the correction or waiver of an obvious mistake

is in the best interest of the Department or is warranted for the fair treatment of other Bidders.

2. Withdrawal of bids after bid opening but prior to award may be made when the bid contains a mistake attributable to an obvious error which affects price, quantity, quality, delivery, or contractual conditions, and the Bidder requests withdrawal by submitting proof of evidentiary value which demonstrates that a mistake was made. The Chairman shall prepare a written approval or denial in response to this request.
3. Correction or withdrawal of bids after award is not permissible except in response to a written withdrawal or correction request by the Contractor, and the Chairman makes a written determination that the Department's procurement practices and policies would not be materially affected by such correction or withdrawal.

D. AWARD OF CONTRACT

1. The award of contract, if it be awarded, will be made within one hundred twenty (120) consecutive calendar days after the opening of the proposals to the lowest responsible and responsive Bidder (including the alternate or alternates which may be selected by the Chairman in the case of alternate bids) whose proposal complies with all the requirements prescribed, but in no case will an award be made until all necessary investigations are made. The successful Bidder will be notified, by letter mailed to the address shown on the proposal, that its bid has been accepted and that it has been awarded the contract.
2. If the contract is not awarded within the one hundred twenty (120) days noted in Subsection 3.4.1 above, the Department may request the successful Bidder to extend the time for the acceptance of its bid. The Bidder may reject such a request without penalty; and in such case, the Department may at its sole discretion make a similar offer to the next lowest responsive and responsible Bidder and so on until a bid is duly accepted or until the Department elects to stop making such requests.
3. No contract will be awarded to any person or firm suspended or debarred under the provisions of Chapters 103D, 104 and Chapter 444, Hawaii Revised Statutes as amended.
4. The contract will be drawn on the forms furnished by the Chairman. The contract will not be binding on the Department until all required signatures have been affixed thereto and written certification that funds are available for the work has been made.
5. Prior to award of the contract, the Department shall verify compliance with Sections 103D-310 and 103D-328 HRS via Hawaii Compliance Express (HCE).

E. CANCELLATION OF AWARD.

The Department reserves the right to cancel the award of any contract at any time before the execution of said contract by all parties. The exclusive remedy to the awardee for such cancellation shall be payment of the reasonable bid preparation costs and the reimbursement of any direct expenses incurred as directed in the Notice of Award. Such cancellation will not incur any liability by the Department to any other Bidder.

F. RETURN OF BID SECURITY.

All bid securities, except those of the four (4) lowest Bidders, will be returned following the opening and checking of the proposals. The retained bid securities of the four lowest Bidders will be returned within five (5) working days following the complete execution of the contract.

G. REQUIREMENT OF PERFORMANCE AND PAYMENT BONDS

1. Performance and Payment Bonds shall be required for contracts \$50,000 (fifty thousand dollars) and higher. At the time of the execution of the contract, the successful Bidder shall file good and sufficient performance and payment bonds on the form furnished by the Department, each in an amount equal to one hundred percent (100%) of the amount of the contract price unless otherwise stated in the solicitation of bids. Acceptable performance and payment bonds shall be limited to the following:
 2. Surety bonds underwritten by a company licensed to issue bonds in this State; or
 3. A certificate of deposit; credit union share certificate; or cashier's, treasurer's, teller's or official check drawn by, or a certified check accepted by, and payable on demand to the Department by a bank, a savings institution, or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration.
 - (a) These instruments may be utilized only a maximum of \$100,000 (one hundred thousand dollars).
 - (b) If the required security or bond amount totals over \$100,000 (one hundred thousand dollars), more than one instrument not exceeding \$100,000 (one hundred thousand dollars) each and issued by different financial institutions shall be acceptable.
4. If the Contractor fails to deliver the required performance and payment bonds, the Contractor's award shall be canceled, the Department shall have the remedies provided below under FAILURE TO EXECUTE THE CONTRACT and award of the contract shall be made to the next lowest responsible and responsive Bidder.

H. EXECUTION OF THE CONTRACT

1. The contract shall be signed by the successful Bidder and returned, together with satisfactory performance and payment bonds, within ten (10) calendar days after the Bidder is awarded the contract for execution or within such further time as the Chairman may allow. No proposal or contract shall be considered binding upon the Department until the contract has been fully and properly executed by all parties thereto. For projects funded with State Capital Improvement Project (CIP) funds, the Chairman shall also endorse thereon its certificate, as required by Section 103D-309, HRS, that there is an available unexpended appropriation or balance of an appropriation over and above all outstanding contracts sufficient to cover the Department's amount required by such contract.
2. On any individual award totaling less than \$25,000 (twenty five thousand dollars), the Department reserves the right to execute the contract by the issuance of a Purchase Order. Issuance of a Purchase Order shall result in a binding contract between the parties without further action by the Department. The issuance of a Purchase Order shall not be deemed a waiver of these General Conditions, and Contract Document requirements.

I. FAILURE TO EXECUTE THE CONTRACT

1. Before the Award - If a low Bidder without legal justification withdraws its bid after the opening of bids but before the award of the contract, the Department shall be entitled to retain as damages the amount established as bid security, and may take all appropriate actions to recover the damages sum from the property or third-party obligations deposited as bid security.
2. After the Award. If the Bidder to which a contract is awarded shall fail or neglect to enter into the contract and to furnish satisfactory security within ten (10) calendar days after such award or within such further time as the Chairman may allow, the Department shall be entitled to recover from such Bidder its actual damages, including but not limited to the difference between the bid and the next lowest responsive bid, as well as personnel and administrative costs, consulting and legal fees and other expenses incurred in arranging a contract with the next low responsible and responsive Bidder or calling for new bids. The Department may apply all or part of the amount of the bid security to reduce its damages. If upon determination by the Department that the bid security exceeds the amount of its damages, it shall release or return the excess to the person who provided same.
3. Chairman's Options. Upon a withdrawal of the lowest responsive bid, or upon a refusal or failure of the lowest Bidder to execute the contract, the Chairman may thereupon award the contract to the next lowest responsible and responsive Bidder or may call for new bids, whichever method the Chairman may deem to be in the best interests of the Department.

IFB Checklist for Bidders

IFB-14- HHL-011

Puukapu Pastoral Lots Water System Operation & Maintenance Services

Items required prior to Bid Opening:

- ☐ Notice of Intention to Bid, no later than 2:00 p.m., March 18, 2014.
- ☐ SPO- Form 21 (Standard Qualification Questionnaire), submitted to DHHL, Land Development Division by 2:00 p.m., March 18, 2014.
- ☐ SPO-38 (Hawaii Product Preference Request, if any), by 2:00 p.m., March 5, 2014.

Items required with Sealed Bid:

- ☐ Bid Package Envelope Cover (with the words “Sealed Bid”), included with this IFB.

The Envelope Cover Form shall be used for Sealed Bid Envelopes. The cover form should be glued or taped to the front of the bid envelope and the information type- written or printed clearly in ink.

- ☐ Bid Offer Form (included with this IFB)

The total sum bid amount must be typed or clearly written in both numbers and words in the appropriate space on page 4 of the Bid Offer Form. Illegible writing on any portion of the Bid Offer Form, except for the signee’s signature, may be grounds for considering a Bid “non-responsive”.

- ☐ Corporate Resolution (Indicating who is authorized to sign bid documents and contracts)
- ☐ Bid Security
- ☐ Form 1 – Certification of Bidder’s Participation in Approved Apprenticeship Program Under Act 17 (Apprenticeship Agreement Preference, if any).

**STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS**

BID OFFER FORM FOR

**PUUKAPU PASTORAL LOTS WATER SYSTEM OPERATION &
MAINTENANCE SERVICES**

SOUTH KOHALA, ISLAND OF HAWAII, HAWAII

**TAX MAP KEY
(3) 6-4-35, 36, 37 and (3) 9-4-38**

IFB No.: IFB-14-HHL-011

Chairman
Hawaiian Homes Commission
Department of Hawaiian Home Lands
91-5420 Kapolei Parkway
Kapolei, Hawaii 96707

The undersigned has carefully examined, read, and understands the terms and conditions in the Plans and Specifications, Special Conditions attached hereto, DHHL Interim General Conditions, and General Conditions specified in the Invitation for Bids (IFB) No. IFB-14-HHL-011. The State of Hawaii's (State) Contract for Goods and Services Based on Competitive Sealed Bids AG-003 Rev. 6/22/2009, AG-008 103D General Conditions, are included by reference and made part hereof and available upon written request to the Procurement Officer. The undersigned hereby submits the following offer to perform the work for IFB No. IFB-14-HHL-011 as specified herein, all in accordance with the true intent and meaning thereof.

The undersigned understands and agrees that:

1. The State reserves the right to reject any and all offers and to waive any items that are defective when, in the State's opinion, such rejection or waiver will be in the best interest of the State. A solicitation may be rejected in whole or part when in the best interest of the State.
2. If awarded the contract, all services will be in accordance with Hawaii Revised Statutes (HRS) § 103-55.5.
3. In submitting this offer, the Offeror is not in violation of HRS Chapter 84, concerning prohibited State contracts.
4. By submitting this offer, the Offeror certifies that the offer was independently arrived at without collusion and the Offeror did not participate in any practices to restrict competition.
5. It is understood that the failure to receive any addendum shall not relieve the Offeror from any obligation under this IFB.

Date: _____

The undersigned 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: _____

Offeror is:

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

Federal ID No.: _____

Hawaii General Excise Tax ID No.: _____

Telephone No.: _____

Fax No.: _____

E-Mail Address.: _____

Payment address (other than street address below)

(Street Address, City, State, Zip Code)

Business address

(Street Address, City, State, Zip Code)

Respectfully submitted:

Authorized (Original) Signature

Name and Title (Please Type or Print)

* _____
Exact Legal Name of Company (Offeror)

*If Offeror shown above is a "dba" or a "division" of a corporation, furnish the exact legal name of the corporation under which the awarded contract will be executed:

The following bid is hereby submitted for Puukapu Pastoral Lots Water System Operation and Maintenance Services, IFB No. IFB-14-HHL-011 for the Department of Hawaiian Home Lands.

GROUP 1A. Operation & Maintenance of Puukapu Pastoral Lots Water System:

<u>Item No.</u>	<u>Bid Price</u>
1. Operation and maintenance, installation of meters & backflow prevention devices, service of pump station, distribution system, water storage system, chlorination facilities, site maintenance, laboratory testing and reporting, meter reading and billing. \$____/mo (Months 1 – 24: \$_____) (Months 25- 48: \$_____) (Months 49-72: \$_____)	\$_____
2. Purchasing & providing trailer-mounted Spare diesel pump (Contingent Item)	\$ 25,000.00
3. Meter and backflow prevention assembly supplies (Allowance)	\$ 25,000.00
Sub-total Bid Price (Group 1A, Item Nos. 1-3)	\$_____

GROUP 1B. Emergency Repairs and Call-outs:

4. Consultant services to advise DHHL during Process to formulate and adopt rules & regulations For Hybrid Water System (to be paid on a time & Materials basis) (Allowance)	\$ 10,000.00
5. Twenty-four (24) hour emergency call-out Services provided seven (7) days a week with one (1) hour response time performed by appropriate licensed trade (Allowance)	\$ 50,000.00
6. Unforeseen Equipment Failures: An allowance Is provided for unforeseen equipment failures, Including but not limited to, total replacement or Replacement of parts for pumps, electrical lines, tanks, transmission and distribution lines, meters, backflow prevention assemblies, and other related water facility needs (Allowance)	\$ 100,000.00

Sub-total Bid Price (Group 1B, Item Nos. 4-6) \$ 160,000.00

TOTAL SUM BID (Group 1A and 1B) \$ _____

TOTAL SUM BID = _____
_____ Dollars(\$ _____).

The prices herein for the above items shall include all materials, labor, tools, equipment, machinery and all incidentals necessary, inclusive of general excise tax to install or to construct these items in place complete and in accordance with the plans and specifications contained in this IFB.

THE FOLLOWING INFORMATION IS SUBMITTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIAL CONDITIONS:

1. Refer to the PRICE ADJUSTMENT PURSUANT TO SECTION 103-55, HRS PROVISION, Item 2, SC-12 for details.

Percentage of Unit Bid Price represents labor cost for Group 1: _____%

Percentage of Unit Bid Price represents labor cost for Group 2: _____%

2. Refer to the STATUROTU REQUIREMENTS OF SECTION 103-55, HRS PROVISION, SC-11 for details.

Are services to be performed under this contract similar to the work performed by public employees as described in the attached class specifications? _____Yes _____No

If yes, list similar positions: _____

3. Refer to OFFEROR QUALIFICATIONS, Item 3, SC-07 for details.

<u>Offeror or Subcontractor Name</u>	<u>Type of HRS Chapter 444 License</u>	<u>License No.</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

<u>Name of Licensed Plumber</u>	<u>HRS Chapter 448E License No.</u>
_____	_____
_____	_____

4. Refer to OFFEROR QUALIFICATIONS, Item 4, SC-07 for details.

<u>Name of Personnel</u>	<u>DOH Certificate No.</u>
_____	_____
_____	_____

5. Refer to OFFEROR QUALIFICATIONS, Item 5, SC-07 for details.

Service facility on the island of Hawaii and name of contact:

Name of Contact person: _____

Address of Service Facility: _____

Telephone no.: _____ Facsimile no.: _____

(Answering Service not acceptable)

List three (3) companies or government agencies for whom bidder has provided or is currently providing operation, maintenance, and repair services for Water System Facilities:

	<u>Name of Firm</u>	<u>Address</u>	<u>Contact Person</u>
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____

6. Refer to OFFEROR QUALIFICATIONS, Item 1, SC-07 for details.

Attach documented operations and maintenance and repair experience to substantiate five (5) consecutive years experience.

7. Refer to INSURANCE COVERAGE, SC-02 for details.

Insurance coverage (if applicable)

	<u>Carrier</u>	<u>Policy No.</u>
1. Commercial General Liability	_____	_____
2. Worker's Compensation	_____	_____
3. Temporary Disability	_____	_____
4. Prepaid Health Care	_____	_____
5. Unemployment Insurance: State	_____	_____

HAWAII PRODUCTS PREFERENCE

In accordance with HRS §103D-1002, the Hawaii products preference is applicable to this solicitation. Hawaii Products [are / may be] available for those items noted on the offer form. The Hawaii products list is available on the SPO webpage at <http://hawaii.gov/spo>, under Toolbox/QuickLinks click on Goods, Services and Construction, then click on Goods, Services and Construction for Vendors, Contractors and Service Providers, under Preferences, click on Preferences pursuant to HRS 103D Part X including Hawaii Products, then click on Preference for Hawaii Products, and select *Hawaii Products List* to view.

Offeror submitting a Hawaii Product (HP) shall identify the HP on the solicitation offer page(s). Any person desiring a Hawaii product preference shall have the product(s) certified and qualified if not currently on the Hawaii products list, prior to the deadline for receipt of offer(s) specified in the procurement notice and solicitation. The responsibility for certification and qualification shall rest upon the person requesting the preference.

Persons desiring to qualify their product(s) not currently on the Hawaii product list shall complete form SPO-038, *Certification for Hawaii Product Preference* and submit to the Procurement Officer issuing the solicitation (IFB or RFP), and provide all additional information required by the Procurement Officer. For each product, one form shall be completed and submitted (i.e. 3 products should have 3 separate forms completed). Form SPO-038 is available on the SPO webpage at <http://hawaii.gov/spo> under the 'Toolbox/QuickLinks' menu; click on 'SPO Forms' then click on 'Forms for Vendors, Contractors, and Service Providers'. 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., March 5, 2014**. 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., March 12, 2014**.

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.

When a solicitation contains both HP and non-HP, then for the purpose of selecting the lowest bid or purchase price only, the price offered for a HP item shall be decreased by subtracting 10% for the class I or 15% for the class II HP items offered, respectively. The lowest total offer, taking the preference into consideration, shall be awarded the contract unless the offer provides for additional award criteria. The contract amount of any contract awarded, however, shall be the amount of the price offered, exclusive of the preferences.

Change in Availability of Hawaii product. In the event of any change that materially alters the offeror's ability to supply Hawaii products, the offeror shall notify the procurement officer in writing no later than five working days from when the offeror knows of the change and

the parties shall enter into discussions for the purposes of revising the contract or terminating the contract for convenience.

SCHEDULE OF ACCEPTABLE HAWAII PRODUCTS AND DESIGNATION OF HAWAII PRODUCTS TO BE USED			
ACCEPTABLE HAWAII PRODUCTS		HAWAII PRODUCTS TO BE USED Cost FOB Jobsite, Unloaded Including Applicable General Excise and Use Taxes	
Description	Manufacturer	Base Bid	Additive Alternate
		\$_____	\$_____
		\$_____	\$_____
		\$_____	\$_____
		\$_____	\$_____
		\$_____	\$_____
		\$_____	\$_____
		\$_____	\$_____
		\$_____	\$_____
		\$_____	\$_____
		\$_____	\$_____

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 AGREEMENT PREFERENCE

Hawaii Revised Statutes §103-55.6 (ACT 17, SLH 2009) provides for a Hawai'i Apprenticeship Preference for public works contracts having an estimated value of \$250,000.00 or more. The preference shall be in the form of a 5% bid adjustment applied to the bidder's amount for bidders that are parties to apprenticeship agreements. The estimated value of this public works contract is \$250,000.00 or more and the apprenticeship agreement preference **shall** apply.

To be eligible for the preference, the bidder shall:

1. Be a party to an apprenticeship agreement registered with the DLIR at the time the bid is made for each apprenticeable trade the bidder will employ to construct the public works project for which the bid is being made.
 - a. The apprenticeship agreement shall be registered and conform to the requirements of HRS Chapter 372.
 - b. Subcontractors do not have to be a party to an apprenticeship agreement for the bidder to obtain the preference.
 - c. The bidder is not required to have apprentices in its employ at the time the bid is submitted to qualify for the preference.
 - d. If a bidder's employee is multi-skilled and able to perform work in more than one trade (for example, a project requires a carpenter and a laborer, and the employee is a carpenter, but is also able to perform the work of a laborer), the bidder need only be a party to the carpenter's apprenticeship agreement and does not need to be a party to the laborer's apprenticeship agreement in order to qualify for the preference. The bidder is not "employing" a laborer, only a carpenter, and so only needs to be a party to the carpenter's apprenticeship agreement.
 - e. Qualification for the preference is given on a project-by-project basis and depends upon the specific offer for a specific project. A bidder's employees may vary from project to project and may qualify for the preference on one project but may not qualify on another project. For example, on one project, if the bidder only employs carpenters to perform work in the carpentry and labor trades, then the bidder only needs to be a party to the carpenter's apprenticeship agreement in order to qualify for the preference. However, on another project if the same bidder employs both carpenters and laborers, then the bidder will not qualify for the preference if the bidder is only a party to the carpenter's apprenticeship agreement and not the laborer's apprenticeship agreement.
2. State the trades the bidder will employ to perform the work;
3. For each trade to be employed to perform the work, the bidder shall submit a completed signed original *CERTIFICATION OF BIDDER'S PARTICIPATION IN APPROVED*

APPRENTICESHIP PROGRAM UNDER ACT 17 (Certification Form 1) verifying the participation in an apprenticeship program registered with the State Department of Labor and Industrial Relations (DLIR);

4. 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; and
5. The completed *Certification Form 1* for each trade must be submitted by the bidder with the offer. A facsimile or copy is acceptable to be submitted with the offer; however, the completed **signed original** must be submitted within five (5) working days of the due date of the offer. If the signed original is not received within this timeframe, the preference may be denied. Previous certifications shall not apply.

Failure to comply with ALL of the conditions noted above, without exception, shall disqualify the Bidder from qualifying for, and thus receiving, benefit of the Hawai'i Apprenticeship Preference.

The *Certification Form 1* and the List of Construction Trades in Registered Apprenticeship Programs is available on the DLIR website at: <http://hawaii.gov/labor/wdd>

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

If the bidder is certified to participate in an apprenticeship program for each trade which will be employed by the bidder for the project, a preference will be applied to decrease the bidder's total bid amount by five per cent (5%) for evaluation purposes.

Should the bidder qualify for other preferences (for example, Hawaii Products Preference), all applicable preferences shall be applied to the bid amount.

While preference for Hawai'i Apprenticeship will be taken into consideration to determine the low bidder, the contract awarded shall be the original bid amount, exclusive of any preferences. The preference is only for evaluation purposes.

The bidder hereby certifies that it will employ the following apprenticeable trades to perform the work for this project:

[illegible]

(Add additional sheets if necessary)

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 bid 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	License Number	Hawaii Tax ID Number	Nature and Scope of Work to be Performed

(Add additional sheets if necessary)

METHOD OF AWARD

Bidder is required to bid on the entire project. The low bidder shall be determined by the procedures outlined in items 1) through 4) below:

- 1) Prior to opening of bids, the State will determine the amount of funds available for the project. This amount will be designated the "control amount". The control amount shall be announced at, and prior to the opening of bids.
- 2) The Base Bid and Alternate, if any, of each Bidder will be adjusted to reflect the applicable preferences in accordance with Chapter 103D, HRS. The Alternate, if any, will then be added to the Base Bid and compared with the control amount.
- 3) The low bidder shall be the Bidder having the lowest aggregate amount, within the control amount (after application of the various preferences), for the Base Bid plus the Alternate, if any.
- 4) If adding the Alternate, if any, would make the aggregate amount exceed the control amount for all Bidders, the low bidder shall be the Bidder having the lowest Base Bid after application of the various preferences.

It is further understood and agreed that:

- 1) The Chairman reserves the right to reject any and/or all bids and waive any defects when, in his opinion, such rejection or waiver will be in the best interest of the State.
- 2) After determining the low bidder, an award may be made either on the amount of the Base Bid alone, or including the Alternate (exclusive of preferences), if:
 - a. It is in the best interest of the State;
 - b. Funds are available at time of the award; and
 - c. The combination of the Base Bid plus Alternate does not change the apparent low bidder.
- 3) In the event the Base Bid for all Bidders exceed the control amount, the Chairman reserves the right to negotiate with the lowest responsible and responsive bidder to award a contract within available funds.
- 4) In the event the award is made for the Base Bid alone, the Chairman reserves the right to amend the contract at a later date to include the Alternate should funds subsequently become available.

OTHER CONDITIONS

- 1) The liquidated damages per working day for failure to complete the work on time have been determined and are noted in the Special Conditions.
- 2) By submitting this bid, the undersigned is declaring that his firm has not been assisted or represented on this matter by an individual who has, in a State capacity, been involved in the subject matter of this contract in the past one (1) year.
- 3) By submitting this bid, the undersigned is declaring that Bidder's own organization will perform at least 20% of the contractor's work.
- 4) Upon the acceptance of the bid by the Chairman, the undersigned must enter into and execute a contract for the same and furnish a Performance and Payment Bond, as required by law. These bonds shall conform to the provisions of Sections 103D-324 and 325, Hawaii Revised Statutes, and any law applicable thereto.
- 5) The quantities given herewith are approximate only and are subject to increase or decrease.
- 6) The estimated quantities shown for items for which a UNIT PRICE is asked in this bid are only for the purpose of comparing on a uniform basis bids offered for the work under this contract. No claim shall be filed for anticipated profit or loss because of any difference between the quantities of the various classes of work done or the materials and equipment actually installed and the said estimated quantities. Payment on UNIT PRICE items will be made only for the actual number of units incorporated into the finished project at the contract UNIT PRICE.
- 7) If the product of the UNIT PRICE BID and the number of units does not equal the total amount stated by the undersigned in the Bid for any item, it will be assumed that the error was made in computing the total amount. For the purpose of determining the lowest Bidder, the stated UNIT PRICE alone will be considered as representing the Bidder's intention and the total amount bid on such items shall be considered to be the amount arrived at by multiplying the UNIT PRICE by the number of units.
- 8) Certification for Safety and Health Programs for Bids in Excess of \$100,000. In accordance with Sections 103D-327 and 396-18, Hawaii Revised Statutes, by submitting this bid, the undersigned certifies that his firm will have a written Safety and Health Plan for this project that will be available and implemented by the Notice to Proceed date of this project. Details of the requirements of this plan may be obtained from the Department of Labor and Industrial Relations, Occupational, Safety and Health Division.
- 9) Any contract arising out of this offer is subject to the approval of the Department of the Attorney General as to form, and to all further approvals, including the approval of the Governor, required by statute, regulation, rule, order, or other directive.

Receipt of the following addenda issued by the Department is acknowledged by the date(s) of receipt indicated below:

	Date		Date
Addendum No. 1	_____	Addendum No. 5	_____
Addendum No. 2	_____	Addendum No. 6	_____
Addendum No. 3	_____	Addendum No. 7	_____
Addendum No. 4	_____	Addendum No. 8	_____

It is understood that failure to receive any such addendum shall not relieve the Contractor from any obligation under this IFB as submitted.

Bid Security in the amount of:_____

_____ DOLLARS (\$_____)

as required by law, is enclosed herewith in the form of:

<input type="checkbox"/> Surety Bond (*1)	<input type="checkbox"/> Official Check (*3)
<input type="checkbox"/> Legal Tender (*2)	<input type="checkbox"/> Share Certificate (*3)
<input type="checkbox"/> Cashier's Check (*3)	<input type="checkbox"/> Teller's Check (*3)
<input type="checkbox"/> Certificate of Deposit (*3)	<input type="checkbox"/> Treasurer's Check (*3)
<input type="checkbox"/> Certified Check (*3)	

Respectfully submitted,

Name of Company, Joint Venture or Partnership

License No.

By _____
Signature (*4)

Title:_____

Date:_____

Address:_____

Telephone No.:_____

(IF A CORPORATION, AFFIX CORPORATE SEAL TO SIGNATURE, BE SURE TO FILL IN ATTACHED LIST OF SUBCONTRACTORS. THIS BID FORM MAY NOT BE ALTERED AND BIDDERS MAY NOT QUALIFY OR CONDITION THEIR BIDS IN ANY WAY.)

PLEASE FILL OUT THE ATTACHED CERTIFICATE OF RESOLUTION GIVING EVIDENCE OF THE AUTHORITY OF THIS OFFICER TO SUBMIT BIDS ON BEHALF OF THE COMPANY.

NOTES:

- *1. Surety bond underwritten by a company licensed to issue bonds in this State;
- *2. Legal tender; or
- *3. A certificate of deposit; share certificate; or cashier's, treasurer's, teller's, or official check accepted by, and payable on demand to the State by a bank, a savings institution, or credit union insured by the Federal Deposit Insurance Corporation of the National Credit Union Administration.
 - A. These instruments may be utilized only to a maximum of \$100,000.
 - B. If the required security or bond amount totals over \$100,000, more than one instrument not exceeding \$100,000 each and issued by different financial institutions shall be accepted.
- *4. Please attach to this page evidence of the authority of this officer to submit bids on behalf of the Company, and also the names and residence addresses of all officers of the Company.
- *5. Fill in all blank spaces with information asked for or bid may be invalidated. BID MUST BE INTACT; MISSING PAGES MAY INVALIDATE YOUR BID.

CERTIFICATE OF RESOLUTION

I, _____, Secretary of _____, a Hawaii Corporation, do hereby certify that the following is a full, true and correct copy of a resolution duly adopted by the Board of Directors of said Corporation, at its meeting duly called and held at the office of the Corporation _____, Hawaii, on _____ day of _____, 20____, at which a quorum was present and acting throughout; and that said resolution has not been modified, amended or rescinded and continues in full force and effect.

“RESOLVED that any individual at the time holding the position(s) of _____, be, and each of them hereby is, authorized to execute on behalf of the Corporation any bid, proposal or contract for the sale or rental of the products of the Corporation or for the services to be performed by the Corporation and to execute any bond required by any such bid, proposal or contract with the United States Government or the State of Hawaii or the City and County of Honolulu, or any County of Municipal Government of said State, or any department or subdivision of any of them.”

IN WITNESS THEREOF, I have hereunto set my hand and affixed the corporate seal of said _____ this _____ day of _____, 20____.

.

Secretary

END OF BID

SAMPLE DHHL CONTRACT

FOR

**PUUKAPU PASTORAL LOTS WATER SYSTEM
OPERATION & MAINTENANCE SERVICES**

PUUKAPU, SOUTH KOHALA, ISLAND OF HAWAII, HAWAII

IFB NO.: IFB-14-HHL-011

PREPARED BY

**STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS**

FEBRUARY 2014



STATE OF HAWAII
CONTRACT FOR GOODS OR SERVICES
BASED UPON
COMPETITIVE SEALED BIDS

This Contract, executed on the respective dates indicated below, is effective as of _____, between _____ Department of Hawaiian Home Lands _____,
(Insert name of state department, agency, board or commission)
State of Hawaii ("STATE"), by its _____ Chairman, Hawaiian Homes Commission _____,
(Insert title of person signing for State)
(hereafter also referred to as the HEAD OF THE PURCHASING AGENCY or designee ("HOPA")),
whose address is 91-5420 Kapolei Parkway, Kapolei, Hawaii 96707
and
("CONTRACTOR"), a _____
(Insert corporation, partnership, joint venture, sole proprietorship, or other legal form of the Contractor)
under the laws of the State of _____, whose business address and federal
and state taxpayer identification numbers are as follows:

RECITALS

- A. The STATE desires to retain and engage the CONTRACTOR to provide the goods or services, or both, described in this Contract and its attachments, and the CONTRACTOR is agreeable to providing said goods or services, or both.
- B. The STATE has issued an invitation for competitive sealed bids, and has received and reviewed bids submitted in response to the invitation.
- C. The solicitation for bids and the selection of the CONTRACTOR were made in accordance with section 103D-302, Hawaii Revised Statutes ("HRS"), Hawaii Administrative Rules, Title 3, Department of Accounting and General Services, Subtitle 11 ("HAR"), Chapter 122, Subchapter 5, and applicable procedures established by the appropriate Chief Procurement Officer ("CPO").
- D. The CONTRACTOR has been identified as the lowest responsible and responsive bidder whose bid meets the requirements and criteria set forth in the invitation.
- E. Pursuant to _____ HHCA of 1920, as amended _____, the STATE
(Legal authority to enter into this Contract)
is authorized to enter into this Contract.
- F. Money is available to fund this Contract pursuant to:
- (1) _____
(Identify state sources)
- or (2) _____
(Identify federal sources)
- or both, in the following amounts: State \$ _____
Federal \$ _____

NOW, THEREFORE, in consideration of the promises contained in this Contract, the STATE and the CONTRACTOR agree as follows:

1. Scope of Services. The CONTRACTOR shall, in a proper and satisfactory manner as determined by the STATE, provide all the goods or services, or both, set forth in the Invitation for Bids number IFB-14-HHL-011 ("IFB") and the CONTRACTOR'S accepted bid ("Bid"), both of which, even if not physically attached to this Contract, are made a part of this Contract.
2. Compensation. The CONTRACTOR shall be compensated for goods supplied or services performed, or both, under this Contract in a total amount not to exceed _____

TBD

DOLLARS

(\$ TBD), including approved costs incurred and taxes, at the time and in the manner set forth in the IFB and CONTRACTOR'S Bid.

3. Time of Performance. The services or goods required of the CONTRACTOR under this Contract shall be performed and completed in accordance with the Time of Performance set forth in Attachment-S3, which is made a part of this Contract.

4. Bonds. The CONTRACTOR is required to provide or is not required to provide: a performance bond, a payment bond, a performance and payment bond in the amount of TBD DOLLARS (\$ TBD).

5. Standards of Conduct Declaration. The Standards of Conduct Declaration of the CONTRACTOR is attached to and made a part of this Contract.

6. Other Terms and Conditions. The General Conditions and any Special Conditions are attached to and made a part of this Contract. In the event of a conflict between the General Conditions and the Special Conditions, the Special Conditions shall control. In the event of a conflict among the documents, the order of precedence shall be as follows: (1) this Contract, including all attachments and addenda; (2) the IFB, including all attachments and addenda; and (3) the CONTRACTOR'S Bid.

7. Liquidated Damages. Liquidated damages shall be assessed in the amount of TBD DOLLARS (\$ TBD) per day, in accordance with the terms of paragraph 9 of the General Conditions.

8. Notices. Any written notice required to be given by a party to this Contract shall be (a) delivered personally, or (b) sent by United States first class mail, postage prepaid. Notice to the STATE shall be sent to the HOPA'S address indicated in the Contract. Notice to the CONTRACTOR shall be sent to the CONTRACTOR'S address indicated in the Contract. A notice shall be deemed to have been received three (3) days after mailing or at the time of actual receipt, whichever is earlier. The CONTRACTOR is responsible for notifying the STATE in writing of any change of address.

IN VIEW OF THE ABOVE, the parties execute this Contract by their signatures, on the dates below, to be effective as of the date first above written.

STATE

(Signature)

Jobie M. K. Masagatani

(Print Name)

Chairman, Hawaiian Homes Commission

(Print Title)

(Date)

CONTRACTOR

(Name of Contractor)

(Signature)

(Print Name)

(Print Title)

(Date)

CORPORATE SEAL
(If available)

APPROVED AS TO FORM:

Deputy Attorney General

* Evidence of authority of the CONTRACTOR'S representative to sign this Contract for the CONTRACTOR must be attached.

*



STATE OF HAWAII

CONTRACTOR'S ACKNOWLEDGMENT

STATE OF _____)
) SS.
_____ COUNTY OF _____)

On this _____ day of _____, _____ before me appeared
_____ and _____, to me
known, to be the person(s) described in and, who, being by me duly sworn, did say that he/she/they is/are
_____ and _____ of
_____, the
CONTRACTOR named in the foregoing instrument, and that he/she/they is/are authorized to sign said
instrument on behalf of the CONTRACTOR, and acknowledges that he/she/they executed said
instrument as the free act and deed of the CONTRACTOR.

(Notary Stamp or Seal)

(Signature)

(Print Name)

Notary Public, State of _____

My commission expires: _____

Doc. Date: _____ # Pages: 2 _____

Notary Name: _____ Circuit _____

Doc. Description: Contract for Goods or Services Based Upon
Competitive Sealed Bids

(Notary Stamp or Seal)

Notary Signature

Date

NOTARY CERTIFICATION



STATE OF HAWAII

CONTRACTOR'S STANDARDS OF CONDUCT DECLARATION

For the purposes of this declaration:

"Agency" means and includes the State, the legislature and its committees, all executive departments, boards, commissions, committees, bureaus, offices; and all independent commissions and other establishments of the state government but excluding the courts.

"Controlling interest" means an interest in a business or other undertaking which is sufficient in fact to control, whether the interest is greater or less than fifty per cent (50%).

"Employee" means any nominated, appointed, or elected officer or employee of the State, including members of boards, commissions, and committees, and employees under contract to the State or of the constitutional convention, but excluding legislators, delegates to the constitutional convention, justices, and judges. (Section 84-3, HRS).

On behalf of _____, CONTRACTOR, the undersigned does declare as follows:

1. CONTRACTOR ☐ is ☐ is not a legislator or an employee or a business in which a legislator or an employee has a controlling interest. (Section 84-15(a), HRS).
2. CONTRACTOR has not been represented or assisted personally in the matter by an individual who has been an employee of the agency awarding this Contract within the preceding two years and who participated while so employed in the matter with which the Contract is directly concerned. (Section 84-15(b), HRS).
3. CONTRACTOR has not been assisted or represented by a legislator or employee for a fee or other compensation to obtain this Contract and will not be assisted or represented by a legislator or employee for a fee or other compensation in the performance of this Contract, if the legislator or employee had been involved in the development or award of the Contract. (Section 84-14 (d), HRS).
4. CONTRACTOR has not been represented on matters related to this Contract, for a fee or other consideration by an individual who, within the past twelve (12) months, has been an agency employee, or in the case of the Legislature, a legislator, and participated while an employee or legislator on matters related to this Contract. (Sections 84-18(b) and (c), HRS).

CONTRACTOR understands that the Contract to which this document is attached is voidable on behalf of the STATE if this Contract was entered into in violation of any provision of chapter 84, Hawaii Revised Statutes, commonly referred to as the Code of Ethics, including the provisions which are the source of the declarations above. Additionally, any fee, compensation, gift, or profit received by any person as a result of a violation of the Code of Ethics may be recovered by the STATE.

Reminder to Agency: If the "is" block is checked and if the Contract involves goods or services of a value in excess of \$10,000, the Contract must be awarded by competitive sealed bidding under section 103D-302, HRS, or a competitive sealed proposal under section 103D-303, HRS. Otherwise, the Agency may not award the Contract unless it posts a notice of its intent to award it and files a copy of the notice with the State Ethics Commission. (Section 84-15(a), HRS).

CONTRACTOR

By _____
(Signature)

Print Name _____

Print Title _____

Name of Contractor _____

Date _____



STATE OF HAWAII

TIME OF PERFORMANCE

Project: Puukapu Pastoral Lots Water System Operation & Maintenance Services
Location: Puukapu, South Kohala, Island of Hawaii, Hawaii
Contractor: TBD

1. The Time of Performance for this Contract shall be twenty-four (24) months from the Notice to Proceed, unless extended by delays excused by the STATE as documented in writing. The Notice to Proceed shall be issued by the STATE separately to the CONTRACTOR.
2. This Contract shall expire on the date on which the later of the following occurs: (a) the State makes final payment to the CONTRACTOR in accordance with (1) paragraph 17(d) of the General Conditions (AG-008 Rev. 4/15/2009) and (2) no dispute between the parties hereto as to the Work or other obligations of the CONTRACTOR hereunder is outstanding or (b) the STATE issues a Final Acceptance letter to the CONTRACTOR.
3. The Contract expiration date is for administrative purposes only and not to be confused with the Time of Performance which refers to the time in which the CONTRACTOR is required to complete the work, or with any continuing obligations on the part of the CONTRACTOR



STATE OF HAWAII

**CERTIFICATE OF EXEMPTION
FROM CIVIL SERVICE****1. By Heads of Departments Delegated by the Director of the Department of Human Resources Development ("DHRD").***

Pursuant to a delegation of the authority by the Director of DHRD, I certify that the services to be provided under this Contract, and the person(s) providing the services under this Contract are exempt from the civil service, pursuant to § 76-16, Hawaii Revised Statutes (HRS).

(Signature)

Jobie M. K. Masagatani

(Print Name)

Chairman, Hawaiian Homes Commission

(Print Title)

(Date)

* This part of the form may be used by all department heads and the heads of attached agencies to whom the Director of DHRD expressly has delegated authority to certify § 76-16, HRS, civil service exemptions. The specific paragraph(s) of § 76-16, HRS, upon which an exemption is based should be noted in the contract file. If an exemption is based on § 76-16(b)(15), the contract must meet the following conditions:

- (1) It involves the delivery of completed work or product by or during a specific time;
- (2) There is no employee-employer relationship; and
- (3) The authorized funding for the service is from other than the "A" or personal services cost element.

NOTE: Not all attached agencies have received a delegation under § 76-16(b)(15). If in doubt, attached agencies should check with the Director of DHRD prior to certifying an exemption under § 76-16(b)(15). Authority to certify exemptions under §§ 76-16(b)(2), and 76-16(b)(12), HRS, has not been delegated; only the Director of DHRD may certify §§ 76-16(b)(2), and 76-16(b)(12) exemptions.

2. By the Director of DHRD, State of Hawaii.

I certify that the services to be provided under this Contract, and the person(s) providing the services under this Contract are exempt from the civil service, pursuant to § 76-16, HRS.

(Signature)

(Print Name)

(Print Title, if designee of the Director of DHRD)

(Date)



STATE OF HAWAII
SPECIAL CONDITIONS

Project: Puukapu Pastoral Lots Water System Operation & Maintenance Services
Location: Puukapu, South Kohala, Island of Hawaii, Hawaii
Contractor: TBD

SC-01: INTERCHANGEABLE TERMS

The following terms are one and the same:

- a. “Contract” and “Agreement”.
- b. “Department of Hawaiian Home Lands” “Department” “DHHL” and “STATE”.

SC-02: INSURANCE COVERAGE

The CONTRACTOR shall obtain separate insurance coverage for this project that complies with the requirements set forth in the DHHL Construction General Conditions, Article 7, Section 7.3, as amended. Payment for all work required to comply with this item will not be paid for separately but shall be considered incidental to the various contract items.

CONTRACTOR shall maintain insurance acceptable to the STATE in full force and effect throughout the term of this Contract. The policies of insurance maintained by CONTRACTOR shall provide the following minimum coverage:

Coverage	Limit
General Liability Insurance (occurrence form)	Bodily Injury and Property Damage (combined single limit): \$1,000,000 per occurrence and \$2,000,000 aggregate Personal Injury: \$1,000,000 per occurrence and \$2,000,000 aggregate
Automobile Insurance (covering all owned, non-owned and hired automobiles)	Bodily Injury: \$1,000,000 per person and \$1,000,000 per occurrence. Property Damage: \$1,000,000 per accident or combined single limit of \$2,000,000.
Workers Compensation (statutory limit is required by laws of the State of Hawaii)	Insurance to include Employer’s Liability. Both such coverages shall apply to all employees of the CONTRACTOR and, in case any sub-contractor fails to provide adequate similar protection for all his employees, to all employees of subcontractors.
Builder’s Risk covering the CONTRACTOR and all subcontractors	100% Replacement Value
Fire and extended coverage	100% Replacement Value



STATE OF HAWAII

SPECIAL CONDITIONS

Malicious Mischief	100% Replacement Value
Flood Insurance , if applicable	Maximum Coverage available

- a. The State of Hawaii, Department of Hawaiian Home Lands, its elected and appointed officials, officers, employees, and agents shall be named as additional insured with respect to operations, services or products provided to the State of Hawaii. CONTRACTOR agrees to provide to the DHHL, before the effective date of the Contract, certificate(s) of insurance necessary to evidence compliance with insurance provisions of this Contract. CONTRACTOR shall keep such insurance in effect and the certificate(s) on deposit with DHHL during the entire term of this Contract. Upon request by the STATE, CONTRACTOR shall furnish a copy of the policy or policies.
- b. Failure of CONTRACTOR to provide and keep in force such insurance shall be regarded as a material default under this Contract. The STATE shall be entitled to exercise any or all of the remedies provided in this Contract for default of CONTRACTOR.
- c. The procuring of such required policy or policies of insurance shall not be construed to limit CONTRACTOR's liability under this Contract or to fulfill the indemnification provisions and requirements of this Contract. Notwithstanding said policy or policies of insurance, CONTRACTOR shall be obliged for the full and total amount of any damage, injury, or loss caused by negligence or neglect connected with this Contract.
- d. CONTRACTOR shall immediately provide written notice to the contracting department or agency should any of the insurance policies evidenced on its Certificate of Insurance form be cancelled, limited in scope, or not renewed upon expiration.
- e. DHHL is a self insured State agency. CONTRACTOR's insurance shall be primary. Any insurance maintained by the State of Hawaii shall apply in excess of, and shall not contribute with, insurance provided by CONTRACTOR.
- f. The CONTRACTOR shall require all subcontractors to have in full force and effect the same insurance coverage as required of the CONTRACTOR. Such insurance shall name the State of Hawaii, Department of Hawaiian Home Lands, its elected and appointed officials, officers, employees, and agents as additional insured with respect to operations, services or products provided to the State of Hawaii. The CONTRACTOR shall be responsible to enforce its subcontractors' compliance with these insurance requirements and CONTRACTOR shall, upon request, provide the STATE a copy of the policy or policies of insurance for any subcontractor.

SC-03: COMPLETION SCHEDULE AND LIQUIDATED DAMAGES

The Contractor shall enter into a contract for furnishing services for a two (2) year period commencing on the date specified on the Notice to Proceed issued by the STATE.



STATE OF HAWAII

SPECIAL CONDITIONS

Unless terminated, contract shall be extended for not more than three (3) additional twelve month periods or portions thereof, without the necessity of rebidding, upon mutual agreement in writing, prior to expiration.

The Contractor or the State may terminate the extended contract period at any time upon three (3) months prior written notice.

Refer to the State's General Conditions liquidated damages is fixed at the sum of TWO HUNDRED DOLLARS (\$200.00) per each and every calendar day the Contractor fails to perform in whole or in part any of his obligations specified herein. Liquidated damages, if assessed, may be deducted from any payments due or to become due to the Contractor.

SC-04: PROCESS THROUGH DHHL

Any and all submittals, reports, requests, claims and notices under the contract shall be processed through Land Development Division Project Manager, at Hale Kalaniana'ole, 91-5420 Kapolei Parkway, Kapolei, Hawaii 96707.

SC-05: ALLOWANCES

The proposal may contain payment items designated as allowances. Funds listed in allowance items are to be spent at the direction of DHHL. The allowance is an estimate only and is subject to increase or decrease depending on the actual cost of the item. The funds are for the direct costs of an item and all pricing, submittal and review, overhead, installation, profit, insurance, surety, processing of the issuance of checks for payment to other parties, and all other costs will be included. No payment will be made for incidental costs.

Allowances specifically set aside for construction work and materials will be negotiated when the scope of work is determined. Any unspent allowance costs will be deducted from the contract by change order prior to final payment.

SC-06: CONTRACTOR'S LICENSING

It is the CONTRACTOR's sole responsibility to review the requirements of this project and determine the appropriate contractor's licenses that are required to complete the project. If the CONTRACTOR does not hold all of the licenses required to perform a particular item of work on this project with its own workers, when bidding, he must list subcontractors that hold the appropriate licenses in its proposal.

SC-07: OFFERER QUALIFICATIONS

In addition to meeting legal and other requirements of this IFB, offeror must meet these bidder qualification requirements to be considered for award:



STATE OF HAWAII

SPECIAL CONDITIONS

1. Offeror must possess the necessary business and tax licenses to conduct business in the State of Hawaii.
2. Offeror, or, Offeror's subcontractor performing plumbing services, shall have at the time of bid submittal, current C-37 contractor license or C-37d and C-37e contractor licenses issued by the Department of Commerce and Consumer Affairs (DCCA) pursuant to Chapter 444, HRS. In addition, plumber mechanics of the Offeror or its subcontractor who will be physically performing plumbing work shall possess a Chapter 448E, HRS, journey worker or master plumber license issued by the DCCA at the time of bid submittal. Questions as to the procedures for obtaining and registering for such licenses should be addressed to:

DCCA, Division of Professional and Vocational Licensing
Princess Victoria Kamamalu Building
1010 Richards Street, 1st and 17th Floor
Honolulu, Hawaii 96813
Phone: (808) 586-3000
E-mail: <http://www.state.hi.us/dcca/pvl/contact.html>

On the appropriate Bid Offer Form page, Offeror shall list its company name or its subcontractor's name along with the type(s) of HRS Chapter 444 Contractor license(s) and number(s). Offeror shall also list the name(s) of the plumber mechanic(s) who will physically perform the plumbing work and the HRS Chapter 448E license number(s). Copies of the licenses shall be submitted to the State within five (5) working days upon request. Failure to provide current licenses upon request shall result in rejection of bid.

3. The Contractor shall have a service facility on the Island of Hawaii where servicing and repair of equipment will be performed. The State shall have access to Contractor's personnel via telephone 24 hours a day, seven (7) days a week, who shall respond to complaints or emergency service request. This information shall be provided on the appropriate bid Offer Form page. Contractor must be able to respond to emergencies within one hour of notification.

If the Offeror does not have a facility on the Island of Hawaii, arrangements shall be made with a company on the island to provide the State with repair services. Offeror shall provide the name and address of this facility in the space provided on the appropriate Bid Offer Form page. The State reserves the right to inspect the designated service facility to determine acceptability under this requirement. Failure on the part of the bidder to meet this requirement shall result in rejection of bid.



STATE OF HAWAII
SPECIAL CONDITIONS

SC-08: CERTIFICATION OF INDEPENDENT COST DETERMINATION

By submission of a bid in response to this IFB, bidder certifies as follows:

1. The costs in this IFB have been arrived at independently, without consultation, communication, or agreement with any other bidder, as to any matter relating to such costs for the purpose of restricting competition.
2. Unless otherwise required by law, the cost which have been quoted in this IFB have not been knowingly disclosed by the bidder prior to award, directly or indirectly, to any other bidder or competitor prior to the award of the contract.
3. No other attempt has been made or will be made by the bidder to indicate any other person or firm to submit or not to submit for the purpose of restricting competition.

SC-09: STATUTORY REQUIREMENTS OF SECTION 103.55, HRS

Offeror shall complete and submit the attached wage certification by which offeror certified that the services required will be performed pursuant to Section 103.55, HRS, as amended.

Offerors are advised that Section 103.55, HRS, provides that the services to be performed shall be performed by employees paid at wages not less than wages paid to public officers and employees for similar work. Offerors are further advised that in the event of an increase in wage rates to public employees performing similar work during the contract period, Contractor will be obliged to provide wages no less than those increase wages.

Contractor shall be further obliged to notify its employees performing work under his contract of the provisions of Section 103.55, HRS, and of the current wage rate for public employees performing similar work. Contractor may meet this obligation by posting a notice to this effect in the Contractor's place of business accessible to all employees, or Contractor may include such notice with each paycheck or pay envelope furnished to the employee.

To assist the Offeror in determining whether the work his employees are to perform under this contract is similar to that performed by public employees, attached are class specifications for State positions. Effective 3/1/2009, the basic hourly wages paid to the State positions are as follows:



STATE OF HAWAII
SPECIAL CONDITIONS

Class	Hourly Rate
Water System Maintenance Worker (10.145)	\$22.23
Water System Maintenance Helper (10.140)	\$17.77
Plumber I (10.130)	\$22.23
Plumber II (10.133)	\$23.54
(See Attachment for Position Class Specification)	

Accordingly, Offeror should consider the aforementioned wage rates when preparing his/her quote.

SC-10: PRICE ADJUSTMENT DUE TO WAGE INCREASE TO STATE EMPLOYEES

At the release of this IFB, only the current wages of State employees performing similar work are known. Should their wages increase during any period of the contract, including supplements, the Contractor may request for increase in contract price if the current wages paid for similar positions are lower than wages paid to State employees. The increase requested must result in increase in wages to the Contractor's employees performing the work, herein, including any increase in cost for benefits required by law that are automatically increase as a result of increased wages, such as federal old age benefits, workers' compensation, temporary disability insurance unemployment insurance, and prepaid public health insurance.

Contractor's request for increase must meet the following criteria:

1. At the time of a request, Contractor must provide documentation to show that he is in compliance with Section 103.55, HRS, i.e., its employees are being paid no less than the known wage of the State position listed herein. Documentation shall include the employees' payroll records and a statement that the employees are being utilized for this contract.
2. At the time of bidding, the Contractor must have specified on the appropriate Bid Offer Form page, the percentage of the unit bid price that represents labor costs. If the Contractor fails to specify the percentage, the Contractor's request for increase will not be considered.
3. Request for increase must be made in writing to DHHL on a timely basis.
 - a. Request for increase for the initial contract period must be made as soon as practicable after the State wage agreements are made public. Approved request will be retroactive to the date of increase for the State employee.



STATE OF HAWAII

SPECIAL CONDITIONS

increase and the State shall only consider those benefits that are required by contract and are directly affected by the wage increase.

If request includes adjustment for wage related fringe benefits, Contractor must provide support documentation and an itemized percentage breakdown of the fringe benefits being paid.

The State has determined that the applicable fringe benefits for wage related price adjustment shall be limited to: 1) Federal Old Age Benefits, 2) Worker Compensation, 3) Temporary Disability Insurance, and 4) Unemployment Insurance. Based on past experience, it has been determined that the percentage increase be set at 16%. If Contractor is able to document that its percent for fringe is higher than 16%, the State will review and consider Contractor's claim.

The following method of calculation shall be applied for the fringe benefits:

- a. 16% for Allowable Fringe Benefits
 - b. \$ Adjusted for Allowable Fringe Benefits (F) = (D) x (.16) = F, or
\$.50 x .16 = \$.08
 - c. Adjusted Bid Price/Hr/Officer + Fringe Benefits = (E) + (F), or
\$15.50 + \$.08 =
\$15.58
7. After the contract modification for the increase is issued by the State, but before payment of an increase is made on the portion of the current contract period already performed, the Contractor shall show proof that its employees were given the retroactive wage increase.

The increase shall be reflected in either a contract modification or in the supplemental agreement issued for any extended period of the initial contract.

SC-11: APPRENTICESHIP AGREEMENT PREFERENCE – CONTRACTOR'S RESPONSIBILITY

1. For the duration of the contract awarded utilizing the Hawai'i Apprenticeship Preference, the CONTRACTOR shall certify each month that work is being conducted on the project, that it continues to be a participant in the relevant apprenticeship program for each trade it employs.
2. Monthly certification shall be made on *MONTHLY REPORT OF CONTRACTOR'S PARTICIPATION IN APPROVED APPRENTICESHIP PROGRAM UNDER ACT 17 (Monthly Certification Form 2)* prepared and made available by the DLIR. *Monthly Certification Form 2* shall be a signed original by the respective apprenticeship program sponsor's authorized official, and submitted by the Contractor with its monthly payment requests. *Monthly Certification Form 2* is available on the DLIR website at: <http://hawaii.gov/labor/wdd>



STATE OF HAWAII

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3. Should the Contractor fail or refuse to submit its monthly certification forms, or at any time during the construction of the project, cease to be a party to a registered apprenticeship agreement for each apprenticeable trade the Contractor employs, the Contractor will be subject to the following sanctions:
 - a. Withholding of the requested payment until the required form(s) are submitted;
 - b. Temporary or permanent cessation of work on the project, without recourse to breach of contract claims by the Contractor; provided the DHHL shall be entitled to restitution for nonperformance or liquidated damages claims; or
 - c. Proceed to debar pursuant to HRS §103D-702.
4. If events such as “acts of God,” acts of a public enemy, acts of the State or any other governmental body in its sovereign or contractual capacity, fires, floods, epidemics, freight embargoes, unusually severe weather, or strikes or other labor disputes prevent the Contractor from submitting the certification forms, the Contractor shall not be penalized as provided herein, provided the Contractor completely and expeditiously complies with the certification process when the event is over.

SC-12: GENERAL CONDITIONS

In the event of conflicts and/or discrepancies, the DHHL Construction General Conditions shall govern over AG-008 103D General Conditions.

SC-13: CONTINGENT ITEMS

Depending upon the site and soil conditions, and other factors, the Project Manager may decide to delete the contingent items in its entirety. A Change Order may be issued to delete the work and the contract amount shall be reduced by subtracting the entire corresponding bid amount. If part of the work is done, or if the work exceeds the estimated quantities, payment shall be made on the actual number of units incorporated in the work at the unit price bid.

SC-14: STATE GENERAL EXCISE TAX

This project is not exempt from the State of Hawaii General Excise Tax. The CONTRACTOR's prices shall include the General Excise Tax for all work.

Department of Hawaiian Home Lands
CONSTRUCTION GENERAL CONDITIONS
Dated August 2013

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ARTICLE 1: DEFINITIONS AND ABBREVIATIONS

- 1.1 DEFINITIONS.** Whenever the following terms or pronouns are used in these Construction General Conditions, or in any contract documents or instruments where these Construction General Conditions govern, the intent and meaning shall be interpreted as follows:

ADDENDUM (*plural - Addenda*). A written or graphic document, including Drawings and Specifications, issued by the Chairman during the bidding period which modifies or interprets the bidding documents, by additions, deletions, clarifications or corrections, which shall be considered and made a part of the bid proposal and the contract.

ADDITION (*to the contract sum*). Amount added to the contract sum by Change Order.

ADMINISTRATIVE RULES. Hawaii Administrative Rules for Chapter 103-D of the Hawaii Revised Statutes.

ADVERTISEMENT. A public announcement inviting bids for work to be performed or materials to be furnished.

BAD WEATHER DAY. When weather or other conditions prevent a minimum of four hours of work with the Contractor's normal work force on controlling items of work at the site. (See excess bad weather day.)

BENEFICIAL OCCUPANCY. The point of project completion when the Department can use the constructed facility in whole or in part for its intended purpose even though substantial completion may not be achieved.

BID. See PROPOSAL.

BID SECURITY. The security furnished by the Bidder from which the Department may recover its damages in the event the Bidder breaches its promise to enter into a contract with the Department and fails to execute the required bonds covering the work contemplated, if its proposal is accepted.

BIDDER. Any individual, partnership, firm, corporation, joint venture, or other legal entity submitting, directly or through a duly authorized representative or agent, a proposal for the work contemplated.

BIDDING DOCUMENTS. The advertisement "Notice to Contractors", or invitation to bid, instructions to Bidders, proposal requirements, the bid form and the proposed Contract Documents including all addenda issued prior to receipt of Bids.

BULLETIN. A written notice to the Contractor requesting a price and / or time proposal for contemplated changes preparatory to the issuance of a field order or change order.

BY OR TO THE PROJECT MANAGER. To avoid cumbersome and confusing repetition of expressions in these General Conditions, it is provided that whenever the following words or words of like import are used, they shall be understood as if they were followed by the words "by the Project Manager" or "to the Project Manager", unless the context clearly indicates another meaning: contemplated, required, determined, directed, specified, authorized, ordered, given, designated, indicated, considered necessary, deemed necessary, permitted, reserved, suspended, established, approval, approved, disapproved, acceptable, unacceptable, suitable, accepted, satisfactory, unsatisfactory, sufficient, insufficient, rejected or condemned.

CALENDAR DAY. Any day shown on the calendar beginning at midnight and ending at midnight the following day. If no designation of calendar or working day is made, “day” shall mean calendar day.

CHAIRMAN. The Chairman of the Hawaiian Homes Commission, Department of Hawaiian Home Lands.

CHANGE ORDER. A written order signed by the Chairman that establishes the full payment and final settlement of all claims for direct, indirect and consequential costs, including costs of delays, and establishes any adjustments to contract time related to the work covered and affected by one or more field orders, or for change work done or agreed to be done without issuance of a separate field order. A change order signed by all the parties to the contract constitutes a supplemental agreement.

COMPLETION. See SUBSTANTIAL COMPLETION and FINAL COMPLETION.

CONSULTANT. A person, firm or corporation having a contract with the Department to furnish services with respect to the project.

CONTRACT. The written agreement between the Contractor and the Department by its Chairman, by which the Contractor is bound to furnish all labor, equipment, and materials and to perform the specified work within the contract time stipulated, and by which DHHL is obligated to compensate the Contractor therefor at the prices set forth therein. The contract shall include the Contract Documents, also any and all amendments, and change orders, which are required to complete the construction in an acceptable manner.

CONTRACT COMPLETION DATE. The calendar day on which all work on the project, required by the contract, must be completed. See CONTRACT TIME and FINAL COMPLETION.

CONTRACT DOCUMENTS. The Contract, Addenda (which pertain to the Contract Documents, Contractor’s Proposal (including Wage Schedule, List of Subcontractors and other documentation accompanying the Bid and any post bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the contract, the Notice to Proceed, the Bonds, these General Conditions, the SPECIAL CONDITIONS, the Specifications and the Drawings as the same are more specifically identified in the contract together with all written Amendments, Change Orders, Field Orders, any written order for minor changes in the work and Project Manager’s written interpretations and clarifications issued on or after the effective date of the contract.

CONTRACT PRICE. The amount designated on the face of the contract for the performance of work including allowances, if any.

CONTRACT TIME. The number of working or calendar days provided in the contract for completion of the contract, exclusive of authorized time extensions. The number of days shall begin running on the effective date in the Notice to Proceed. If in lieu of providing a number of working or calendar days, the contract requires completion by a certain date, the work shall be completed by that date.

CONTRACTOR. Any individual, partnership, firm, corporation, joint venture, or other legal entity undertaking the execution of the work under the terms of the contract with the State of Hawaii, and acting directly or through its agents, or employees.

DEPARTMENT. The Department of Hawaiian Home Lands (abbreviated DHHL).

DRAWINGS (or Plans). The contract drawings in graphic or pictorial form, which show the design, location, character, dimensions and details of the work to be done and which shall be a part of the Contract Documents.

EQUAL OR APPROVED EQUAL. Whenever this term is used in the drawings or specifications, it shall be interpreted to mean a brand or article, prequalified in accordance with Section 6.3 SUBSTITUTION OF MATERIALS AND EQUIPMENT AFTER BID OPENING, that may be used in place of the one specified.

EXCESS BAD WEATHER DAY. A working day on which inclement weather prevents work on the contract and is beyond the average weather for the location of the project and the time of the year.

FIELD ORDER. A written order issued by the Project Manager to the Contractor requiring the contract work to be performed in accordance with a change or changes in the work. A field order may (1) establish a price adjustment and/or time adjustment in an amount the Project Manager believes is reasonable for the change; or (2) may declare that the Project Manager does not intend to adjust contract time or price for the work; or (3) may request the Contractor to submit a proposal for an adjustment to the contract time and/or price by a certain date.

FINAL COMPLETION. The date set by the Chairman that all work required by the contract and any amendments or changes thereto is in full compliance with the contract.

FORCE ACCOUNT. Term used when work is ordered to be done at the sole option of the Department and is to be billed for at cost of labor, materials and equipment, insurance(s), taxes, etc., plus a percentage for overhead and profit.

GUARANTEE. Legally enforceable assurance of the duration of satisfactory performance of quality of a product or work.

HAZARDOUS MATERIALS. Any and all radioactive materials, asbestos, polychlorinated biphenyls, petroleum, crude oil, chemicals known to cause cancer or reproductive toxicity, pollutants, contaminants, toxic substances or materials cited in Hazardous Material Laws. Abandoned motor vehicles or parts thereof are not hazardous material.

HOLIDAYS. The days of each year which are set apart and established as State holidays pursuant to Chapter 8, Hawaii Revised Statutes.

INSPECTOR. The person assigned by the Department to make detailed inspections of contract performance and materials supplied for the work.

LAWS. All Federal, State, City and County Laws, ordinances, rules and regulations, and standard specifications, including any amendments thereto effective as of the date of the call for sealed bids.

LETTER OF AWARD. A written notice from the Chairman to the successful Bidder(s) stating that the Department has accepted its proposal.

LIQUIDATED DAMAGES. The amount prescribed in the Special Conditions, LIQUIDATED DAMAGES to be paid to the Department or to be deducted from any payments due or to become due the Contractor for each working day or calendar day (as applicable) delay in completing the whole or any specified portion of the work beyond the Contract Time.

MAJOR UNIT PRICE ITEM. A unit price item which, when extended on its estimated quantities in the proposal form, exceeds five percent (5%) of the total base bid proposal less any allowance and contingent items included in the proposal.

NON-CONFORMING WORK. Work that does not meet the requirements of the Contract Documents.

NOTICE TO PROCEED. A written notice from the Project Manager to the Contractor advising it of the date on which it is to begin the prosecution of the work, which date shall also be the beginning of Contract Time.

POST CONTRACT DRAWINGS. Drawings issued after the award of the contract for the purpose of clarification and / or changes to the work indicated in the original drawings and which may be made a part of the contract.

PROJECT ACCEPTANCE DATE. The calendar day on which the Project Manager accepts the project as sufficiently completed in compliance with the contract so that the Department can occupy or utilize the work for its intended use. See SUBSTANTIAL COMPLETION.

PROJECT CONTRACT LIMITS (or CONTRACT ZONE). The portion of the site as delineated on the drawings which define the Contractor's primary area of operation for the prosecution of the work. It does not define the exact limits of all construction that may be required under the contract.

PROJECT MANAGER. The Department's Contract Administrator as described in ARTICLE 5, CONTROL OF WORK.

PROJECT GUARANTEE. A guarantee issued by the Contractor to the Department. See GUARANTEE.

PROPOSAL (BID). The executed document submitted by a Bidder in the prescribed manner, in response to a request for proposals or invitation to Bid, to perform at the prices quoted, for the work specified under the contract, within the time prescribed for performance.

PROPOSAL FORM. The form prepared by the Department on which the written offer or formal bid for the work to be done is submitted by the Bidder. By submitting a bid on the proposal form, a Bidder adopts the language therein as its own.

PUNCHLIST. A list compiled by the Project Manager (or Contractor) stating work yet to be completed or corrected by the Contractor in order to substantially complete or finally complete the contract requirements.

SHOP DRAWINGS/SUBMITTALS. All drawings, diagrams illustrations, schedules and other data or information which are prepared or assembled by the Contractor and submitted by Contractor to illustrate some portion of the work.

SPECIAL CONDITIONS. The specific clauses that supplements or modify the standard clauses of the GENERAL CONDITIONS setting forth conditions or requirements peculiar to the individual project under consideration, which are not thoroughly or satisfactorily covered, described or explained in these GENERAL CONDITIONS.

SPECIFICATIONS. That portion of the Contract Documents consisting of written descriptions for materials, equipment, construction systems, standards, workmanship, directions, provisions and

requirements that pertain to the method and manner of performing the work and certain administrative requirements applicable thereto.

STATE. The State of Hawaii acting through its authorized representative.

SUBCONTRACT. Any written agreement between the Contractor and its subcontractors which contains the conditions under which the subcontractor is to perform a portion of the work for the Contractor.

SUBCONTRACTOR. An individual, partnership, firm, corporation, joint venture or other legal entity, as covered in Chapter 444, Hawaii Revised Statutes, which enters into an agreement with the Contractor to perform a portion of the work for the Contractor.

SUBSTANTIAL COMPLETION. The status of the project when the Contractor has completed all the work and (1) all utilities and services are connected and working; (2) all equipment is in acceptable working condition; (3) additional activity by the Contractor to correct punchlist items as described herein will not prevent or disrupt use of the work or the facility in which the work is located; and 4) the building, structure, improvement or facility can be used for its intended purpose.

SUPERINTENDENT. The employee of the Contractor, authorized to receive and fulfill instructions from the Project Manager, who is charged with the responsibility of all the work.

SURETY. The qualified individual, firm or corporation other than the Contractor, which executes a bond with and for the Contractor to ensure its acceptable performance of the contract.

UNUSUALLY SEVERE WEATHER. Uncommonly harsh weather including but not limited to hurricanes, tornadoes, tropical storms and tropical depressions.

WORK. The furnishing of all labor, materials, equipment, and other incidentals necessary or convenient for the successful completion of the project and the execution of all the duties and obligations imposed by the contract.

WORKING DAY. A calendar day, exclusive of Saturdays, Sundays and State-recognized legal holidays for the month in question.

1.2 ABBREVIATIONS

DHHL	Department of Hawaiian Home Lands.
HAR	Hawaii Administrative Rules
HRS	Hawaii Revised Statutes
VECP	Value Engineering Cost Proposal

~ END OF ARTICLE 1~

ARTICLE 2: [reserved]

ARTICLE 3: CONTRACT

3.1 NOTICE TO PROCEED

3.1.1 After the contract is fully executed and signed by the Chairman, the Contractor will be sent a formal Notice to Proceed letter advising the Contractor of the date on which it may proceed with the work. The Contractor shall be allowed ten (10) consecutive working days from said date to begin its work. In the event that the Contractor refuses or neglects to start the work, the Chairman may terminate the contract in accordance with Section 7.27, TERMINATION OF CONTRACT FOR CAUSE.

3.1.2 The Contractor may commence its operations strictly at its own risk prior to receipt of the formal notice to proceed, provided it makes a written request and has received approval from the Chairman in writing. All work performed shall be conducted in accordance with Section 7.1, PROSECUTION OF THE WORK.

3.1.3 In certain cases, the Department, with agreement of the Contractor, may issue a Notice to Proceed before full execution of the contract by the Chairman and it may further issue a Notice to Proceed concurrently with the Notice of Award.

3.1.4 In the event the Notice to Proceed is not issued within one hundred eighty (180) days after (1) the date the contract is executed by all parties; or (2) for projects funded with State Capital Improvement Project (CIP) funds, the date that the written certificate that funds are available is issued, whichever is later, the Contractor may submit a claim for increased labor and material costs (but not overhead costs) which are directly attributable to the delay beyond the first one hundred eighty (180) days. Such claims shall be accompanied with the necessary documentation to justify the claim. No payment will be made for assumed escalation costs.

3.2 RELATIONSHIP OF PARTIES. Independent Contractor Status and Responsibilities, including Tax Responsibilities.

3.2.1 In the performance of services required under this Contract, the CONTRACTOR is an “independent contractor,” with the authority and responsibility to control and direct the performance and details of the work and services required under this Contract; however, the STATE shall have a general right to inspect work in progress to determine whether, in the STATE’s opinion, the services are being performed by the CONTRACTOR in compliance with this Contract. Unless otherwise provided by special condition, it is understood that the STATE does not agree to use the CONTRACTOR exclusively, and that the CONTRACTOR is free to contract to provide services to other individuals or entities while under contract with the STATE.

3.2.2 The CONTRACTOR and the CONTRACTOR’s employees and agents are not by reason of this Contract, agents or employees of the State for any purpose, and the CONTRACTOR and the CONTRACTOR’s employees and agents shall not be entitled to claim or receive from the STATE any vacation, sick leave, retirement, workers’ compensation, unemployment insurance, or other benefits provided to state employees.

3.2.3 The CONTRACTOR shall be responsible for the accuracy, completeness, and adequacy of the CONTRACTOR’s performance under this Contract. Furthermore, the CONTRACTOR intentionally, voluntarily, and knowingly assumes the sole and entire liability to the CONTRACTOR’s employees

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and agents, and to any individual not a party to this Contract, for all loss, damage, or injury caused by the CONTRACTOR, or the CONTRACTOR's employees or agents in the course of their employment.

- 3.2.4 The CONTRACTOR shall be responsible for payment of all applicable federal, state, and county taxes and fees which may become due and owing by the CONTRACTOR by reason of this Contract, including but not limited to (i) income taxes, (ii) employment related fees, assessments, and taxes, and (iii) general excise taxes. The CONTRACTOR also is responsible for obtaining all licenses, permits, and certificates that may be required in order to perform this Contract.
- 3.2.5 The CONTRACTOR shall obtain a general excise tax license from the Department of Taxation, State of Hawaii, in accordance with Section 237-9, HRS, and shall comply with all requirements thereof.
- 2.2.6 The CONTRACTOR is responsible for securing all employee-related insurance coverage for the CONTRACTOR and the CONTRACTOR's employees and agents that is or may be required by law, and for payment of all premiums, costs, and other liabilities associated with securing the insurance coverage.
- 3.3 PERSONNEL REQUIREMENTS:
- 3.3.1 The CONTRACTOR shall secure, at the CONTRACTOR's own expense, all personnel required to perform this Contract.
- 3.3.2 The CONTRACTOR shall ensure that the CONTRACTOR's employees or agents are experienced and fully qualified to engage in the activities and perform the services required under this Contract, and that all applicable licensing and operating requirements imposed or required under federal, state, or county law, and all applicable accreditation and other standards of quality generally accepted in the field of the activities of such employees and agents are complied with and satisfied.
- 3.4 NONDISCRIMINATION. No person performing work under this Contract, including any subcontractor, employee, or agent of the Contractor, shall engage in any discrimination that is prohibited by any applicable federal, state, or county law.
- 3.5 CONFLICTS OF INTEREST. The CONTRACTOR represents that neither the CONTRACTOR, nor any employee or agent of the CONTRACTOR, presently has any interest, and promises that no such interest, direct or indirect, shall be acquired, that would or might conflict in any manner or degree with the CONTRACTOR's performance under this Contract.
- 3.6 EMPLOYMENT OF STATE RESIDENTS (§103B-3 HRS). The Contractor shall ensure that Hawaii residents comprise not less than eighty per cent of the workforce employed to perform the contract work on the project. The 80% requirement shall be determined by dividing the total number of hours worked on the contract by Hawaii residents, by the total number of hours worked on the contract by all employees of the Contractor in the performance of the contract. The hours worked by any Subcontractor of the Contractor shall count towards the calculation for this section. The hours worked by employees within shortage trades, as determined by the Department of Labor and Industrial Relations (DLIR), shall not be included in the calculation for this section.

~END OF ARTICLE 3~

ARTICLE 4: SCOPE OF WORK

- 4.1 INTENT OF CONTRACT, DUTY OF CONTRACTOR. The intent of the Contract is to provide for the construction, complete in every detail, of the work described at the accepted bid price and within the time established by the contract. The Contractor has the duty to furnish all labor, materials, equipment, tools, transportation, incidentals and supplies and to determine the means, methods and schedules required to complete the work in accordance with the drawings, specifications and terms of the contract.
- 4.1.1 ENTIRE CONTRACT. This Contract sets forth all of the Contract, conditions, understandings, promises, warranties, and representations between the STATE and the CONTRACTOR relative to this Contract. This Contract supersedes all prior Contracts, conditions, understandings, promises, warranties and representations, which shall have no further force or effect. There are no Contracts, conditions, understandings, promises, warranties, or representations, oral or written, express or implied, between the STATE and the CONTRACTOR other than as set forth or as referred to herein.
- 4.2 CHANGES. The Project Manager may at any time, during the progress of the work, by written order, and without notice to the sureties, make changes in the work as may be found to be necessary or desirable. Such changes shall not invalidate the Contract nor release the Surety, and the Contractor will perform the work as changed, as though it had been a part of the original Contract.
- 4.2.1 MINOR CHANGES. Minor changes in the work may be directed by the Project Manager with no change in contract price or time of performance. Minor changes are consistent with the intent of the Contract Documents and do not substantially alter the type of work to be performed or involve any adjustment to the contract sum or extension of the contract time.
- 4.2.2 ORAL ORDERS
- 4.2.2.1 Any oral order, direction, instruction, interpretation or determination from the Chairman or any other person which in the opinion of the Contractor causes any change, shall be considered as a change only if the Contractor gives the Chairman written notice of its intent to treat such oral order, direction, instruction, interpretation or determination as a change directive. Such written notice must be delivered to both the Chairman and the Project Manager before the Contractor acts in conformity with the oral order, direction, instruction, interpretation or determination, but not more than five (5) days after delivery of the oral order to the Contractor. The written notice shall state the date, circumstances, whether a time extension will be requested, and source of the order that the Contractor regards as a change. Such written notice may not be waived and shall be a condition precedent to the filing of any claim by the Contractor. Unless the Contractor acts in accordance with this procedure, any such oral order shall not be treated as a change for which the Contractor may make a claim for an increase in the contract time or contract price related to such work.
- 4.2.2.2 No more than five (5) days after receipt of the written notice from the Contractor, a Field Order shall be issued for the subject work if the Department agrees that it constitutes a change. If no Field Order is issued in the time established, it shall be deemed a rejection of Contractor's claim for a change. If the Contractor objects to the failure to issue a Field Order, it shall file a written protest with the Chairman within thirty (30) days after delivery to the Chairman of the Contractor's written notice of its intention to treat the oral order as a change. In all cases, the Contractor shall proceed with the work. The protest shall be determined as provided in Section 7.25, DISPUTES AND CLAIMS.
- 4.2.3 FIELD ORDERS. All changes will be set forth in a field order or change order. Upon receipt of a field order, the Contractor shall proceed with the changes as ordered. If the Contractor does not agree

with any of the terms or conditions or in the adjustment or non-adjustment to the contract time and/or contract price set forth therein, it shall file with the Chairman a written protest setting forth its reasons in detail within thirty (30) days after receipt of the field order. In all cases, the Contractor shall proceed with the work as changed. The protest shall be determined as provided in Section 7.25, DISPUTES AND CLAIMS. Failure to file such a protest within the time specified shall constitute agreement on the part of the Contractor with the terms, conditions, amounts and adjustments or non-adjustment to the contract price and/or contract time set forth in the field order.

4.2.4 CHANGE ORDERS

4.2.4.1 The Department will issue sequentially numbered change orders at times it deems appropriate during the contract period. A change order may contain the adjustment in contract price and / or time for a number of Field Orders. No payment for any change will be made until the change order is issued.

4.2.4.2 The penal sum of the Surety Performance and Payment Bonds will be adjusted by the amount of each and every change order.

4.3 DUTY OF CONTRACTOR TO PROVIDE PROPOSAL FOR CHANGES

4.3.1 A Field Order may request the Contractor to supply the Department with a proposal for an adjustment to the contract time or contract price for the work described therein. Any such request for a proposal shall not affect the duty of the Contractor to proceed as ordered with the work described in the Field Order.

4.3.2 The Project Manager from time to time may issue a Bulletin to the Contractor requesting price and / or time adjustment proposals for contemplated changes in the work. A Bulletin is not a directive for the Contractor to perform the work described therein.

4.3.3 Within seven (7) days after receipt of a Bulletin or Field Order containing a request for proposal, the Contractor shall submit to the Project Manager a detailed written statement setting forth all charges the Contractor proposes for the change and the proposed adjustment of the contract time, all properly itemized and supported by sufficient substantiating data to permit evaluation. No time extension will be granted for delays caused by late Contractor pricing of changes or proposed changes. If the project is delayed because Contractor failed to submit the cost proposal within the seven (7) days, or longer as allowed by the Project Manager, liquidated damages will be assessed in accordance with Section 7.26, FAILURE TO COMPLETE THE WORK ON TIME.

4.3.4 No payment shall be allowed to the Contractor for pricing or negotiating proposed or actual changes. No time extension will be granted for delay caused by late Contractor pricing of changes or proposed changes.

4.3.5 The Chairman may accept the entire proposal, or any discreet cost item contained within the proposal or the proposed adjustment to contract time by a notice in writing to the Contractor delivered to the Contractor within thirty (30) days after receipt of the proposal. The written acceptance by the Chairman of all or part of the Contractor's proposal shall create a binding agreement between the parties for that aspect of the change.

4.3.6 If the Department refuses to accept the Contractor's entire proposal, the Chairman may issue a Field Order for the work; or if a Field Order has already been issued, the Department may issue a supplemental Field Order establishing the remaining adjustments to contract price and/or contract time for the ordered changes. If the Contractor disagrees with any term, condition or adjustment

contained in such Field Order or supplemental Field Order, it shall follow the protest procedures set forth in and be subject to the other terms of Subsection 4.2.3, FIELD ORDERS.

4.4 PRICE ADJUSTMENT (§3-125-13 HAR)

4.4.1 Any adjustment in the contract price pursuant to a change or claim in this contract shall be made in one or more of the following ways:

4.4.1.1 By agreement on a fixed price adjustment before commencement of the pertinent performance or as soon thereafter as practicable;

4.4.1.2 By unit prices specified in the contract or subsequently agreed upon;

4.4.1.3 Whenever there is a variation in quantity for any work covered by any line item in the schedule of costs submitted as required by Section 7.2, COMMENCEMENT REQUIREMENTS, by the Department at its discretion, adjusting the lump sum price proportionately;

4.4.1.4 In such other manner as the parties may mutually agree;

4.4.1.5 At the sole option of the Project Manager, by the costs attributable to the event or situation covered by the change, plus appropriate profit or fee, all as specified in Section 4.5, ALLOWANCES FOR OVERHEAD AND PROFIT and the force account provision of Section 8.3, PAYMENT FOR ADDITIONAL WORK; or

4.4.1.6 In the absence of an agreement between the two parties, by a unilateral determination by the Department of the reasonable and necessary costs attributable to the event or situation covered by the change, plus appropriate profit or fee, all as computed in accordance with applicable Sections of Chapters 3-123 and 3-126 of the Hawaii Administrative Rules and Regulations, and Section 4.5, ALLOWANCES FOR OVERHEAD AND PROFIT.

4.5 ALLOWANCES FOR OVERHEAD AND PROFIT (§3-125-13 HAR)

4.5.1 In determining the cost or credit to the Department resulting from a change, the allowances for all overhead, including, extended overhead resulting from adjustments to contract time (including home office, branch office and field overhead, and related delay impact costs) and profit combined, shall not exceed the percentages set forth below:

4.5.1.1 For the Contractor, for any work performed by its own labor forces, twenty percent (20%) of the direct cost;

4.5.1.2 For each subcontractor involved, for any work performed by its own forces, twenty percent (20%) of the direct cost;

4.5.1.3 For the Contractor or any subcontractor, for work performed by their subcontractors, ten percent (10%) of the amount due the performing subcontractor.

4.5.1.4 Field overhead includes, but is not limited to all costs of supervision, engineering, clerical, layout, temporary facilities, improvements and structures, all general condition expenditures, storage, transport and travel, housing, small tools (as defined in 8.3.4.5(h)), pickup trucks and automobiles.

- 4.5.2 Not more than three markup allowance line item additions not exceeding the maximum percentage shown above will be allowed for profit and overhead, regardless of the number of tier subcontractors.
- 4.5.3 The allowance percentages will be applied to all credits and to the net increase of direct costs where work is added and deleted by the changes.
- 4.6 PAYMENT FOR DELETED MATERIAL
- 4.6.1 CANCELED ORDERS. If acceptable material was ordered by the Contractor for any item deleted by an ordered change in the work prior to the date of notification of such deletion by the Project Manager, the Contractor shall use its best efforts to cancel the order. The Department shall pay reasonable cancellation charges required by the supplier excluding any markup for overhead and profit to the Contractor.
- 4.6.2 RETURNED MATERIALS - If acceptable deleted material is in the possession of the Contractor or is ultimately received by the Contractor, if such material is returnable to the supplier and the Project Manager so directs, the material shall be returned and the Contractor will be paid for the reasonable charges made by the supplier for the return of the material, excluding any markup for overhead and profit to the Contractor. The cost to the Contractor for handling the returned material will be paid for as provided in Section 4.4, PRICE ADJUSTMENT.
- 4.6.3 UNCANCELLED MATERIALS. If orders for acceptable deleted material cannot be canceled at a reasonable cost, it will be paid for at the actual cost to the Contractor including an appropriate markup for overhead and profit as set forth in Section 4.5, ALLOWANCES FOR OVERHEAD AND PROFIT. In such case, the material paid for shall become the property of the Department and the cost of further storage and handling shall be paid for as provided in Section 4.4, PRICE ADJUSTMENT.
- 4.7 VARIATIONS IN ESTIMATED QUANTITIES (§3-125-10 HAR)
- 4.7.1 Where the quantity of a major unit price item in this contract is estimated on the proposal form and where the actual quantity of such pay item varies more than fifteen percent (15%) above or below the estimated quantity stated in this contract, an adjustment in the contract price shall be made upon demand of either party. The adjustment shall be based upon any increase or decrease in costs due solely to the variation above one hundred fifteen percent (115%) or below eighty-five percent (85%) of the estimated quantity. The adjustment shall be subject to Section 4.4 PRICE ADJUSTMENT and Section 4.5, ALLOWANCES FOR OVERHEAD AND PROFIT. If the quantity variation is such as to cause an increase in the time necessary for completion, the Chairman shall, upon receipt of a written request for an extension of time within thirty (30) days of the item's completion, ascertain the facts and make such adjustment to the completion date as the Chairman finds justified.
- 4.8 VARIATIONS IN BOTTOM ELEVATIONS. The Contractor shall plan and construct to the bottom elevations of footings, piles, drilled shafts, or cofferdams as shown on the drawings. When the bottom of a footing, pile, drilled shaft, or cofferdam is shown as an estimated or approximate elevation, the Contractor shall plan and construct to that elevation or to any deeper elevation required by the drawings or direction of the Project Manager. In the event the bottom elevation is lowered, the Contractor shall be entitled to additional payment in accordance with Sections 4.4 PRICE ADJUSTMENT and 4.5 ALLOWANCES FOR OVERHEAD AND PROFIT. In the event the bottom elevation is raised, the Department shall be entitled to a credit in accordance with Sections 4.2 CHANGES, 4.4, PRICE ADJUSTMENT and 4.5, ALLOWANCES FOR OVERHEAD AND PROFIT.

- 4.9 DIFFERING SITE CONDITIONS (§3-125-11 HAR)
- 4.9.1 During the progress of the work, if the Contractor encounters conditions at the site differing materially from those shown in the drawings and specifications, Contractor shall promptly, and before any such conditions are disturbed or damaged (except in an emergency as required by Subsection 7.17.8. EMERGENCIES), notify the Project Manager in writing of:
- 4.9.1.1 Subsurface or latent physical conditions at the site differing materially from those indicated in the contract; or
- 4.9.1.2 Unknown physical conditions at the site, of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this contract. Unclaimed motor vehicles or parts thereof and discarded materials or unclaimed items are not unknown or unforeseen physical conditions. (See also Section 5.8, EXAMINATION OF DRAWINGS, SPECIFICATIONS, PROJECT SITE).
- 4.9.2 After receipt of written notice, the Chairman shall promptly investigate the site, and if it is found that such conditions do materially differ and cause an increase in the Contractor's cost of, or the time required to, perform any part of the work, whether or not changed as a result of such conditions, an adjustment shall be made and the contract modified accordingly. Any adjustment in contract price made pursuant to this Section 4.9. DIFFERING SITE CONDITIONS (§3-125-11 HAR) shall be determined in accordance with Sections 4.4, PRICE ADJUSTMENT and 7.25, DISPUTES AND CLAIMS.
- 4.9.3 Nothing contained in this Section 4.9, DIFFERING SITE CONDITONS shall be grounds for an adjustment in compensation if the Contractor had actual knowledge or should have known of the existence of such conditions prior to the submission of bids.
- 4.10 COSTS AND EXPENSES. Any reimbursement due the CONTRACTOR for per diem and transportation expenses under this Contract shall be subject to Chapter 3-123 (Cost Principles) of the Procurement Rules and the following guidelines:
- 4.10.1 Reimbursement for air transportation shall be actual cost or coach class air fare, whichever is less.
- 4.10.2 Reimbursement for ground transportation costs shall not exceed the actual cost of renting an intermediate-sized vehicle.
- 4.10.3 Unless prior written approval of the CHAIRMAN is obtained, reimbursement for subsistence allowance (i.e., hotel and meals, etc.) shall not exceed the applicable daily authorized rates for interisland or out-of-state travel that are set forth in the current Governor's Executive Order authorizing adjustments in salaries and benefits for state officers and employees in the Chairman branch who are excluded from collective bargaining coverage.

~END OF ARTICLE 4~

ARTICLE 5: CONTROL OF WORK

- 5.1 **AUTHORITY OF THE CHAIRMAN** - The Chairman shall make final and conclusive decisions on all questions which may arise relating to the quality and acceptability of the materials furnished and work performed, the manner of performance and the rate of progress of the work, the interpretation of the plans and specifications, the acceptable fulfillment of the contract on the part of the Contractor, the compensation under the contract and the mutual rights of the parties to the contract. The Chairman shall have the authority to enforce and make effective such decisions and orders at the Contractor's expense when the Contractor fails to carry such decisions and orders out promptly and diligently. The Chairman shall have the authority to suspend the work wholly or in part as provided in Section 7.24, SUSPENSION OF WORK.
- 5.2 **AUTHORITY OF THE PROJECT MANAGER.** The Project Manager has the authority to act on behalf of the Department on all matters regarding the contract and the work that are not reserved for the Chairman. The Project Manager's authority is vested exclusively in the Project Manager except when specific authority to act for the Project Manager has been delegated to a specific person or persons. Such delegation of authority may be established by the Contract Documents; otherwise, it is not effective or binding upon the Department until such written notification of the delegation is received by the Contractor. The Administrator of the Land Development Division of the Department, or his designee, shall also have authority to act on behalf of the Department on all matters regarding the contract that are not reserved for the Chairman.
- 5.3 **AUTHORITY OF THE INSPECTOR**
- 5.3.1 The Inspector shall observe and inspect the contract performance and materials. The Inspector does not have any authority vested in the Project Manager unless specifically delegated in writing.
- 5.3.2 The Inspector may offer advice and recommendations to the Contractor, but any such advice or recommendations are not directives from the Project Manager.
- 5.3.3 The Inspector has no authority to allow deviations from the Contract Documents and may reject any and all work that the Inspector deems is not in conformity with the contract requirements. Failure of an Inspector at any time to reject non-conforming work shall not be considered a waiver of the Department's right to require work in strict conformity with the Contract Documents as a condition of final acceptance.
- 5.4 **AUTHORITY OF CONSULTANT(S).** The Department may engage Consultant(s) for limited or full observation to supplement the inspections performed by the Department and respective Counties. Unless otherwise specified in writing to the Contractor, such retained Consultant(s) will have the authority of an Inspector.
- 5.5 **SHOP DRAWINGS AND OTHER SUBMITTALS.** The following documents shall be submitted where required by the Contract Documents:
- 5.5.1 **SHOP DRAWING**
- (a) The Contractor shall prepare, thoroughly check, and approve all shop drawings, including those prepared by subcontractors or any other persons. The Contractor shall indicate its approval by stamping and signing each drawing. Any shop drawing submitted without being reviewed, stamped and signed will be considered as not having been submitted, and any delay caused thereby shall be the Contractor's responsibility.

- (b) Shop drawings shall indicate in detail all parts of an item of work, including erection and setting instructions and engagements with work of other trades or other separate contractors. Shop drawings for structural steel, millwork and pre-cast concrete shall consist of calculations, fabrication details, erection drawings and other working drawings to show the details, dimensions, sizes of members, anchor bolt plans, insert locations and other information for the complete fabrication and erection of the structure to be constructed.
- (c) The Contractor shall be responsible for the design of all structural curtain walls, all connections and fasteners for structural steel and architectural and structural precast concrete. Curtain walls, connections and fasteners shall be designed by a licensed professional engineer to carry the indicated or necessary loads. The precast concrete pieces shall be designed to withstand erection, transportation and final loading stresses. All calculations shall be performed by a licensed professional engineer and submitted to the Project Manager for review.
- (d) The cost of shop drawings or any other submittal shall not be a separate or individual pay item. All costs of furnishing shop drawings required by the contract shall be included in the price agreed to be paid for the various contract items of work, and no additional allowances will be made therefor.
- (e) All shop drawings as required by the contract, or as determined by the Project Manager to be necessary to illustrate details of the work shall be submitted to the Project Manager with such promptness as to cause no delay in the work or in that of any other Contractor. Delay caused by the failure of the Contractor to submit shop drawings on a timely basis to allow for review, possible resubmittal and acceptance will not be considered as a justifiable reason for a contract time extension. Contractor, at its own risk, may proceed with the work affected by the shop drawings before receiving acceptance; however the Department shall not be liable for any costs or time required for the correction of work done without the benefit of accepted shop drawings.
- (f) It is the Contractor's obligation and responsibility to check all of its and its subcontractor's shop drawings and be fully responsible for them and for coordination with connecting and other related work. The Contractor shall prepare, and submit to the Project Manager coordination drawings showing the installation locations of all plumbing, piping, duct and electrical work including equipment throughout the project. By approving and submitting shop drawings, the Contractor thereby represents that it has determined and verified all field measurements and field construction criteria, or will do so, and that it has checked and coordinated each shop drawing with the requirements of the work and the contract documents. When shop drawings are prepared and processed before field measurements and field construction criteria can be or have been determined or verified, the Contractor shall make all necessary adjustments in the work or resubmit further shop drawings, all at no change in contract price or time.

5.5.1.1 **SHOP DRAWING FORM.** Each drawing and/or series of drawings submitted must be accompanied by a letter of transmittal giving a list of the titles and number of the drawings. Each series shall be numbered consecutively for ready reference and each drawing shall be marked with the following information:

- (a) Date of Submission
- (b) Name of Project
- (c) Project Number
- (d) Location of Project
- (e) Name of submitting Contractor and Subcontractor
- (f) Revision Number
- (g) Specification and/or any drawing reference by article or sheet number.

- 5.5.1.2 No shop drawing shall be smaller than 24" x 36" nor larger than 28" x 42". At the determination of the Project Manager, each sheet of drawings for the submittal shall consist of either (1) reproducible transparency and three ozalid prints; or (2) six ozalid prints.
- 5.5.1.3 The Department will not be responsible for any cost of modifying/adjusting precast structures to fit the final as-built design, actual field conditions and finished work. To this end, the Contractor shall follow the following procedures:
- (a) Submit shop drawings for general design conformity for approval. Delay precasting operations.
 - (b) Start infrastructure work. Expose, check grade and install improvements requiring precast structures. Resubmit shop drawings with schedule for all structures indicating required deviations, correct and final inverts, depths, openings, special reinforcing and details, alignments, correct configurations, tops, grating, etc. The Contractor shall submit a schedule for the precasting work. Precast operations may commence based on approved shop drawings. During precast operations, the Project Manager may inspect the operations at least once per differing group of structures. The Contractor shall assume all risks and costs associated with modifying/adjusting the precast structures due to incomplete field verification, premature analysis and shop drawings.
- 5.5.2 **DESCRIPTIVE SHEETS AND OTHER SUBMITTALS.** When a submittal is required by the contract, the Contractor shall submit to the Project Manager eight (8) complete sets of descriptive sheets such as brochures, catalogs, illustrations, etc., which will completely describe the material, product, equipment, furniture or appliances to be used in the project as shown in the drawings and specifications. Prior to the submittal, the Contractor will review and check all descriptive sheets for conformity to the contract requirements and indicate such conformity by marking or stamping and signing each sheet. It is the responsibility of the Contractor to submit descriptive sheets for review and acceptance by the Project Manager as required at the earliest possible date after the date of award in order to meet the construction schedule. Delays caused by the failure of the Contractor to submit descriptive sheets as required will not be considered as justifiable reasons for contract time extension. The submittal shall list the seven (7) items of information as listed in Subsection 5.5.1, Shop Drawing.
- 5.5.3 **MATERIAL SAMPLES AND COLOR SAMPLES.** Prior to their submittal, all color samples and material shall be assembled and presented as required by the Department. When sample submittals are required by the contract, the Contractor shall review, approve, indicate its approval and submit to the Project Manager samples of the materials to be used in the project and color selection samples. It is the responsibility of the Contractor to submit material and color samples for review as required at the earliest possible date after the date of award in order to meet the construction schedule. Delays caused by the failure of the Contractor to submit material and color samples will not be considered as justifiable reasons for contract time extension. The submittal shall list the seven (7) items of information as listed in Subsection 5.5.1, Shop Drawing.
- 5.5.4 **SUBMITTAL VARIANCES.** The Contractor shall include with the submittal, written notification clearly identifying all deviations or variances from the contract drawings, specifications and other Contract Documents. The notice shall be in a written form separate from the submittal. The variances shall also be clearly indicated on the shop drawing, descriptive sheet, material sample or color sample. Failure to so notify of and identify such variances shall be grounds for the subsequent rejection of the related work or materials, notwithstanding that the submittal was accepted by the Project Manager. If the variances are not acceptable to the Project Manager, the Contractor will be

required to furnish the item as specified or indicated on the Contract Documents at no additional cost or time.

- 5.5.5 **REVIEW AND ACCEPTANCE PROCESS.** The Project Manager shall check shop drawings and within forty-five (45) days of receipt return them to the Contractor unless otherwise agreed between the Contractor and the Department. Submittals required for work to be installed within the first sixty days after the notice to proceed shall be returned by the Project Manager within twenty (20) days. If the volume of shop drawings submitted at any time for review is unusually large, the Contractor may inform the Project Manager of its preferred order for review and the Project Manager shall use reasonable efforts to accommodate the Contractor's priorities.
- 5.5.5.1 The acceptance by the Project Manager of the Contractor's submittal relates only to their sufficiency and compliance with the intention of the contract. Acceptance by the Project Manager of the Contractor's submittal does not relieve the Contractor of any responsibility for accuracy of dimensions, details, and proper fit, and for agreement and conformity of submittal with the Contract Drawings and Specifications. Nor will the Project Manager's acceptance relieve the Contractor of responsibility for variance from the Contract Documents unless the Contractor, at the time of submittal, has provided notice and identification of such variances required by this section. Acceptance of a variance shall not justify a contract price or time adjustment unless the Contractor requests such an adjustment at the time of submittal and the adjustment are explicitly agreed to in writing by the Department. Any such request shall include price details and proposed scheduling modifications. Acceptance of a variance is subject to all contract terms, stipulations and covenants, and is without prejudice to any and all rights under the surety bond.
- 5.5.5.2 If the Project Manager returns a submittal to the Contractor that has been rejected, the Contractor, so as not to delay the work, shall promptly make a resubmittal conforming to the requirements of the Contract Documents and indicating in writing on the transmittal and the subject submittal what portions of the resubmittal has been altered in order to meet the acceptance of the Project Manager. Any other differences between the resubmittal and the prior submittal shall also be specifically described in the transmittal.
- 5.5.5.3 No mark or notation made by the Project Manager or Consultant(s) on or accompanying the return of any submittal to the Contractor shall be considered a request or order for a change in work. If the Contractor believes any such mark or notation constitutes a request for a change in the work for which it is entitled to an adjustment in contract price and/or time, the Contractor must follow the same procedures established in Section 4.2, **CHANGES** for oral orders, directions, instructions, interpretations or determinations from the Project Manager or else lose its right to claim for an adjustment.
- 5.6 **COORDINATION OF CONTRACT DOCUMENTS.** It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. The Contract Documents are complementary: any requirement occurring in one document is as binding as though occurring in all. In the event of conflict or discrepancy the priorities stated in the following Subsections shall govern:
- 5.6.1 Addenda shall govern over all other Contract Documents. Subsequent addenda issued shall govern over prior addenda only to the extent specified.
- 5.6.2 Special Conditions and Proposal shall govern over the General Conditions and Specifications.
- 5.6.3 Specifications shall govern over drawings.

- 5.6.4 Specification Error - Should an error or conflict appear within the specification, the Contractor shall immediately notify the Project Manager. The Project Manager shall promptly issue instructions as to procedure. Any requirement occurring in one or more parts of the specification is as binding as though occurring in all applicable parts.
- 5.6.4.1 Should an error or conflict appear within a specification section, between a listed manufacturer / product and the performance requirements of the specification section, the performance requirements shall govern.
- 5.6.4.2: In the event of a conflict between AG-008 103D General Conditions (the “General Conditions”) and these DHHL Construction General Conditions, the requirements of these DHHL Construction General Conditions will apply to the extent provided by and as allowed under law.
- 5.6.5 DRAWINGS
- 5.6.5.1 Schedules shall govern over all other notes and drawings.
- 5.6.5.2 Bottom elevations of footings shown on drawings shall govern over a general note such as: “All footings shall rest on firm, undisturbed soil and extend a minimum of a certain number of feet into natural or finish grade, whichever is lower.” In the event the footing must be lowered below the bottom elevation shown, the Contractor shall be entitled to additional payment as provided in Section 4.2, CHANGES. In the event the footing is raised above the bottom elevation shown, the Department shall be entitled to a credit as provided in Section 4.2, CHANGES.
- 5.6.5.3 When a bottom of pile, drilled shaft, piling or cofferdam is shown as an estimated or approximate elevation, the Contractor shall plan and construct to that elevation or to any deeper elevation required by the plans or the direction by the Project Manager. The Project Manager, at the Project Manager’s sole discretion, may order in writing termination of all or part of the work above the estimated or approximate elevation.
- 5.6.5.4 Except for drawing schedules and bottom elevations as noted above, general notes shall govern over all other portions of the drawings:
- 5.6.5.5 Larger scale drawings shall govern over smaller scale drawings.
- 5.6.5.6 Figured or numerical dimensions shall govern over dimensions obtained by scaling. Measurements from the drawings when scaled shall be subject to the approval of the Project Manager.
- 5.6.5.7 In cases of discrepancies in the figures or drawings, the discrepancies shall be immediately referred to the Project Manager without whose decision said discrepancy shall not be corrected by the Contractor save at its own risk and in the settlement of any complications arising from such adjustment without the knowledge and consent of the Project Manager, the Contractor shall bear all extra expense involved.
- 5.6.5.8 Items shown on the drawings that are completely void in terms of description, details, quality and / or performance standards in both the Drawings and Specifications to make a price determination shall be considered an omission and the Contractor shall immediately refer same to the Project Manager for a decision.

- 5.6.5.9 Where there is a conflict between the architectural sheets and the civil or landscaping or electrical sheets, etc., the conflict shall be considered a discrepancy and the Contractor shall immediately refer same to the Project Manager for a decision.
- 5.6.5.10 Any requirement occurring in one or more of the sheets is as binding as though occurring in all applicable sheets.
- 5.7 INTERPRETATION OF DRAWINGS AND SPECIFICATIONS. The Contractor shall carefully study and compare the Contract Documents with each other, with field conditions and with the information furnished by the Department and shall at once report to the Project Manager errors, conflicts, ambiguities, inconsistencies or omissions discovered. Should an item not be sufficiently detailed or explained in the Contract Documents, Contractor shall report and request the Project Manager's clarification and interpretation. The Project Manager will issue a final clarification or final interpretation.
- 5.8 EXAMINATION OF DRAWINGS, SPECIFICATIONS, PROJECT SITE
- 5.8.1 The Contractor shall examine carefully the Project Site to become familiar with the conditions to be encountered in performing the work and the requirements of the Contract Documents.
- 5.8.1.1 No extra compensation will be given by reason of the Contractor's misunderstanding or lack of knowledge of the requirements of the work to be accomplished or the conditions to be encountered in performing the project.
- 5.8.1.2 No extra compensation will be given by reason of the Contractor's misunderstanding or lack of knowledge when the existence of differing site, subsurface or physical conditions could have been reasonably discovered or revealed as a result of any examination, investigation, exploration, test or study of the site and contiguous areas required by the bidding requirements or contract documents to be conducted by or for the Contractor.
- 5.8.2 When the contract drawings include a log of test borings showing a record of the data obtained by the Department's investigation of subsurface conditions, said log represents only the opinion of the Department as to the character of material encountered in its test borings and at only the location of each boring. The Contractor acknowledges that underground site conditions in Hawaii vary widely. There is no warranty, either expressed or implied, that the conditions indicated are representative of those existing throughout the work or any part of it, or that other conditions may not occur.
- 5.8.3 Reference is made to the Special Conditions for identification of subsurface investigations, reports, explorations and tests utilized by the Department in preparation the Contract Documents. Such reports, drawings, boring logs etc., if any, are not part of the Contract Documents.
- 5.9 COOPERATION BETWEEN THE CONTRACTOR AND THE DEPARTMENT
- 5.9.1 FURNISHING DRAWINGS AND SPECIFICATIONS. Contractor will be supplied copies of the Contract Drawings and Specifications as specified in the Special Conditions. Contractor shall have and maintain at least one unmarked copy of the Contract Drawings and Specifications on the work site, at all times. Contractor shall cooperate with the Project Manager, the Inspector(s), and other contractors in every possible way.
- 5.9.2 SUPERINTENDENT. The Contractor shall have a competent superintendent on the work site as its designated agent. The superintendent shall be able to read and understand the project plans and

specifications and shall be experienced in the type of project being undertaken and the work being performed. The superintendent shall receive instructions from the Project Manager or its authorized representative. The Contractor shall authorize the superintendent to (a) execute the orders and directions of the Project Manager or its authorized representative without delay and (b) promptly supply such materials, equipment, tools, labor and incidentals as may be required to complete the project within the prescribed contract time. The Contractor shall furnish a superintendent regardless of the amount of project work sublet.

- 5.9.2.1 If the superintendent or agent is not present at the work site, the Project Manager shall have the right to suspend the work as described under Section 7.24, SUSPENSION OF WORK.
- 5.9.2.2 The Contractor shall file with the Project Manager a written statement giving the name of the superintendent or agent assigned to the project. The Contractor shall be responsible for notifying the Project Manager in writing of any change in the superintendent or agent.
- 5.9.2.3 The requirements of this Subsection 5.9.2, SUPERINTENDENT may be waived by the Project Manager.
- 5.9.3 **ENGINEERING WORK.** The Contractor shall properly and accurately lay out the work, perform all engineering work, and furnish all engineering materials and equipment required to establish and maintain all lines, grades, dimensions and elevations called for in the drawings or required in the progress of construction, unless otherwise noted in the contract documents. The Contractor will be held definitely and absolutely responsible for any errors in lines, grades, dimensions and elevations and shall at once, on instruction from the Project Manager, correct and make good such errors or any errors, or faults in the work resulting from errors in engineering performed under the requirements of its contract to the entire satisfaction of the Project Manager. Full compensation for the work shall be included in the prices paid for contract items of work. No additional allowance will be made for the correction of incorrect engineering work.
 - 5.9.3.1 The Project Manager shall furnish the requisite bench elevations.
 - 5.9.3.2 The Contractor shall locate and verify all lines, grades, dimensions and elevations indicated on the drawings before any excavation, or construction begins. Any discrepancy shall be immediately brought to the attention of the Project Manager; any change shall be made in accordance with the Project Manager's instruction.
 - 5.9.3.3 The Contractor shall verify all street survey monuments (horizontal and vertical alignment) prior to final acceptance by the Project Manager in accordance with any governmental requirements.
 - 5.9.3.4 The Contractor shall provide a surveyor or Civil Engineer licensed in the State of Hawaii to verify and establish all lines, grades, dimensions and elevations.
- 5.9.4 **USE OF STRUCTURE OR IMPROVEMENT.** The Department shall have the right, at any time during construction of the structure or improvements, to enter same for the purpose of installing by government labor or by any other Contractor or utility any necessary work in connection with the installation of facilities, it being mutually understood and agreed, however, that the Contractors, utilities and the Department will, so far as possible work to the mutual advantage of all, where their several works in the above mentioned or in unforeseen instances touch upon or interfere with each other. As a convenience to those involved, the Project Manager shall allocate the work and designate the sequence of construction in case of controversy between Contractors on separate projects under Department jurisdiction.

- 5.9.4.1 The Department shall also have the right to use the structure, equipment, improvement or any part thereof, at any time after it is considered by the Project Manager as available. In the event that the structure, equipment or any part thereof is so used, the Department shall be responsible for all expenses incidental to such use and any damages resulting from the Department's use.
- 5.9.4.2 Equipment warranty will commence to run before the work is complete when and if the Department begins actual use of the equipment for the purpose for which the equipment was designed and installed.
- 5.9.4.3 If the Department enters the structure for construction and/or occupancy and the Contractor is delayed because of interference by the Department or by extra work resulting from damage which the Contractor is not responsible for, or by extraordinary measures the Contractor must take to accommodate the Department, the Contractor shall be granted an extension of time in accordance with Section 7.21, CONTRACT TIME. However, if such use increases the cost or delays the completion of the remaining portions of work, the Contractor shall be entitled to such extra compensation or extension of time or both, as the Department may determine to be proper. Any additional work necessary will be paid in accordance with Section 8.3, PAYMENT FOR ADDITIONAL WORK.
- 5.10 INSPECTION. The Project Manager, the Department's consultants, inspectors employed by the Department and other representatives duly authorized by the Department shall at all times have access to the work during its construction and shall be furnished with every reasonable facility for ascertaining at any time that the materials and the workmanship are in accordance with the requirements and intentions of the contract. All work done and all materials furnished shall be subject to inspection and acceptance.
- 5.10.1 Such inspection and approval may extend to all or part of the work, and to the preparation, fabrication or manufacture of the materials to be used. By entering into a contract for the supply of materials, equipment or performance of labor in connection with the work, such material and equipment supplier or labor contractor consents to and is subject to the terms of Section 5.9, COOPERATION BETWEEN THE CONTRACTOR AND THE DEPARTMENT to the same extent as the Contractor.
- 5.10.2 AUTHORITY TO SUSPEND OPERATIONS. The Project Manager shall have the authority to suspend operations of any work being improperly performed by issuing a written order giving the reason for shutting down the work. Should the Contractor disregard such written order, the work done thereafter will not be accepted nor paid for.
- 5.10.3 The inspection of the work shall not relieve the Contractor of any of its obligations to fulfill the contract as prescribed. Notwithstanding prior payment and acceptance by the Project Manager, any defective and nonconforming work shall be corrected to comply with the contract requirements. Unsuitable, unspecified or unapproved materials may be rejected.
- 5.10.4 FEDERAL AGENCY INSPECTION. Projects financed in whole or in part with Federal funds shall be subject to inspection and corrective requirements at all times by the Federal Agency involved at no cost to the Department.
- 5.11 REMOVAL OF DEFECTIVE, NON-CONFORMING AND UNAUTHORIZED WORK
- 5.11.1 All work which has been rejected as not conforming to the requirements of the Contract shall be remedied or removed and replaced by the Contractor in an acceptable manner and no compensation

will be allowed for such removal or replacement. Any work done beyond the work limits shown on the drawings and specifications or established by the Project Manager or any additional work done without written authority will be considered as unauthorized and will not be paid for. work so done may be ordered removed at the Contractor's expense.

- 5.11.2 SCHEDULING CORRECTIVE WORK. The Contractor shall perform its corrective or remedial work at the convenience of the Department and shall obtain the Project Manager's approval of its schedule.
- 5.11.3 FAILURE TO CORRECT WORK. Upon failure on the part of the Contractor to comply promptly with any order of the Project Manager made under the provisions of Section 5.10, the Project Manager shall have authority to cause defective work to be remedied or removed and replaced, and unauthorized work to be removed, at the Contractor's expense, and to deduct the costs from any monies due or to become due the Contractor.
- 5.12 VALUE ENGINEERING INCENTIVE (§3-132 HAR amended by Act 149 SLH 1999). On projects with contract amounts in excess of \$250,000 (two hundred fifty thousand dollars), the following Value Engineering Incentive Clause shall apply to allow the Contractor to share in cost savings that ensue from cost reduction proposals it submits.
 - 5.12.1 The Value Engineering Incentive Clause applies to all Value Engineering Change Proposals (cost reduction proposals, hereinafter referred to as (VECP) initiated and developed by the Contractor for changing the drawings, designs, specifications or other requirements of this contract. This clause does not however, apply to any VECP unless it is identified as such by the Contractor at the time of its submission to the Project Manager.
 - 5.12.2 VALUE ENGINEERING CHANGE PROPOSAL (VECP). All VECP must:
 - 5.12.2.1 Result in a savings to the Department of at least \$4000 (four thousand dollars) by providing less costly items and without impairing any essential functions and characteristics such as service life, reliability, economy of operation, ease of maintenance and all necessary features of the completed work;
 - 5.12.2.2 Require, in order to be applied to this Contract, a change order to this Contract; and
 - 5.12.2.3 Not adversely impact on the schedule of performance or the Contract completion date.
 - 5.12.3 VECP REQUIRED INFORMATION. The VECP will be processed expeditiously and in the same manner as prescribed for any other change order proposal. As a minimum, the following information will be submitted by the Contractor with each proposal:
 - 5.12.3.1 A description of the difference between the existing contract requirements and the VECP, and the comparative advantages and disadvantages of each including durability, service life, reliability, economy of operation, ease of maintenance, design safety standards, desired appearance, impacts due to construction and other essential or desirable functions and characteristics as appropriate;
 - 5.12.3.2 An itemization of the requirements of the contract which must be changed if the VECP is adopted and a recommendation as to how to make each such change;

- 5.12.3.3 An estimate of the reduction in performance costs that will result from adoption of the VECP taking into account the costs of implementation by the Contractor, including any amounts attributable to subcontracts, and the basis for the estimate;
- 5.12.3.4 A prediction of any effects the VECP would have on other costs to the Department, such as Department furnished property costs, costs of related items, and costs of maintenance and operation over the anticipated life of the material, equipment, or facilities as appropriate; the construction schedule, sequence and time; and bid item totals used for evaluation and payment purposes;
- 5.12.3.5 A statement of the time by which a change order adopting the VECP must be issued so as to obtain the maximum cost reduction during the remainder of this contract noting any effect on the contract time; and 5.12.3.6 The dates of any previous submissions of the VECP, the numbers of any Government contracts under which submitted and the previous actions by the Government, if known.
- 5.12.4 **REQUIRED USE OF LICENSED ARCHITECT OR ENGINEER.** When, in the judgment of the Project Manager, a VECP alters the design prepared by a registered professional architect or engineer, the Contractor shall ensure the changes to be prepared are by or under the supervision of a licensed professional architect or engineer, and stamped and so certified.
- 5.12.5 Unless and until a change order applies a VECP to a contract, the Contractor shall remain obligated to perform in accordance with the terms of the contract and the Department shall not be liable for delays incurred by the Contractor resulting from the time required for the Department's determination of the acceptability of the VECP.
- 5.12.5.1 The determination of the Project Manager as to the acceptance of any VECP under a contract shall be final.
- 5.12.6 **ACCEPTANCE OF VECP.** The Project Manager may accept in whole or in part any VECP submitted pursuant to this section by issuing a change order to the Contract. Prior to issuance of the change order, the Contractor shall submit complete final contract documents similar to those of the original Contract showing the accepted changes and the new design and features as well as the following:
 - 5.12.6.1 Design calculations;
 - 5.12.6.2 The design criteria used; and
 - 5.12.6.3 A detailed breakdown of costs and expenses to construct or implement such revisions.
 - 5.12.6.4 The change order will identify the final VECP on which it is based.
- 5.12.7 **VECP PRICE ADJUSTMENTS.** When a VECP is accepted under a contract, an adjustment in the contract price shall be made in accordance with Section 4.4, PRICE ADJUSTMENT. The adjustment shall first be established by determining the effect on the Contractor's cost of implementing the change, including any amount attributable to subcontractors and to the Department's charges to the Contractor for architectural, engineering, or other consultant services, and the staff time required to examine and review the proposal. The contract price shall then be reduced by fifty percent (50%) of the net estimated decrease in the cost of performance.

- 5.12.8 The Contractor may restrict the Department's right to use the data or information or both, on any sheet of a VECP or of the supporting data, submitted pursuant to this Subsection, if it is stated on that sheet as follows:
- 5.12.8.1 "This data or information or both shall not be disclosed outside the Department or be duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate this VECP. This restriction shall not limit the Department's right to use this data or information or both if obtained from another source, or is otherwise available, without limitations. If this VECP is accepted by the Department by issuance of a change order after the use of this data or information or both in such an evaluation, the Department shall have the right to duplicate, use and disclose any data or information or both pertinent to the proposal as accepted in any manner and for any purpose whatsoever and have others so do."
- 5.12.9 In the event of acceptance of a VECP, the Department shall have all rights to use, duplicate or disclose in whole or in part in any manner and for any purpose whatsoever, and to have or permit others to do so, any data or information or both reasonably necessary to fully utilize such proposal.
- 5.12.10 The Contractor shall submit with each VECP all required information and provide all additional information as may be required by the Project Manager to evaluate and implement the VECP. The cost for preparing the VECP shall be the Contractor's responsibility, and any part of the Contractor's cost for implementing the change shall be due only when the proposal is accepted and a change order is issued.
- 5.12.11 If the service of the Department's architect, Project Manager or consultant is necessary to review and evaluate a VECP, the cost therefor shall be paid for by the Contractor.
- 5.12.12 Each VECP shall be evaluated as applicable to this contract, and past acceptance on another Department project for a similar item shall not be automatic grounds for approval.
- 5.12.13 The method by which the Contractor will share a portion of the cost savings from an accepted VECP shall be for this contract only, and no consideration shall be made for future acquisition, royalty type payment or collateral savings.
- 5.12.13.1 The Department may accept the proposed VECP in whole or in part. The Chairman shall issue a contract change order to identify and describe the accepted VECP.
- 5.13 SUBCONTRACTS. Nothing contained in the contract documents shall create a contractual relationship between the Department and any subcontractor.
- 5.13.1 SUBSTITUTING SUBCONTRACTORS. Contractors may enter into subcontracts only with subcontractors listed in the proposal. No subcontractor may be added or deleted and substitutions will be allowed only if the subcontractor:
- 5.13.1.1 Fails, refuses or is unable to enter into a subcontract; or
- 5.13.1.2 Becomes insolvent; or
- 5.13.1.3 Has its subcontractor's license suspended or revoked; or
- 5.13.1.4 Has defaulted or has otherwise breached the subcontract in connection with the subcontracted work; or

- 5.13.1.5 Is unable to comply with other requirements of law applicable to contractors, subcontractors and public works projects.
- 5.13.2 Requesting Approval to Substitute a Subcontractor. Requests to substitute a subcontractor shall be submitted to the Project Manager for approval. Contractor agrees to hold the Department harmless and indemnify the Department for all claims, liabilities, or damages whatsoever, including attorney's fees arising out of or related to the approval or disapproval of the substitution.
- 5.13.3 The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the General Conditions and the other contract documents insofar as applicable to the work of the subcontractor and to give the Contractor the same rights regarding the termination of a subcontractor as the Department may exercise over the Contractor.
- 5.13.4 The Contractor shall not sponsor any unliquidated subcontractor's claim against the Department and shall defend, indemnify and hold the Department harmless against any direct claims by its subcontractors. Any claim for additional compensation by a subcontractor in connection with the work shall be made only against the Contractor. The Contractor may not assert any such claim against the Department until the liability of the Contractor has been unconditionally established by negotiation, arbitration or litigation, and the amount due the subcontractor has been determined, save for interest due.
- 5.13.5 Once a subcontractor's claim is established, should the Contractor intend to make the claim against the Department, it shall follow the procedure set forth under Section 7.25, DISPUTES AND CLAIMS.
- 5.13.6 SUBCONTRACTING. Contractor shall perform with its own organization, work amounting to not less than twenty percent (20%) of the total contract cost, exclusive of costs for materials and equipment the Contractor purchases for installation by its subcontractors, except that any items designated by the Department in the contract as "specialty items" may be performed by a subcontractor and the cost of any such specialty items so performed by the subcontractor may be deducted from the total contract cost before computing the amount of work required to be performed by the Contractor with its own organization. For the purposes of this section, the Contractor's work is defined as: direct cost labor for contractor's forces; direct cost materials installed by the contractor's direct cost labor force; direct cost equipment, either owned or leased, used by the contractor's direct cost labor force; and field overhead cost to include: field supervision, field office trailer (if any), field office equipment and supplies, etc.

~END OF ARTICLE 5~

ARTICLE 6: CONTROL OF MATERIALS AND EQUIPMENT

- 6.1 MATERIALS AND EQUIPMENT. Contractor shall furnish, pay for and install all material and equipment as called for in the drawings and specifications. Materials and equipment shall be new and the most suitable for the purpose intended unless otherwise specified. The Department does not guarantee that the specified or pre-qualified product listed in the drawings and specifications are available at the time of bid or during the contract period.
- 6.2 SOURCE OF SUPPLY AND QUALITY OF MATERIALS
- 6.2.1 Only materials conforming to the drawings and specifications and, when required by the contract have been accepted by the Project Manager, shall be used. In order to expedite the inspection and testing of materials, at the request of the Project Manager, the Contractor shall identify its proposed sources of materials within ten (10) days after notification by the Project Manager.
- 6.2.2 At the option of the Project Manager, the materials may be accepted by the Project Manager at the source of supply before delivery is started. Representative preliminary samples of the character and quantity prescribed shall be submitted by the Contractor or producer for examination and tested in accordance with the methods referred to under samples and tests.
- 6.2.3 PROJECT MANAGER'S AUTHORIZATION TO TEST MATERIALS. Materials proposed to be used may be inspected and tested whenever the Project Manager deems necessary to determine conformance to the specified requirements. The cost of testing shall be borne by the Contractor. However, should test results show that the material(s) is in compliance with the specified requirements; the cost of the testing will be borne by the Department.
- 6.2.4 UNACCEPTABLE MATERIALS. In the event material(s) are found to be unacceptable, the Contractor shall cease their use, remove the unacceptable material(s) that have already been installed or applied, and furnish acceptable materials all at no additional cost to the Department. No material which is in any way unfit for use shall be used.
- 6.3 SUBSTITUTION OF MATERIALS AND EQUIPMENT
- 6.3.1 SUBSTITUTION OF MATERIALS AND EQUIPMENT BEFORE BID OPENING For materials and equipment submitted in compliance with Instructions to Bidders, if after installing the substituted product, an unlisted variance is discovered the Contractor shall immediately replace the product with a specified product at no cost to the Department.
- 6.3.2 SUBSTITUTION AFTER CONTRACT AWARD. Subject to the Project Manager's determination if the material or equipment is equal to the one specified or prequalified, substitution of material or equipment may be allowed after the Letter of Award is issued only:
- 6.3.2.1 If the specified or prequalified item is delayed by unforeseeable contingencies beyond the control of the Contractor which would cause a delay in the project completion; or
- 6.3.2.2 If any specified or prequalified item is found to be unusable or unavailable due to a change by the manufacturer or other circumstances; or
- 6.3.2.3 If the Contractor desires to provide a more recently developed material, equipment, or manufactured model from the same named manufacturer than the one specified or prequalified; or
- 6.3.2.4 If the specified material and / or equipment inadvertently lists only a single manufacturer.

- 6.3.3 A substitution request after the Contract is awarded shall be fully explained in writing. Contractor shall provide brochures showing that the substitute material and / or equipment is equal or better in essential features and also provide a matrix showing comparison of the essential features. Contractor shall justify its request and include quantities and unit prices involved, respective supplier's price quotations and such other documents necessary to fully support the request. Any savings in cost will be credited to the Department. Contractor shall absorb any additional cost for the substitute item(s) or for its installation. Submitting a substitution request, does not imply that substitutions, for brand name specified materials and equipment will be allowed. The Project Manager may reject and deny any request deemed irregular or not in the best interest of the Department. A request for substitution shall not in any way be grounds for an extension of contract time. At the discretion of the Project Manager, a time extension may be granted for an approved substitution.
- 6.4 ASBESTOS CONTAINING MATERIALS. The use of materials or equipment containing asbestos is prohibited under this contract. Contractor warrants that all materials and equipment incorporated in the project are asbestos-free.
- 6.5 TEST SAMPLES
- 6.5.1 The Project Manager may require any or all materials to be tested by means of samples or otherwise. Contractor shall collect and forward samples requested by the Project Manager. Contractor shall not use or incorporate any material represented by the samples until all required tests have been made and the material has been accepted. In all cases, the Contractor shall furnish the required samples without charge. Where samples are required from the completed work, the Contractor shall cut and furnish samples from the completed work. Samples so removed shall be replaced with identical material and refinished. No additional compensation will be allowed for furnishing test samples and their replacement with new materials.
- 6.5.2 Tests of the material samples will be made in accordance with the latest standards of the American Society for Testing and Materials (ASTM), as amended prior to the contract date unless otherwise provided. In cases where a particular test method is necessary or specifications and serial numbers are stipulated, the test shall be made by the method stated in the above-mentioned publication. Where the test reference is the American Association of State Highway and Transportation Officials (AASHTO), it means the specifications and serial numbers of the latest edition and amendments prior to the bid date.
- 6.5.3 The Project Manager may, at no extra cost to the Department retest any materials which have been tested and accepted at the source of supply after the same has been delivered to the work site. The Project Manager shall reject all materials which, when retested, do not meet the requirements of the Contract.
- 6.6 MATERIAL SAMPLES
- 6.6.1 The Contractor shall furnish all samples required by the drawings and specifications or that may be requested by the Project Manager of any and all materials or equipment it proposes to use. Unless specifically required, samples are not to be submitted with the bid.
- 6.6.2 No materials or equipment of which samples are required shall be used on the work until the Project Manager has received and accepted the samples. If the Contractor proceeds to use such materials before the Project Manager accepts the samples, the Contractor shall bear the risk.

- 6.6.3 Contractor shall furnish two (2) copies of a transmittal letter with each shipment of samples. The letter shall provide a list of the samples, the name of the building or work for which the materials are intended and the brands of the materials and names of the manufacturers. Also, each sample submitted shall have a label indicating the material represented, its place of origin, the names of the producer, the Contractor and the building or work for which the material is intended. Samples of finished materials shall be marked to indicate where the materials represented are required by the drawings or specifications.
- 6.6.4 Acceptance of any sample(s) shall be only for the characteristics or for the uses named in such acceptance and for no other purpose. Acceptance of samples shall not change or modify any contract requirement. All samples will be provided by the Contractor at no extra cost to the Department. See also Section 5.5, SHOP DRAWINGS AND OTHER SUBMITTALS.
- 6.7 NON-CONFORMING MATERIALS. All materials not conforming to the requirements of this contract documents, whether in place or not, shall be rejected and removed immediately from the site of work unless otherwise permitted by the Project Manager in writing. No rejected material which has subsequently been made to conform shall be used unless and until written acceptance has been given by the Project Manager. If the Contractor fails to comply forthwith with any order of the Project Manager made under the provisions of this Section 6.7, NON-CONFORMING MATERIALS the Project Manager shall have the authority to remove and replace non-conforming materials and charge the cost of removal and replacement to the Contractor.
- 6.8 HANDLING MATERIALS. Contractor shall handle all materials to preserve their quality and fitness for work. Transport aggregates from the source or storage site to the work in tight vehicles to prevent loss or segregation of materials after loading and measuring.
- 6.9 STORAGE OF MATERIALS. Contractor shall store all materials to preserve their quality and fitness for the work. Unless otherwise provided, any portion of the project site within the Project Contract Limit not required for public travel may be used for storage purposes and for the Contractor's plant and equipment. Any additional space required shall be provided by the Contractor at its expense subject to the Project Manager's acceptance. Contractor shall store materials on wooden platforms or other hard, clean surfaces and covered to protect it from the weather and damage. Stored materials shall be located to allow prompt inspection.
- 6.10 PROPERTY RIGHTS IN MATERIALS. Nothing in the contract shall be construed to vest in the Contractor any right to any materials and equipment after such materials and equipment have been attached, affixed to, or placed in the work.
- 6.11 ANTITRUST CLAIMS. The STATE and the CONTRACTOR recognized that in actual economic practice, overcharges resulting from antitrust violations are in fact usually borne by the purchaser. Therefore, the CONTRACTOR hereby assigns to STATE any and all claims for overcharges as to goods and material purchased in connection with this Contract, except as to overcharges which result from violations commencing after the price is established under this Contract and which are not passed on to the STATE under an escalation clause.

~END OF SECTION 6~

ARTICLE 7: PROSECUTION AND PROGRESS (Including Legal Relations and Responsibility)

7.1 PROSECUTION OF THE WORK

- 7.1.1 After approval of the Contract by the Chairman, a Notice to Proceed will be given to the Contractor as described in Section 3.10, NOTICE TO PROCEED. The Notice to Proceed will indicate the date the Contractor is expected to begin the construction and from which date contract time will be charged.
- 7.1.2 The Contractor shall begin work no later than ten (10) working days from the date in the Notice to Proceed and shall diligently prosecute the same to completion within the contract time allowed. The Contractor shall notify the Project Manager at least three (3) working days before beginning work.
- 7.1.3 If any subsequent suspension and resumption of work occurs, the Contractor shall notify the Project Manager at least twenty-four (24) hours before stopping or restarting actual field operations.
- 7.1.4 **WORKING PRIOR TO NOTICE TO PROCEED.** The Contractor shall not begin work before the date in the Notice to Proceed. Should the Contractor begin work before receiving the Notice to Proceed, any work performed in advance of the specified date will be considered as having been done at the Contractor's risk and as a volunteer and subject to the following conditions:
 - 7.1.4.1 Under no circumstances shall the Contractor commence work on site until it has notified the Project Manager of its intentions and has been advised by the Project Manager in writing that the project site is available to the Contractor. The project site will not be made available until the Contractor has complied with commencement requirements under Section 7.2, COMMENCEMENT REQUIREMENTS.
 - 7.1.4.2 In the event the contract is not executed, the Contractor shall, at its own expense, do such work as is necessary to leave the site in a neat condition to the satisfaction of the Project Manager. The Contractor shall not be reimbursed for any work performed.
 - 7.1.4.3 All work done prior to the Notice to Proceed shall be performed in accordance with the Contract Documents, but will only be considered authorized work and be paid for as provided in the Contract after the Notice to Proceed is issued.
- 7.1.5 For repairs and/or renovations of existing buildings, unless otherwise permitted by the Project Manager, the Contractor shall not commence with the physical construction unless all or sufficient amount of materials are available for either continuous construction or completion of a specified portion of the work. When construction is started, the Contractor shall work expeditiously and pursue the work diligently until it is complete. If only a portion of the work is to be done in stages, the Contractor shall leave the area safe and usable for the user agency at the end of each stage.
- 7.2 **COMMENCEMENT REQUIREMENTS.** Prior to beginning work on site, the Contractor shall submit the following to the Project Manager:
 - 7.2.1 Identification of the Superintendent or authorized representative on the job site. Refer to Section 5.9, COOPERATION BETWEEN THE CONTRACTOR AND THE DEPARTMENT;
 - 7.2.1.1 Identification of the surveyor who shall be licensed in the State of Hawaii and will work for it throughout the course of the project. Refer to Section 5.9.3.4.

- 7.2.2 Proposed Working Hours on the job. Refer to Section 7.5, NORMAL WORKING HOURS;
- 7.2.3 Permits and Licenses. Refer to Section 7.4, PERMITS AND LICENSES;
- 7.2.4 Schedule of Prices to be accepted for the agreed Monthly Payment Application. Unless the proposal provides unit price bids on all items in this project, the successful Bidder will be required, after the award of contract, to submit a schedule of prices for the various items of construction included in the contract. For projects involving more than a single building and / or facility, the breakdown cost shall reflect a separate schedule of prices for the various items of work for each building and/or facility. The sum of the prices submitted for the various items must equal the lump sum bid in the Bidder's proposal. This schedule will be subject to acceptance by the Project Manager who may reject same and require the Bidder to submit another or several other schedules if in the Project Manager's opinion the prices are unbalanced or not sufficiently detailed. This schedule of prices shall be used for the purpose of determining the value of monthly payments due the Contractor for work installed complete in place; and may be used as the basis for determining cost and credit of added or deleted items of work, respectively;
- 7.2.4.1 The Contractor shall estimate at the close of each month the percentage of work completed under each of the various construction items during such month and submit the Monthly Payment Application to the Project Manager for review and approval. The Contractor shall be paid the approved percentage of the price established for each item less the retention provided in Section 8.4, PROGRESS AND/OR PARTIAL PAYMENTS; and
- 7.2.5 PROOF OF INSURANCE COVERAGE. Certificate of Insurance or other documentary evidence satisfactory to the Project Manager that the Contractor has in place all insurance coverage required by the contract. Refer to Section 7.3, INSURANCE REQUIREMENTS.
- 7.2.6 Until such time as the above items are processed and approved, the Contractor shall not be allowed to commence on any operations unless authorized by the Project Manager.
- 7.3 INSURANCE REQUIREMENTS
- 7.3.1 OBLIGATION OF CONTRACTOR. Contractor shall not commence any work until it obtains, at its own expense, all required herein insurance. Such insurance shall be provided by an insurance company authorized by the laws of the State to issue such insurance in the State of Hawaii. Coverage by a "Non-Admitted" carrier is permissible provided the carrier has a Best's Rating of "A-VII" or better.
- 7.3.2 All insurance described herein will be maintained by the Contractor for the full period of the contract and in no event will be terminated or otherwise allowed to lapse prior to written certification of final acceptance of the work by the Department.
- 7.3.3 Certificate(s) of Insurance acceptable to the Department shall be filed with the Project Manager prior to commencement of the work. Certificates shall identify if the insurance company is a "captive" insurance company or a "Non-Admitted" carrier to the State of Hawaii. The Best's rating must be stated for the "Non-Admitted" carrier. Certificates shall contain a provision that coverage(s) being certified will not be cancelled or materially changed without giving the Project Manager at least thirty (30) days prior written notice. The Department is to be named as Additional Insured on any of the required insurance and it shall be so noted on the certificate. Should any policy be cancelled before final acceptance of the work by the Department, and the Contractor fails to immediately procure replacement insurance as specified, the Department, in addition to all other remedies it may have for

such breach, reserves the right to procure such insurance and deduct the cost thereof from any money due to the Contractor.

- 7.3.4 Nothing contained in these insurance requirements is to be construed as limiting the extent of Contractor's responsibility for payment of damages resulting from its operations under this Contract, including the Contractor's obligation to pay liquidated damages, nor shall it affect the Contractor's separate and independent duty to defend, indemnify and hold the Department harmless pursuant to other provisions of this Contract. In no instance will the Department's exercise of an option to occupy and use completed portions of the work relieve the Contractor of its obligation to maintain the required insurance until the date of final acceptance of the work.
- 7.3.5 All insurance described herein shall be primary and cover the insured for all work to be performed under the Contract, all work performed incidental thereto or directly or indirectly connected therewith, including traffic detour work or other work performed outside the work area and all change order work.
- 7.3.6 The Contractor shall, from time to time, furnish the Project Manager, when requested, satisfactory proof of coverage of each type of insurance required covering the work. Failure to comply with the Project Manager's request may result in suspension of the work, and shall be sufficient grounds to withhold future payments due the Contractor and to terminate the contract for Contractor's default.
- 7.3.7 TYPES OF INSURANCE. Contractor shall purchase and maintain insurance described below which shall provide coverage against claims arising out of the Contractor's operations under the Contract, whether such operations be by the Contractor itself or by any subcontractor or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.
- 7.3.7.1 WORKER'S COMPENSATION. The Contractor shall obtain worker's compensation insurance for all persons whom they employ in carrying out the work under this contract. This insurance shall be in strict conformity with the requirements of the most current and applicable State of Hawaii Worker's Compensation Insurance laws in effect on the date of the execution of this contract and as modified during the duration of the contract.
- 7.3.7.2 COMMERCIAL GENERAL LIABILITY INSURANCE AND AUTOMOBILE INSURANCE. Contractor's commercial general liability insurance and automobile liability insurance shall both be obtained in a combined, single limit of not less than \$1,000,000 (one million dollars) unless otherwise indicated in the Special Conditions per occurrence that shall include coverage for bodily injury, sickness, disease or death of any person, arising directly or indirectly out of, in connection with, the performance of work under this contract.
- 7.3.7.3 "General Liability and Automobile Insurance. CONTRACTOR shall maintain, at its own expense, the minimum insurance coverage specified below, or as amended in the Special Conditions, throughout the term of this Contract.
- a. General Liability insurance providing coverage of no less than ONE MILLION DOLLARS (\$1,000,000.00) per occurrence and TWO MILLION DOLLARS (\$2,000,000.00) in the aggregate.
 - b. Automobile insurance providing coverage of no less than ONE MILLION DOLLARS (\$1,000,000.00) per accident."
- 7.3.7.4 The Contractor shall either (a) Require each of its subcontractors to procure and to maintain during the life of its subcontract, subcontractor's comprehensive general liability, automobile liability and

property damage liability insurance of the type and in the same amounts specified herein; or (b) Insure the activities of its subcontractors in its own policy.

- 7.3.7.5 **BUILDERS RISK INSURANCE.** Unless excluded by the Special Conditions of this contract, the Contractor shall provide builder's risk insurance during the progress of the work and until final acceptance by the Department upon completion of the contract. It shall be "All Risk" (including but not limited to earthquake, windstorm and flood damage) completed value insurance coverage on all completed work and work in progress to the full replacement value thereof. Such insurance shall include the Department as an additional named insured. The Contractor shall submit to the Project Manager for its approval all items deemed to be uninsurable. The policy may provide for a deductible in an amount of up to twenty five percent (25%) of the amount insured by the policy. With respect to all losses up to any deductible amount, the relationship between the Contractor and the Department shall be that of insurer and the additional insured respectively as if no deductible existed. The Contractor is responsible for theft, if any item of the contract is stolen prior to, or after installation, until the work is accepted by the Department. Progress payment does not constitute acceptance.

7.4 PERMITS AND LICENSES

- 7.4.1 The Department or its representative may process Federal (e.g. Army Corps of Engineers), State and county permit applications. The Contractor shall pick up the preprocessed Permits at the appropriate governmental agency and pay the required fees. Other permits necessary for the proper execution of the work such as utility connection permits, elevator installation permits etc., unless processed by the Department and paid for by the Contractor, shall be obtained and paid for by the Contractor.

- 7.4.2 Until such time as the above permits are approved, the Contractor shall not be allowed to commence any operations without written approval of the Project Manager.

- 7.4.3 The Project Manager reserves the right to waive application and processing of the building permit.

- 7.5 **NORMAL WORKING HOURS.** Prior to beginning operations, unless otherwise established by the Department, the Contractor shall notify the Project Manager in writing of the time in hours and minutes, A.M. and P.M. respectively, at which it desires to begin and end the day's work. If the Contractor desires to change the working hours, it shall request the Project Manager's approval three (3) consecutive working days prior to the date of the change.

7.6 HOURS OF LABOR (§104-2 HRS)

- 7.6.1 No laborer or mechanic employed on the job site of any public work of the Department or any political sub-division thereof shall be permitted or required to work on Saturday, Sunday or a legal holiday of the State or in excess of eight (8) hours on any other day unless the laborer or mechanic receives overtime compensation for all hours worked on Saturday, Sunday and a legal holiday of the State or in excess of eight (8) hours on any other day. For the purposes of determining overtime compensation under this Section 7.6, HOURS OF LABOR (§104-2 HRS) the basic hourly rate of any laborer or mechanic shall not be less than the basic hourly rate determined by the Department of Labor and Industrial Relations to be the prevailing basic hourly rate for corresponding classes of laborers and mechanics on projects of similar character in the Department.

- 7.6.2 Overtime compensation means compensation based on one and one-half times the laborers or mechanics basic hourly rate of pay plus the cost to an employer of furnishing a laborer or mechanic with fringe benefits.

7.7 PREVAILING WAGES (State §104-2 HRS & Federal Davis-Bacon)

7.7.1 The Contractor shall at all time observe and comply with all provisions of Chapter 104, HRS, the significant requirements of which are emphasized in the Department of Labor and Industrial Relations Publication No. H104-3 entitled "Requirements of Chapter 104, Hawaii Revised Statutes, Wages and Hours of Employees on Public Works Law". The Contractor must also comply with all provisions of Federal Davis-Bacon Act (40 U.S.C. 276-276a-5 and Code of Federal Regulation (CFR) Title 29 and related Acts.

7.7.2 WAGE RATE SCHEDULE. The wage rate schedule may not be physically enclosed in the bid documents. However, the wage rate schedule is incorporated herein by reference and made a part of the Bid and Contract Documents. The bidder must obtain and use the latest minimum rates ten (10) days prior to the date set for the bid opening of bids. The wage rate schedule may be obtained from the DHHL, Labor Compliance Specialist, Hale Kalanianaʻole, 91-5420 Kapolei Parkway, Kapolei, Hawaii, 96707 or, State Department of Labor and Industrial Relations web site:

<http://labor.hawaii.gov/rs/home/wages/72-2/>

or the Federal Department of Labor (Davis- Bacon) wage rate schedule web site:

<http://www.wdol.gov>.

7.7.3 The Contractor or its subcontractor(s) shall pay all laborers and mechanics employed on the job site, unconditionally and not less often than once a week, and without deduction or rebate on any account except as allowed by law, the full amounts of their wages including overtime, accrued to not more than five (5) working days prior to the time of payment, at wage rates not less than those stated in the contract, regardless of any contractual relationship which may be alleged to exist between the Contractor and subcontractor and such laborers and mechanics. The wages stated in the contract shall not be less than the minimum prevailing wages (basic hourly rate plus fringe benefits), as determined by the of Labor and Industrial Relations and published in wage rate schedules. Any increase in wage rates, as determined by the of Labor and Industrial Relations and issued in the wage rate schedule, shall be applicable during the performance of the contract, in accordance with Section 104-2(a) and (b), Hawaii Revised Statutes. Notwithstanding the provisions of the original contract, if the of Labor and Industrial Relations determines that prevailing wages have increased during the performance of the contract, the rate of pay of laborers and mechanics shall be raised accordingly.

7.7.4 The applicable wage rate schedule shall be physically included in the Contract Documents executed by the successful Bidder.

7.7.5 POSTING WAGE RATE SCHEDULE. The rates of wages to be paid shall be posted by the Contractor in a prominent and easily accessible place at the job site and a copy of such wages required to be posted shall be given to each laborer and mechanic employed under the contract by the Contractor at the time the person is employed thereunder, provided that where there is a collective bargaining agreement, the Contractor does not have to provide its employees the wage rate schedules. Any revisions to the schedule of wages issued by the Department of Labor and Industrial Relations during the course of the Contract shall also be posted by the Contractor and a copy provided to each laborer and mechanic employed under the Contract as required above.

7.7.6 The Chairman may withhold from the Contractor so much of the accrued payments as the Chairman may consider necessary to pay to laborers and mechanics employed by the Contractor or any

subcontractor on the job site. The accrued payments withheld shall be the difference between the wages required by this Contract and the wages actually received by such laborers or mechanics.

7.8 FAILURE TO PAY REQUIRED WAGES (§104-4, HRS or Federal Davis-Bacon). If the Department finds that any laborer or mechanic employed on the job site by the Contractor or any subcontractor has been or is being paid wages at a rate less than the required rate by the Contract, or has not received their full overtime compensation, the Department may, by written notice to the Contractor, terminate its right, or the right of any subcontractor, to proceed with the work or with the part of the work on which the required wages or overtime compensation have not been paid and may complete such work or part by contract or otherwise, and the Contractor and its sureties shall be liable to the Department for any excess costs occasioned thereby.

7.9 PAYROLLS AND PAYROLL RECORDS (§104-3 HRS)

7.9.1 A certified copy of each weekly payroll shall be submitted to the Chairman within seven (7) calendar days after the end of each weekly payroll period. Failure to do so on a timely basis shall be cause for withholding of payments, termination of the contract, and/or debarment. The Contractor shall be responsible for the timely submission of certified copies of payrolls of all subcontractors. The certification shall affirm that payrolls are correct and complete, that the wage rates contained therein are not less than the applicable rates contained in the wage determination decision, any amendments thereto during the period of the contract, and that the classifications set forth for each laborer and mechanic conform with the work they performed.

7.9.2 Payroll records for all laborers and mechanics working at the site of the work shall be maintained by the General Contractor and its subcontractors, if any, during the course of the work and preserved for a period of four (4) years thereafter. Such records shall contain the name of each employee, their address, their correct classification, rate of pay, daily and weekly number of hours worked, itemized deductions made and actual wages paid. Such records shall be made available for inspection at a place designated by the Chairman, the U.S. Department of Labor and any authorized persons who may also interview employees during working hours on the job site.

7.9.3 Note that the falsification of certifications noted in this Section 7.9, PAYROLLS AND PAYROLL RECORDS (§104-3 HRS) may subject the Contractor or subcontractor to penalties and debarment under the laws referenced in Section 7.14, LAWS TO BE OBSERVED and / or criminal prosecution.

7.10 OVERTIME AND NIGHT WORK

7.10.1 Overtime work shall be considered as work performed in excess of eight (8) hours in any one (1) day or work performed on Saturday, Sunday or legal holiday of the State. Overtime and night work are permissible when approved by the Project Manager in writing, or as called for elsewhere within these Contract Documents.

7.10.2 OVERTIME NOTIFICATION. Contractor shall inform the Project Manager in writing at least two (2) working days in advance as to exactly what specific work is to be done during any overtime and night period to ensure that proper inspection will be available.

7.10.3 In the event that work other than that contained in the above notification is performed and for which the Project Manager determines Department inspection services were necessary but not available because of the lack of notification, the Contractor may be required to remove all such work and perform the work over again in the presence of Department inspection personnel.

- 7.10.4 Any hours worked in excess of the normal eight (8) working hours per day or on Saturdays, Sundays or legal State holidays will not be considered a working day.
- 7.10.5 The Department hereby reserves the right to cancel the overtime, night, Saturday, Sunday or legal State holiday work when it is found that work during these periods is detrimental to the public welfare or the user agency.
- 7.11 OVERTIME AND NIGHT PAYMENT FOR DEPARTMENT INSPECTION SERVICE
- 7.11.1 Whenever the Contractor's operations require the Department's inspection and staff personnel to work overtime or at night, the Contractor shall reimburse the Department for the cost of such services unless otherwise instructed in the Contract. The Project Manager will notify the Contractor of the minimum number of required Department employees and other personnel engaged by the Department prior to the start of any such work. The costs chargeable to the Contractor shall include but not be limited to the following:
- 7.11.1.1 The cost of salaries which are determined by the Department and includes overtime and night time differential for the Department's staff and inspection personnel. In addition to the cost of the salaries, the Contractor shall reimburse the Department's share of contributions to the employee's retirement, medical plan, social security, vacation, sick leave, worker's compensation funds, per diem, and other applicable fringe benefits and overhead expenses;
- 7.11.1.2 The transportation cost incurred by the Department's staff and inspection personnel which are based on established rental rates or mileage allowance in use by the Department for the particular equipment or vehicle; and/or
- 7.11.1.3 Fees and other costs billed the Department by Consultants engaged on the project for overtime and/or night time work.
- 7.11.2 PAYMENT FOR INSPECTION SERVICES. The monies due the Department for staff and inspection work and use of vehicles and equipment as determined in Subsection 7.11.1, OVERTIME AND NIGHT PAYMENT FOR DEPARTMENT INSPECTION SERVICE shall be deducted from the monies due or to become due the Contractor. In any and all events, the Contractor shall not pay the Department's employees directly.
- 7.12 LIMITATIONS OF OPERATIONS
- 7.12.1 Contractor shall at all times conduct the work in such manner and in such sequence as will ensure the least practicable interference with pedestrian and motor traffic passageways. The Contractor shall furnish convenient detours and provide and plan other appropriate signs, flashers, personnel, warnings, barricades and other devices for handling pedestrian and motor traffic.
- 7.12.2 In the event that other contractors are also employed on the job site, the Contractor shall arrange its work and dispose of materials so as not to interfere with the operations of the other contractors engaged upon adjacent work. The Contractor shall join its work to that of others and existing buildings in a proper manner, and in accordance with the drawings and specifications, and perform its work in the proper sequence in relation to that of others, all as may be directed by the Project Manager.

- 7.12.3 Each Contractor shall be responsible for any damage done by it to work performed by another contractor. Each Contractor shall conduct its operations and maintain the work in such condition that no fugitive dust shall be created and adequate drainage shall be in effect at all times.
- 7.12.4 In the event that the Contractor fails to prosecute its work as provided in this Section 7.12, LIMITATIONS OF OPERATIONS or disregards the directions of the Project Manager, the Project Manager may suspend the work until such time as the Contractor provides for the prosecution of the work with minimum interference to traffic and passageways or other contractors, dust control, adequate drainage, the repair of damage and complies with the direction of the Project Manager. No payment will be made to the Contractor for the costs of such suspension.
- 7.13 ASSIGNMENT OR CHANGE OF NAME (§3-125-14 HAR)
- 7.13.1 SUBCONTRACTS AND ASSIGNMENT. The CONTRACTOR shall not assign or subcontract any of the CONTRACTOR's duties, obligations, or interests under this Contract and no such assignment or subcontract shall be effective unless (i) the CONTRACTOR obtains the prior written consent of the STATE and (ii) the CONTRACTOR's assignee or subcontractor submits to the STATE a tax clearance certificate from the Department of Taxation, State of Hawaii, showing that all delinquent taxes, if any, levied or accrued under state law against the CONTRACTOR's assignee or subcontractor have been paid. Additionally, no assignment by the CONTRACTOR of the CONTRACTOR's right to compensation under this Contract shall be effective unless and until the assignment is approved by the Comptroller of the State of Hawaii, as provided in Section 40-58, HRS.
- 7.13.2 RECOGNITION OF A SUCCESSOR IN INTEREST. When in the best interest of the State, a successor in interest may be recognized in an assignment Contract in which the STATE, the CONTRACTOR and the assignee or transferee (hereinafter referred to as the "Assignee") agree that:
- 7.13.2.1 The Assignee assumes all of the CONTRACTOR's obligations;
- 7.13.2.2 The CONTRACTOR remains liable for all obligations under this Contract but waives all rights under this Contract as against the STATE; and
- 7.13.2.3 The CONTRACTOR shall continue to furnish, and the Assignee shall also furnish, all required bonds.
- 7.13.3 CHANGE OF NAME. When the CONTRACTOR asks to change the name in which it holds this Contract with the STATE, the procurement officer of the purchasing agency (hereinafter referred to as the "Agency procurement officer") shall, upon receipt of a document acceptable or satisfactory to the Agency procurement officer indicating change of name (for example, an amendment to the CONTRACTOR's articles of incorporation), enter into an amendment to this Contract with the CONTRACTOR to effect such a change of name. The amendment to this Contract changing the CONTRACTOR's name shall specifically indicate that no other terms and conditions of this Contract are thereby changed.
- 7.13.4 REPORTS. All assignment Contracts and amendments to this Contract effecting changes of the CONTRACTOR's name or novations hereunder shall be reported to the CPO within thirty days of the date that the assignment Contract or amendment becomes effective.
- 7.13.5 ACTIONS AFFECTING MORE THAN ONE PURCHASING AGENCY. Notwithstanding the provisions of Subsections 7.13.2 through 7.13.4 herein, when the CONTRACTOR holds Contracts

with more than one purchasing agency of the State, the assignment Contracts and the novation and change of name amendments herein authorized shall be processed only through the CPO's office.

- 7.14 LAWS TO BE OBSERVED. The CONTRACTOR shall comply with all federal, state, and county laws, ordinances, codes, rules, and regulations, as the same may be amended from time to time, that in any way affect the CONTRACTOR's performance of this Contract.
- 7.14.1 The Contractor at all times shall observe and comply with all Federal, State and local laws or ordinances, rules and regulations which in any manner affect those engaged or employed in the work, the materials used in the work, and the conduct of the work. The Contractor shall also comply with all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the work. Any reference to such laws, ordinances, rules and regulations shall include any amendments thereto before and after the date of this Contract.
- 7.14.2 The Contractor shall defend, protect, hold harmless and indemnify the State and its departments and agencies and all their officers, representatives, employees or agents against any claim or liability arising from or based on the violation of any such laws, ordinances, rules and regulations, orders or decrees, whether such violation is committed by the Contractor or its Subcontractor(s) or any employee of either or both. If any discrepancy or inconsistency is discovered in the contract for the work in relation to any such laws, ordinances, rules and regulations, orders or decrees, the Contractor shall forthwith report the same to the Project Manager in writing.
- 7.14.3 While the Contractor must comply with all applicable laws, attention is directed to: Wage and Hours of Employees on Public Works, Chapter 104, Hawaii Revised Statutes (HRS); Hawaii Public Procurement Code, Authority to debar or suspend, Section 103D-702, HRS; Hawaii Employment Relations Act, Chapter 377, HRS; Hawaii Employment Security Law, Chapter 383, HRS; Worker's Compensation Law, Chapter 386, HRS; Wage and Hour Law, Chapter 387, HRS; Occupational Safety and Health, Chapter 396, HRS; and Authority to Debar or Suspend, Chapter 126, subchapter 2, Hawaii Administrative Rules (HAR).
- 7.14.4 CONFLICT BETWEEN GENERAL CONDITIONS AND PROCUREMENT RULES. In the event of a conflict between the General Conditions and the Procurement Rules, the Procurement Rules in effect on the date this Contract became effective shall control and are hereby incorporated by reference.
- 7.15 PATENTED DEVICES, MATERIALS AND PROCESSES. If the Contractor desires to use any design, device, material, or process covered by letters of patent or copyright, the right for such use shall be procured by the Contractor from the patentee or owner. The Contractor shall defend, protect, indemnify and hold harmless the State of Hawaii, the contracting agency, and their officers, employees, and agents from and against all liability, loss, damage, cost, and expense, including attorney' fees, and all claims, suits, and demands arising out of or resulting from any claims, demands, or actions by the patent holder for infringement or other improper or unauthorized use of any patented article, patented design, patented device, patented process, patented appliance or patented material in connection with this Contract. The Contractor shall be solely responsible for correcting or curing to the satisfaction of the DHHL any such infringement or improper or unauthorized use, including, without limitation: (a) furnishing at no cost to the DHHL a substitute article, design, device, process, appliance or material acceptable to the DHHL; (b) paying royalties or other required payments to the patent holder; (c) obtaining proper authorizations or releases from the patent holder; and (d) furnishing such security to or making such arrangement with the patent holder as may be necessary to correct or cure any such infringement or improper or unauthorized use. This

section shall not apply to any article, design, device, material, appliance or process covered by letters of patent or copyright, which the Contractor is required to use by the Drawings or Specifications.

7.16 SANITARY, HEALTH AND SAFETY PROVISIONS

7.16.1 The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of its employees as may be necessary to comply with the requirements of the State and local boards of health, or other bodies or tribunals having jurisdiction. Unless otherwise stated in the drawings or specifications, the Contractor shall install toilet facilities conveniently located at the job site and maintain same in a neat and sanitary condition for the use of the employees on the job site for the duration of the Contract. The toilet facilities shall conform to the requirements of the State Department of Health. The cost of installing, maintaining and removing the toilet facilities shall be considered incidental to and paid for under various contract pay items for work or under the lump sum bids as the case may be, and no additional compensation will be made therefor. These requirements shall not modify or abrogate in any way the requirements or regulations of the State Department of Health.

7.16.2 Attention is directed to Federal, State and local laws, rules and regulations concerning construction safety and health standards. The Contractor shall not require any worker to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to their health or safety.

7.17 PROTECTION OF PERSONS AND PROPERTY

7.17.1 SAFETY PRECAUTIONS AND PROGRAMS. The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall take reasonable precautions for the safety of, and shall provide reasonable protection to prevent damage, injury or loss to:

7.17.1.1 All persons on the work site or who may be affected by the work;

7.17.1.2 All the work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor and its subcontractors; and

7.17.1.3 Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavement, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

7.17.2 Contractor shall give notices and comply with applicable laws, ordinances, regulations, rules, and lawful orders of any public body having jurisdiction for the safety of persons or property or their protection from damage, injury or loss; and the Contractor shall erect and maintain reasonable safeguards for safety and protection, including posting danger signs, or other warnings against hazards.

7.17.3 The Contractor shall notify owners of adjacent properties and of underground (or overhead) utilities when performing work which may affect the owners; and shall cooperate with the owners in the protection, removal and replacement of their property.

7.17.4 All damage, injury or loss to any property referred to in Subsections 7.17.1.2 and 7.17.1.3 caused by the fault or negligence or damage or loss attributable to acts or omissions directly or indirectly in whole or part by the Contractor a subcontractor or any one directly or indirectly employed by them, or by anyone for whose acts they might be liable, shall be remedied promptly by the Contractor.

- 7.17.5 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the protection of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor.
- 7.17.6 The Contractor shall not load or permit any part of the construction to be loaded so as to endanger its safety. The Contractor shall not injure or destroy trees or shrubs nor remove or cut them without permission of the Project Manager. Contractor shall protect all land monuments and property marks until an authorized agent has witnessed or otherwise referenced their location and shall not remove them until directed.
- 7.17.7 In the event the Contractor encounters on the site, material reasonably believed to be asbestos or other hazard material that has not been rendered harmless, the Contractor shall stop work in the area and notify the Project Manager promptly. The work in the affected area shall be resumed in the absence of hazard materials or when the hazard has been rendered harmless.
- 7.17.8 EMERGENCIES. In an emergency affecting the safety and protection of persons or the work or property at the site or adjacent thereto, Contractor without special instructions or authorization from the Project Manager, shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Contractor shall give the Project Manager prompt written notice of the emergency and actions taken. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined under the provisions of Section 7.25, DISPUTES AND CLAIMS.
- 7.18 ARCHAEOLOGICAL SITES
- 7.18.1 Should historic sites such as walls, platforms, pavements and mounds, or remains such as artifacts, burials, concentration of charcoal or shells be encountered during construction, work shall cease in the immediate vicinity of the find and the find shall be protected from further damage. The Contractor shall immediately notify the Project Manager and contact the State Historic Preservation Division which will assess the significance of the find and recommend the appropriate mitigation measures, if necessary.
- 7.18.2 When required, the Contractor shall provide and install any temporary fencing to protect archaeological sites within the project. The fencing shall be installed prior to any construction activity and shall be maintained by the Contractor for the duration of the project. Fence installation and maintenance shall be to the satisfaction of the Project Manager. The Contractor shall remove the fencing upon completion of construction, or as directed by the Project Manager.
- 7.18.3 No work shall be done within the temporary fencing area. If any construction work is done within the temporary fencing, the Contractor shall notify the Project Manager immediately; and if the Contractor entered the archaeological site area without permission, it shall stop work in this area immediately. The Project Manager shall notify the archaeologist to assess any damage to the area. The Contractor shall allow the archaeologist sufficient time to perform the field investigation.
- 7.18.4 Any site requiring data recovery within the project shall not be disturbed until data recovery is completed.
- 7.19 RESPONSIBILITY FOR DAMAGE CLAIMS; INDEMNITY
- 7.19.1 The CONTRACTOR shall defend, indemnify, and hold harmless the State of Hawaii, the contracting agency, and their officers, employees, and agents from and against all liability, loss, damage, cost,

and expense, including all attorneys' fees, and all claims, suits, and demands therefor, arising out of or resulting from the acts or omissions of the CONTRACTOR or the CONTRACTOR's employees, officers, agents, or subcontractors under this Contract. The provisions of this Subsection shall remain in full force and effect notwithstanding the expiration or early termination of this Contract.

- 7.19.2 The Contractor agrees that it will not attempt to hold the State and the Department, their officers, representatives, employees or agents, liable or responsible for any losses or damages to third parties from the action of the elements, the nature of the work to be done under these Contract Documents or from any unforeseen obstructions, acts of God, vandalism, fires or encumbrances which may be encountered in the prosecution of the work.
- 7.19.3 The Contractor shall pay all just claims for materials, supplies, tools, labor and other just claims against the Contractor or any subcontractor in connection with this contract and the surety bond will not be released by final acceptance and payment by the Department unless all such claims are paid or released. The Department may, but is not obligated to, withhold or retain as much of the monies due or to become due the Contractor under this contract considered necessary by the Project Manager to cover such just claims until satisfactory proof of payment or the establishment of a payment plan is presented.
- 7.19.4 The Contractor shall defend, indemnify and hold harmless the State and the Department, their officers, representatives, employees or agents from all suits, actions or claims of any character brought on account of any claims or amounts arising out of or recovered under the Workers' Compensation Laws or violation of any other law, by-law, ordinance, order or decree.
- 7.19.5 COST OF LITIGATION. In case the STATE shall, without any fault on its part, be made a party to any litigation commenced by or against the CONTRACTOR in connection with this Contract, the CONTRACTOR shall pay all costs and expenses incurred by or imposed on the STATE, including attorneys' fees.
- 7.20 CHARACTER OF WORKERS OR EQUIPMENT
 - 7.20.1 The Contractor shall at all times provide adequate supervision and sufficient labor and equipment for prosecuting the work to full completion in the manner and within the time required by the contract.
 - 7.20.2 Character and Proficiency of Workers - All workers shall possess the proper license and/or certification, job classification, skill and experience necessary to properly perform the work assigned to them. All workmen engaged in special work or skilled work, such as bituminous courses or mixtures, concrete pavement or structures, electrical installation, plumbing installation, or in any trade shall have sufficient experience in such work and in the operation of the equipment required to properly and satisfactorily perform all work. All workers shall make due and proper effort to execute the work in the manner prescribed in these Contract Documents, otherwise, the Project Manager may take action as prescribed herein.
 - 7.20.2.1 Any worker employed on the project by the Contractor or by any subcontractor who, in the opinion of the Project Manager, is not careful and competent, does not perform its work in a proper and skillful manner or is disrespectful, intemperate, disorderly or neglects or refuses to comply with directions given, or is otherwise objectionable shall at the written request of the Project Manager, be removed forthwith by the Contractor or subcontractor employing such worker and shall not be employed again in any portion of the work without the written consent of the Project Manager. Should the Contractor or subcontractor continue to employ, or again employ such person or persons on the project, the

Project Manager may withhold all payments which are or may become due, or the Project Manager may suspend the work until the Project Manager's orders are followed, or both.

- 7.20.3 **INSUFFICIENT WORKERS.** A sufficient number of workers shall be present to ensure the work is accomplished at an acceptable rate. In addition, the proper ratio of apprentice to journey worker shall be maintained to ensure the work is properly supervised and performed. In the event that the Project Manager finds insufficient workers are present to accomplish the work at an acceptable rate of progress or if a adequate number of journey workers are not present and no corrective action is taken by the Contractor after being informed in writing, the Chairman may terminate the Contract as provided for under Section 7.27, **TERMINATION OF CONTRACT FOR CAUSE.**
- 7.20.4 **EQUIPMENT REQUIREMENTS.** All equipment furnished by the Contractor and used on the work shall be of such size and of such mechanical condition that the work can be performed in an acceptable manner at a satisfactory rate of progress and the quality of work produced will be satisfactory.
- 7.20.4.1 Equipment used on any portion of the project shall be such that no injury to the work, persons at or near the site, adjacent property or other objects will result from its use.
- 7.20.4.2 If the Contractor fails to provide adequate equipment for the work, the contract may be terminated as provided under Section 7.27, **TERMINATION OF CONTRACT FOR CAUSE.**
- 7.20.4.3 In the event that the Contractor furnishes and operates equipment on a force account basis, it shall be operated to obtain maximum production under the prevailing conditions.
- 7.21 **CONTRACT TIME**
- 7.21.1 Time is of the essence for this Contract.
- 7.21.2 **CALCULATION OF CONTRACT TIME.** When the contract time is on a working day basis, the total contract time allowed for the performance of the work shall be the number of working days shown in the contract plus any additional working days authorized in writing as provided hereinafter. Refer to **ARTICLE 1, DEFINITIONS** for the definition of Working Day. The count of elapsed working days to be charged against contract time shall begin from the date of the Notice to Proceed and shall continue consecutively to the date of Project Acceptance determined by the Project Manager. When the contract completion time is a fixed calendar date, it shall be the date on which all work on the project shall be completed. Maintenance periods are not included within the contract time unless specifically noted in the Contract Documents. Failure to complete the work by contract completion date shall not terminate the Contract.
- 7.21.3 **MODIFICATIONS OF CONTRACT TIME (§3-125-4 HAR)**
- 7.21.3.1 **EXTENSIONS.** For increases in the scope for work caused by alterations and additional work made under Section 4.2, **CHANGES**, the Contractor will be granted a time extension only if the changes increase the time of performance for the Contract. If the Contractor believes an extension of time is justified and is not adequately provided for in a Field Order, it must request the additional time sought in writing when the detailed cost breakdown required by Section 4.2, **CHANGES**, is submitted. The Contractor must show how the time of performance for the critical path will be affected and must also support the time extension request with schedules and statements from its subcontractors, suppliers, and/or manufacturers. Compensation for any altered or additional work will be paid as provided in Section 4.2, **CHANGES.**

- 7.21.3.2 The Department may direct changes to the work at any time until the work is finally accepted. The issuance of a Field Order at any time may alter or modify the contract duration only by the days specified therein; or if not specified therein, for the days the critical path must be extended for the change. Additional time to perform the extra work will be added to the time allowed in the contract without regard to the date the change directive was issued, even if the contract completion date has passed. A change requiring time will not constitute a waiver of pre-existing Contractor delay.
- 7.21.4 DELAY FOR PERMITS. For delays beyond the control of the Contractor in obtaining necessary permits, one day extension for each day delay may be granted by the Project Manager, provided the Contractor notifies the Project Manager that the permits are not available, as soon as the delay occurs. Time extensions shall be the exclusive relief granted on account of such delays. No additional compensation will be paid for these time extensions.
- 7.21.5 DELAYS BEYOND CONTRACTOR'S CONTROL. For delays affecting the critical path caused by acts of God, or the public enemy, fire, unusually severe weather, earthquakes, floods, epidemics, quarantine restrictions, labor disputes, freight embargoes and other reasons beyond the Contractor's control, the Contractor may be granted an extension of time provided that:
- 7.21.5.1 The Contractor notifies the Project Manager in writing within five (5) work days after the occurrence of the circumstances described above and states the possible effects on the completion date of the contract.
- 7.21.5.2 No time extension will be granted for weather conditions other than unusually severe weather occurrences, and floods.
- 7.21.5.3 The Contractor, if requested, submits to the Project Manager within ten (10) work days after the request, a written statement describing the delay to the project. The extent of delay must be substantiated as follows:
- (a) State specifically the reason or reasons for the delay and fully explain in a detailed chronology the effect of this delay to the work and/or the completion date;
 - (b) Submit copies of purchase order, delivery tag, and any other pertinent documentation to support the time extension request;
 - (c) Cite the period of delay and the time extension requested; and
 - (d) A statement either that the above circumstances have been cleared and normal working conditions restored as of a certain day or that the above circumstances will continue to prevent completion of the project.
- 7.21.5.4 Time extensions shall be the exclusive relief granted and no additional compensation will be paid the Contractor for such delays.
- 7.21.6 DELAYS IN DELIVERY OF MATERIALS. For delays in delivery of materials and/or equipment which occur as a result of unforeseeable causes beyond the control and without fault or negligence of the Contractor, its subcontractor(s) or supplier(s), the Contractor may be granted an extension of time provided it complies with the following procedures:
- 7.21.6.1 The Contractor must notify the Project Manager in writing within five (5) consecutive working days after it first has any knowledge of delays or anticipated delays and state the effects such delays may have on the completion date of the Contract.

- 7.21.6.2 The Contractor, if requested, must submit to the Project Manager within ten (10) working days after a firm delivery date for the material and equipment is established, a written statement as to the delay to the progress of the project. The delay must be substantiated as follows:
- (a) State specifically the reason or reasons for the delay. Explain in a detailed chronology the effect of this delay to the other work and / or the completion date;
 - (b) Submit copies of purchase order(s), factory invoice(s), bill(s) of lading, shipping manifest(s), delivery tag(s) and any other pertinent correspondence to support the time extension request; and
 - (c) Cite the start and end date of the delay and the days requested therefore. The delay shall not exceed the difference between the originally scheduled delivery date versus the actual delivery date.
- 7.21.6.3 Time extensions shall be the exclusive relief granted and no additional compensation will be paid the Contractor on account of such delay.
- 7.21.7 DELAYS FOR SUSPENSION OF WORK. Delay during periods of suspension of the work by the Project Manager shall be computed as follows:
- 7.21.7.1 When the performance of the work is totally suspended for one (1) or more days (calendar or working days, as appropriate) by order of the Project Manager in accordance with Subsections 7.24.1.1, 7.24.1.2, 7.24.1.4 or 7.24.1.6 the number of days from the effective date of the Project Manager's order to suspend operations to the effective date of the Project Manager's order to resume operations shall not be counted as contract time and the contract completion date will be adjusted. Should the Contractor claim for additional days in excess of the suspension period, Contractor shall provide evidence justifying the additional time. During periods of partial suspensions of the work, the Contractor will be granted a time extension only if the partial suspension affects the critical path. If the Contractor believes that an extension of time is justified for a partial suspension of work, it must request the extension in writing at least five (5) working days before the partial suspension will affect the critical operation(s) in progress. The Contractor must show how the critical path was increased based on the status of the work and must also support its claim, if requested, with statements from its subcontractors. A suspension of work will not constitute a waiver of pre-existing Contractor delay.
- 7.21.8 CONTRACTOR CAUSED DELAYS - No time extension will be considered for the following:
- 7.21.8.1 Delays in performing the work caused by the Contractor, subcontractor and/or supplier;
 - 7.21.8.2 Delays in arrival of materials and equipment caused by the Contractor, subcontractor and / or supplier in ordering, fabricating, delivery, etc.;
 - 7.21.8.3 Delays requested for changes which the Project Manager determines unjustifiable due to the lack of supporting evidence or because the change is not on the critical path;
 - 7.21.8.4 Delays caused by the failure of the Contractor to submit for review and acceptance by the Project Manager, on a timely basis, pricing proposals, shop drawings, descriptive sheets, material samples, color samples, etc. except as covered in Subsection 7.21.5 and 7.21.6;
 - 7.21.8.5 Failure to follow the procedure within the time allowed to qualify for a time extension; and
 - 7.21.8.6 Days the Contractor is unable to work due to normal rainfall or other normal bad weather day conditions.

- 7.21.9 REDUCTION IN TIME - If the Department deletes any portion of the work, an appropriate reduction of contract time may be made in accordance with Section 4.2, CHANGES.
- 7.22 CONSTRUCTION SCHEDULE
- 7.22.1 The Contractor shall submit its detailed construction schedule to the Project Manager prior to the start of the work. The purpose of the schedule is to allow the Project Manager to monitor the Contractor's progress on the work. The schedule shall account for normal inclement weather, unusual soil or other conditions that may influence the progress of the work, schedules and coordination required by any utility, off or on site fabrications, and all other pertinent factors that relate to progress.
- 7.22.2 Submittal of and the Project Manager's receipt of the construction schedule shall not imply the Department's approval of the schedule's breakdown, its individual elements, and any critical path that may be shown. Any acceptance or approval of the schedule: (1) shall be for general format only and not for sequences or durations thereon; and (2) shall not be deemed an agreement by the Department that the construction means, methods and resources shown on the schedule will result in work that conforms to the contract requirements. The Contractor has the risk of all elements (whether or not shown) of the schedule and its execution.
- 7.22.3 In the event the Contractor submits and the Department receives an accelerated schedule (shorter than the contract time), such will not constitute an agreement to modify the contract time or completion date, nor will the receipt, acceptance or approval of such a schedule incur any obligation by the Department. The Contractor shall be solely responsible for and shall accept all risks and any delays that may materialize during the construction work until the contract completion date is reached. The contract time or completion date is established for the benefit of the Department and cannot be changed without an appropriate change order issued by the Department. All float on an accelerated schedule belongs exclusively to the Department. The Department will not be responsible for or obligated to accept the work before the completion date established by the Contract.
- 7.23 STATEMENT OF WORKING DAYS - For all contracts on a working day basis, the Contractor will submit a statement of the number of working days for each month together with the Monthly Payment Application. The Monthly Payment Application will not be processed without the statement of working days.
- 7.24 SUSPENSION OF WORK (§3-125-7 HAR)
- 7.24.1 PROCEDURE TO BE FOLLOWED. The Chairman may, by written order to the Contractor, at any time and without notice to any surety, suspend the performance of the work either in whole or in part for any cause, including but not limited to:
- 7.24.1.1 Weather or excess bad weather days, considered unsuitable by the Project Manager for prosecution of the work; or
- 7.24.1.2 Soil Conditions considered unsuitable by the Project Manager for prosecution of the work; or 7.24.1.3 Failure of the Contractor to:
- (a) Correct conditions unsafe for the general public or for the workers;
 - (b) Carry out orders given by the Project Manager;
 - (c) Perform the work in strict compliance with the provisions of the contract; or
 - (d) Provide a qualified Superintendent on the jobsite as described under Subsection 5.9.2, SUPERINTENDENT.

- 7.24.1.4 When any redesign is deemed necessary by the Project Manager; or
- 7.24.1.5 Disturbance due to noise, odors or dust arising from the construction even if such disturbance does not violate the section on Environmental Protection contained in the Contract Documents; or
- 7.24.1.6 The convenience of the Department.
- 7.24.2 PARTIAL OR TOTAL SUSPENSION OF WORK. Suspension of work on some but not all items of work shall be considered a partial suspension. Suspension of work on the entire work at the job site shall be considered total suspension. The period of suspension shall be computed as set forth in Subsection 7.21.7, Delays for Suspension of Work.
- 7.24.3 PAYMENT
- 7.24.3.1 In the event that the Contractor is ordered by the Chairman in writing as provided herein to suspend all work under the contract in accordance with Subsections 7.24.1.4 or 7.24.1.6, the Contractor may be reimbursed for actual direct costs incurred on work at the jobsite, as authorized in writing by the Chairman, including costs expended for the protection of the work. Payment for equipment which must standby during such suspension of work shall be made as described in clause 8.3.4.5.(e). No payment will be made for profit on any suspension costs. An allowance of five percent (5%) will be paid on any reimbursed actual costs for indirect categories of delay costs, including extended branch and home-office overhead and delay impact costs.
- 7.24.3.2 However, no adjustment to the contract amount or time shall be made under this Section 7.24, SUSPENSION OF WORK (§3-125-7 HAR) for any suspension, delay, or interruption:
- (a) To the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor; or
 - (b) For which an adjustment is provided for or excluded under any other provision of this Contract.
- 7.24.3.3 Any adjustment in contract price made pursuant to this subsection shall be determined in accordance with this Section 7.24, SUSPENSION OF WORK (§3-125-7 HAR) and Section 4.2, CHANGES.
- 7.24.3.4 Claims for such compensation shall be filed with the Project Manager within ten (10) calendar days after the date of the order to resume work or such claims will be waived by the Contractor. Together with the claim, the Contractor shall submit substantiating documents supporting the entire amount shown on the claim. The Chairman may make such investigations as are deemed necessary and shall be the sole judge of the claim and the Chairman's decision shall be final.
- 7.24.4 CLAIMS NOT ALLOWED. No claim under this Section 7.24, SUSPENSION OF WORK (§3-125-7 HAR) shall be allowed:
- 7.24.4.1 For any direct costs incurred more than twenty (20) days before the Contractor shall have notified the Project Manager in writing of any suspension that the Contractor considers compensable. This requirement shall not apply as to a claim resulting from a suspension order under Subsections 7.24.1.4 or 7.24.1.6; and 7.24.4.2 Unless the claim is asserted in writing within ten (10) calendar days after the termination of such suspension, delay, or interruption, but in no case not later than the date of final payment under the contract.
- 7.24.4.2 No provision of this Section 7.24, SUSPENSION OF WORK (§3-125-7 HAR) shall be construed as entitling the Contractor to compensation for delays due to failure of surety, for suspensions made at

the request of the Contractor, for any delay required under the Contract, for partial suspension of work or for suspensions made by the Project Manager under the provisions of Subsections 7.24.1.1, 7.24.1.2, 7.24.1.3 and 7.24.1.5.

- 7.25 DISPUTES AND CLAIMS (§3-126-31 HAR). Disputes shall be resolved in accordance with Section 103D-703, HRS, and chapter 126, Procurement Rules, as the same may be amended from time to time.
- 7.25.1 REQUIRED NOTIFICATION. As a condition precedent for any claim, the Contractor must give notice in writing to the Project Manager in the manner and within the time periods stated in Section 4.2, CHANGES for claims for extra compensation, damages, or an extension of time due for one or more of the following reasons:
 - 7.25.1.1 Requirements not clearly covered in the Contract, or not ordered by the Project Manager as an extra;
 - 7.25.1.2 Failure by the Department and Contractor to agree to an Oral Order or an adjustment in price or contract time for a Field Order or a Change Order (which was not previously agreed on by a Field Order), issued by the Department;
 - 7.25.1.3 An action or omission by the Project Manager requiring performance changes beyond the scope of the Contract; and/or
 - 7.25.1.4 Failure of the Department to issue a Field Order for controversies within the scope of Section 4.2, CHANGES.
 - 7.25.1.5 For any other type of claim, the Contractor shall give notice within the time periods set forth in contract provisions pertaining to that event. If no specific contract provisions pertain to the claim, then the written notice of claim must be submitted within fifteen (15) days of the event giving rise to the claim.
- 7.25.2 CONTINUED PERFORMANCE OF WORK. The Contractor shall at all times continue with performance of the contract in full compliance with the directions of the Project Manager. Continued performance by the Contractor shall not be deemed a waiver of any claim for additional compensation, damages, or an extension of time for completion, provided that the written notice of claim is submitted in accordance with Subsection 7.25.1, REQUIRED NOTIFICATION.
- 7.25.3 The requirement for timely written notice shall be a condition precedent to the assertion of a claim.
- 7.25.4 REQUIREMENTS FOR NOTICE OF CLAIM. The notice of claim shall clearly state the Contractor's intention to make claim and the reasons why the Contractor believes that additional compensation, changes or an extension of time may be remedies to which it is entitled. At a minimum, it shall provide the following:
 - 7.25.4.1 Date of the protested order, decision or action;
 - 7.25.4.2 The nature and circumstances which caused the claim;
 - 7.25.4.3 The contract provision(s) that support the claim;
 - 7.25.4.4 The estimated dollar cost, if any, of the protested work and how that estimate was determined; and

- 7.25.4.5 An analysis of the progress schedule showing the schedule change or disruption if the Contractor is asserting a schedule change or disruption.
- 7.25.5 If the protest or claim is continuing, the information required in Subsection 7.25.4 REQUIREMENTS FOR NOTICE OF CLAIMS above shall be supplemented as requested by the Project Manager.
- 7.25.6 FINAL STATEMENT FOR CLAIM. The Contractor shall provide a final written statement of the actual adjustment in contract price and/or contract time requested for each notice of claim. Such statement shall clearly set forth that it is the final statement for that notice of claim. All such final statements shall be submitted within thirty (30) days after completion of the work that is the subject of the claim, but in no event no later than thirty (30) days after the Project Acceptance Date or the date of termination of the Contractor, whichever comes first.
- 7.25.7 All claims of any nature are barred if asserted after final payment under this Contract has been made.
- 7.25.8 Contractor may protest the assessment or determination by the Project Manager of amounts due the Department from the Contractor by providing a written notice to the Chairman within thirty (30) days of the date of the written assessment or determination. Said notice shall comply with all requirements of Subsections 7.25.4, REQUIREMENTS FOR NOTICE OF CLAIM and 7.25.6, FINAL STATEMENT FOR CLAIM above. The requirement of such notice cannot be waived and it is a condition precedent to any claim by the Contractor. Failure to comply with these notice provisions constitutes a waiver of any claim.
- 7.25.9 In addition to the requirements of Subsections 7.25.4, 7.25.6, and 7.25.8, all final written statements of claim shall be certified. This certification requirement applies to the Contractor without exception, including, but not limited to, situations involving claims of subcontractors or suppliers which meet the requirements of Subsection 5.13.4. The certification must be executed by a person duly authorized to bind the Contractor with respect to the claim. The certification shall state as follows:
- “I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the contract adjustment for which the Contractor believes the Department is liable; and that I am duly authorized to certify the claim on behalf of the Contractor.”
- 7.25.10 DECISION ON CLAIM/APPEAL. The decision of the Chairman on the claim shall be final and conclusive, unless fraudulent, or unless the Contractor delivers to the Chairman a written appeal of the Chairman’s decision. Said appeal shall be delivered to the Chairman no later than thirty (30) days after the date of the Chairman’s decision.
- 7.25.10.1 In that event, the decision of the Chairman shall be final and conclusive, unless fraudulent or unless the Contractor brings an action seeking judicial review of the Chairman’s decision in an appropriate circuit court of this State within six (6) months from the date of the Chairman’s decision.
- 7.25.11 PAYMENT AND INTEREST. The amount determined payable pursuant to the decision, less any portion already paid, normally should be paid without awaiting Contractor action concerning appeal. Such payments shall be without prejudice to the rights of either party. Interest on amounts ultimately determined to be due to a Contractor shall be payable at the Statutory rate applicable to judgments against the State under Chapter 662, HRS from the date of receipt of a properly certified final written statement of actual adjustment required until the date of decision; except, however, that if an action is initiated in circuit court, interest under this Section 7.25, DISPUTES AND CLAIMS (§3-126-31 HAR) shall only be calculated until the time such action is initiated. Interest on amounts due the

Department from the Contractor shall be payable at the same rate from the date of issuance of the Project Manager's notice to the Contractor. Where such payments are required to be returned by a subsequent decision, interest on such payments shall be paid at the statutory rate from the date of payment.

7.25.12 Contractor shall comply with any decision of the Chairman and proceed diligently with performance of this contract pending final resolution by a circuit court of this State of any controversy arising under, or by virtue of, this Contract, except where there has been a material breach of contract by the Department; provided that in any event the Contractor shall proceed diligently with the performance of the Contract where the Project Manager has made a written determination that continuation of work under the Contract is essential to the public health and safety.

7.25.13 **WAIVER OF ATTORNEY'S FEES.** In the event of any litigation arising under, or by virtue of, this Contract, the Contractor and the Department agree to waive all claims against each other for attorney's fees and agree to refrain from seeking attorney's fees as part of any award or relief from any court.

7.26 **FAILURE TO COMPLETE THE WORK ON TIME**

7.26.1 Completion of the work within the required time is important because delay in the prosecution of the work will inconvenience the public and interfere with the Department's business. In addition, the Department will be damaged by the inability to obtain full use of the completed work and by increased engineering, inspection, superintendence, and administrative services in connection with the work. Furthermore, delay may detrimentally impact the financing, planning, or completion of other Department projects because of the need to devote Department resources to the project after the required completion date. The monetary amount of such public inconvenience, interference with Department business, and damages, is difficult, if not impossible, to accurately determine and precisely prove. Therefore, it is hereby agreed that the amount of such damages shall be the appropriate sum of liquidated damages.

7.26.1.1 When the Contractor fails to complete the work or any portion of the work within the time or times fixed in the contract or any extension thereof, it is agreed the Contractor shall pay liquidated damages to the Department in the amount of \$1,000 (one thousand dollars) per calendar day, unless otherwise indicated in the Special Conditions.

7.26.1.2 If the Contractor fails to correct Punchlist deficiencies as required by Section 7.32, **PROJECT ACCEPTANCE DATE**, the Department will be inconvenienced and damaged, therefore, it is agreed that the Contractor shall pay liquidated damages to the Department based upon the amount stated in Section 7.26.1.1. Liquidated damages shall accrue for all days after the Contract Completion Date or any extension thereof, until the date the Punchlist items are corrected and accepted by the Project Manager.

7.26.1.3 If the Contractor fails to submit final documents as required by Section 7.33, **FINAL SETTLEMENT OF CONTRACT**, the Department will be inconvenienced and damaged, therefore, it is agreed that the Contractor shall pay liquidated damages to the Department in the amount stated in the Section 7.26.1.1. Liquidated damages shall accrue for all days after the Contract Completion Date or any extension thereof, until the date the final documents are received by the Project Manager.

7.26.1.4 The Project Manager shall assess the total amount of liquidated damages in accordance with the amount of \$1,000 (one thousand dollars) per day, unless otherwise indicated in the Special Conditions, and provide written notice of such assessment to the Contractor.

- 7.26.2 ACCEPTANCE OF LIQUIDATED DAMAGES. The assessment of liquidated damages by the Project Manager shall be accepted by the parties hereto as final, unless the Contractor delivers a written appeal of the Project Manager's decision in accordance with Subsection 7.25.10, DECISION ON CLAIM/APPEAL REQUIREMENTS. Any allowance of time or remission of charges or liquidated damages shall in no other manner affect the rights or obligations of the parties under this contract nor be construed to prevent action under Section 7.27, TERMINATION OF CONTRACT FOR CAUSE. If the Department terminates the Contractor's right to proceed, the resulting damage will include such liquidated damages for such time as may be required for final completion of the work after the required contract completion date.
- 7.26.3 PAYMENTS FOR LIQUIDATED DAMAGES. Liquidated damages shall be deducted from monies due or that may become due to the Contractor under the contract or from other monies that may be due or become due to the Contractor from the Department.
- 7.26.4 If the Contractor contests the per diem liquidated charge, the Department may elect to recover the actual damages caused by the Contractor's delay. Should the Department claim liquidated damages for delay and if such liquidated damages are disallowed for any reason, the Department shall recover the actual damages to which it is legally entitled as a result of the Contractor's delay or other breach.
- 7.27 TERMINATION OF CONTRACT FOR CAUSE (§3-125-18 HAR)
- 7.27.1 DEFAULT. If the Contractor refuses or fails to perform the work, or any separable part thereof, with such diligence as will assure its completion within the time specified in this contract, or any extension thereof, fails to complete the work within such time, or commits any other material breach of this contract, and further fails within seven (7) days after receipt of written notice from the Project Manager to commence and continue correction of the refusal or failure with diligence and promptness, the Chairman may, by written notice to the Contractor, declare the Contractor in breach and terminate the Contractor's right to proceed with the work or the part of the work as to which there has been delay or other breach of contract. In such event, the Department may take over the work and perform the same to completion, by contract or otherwise, and may take possession of, and utilize in completing the work, the materials, appliances, and plant as may be on the site of the work and necessary therefor. Whether or not the Contractor's right to proceed with the work is terminated, the Contractor and the Contractor's sureties shall be liable for any damage to the Department resulting from the Contractor's refusal or failure to complete the work within the specified time.
- 7.27.2 ADDITIONAL RIGHTS AND REMEDIES. The rights and remedies of the Department provided in this contract are in addition to any other rights and remedies provided by law.
- 7.27.3 COSTS AND CHARGES
- 7.27.3.1 All costs and charges incurred by the Department, together with the cost of completing the work under contract, will be deducted from any monies due or which would or might have become due to the Contractor had it been allowed to complete the work under the contract. If such expense exceeds the sum which would have been payable under the contract, then the Contractor and the surety shall be liable and shall pay the Department the amount of the excess.
- 7.27.3.2 In case of termination, the Chairman shall limit any payment to the Contractor to the part of the contract satisfactorily completed at the time of termination. Payment will not be made until the work has satisfactorily been completed and the tax clearance required by Section 8.8, FINAL PAYMENT

is submitted by the Contractor. Termination shall not relieve the Contractor or Surety from liability for liquidated damages.

- 7.27.4 **ERRONEOUS TERMINATION FOR CAUSE.** If, after notice of termination of the Contractor's right to proceed under this Section 7.27, **TERMINATION OF CONTRACT FOR CAUSE** (§3-125-18 HAR) it is determined for any reason that good cause did not exist to allow the Department to terminate as provided herein, the rights and obligations of the parties shall be the same as, and the relief afforded the Contractor shall be limited to, the provisions contained in Section 7.28, **TERMINATION FOR CONVENIENCE**.
- 7.28 **TERMINATION FOR CONVENIENCE** (§3-125-22 HAR)
- 7.28.1 **TERMINATION.** The Chairman may, when the interests of the Department so require, terminate this contract in whole or in part, for the convenience of the Department. The Chairman shall give written notice of the termination to the Contractor specifying the part of the contract terminated and when termination becomes effective.
- 7.28.2 **CONTRACTOR'S OBLIGATIONS.** The Contractor shall incur no further obligations in connection with the terminated work and on the date set in the notice of termination the Contractor will stop work to the extent specified. The Contractor shall also terminate outstanding orders and subcontracts as they relate to the terminated work. The Contractor shall settle the liabilities and claims arising out of the termination of subcontracts and orders connected with the terminated work subject to the Department's approval. The Chairman may direct the Contractor to assign the Contractor's right, title, and interest under terminated orders or subcontracts to the Department. The Contractor must still complete the work not terminated by the notice of termination and may incur obligations as necessary to do so.
- 7.28.3 **RIGHT TO CONSTRUCTION AND GOODS.** The Chairman may require the Contractor to transfer title and delivery to the Department in the manner and to the extent directed by the Chairman, the following:
- 7.28.3.1 Any completed work; and
- 7.28.3.2 Any partially completed construction, goods, materials, parts, tools, dies, jigs, fixtures, drawings, information, and contract rights (hereinafter called "construction material") that the Contractor has specifically produced or specially acquired for the performance of the terminated part of this contract.
- 7.28.3.3 The Contractor shall protect and preserve all property in the possession of the Contractor in which the Department has an interest. If the Chairman does not elect to retain any such property, the Contractor shall use its best efforts to sell such property and construction material for the Department's account in accordance with the standards of Section 490:2-706, HRS.
- 7.28.4 **COMPENSATION**
- 7.28.4.1 Contractor shall submit a termination claim specifying the amounts due because of the termination for convenience together with cost or pricing data, submitted to the extent required by subchapter 15, chapter 3-122, HAR. If the Contractor fails to file a termination claim within one (1) year from the effective date of termination, the Chairman may pay the Contractor, if at all, an amount set in accordance with Subsection 7.28.4.3.

- 7.28.4.2 The Chairman and the Contractor may agree to a settlement provided the Contractor has filed a termination claim supported by cost or pricing data submitted as required and that the settlement does not exceed the total contract price plus settlement costs reduced by payments previously made by the Department, the proceeds of any sales of construction, supplies, and construction materials under Subsection 7.28.3.3 of this Section, and the contract price of the work not terminated.
- 7.28.4.3 Absent complete agreement, the Chairman shall pay the Contractor the following amounts, less any payments previously made under the Contract.
- (a) The cost of all contract work performed prior to the effective date of the notice of termination work plus a five percent (5%) markup on the actual direct costs, including amounts paid to subcontractor(s), less amounts previously paid or to be paid for completed portions of such work; provided, however, that if it appears that the Contractor would have sustained a loss if the entire contract would have been completed, no markup shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss. No anticipated profit or consequential damage will be due or paid.
 - (b) Subcontractors shall be paid a markup of ten percent (10%) on their direct job costs incurred to the date of termination. No anticipated profit or consequential damage will be due or paid to any subcontractor. These costs must not include payments made to the Contractor for subcontract work during the contract period.
 - (c) In any case, the total sum to be paid the Contractor shall not exceed the total contract price reduced by the amount of any sales of construction supplies, and construction materials.
- 7.28.4.4 Costs claimed, agreed to, or established by the Department shall be in accordance with chapter 3-123, HAR.
- 7.29 **CORRECTING DEFECTS.** If the Contractor fails to commence to correct any defects of any nature, within ten (10) working days after the correction thereof has been requested in writing by the Department, and thereafter to expeditiously complete the correction of said defects, the Project Manager may without further notice to the Contractor or surety and without termination of contract, correct the defects and deduct the cost thereof from the contract price.
- 7.30 **FINAL CLEANING.** Before final inspection of the work, the Contractor shall clean all ground occupied by the Contractor in connection with the work of all rubbish, excess materials, temporary structures and equipment, and all parts of the work must be left in a neat and presentable condition to the satisfaction of the Project Manager. However, the Contractor shall not remove any warning and directional signs prior to the formal acceptance by the Project Manager. Full compensation for final cleaning will be included in the prices paid for the various items of work or lump sum bid, as the case may be, and no separate payment will be made therefor.
- 7.31 **SUBSTANTIAL COMPLETION AND FINAL INSPECTION.** Before the Department accepts the project as being completed, unless otherwise stipulated by the Project Manager the following procedure shall be followed:
- 7.31.1 **SUBSTANTIAL COMPLETION**
- 7.31.1.1 The Contractor and its subcontractors shall inspect the project to confirm whether the Project is Substantially Complete. This inspection effort shall include the testing of all equipment and providing a Punchlist that identifies deficiencies which must be corrected. Contractor shall make the corrections and if required repeat the procedure. Also, the Contractor shall schedule final Building, Plumbing, Electrical, Elevator, Fire and other required inspections and obtain final approvals.

- (a) When in compliance with the above requirements, the Contractor shall notify the Project Manager in writing that project is Substantially Complete and ready for a Final Inspection. Along with the Substantial Completion notification, the Contractor shall provide its Punchlist(s) with the status of the deficiencies and dates when the deficiencies were corrected. The Project Inspector and / or the Project Manager shall make a preliminary determination whether project is Substantially Complete.
- (b) If the Project is not Substantially Complete, the Project Manager shall inform the Contractor. The Contractor shall identify deficiencies which must be corrected, update its Punchlist, make the necessary corrections and repeat the previous step. After completing the necessary work, the Contractor shall notify the Project Manager in writing that Punchlist deficiencies have been corrected and the project is ready for a Final Inspection.
- (c) If the Project is Substantially Complete, the Project Manager shall schedule a Final Inspection within fifteen (15) days of the Contractor's notification letter or as otherwise determined by the Project Manager.

7.31.1.2 In addition, and to facilitate closing of the project, the Contractor shall also proceed to obtain the following closing documents (where applicable) prior to the Final Inspection:

- (a) Field-Posted As-Built Drawings;
- (b) Maintenance Service Contract and two (2) copies of a list of all equipment;
- (c) Five (5) sets of operating and maintenance manuals;
- (d) Air conditioning test and balance reports; and
- (e) Any other final submittal required by the Contract.

7.31.2 **FINAL INSPECTION.** If at the Final Inspection the Project Manager determines that all work is completed, the Project Manager shall notify the Contractor in accordance with Section 7.32, **PROJECT ACCEPTANCE DATE**. Should there be remaining deficiencies which must be corrected the Contractor shall provide an updated Punchlist to the Project Manager, within five (5) days from the Final Inspection Date. The Contractor shall make the necessary corrections.

7.31.2.1 The Project Manager shall confirm the list of deficiencies noted by the Contractor's punchlist(s) and will notify the Contractor of any other deficiencies that must be corrected before final settlement.

7.31.3 The Project Manager may add to or otherwise modify the Punchlist from time to time. The Contractor shall take immediate action to correct the deficiencies.

7.31.4 **REVOKING SUBSTANTIAL COMPLETION.** At any time before final Project Acceptance is issued the Project Manager may revoke the determination of Substantial Completion if the Project Manager finds it was not warranted. The Project Manager shall notify the Contractor in writing with the reasons and outstanding deficiencies negating the declaration. Once notified, the Contractor shall make the necessary corrections and repeat the required steps noted in Subsections 7.31.1 and 7.31.2.

7.32 **PROJECT ACCEPTANCE DATE**

7.32.1 If upon Final Inspection, the Project Manager finds that the project has been satisfactorily completed in compliance with the contract, the Project Manager shall declare the project completed and accepted and will notify the Contractor in writing of the acceptance by way of the Project Acceptance Notice.

7.32.2 **PROTECTION AND MAINTENANCE.** After the Project Acceptance Date, the Contractor shall be relieved of maintaining and protecting the work except that this does not hold true for those portions of the work which have not been accepted, including Punchlist deficiencies. The Department shall be responsible for the protection and maintenance of the accepted facility.

- 7.32.3 The date of Project Acceptance shall determine:
- 7.32.3.1 End of Contract Time;
- 7.32.3.2 Commencement of all guaranty periods except as noted in Section 7.34, CONTRACTOR'S RESPONSIBILITY FOR WORK: RISK OF LOSS; and
- 7.32.3.3 Commencement of all maintenance services except as noted in Section 7.34, CONTRACTOR'S RESPONSIBILITY FOR WORK: RISK OF LOSS.
- 7.32.4 PUNCHLIST REQUIREMENTS. If a Punchlist is required under Section 7.31, SUBSTANTIAL COMPLETION AND FINAL INSPECTION, the Project Acceptance Notice will include the Project Manager's Punchlist and the date when correction of the deficiencies must be completed.
- 7.32.5 Upon receiving the Punchlist, the Contractor shall promptly devote the required time, labor, equipment, materials and incidentals necessary to correct the deficiencies expeditiously.
- 7.32.6 For those items of work that cannot be completed by the established date, the Contractor shall submit a schedule in writing to the Project Manager for approval along with documentation to justify the time required, no later than five (5) working days before the date stipulated for completion of the Punchlist work. A Proposed schedule submitted after the five (5) day period will not be considered.
- 7.32.7 FAILURE TO CORRECT DEFICIENCIES. After the Contract Completion Date, or any extension thereof, if the Contractor fails to correct the deficiencies within the established date or agreed to Punchlist completion date, the Project Manager shall assess liquidated damages as required by Section 7.26, FAILURE TO COMPLETE THE WORK ON TIME.
- 7.32.8 If the Contractor fails to correct the deficiencies and complete the work by the established or agreed to date, the Department also reserves the right to correct the deficiencies by whatever method it deems necessary and deduct the cost from the final payment due the Contractor.
- 7.32.9 The Contractor may further be prohibited from bidding in accordance with Section 2.12, DISQUALIFICATION OF BIDDERS. In addition, assessment of damages shall not prevent action under Section 7.27, TERMINATION OF CONTRACT FOR CAUSE.
- 7.33 FINAL SETTLEMENT OF CONTRACT
- 7.33.1 The contract will be considered settled after the project acceptance date and when the following items have been satisfactorily submitted, where applicable:
- 7.33.1.1 Necessary Submissions in addition to the items noted under Subsection 7.31.1.2.
- 7.33.1.2 All written guarantees required by the contract.
- 7.33.1.3 Complete and certified weekly payrolls for the Contractor and its Subcontractor(s).
- 7.33.1.4 Certificate of Plumbing and Electrical Inspection.
- 7.33.1.5 Certificate of Building Occupancy.

- 7.33.1.6 Certificate for Soil Treatment and Wood Treatment.
- 7.33.1.7 Certificate of Water System Chlorination.
- 7.33.1.8 Certificate of Elevator Inspection, Boiler and Pressure Pipe installation.
- 7.33.1.9 Certification of compliance with §103B-3 HRS, Employment of State Residents.
- 7.33.1.10 All other documents required by the Contract.
- 7.33.2 FAILURE TO SUBMIT CLOSING DOCUMENTS. The Contractor shall submit the final Payment Application and the above applicable closing documents within sixty (60) days from the date of Project Acceptance or the agreed to Punchlist completion date. Should the Contractor fail to comply with these requirements, the Chairman may terminate the Contract for cause. The pertinent provisions of Section 7.27, TERMINATION OF CONTRACT FOR CAUSE shall be applicable.
- 7.33.3 In addition, should the Contractor fail to furnish final closing documents within the required time period, the Project Manager shall assess liquidated damages as required by Section 7.26, FAILURE TO COMPLETE THE WORK ON TIME.
- 7.34 CONTRACTOR'S RESPONSIBILITY FOR WORK; RISK OF LOSS
 - 7.34.1 Until the establishment of the Project Acceptance Date or Beneficial Occupancy, whichever is sooner, the Contractor shall take every necessary precaution against injury or damage to any part of the work caused by the perils insured by an All Risk policy, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore and make good all injuries or damage to any portion of the work occasioned by the perils insured by an All Risk policy before the date of final acceptance and shall bear the risk and expense thereof.
 - 7.34.2 After the Project Acceptance Date or Beneficial Occupancy, whichever is sooner, the Contractor shall be relieved of maintaining and protecting the work except for those portions of the work which have not been accepted including Punchlist deficiencies.
 - 7.34.3 The risk of damage to the work from any hazard or occurrence that may be covered by a required Property Insurance policy is that of the Contractor, unless such risk of loss is placed elsewhere by express language in the Contract Documents. No claims for any loss or damage shall be recognized by the Department, nor will any such loss or damage excuse the complete and satisfactory performance of the Contract by the Contractor.
- 7.35 GUARANTEE OF WORK
 - 7.35.1 In addition to any required manufacturers warranties, all work and equipment shall be guaranteed by the Contractor against defects in materials, equipment or workmanship for one year from the Project Acceptance Date or as otherwise specified in the Contract Documents.
 - 7.35.2 REPAIR OF WORK. If, within any guarantee period, repairs or changes are required in connection with the guaranteed work, which in the opinion of the Project Manager is necessary due to materials, equipment or workmanship which are inferior, defective or not in accordance with the terms of the Contract, the Contractor shall within five (5) working days and without expense to the Department commence to:

- 7.35.2.1 Place in satisfactory condition in every instance all such guaranteed work and correct all defects therein; and
- 7.35.2.2 Make good and repair or replace to new or pre-existing condition all damages to the building, facility, work or equipment or contents thereof, resulting from such defective materials, equipment or installation thereof.
- 7.35.3 MANUFACTURER'S AND INSTALLER'S GUARANTEE. Whenever a manufacturer's or installer's guarantee on any product specified in the respective Specification sections, exceeds one year, this guarantee shall become part of this contract in addition to the Contractor's guarantee. Contractor shall complete the guarantee forms in the name of the Department and submit such forms to the manufacturer within such time required to validate the guarantee. Contractor shall submit to the Department a photocopy of the completed guarantee form for the Department's record as evidence that such guarantee form was executed by the manufacturer.
- 7.35.4 If a defect is discovered during a guarantee period, all repairs and corrections to the defective items when corrected shall again be guaranteed for the original full guarantee period. The guarantee period shall be tolled and suspended for all work affected by the defect. The guarantee period for work affected by the defect shall restart for its remaining duration upon confirmation by the Project Manager that the deficiencies have been repaired or remedied.
- 7.36 WORK OF AND CHARGES BY UTILITIES
- 7.36.1 The Contractor shall be responsible for scheduling and coordinating the work with the utility companies and applicable governmental agencies for permanent service installation and connections or modifications to existing utilities. The Contractor shall make available all portions of the work necessary for the utility companies to do their work. The Department shall not bear the risk of any damage to the contract work caused by any utility company, and work of repairing such damage and delay costs must be resolved between the Contractor, the utility company, and their insurers.
- 7.36.2 Unless stated as an allowance item to be paid by the Contractor, the Department will pay the utility companies and applicable governmental agencies directly for necessary modifications and connections. Contractor charges for overhead, supervision, coordination, profit, insurance and any other incidental expenses shall be included in the Contractor's Bid whether the utility is paid directly by the Department or by an allowance item in the Contract.
- 7.37 RIGHT TO AUDIT RECORDS
- 7.37.1 The STATE may, at reasonable times and places, audit the books and records of the CONTRACTOR, prospective contractor, subcontractor or prospective subcontractor which are related to the cost or pricing data, and a State contract, including subcontracts, other than a firm fixed-price contract. The Contractor and subcontractor(s) shall maintain the books and records for a period of four (4) years from the date of final payment under the Contract.
- 7.37.2 The Contractor shall ensure that its subcontractors comply with this requirement and shall bear all costs (including attorney's fees) of enforcement in the event of its subcontractor's failure or refusal to fully cooperate.
- 7.37.3 Additionally, Sections 231-7, 235-108, 237-39 and other HRS chapters through reference, authorize the Department of Taxation to audit all taxpayers conducting business within the State. Contractors

must make available to the Department of Taxation all books and records necessary to verify compliance with the tax laws.

7.38 RECORDS MAINTENANCE, RETENTION AND ACCESS

7.38.1 The Contractor and any subcontractor whose contract for services is valued at \$25,000 (twenty five thousand) or more shall, in accordance with generally acceptable accounting practices, maintain fiscal records and supporting documents and related files, papers, and reports that adequately reflect all direct and indirect expenditures and management and fiscal practices related to the Contractor and subcontractor's performance of services under this Contract.

7.38.2 The representative of the Department, the Chairman, the Attorney General, (the Federal granting agency, the Comptroller General of the United States, and any of their authorized representatives when federal funds are utilized), and the Legislative Auditor of the State of Hawaii shall have the right of access to any book, document, paper, file, or other record of the Contractor and any subcontractor that is related to the performance of services under this Contract in order to conduct an audit or other examination and /or to make copies, excerpts and transcripts for the purposes of monitoring and evaluating the Contractor and subcontractor's performance of services and the Contractor and subcontractor's program, management, and fiscal practices to assure the proper and effective expenditure of funds and to verify all costs associated with any claims made under this Contract.

7.38.3 The right of access shall not be limited to the required retention period but shall last as long as the records are retained. The Contractor and subcontractor shall maintain and retain all books and records related to the Contractor and subcontractor's performance of services under this Contract, including any cost or pricing data for three (3) years from the date of final payment, except that if any litigation, claim, negotiation, investigation, audit or other action involving the books and records has been started before the expiration of the three (3) year period, the Contractor and subcontractors shall retain the books and records until completion of the action and resolution of all issues that arise from it, or until the end of the three (3) year retention period, whichever occurs later. Furthermore, it shall be the Contractor's responsibility to enforce compliance with this provision by any subcontractor.

7.39 COST OR PRICING DATA. Cost or pricing data must be submitted to the Agency purchasing officer and timely certified as accurate for contracts over \$100,000 unless the contract is for a multiple-term or as otherwise specified by the procurement officer. Unless otherwise required by the Agency procurement officer, cost or pricing data submission is not required for Contracts awarded pursuant to competitive sealed bid procedures. If certified cost or pricing data are subsequently found to have been inaccurate, incomplete, or noncurrent as of the date stated in the certificate, the STATE is entitled to an adjustment of the contract price, including profit or fee, to exclude any significant sum by which the price, including profit or fee, was increased because of the defective data. It is presumed that overstated cost or pricing data increased the contract price in the amount of the defect plus related overhead and profit or fee. Therefore, unless there is a clear indication that the defective data was not used or relied upon, the price will be reduced in such amount.

7.39.1 AUDIT OF COST OR PRICING DATA. When cost or pricing principles are applicable, the STATE may require an audit of cost or pricing data.

7.40 CONFIDENTIALITY OF MATERIAL

7.40.1 All material given to or made available to the CONTRACTOR by virtue of this Contract, which is identified as proprietary or confidential information, will be safeguarded by the CONTRACTOR and

shall not be disclosed to any individual or organization without the prior written approval of the STATE.

- 7.40.2 All information, data, or other material provided by the CONTRACTOR to the STATE shall be subject to the Uniform Information Practices Act, chapter 92F, HRS.
- 7.41 **PUBLICITY.** The CONTRACTOR shall not refer to the STATE, or any office, agency, or officer thereof, or any State employee, including the head of the purchasing agency, the Chief Procurement Officer, the Director, the Agency procurement officer, or to the services or goods, or both, provided under this Contract, in any of the CONTRACTOR's brochures, advertisements, or other publicity of the CONTRACTOR. All media contacts with the CONTRACTOR about the subject matter of this Contract shall be referred to the Agency procurement officer.
- 7.42 **OWNERSHIP RIGHTS AND COPYRIGHT.** The STATE shall have complete ownership of all material, both finished and unfinished which is developed, prepared, assembled, or conceived by the CONTRACTOR pursuant to this Contract, and all such material shall be considered "works made for hire." All such material shall be delivered to the STATE upon expiration or termination of this Contract. The STATE, in its sole discretion, shall have the exclusive right to copyright any product, concept, or material developed, prepared, assembled, or conceived by the CONTRACTOR pursuant to this Contract.
- 7.43 **GOVERNING LAW.** The validity of this Contract and any of its terms or provisions, as well as the rights and duties of the parties to this Contract, shall be governed by the laws of the State of Hawaii. Any action at law or in equity to enforce or interpret the provisions of this Contract shall be brought in a state court of competent jurisdiction in Honolulu, Hawaii.
- 7.44 **SEVERABILITY.** In the event that a court declares any provision of this Contract invalid or unenforceable, such invalidity or unenforceability shall not affect the validity or enforceability of the remaining terms of this Contract.
- 7.45 **WAIVER.** The failure of the STATE to insist upon the strict compliance with any term, provision, or condition of this Contract, shall not constitute or be deemed to constitute a waiver or relinquishment of the STATE's right to enforce the same in accordance with this Contract. The fact that the STATE specifically refers to one provision of the Procurement Rules or one section of the Hawaii Revised Statutes, and does not include other provisions or statutory sections in this Contract shall not constitute a waiver or relinquishment of the STATE's rights or the CONTRACTOR's obligations under the Procurement Rules or statutes.
- 7.46 **UTILITIES AND SERVICES**
- 7.46.1 Where its operations are next to or near properties of utility companies or other property, the CONTRACTOR shall not start work until the CONTRACTOR makes arrangements necessary for the protection of said property.
- 7.46.2 The CONTRACTOR shall cooperate, coordinate and schedule its work to suit the owners of underground or overhead utility lines or other property in removing or altering such lines or providing new services in order for the work to progress according to the contract. Cooperation includes rearranging the CONTRACTOR's operations and normal work schedules and realignment of work as approved by the Department in order to accommodate the operations and work of the utilities and/or other property in and around the work site at no additional cost to the Department.

- 7.46.3 The CONTRACTOR shall contact all the various utility companies before the start of the work to ascertain any existing utilities and to develop a full understanding of the utility requirements with respect to this project. The CONTRACTOR shall furnish the Project Manager with evidence that the CONTRACTOR has contacted the utility companies.
- 7.46.4 If the CONTRACTOR discovers that the existence and location of utilities in the contract plans are not correct, the CONTRACTOR shall not disturb the utilities and immediately notify the Project Manager. The Project Manager will advise the CONTRACTOR regarding actions to take.
- 7.46.5 The CONTRACTOR shall ascertain the exact location and depth of utilities within the project area. The CONTRACTOR shall mark such locations to warn workers or equipment operators of their existence and location. The CONTRACTOR shall be responsible to acquaint personnel working near utilities with the type, size, location and depth of the utilities and the consequences that might result from disturbances. The CONTRACTOR shall not start trenching or start similar operations until the CONTRACTOR has taken reasonable and appropriate precautions to protect the utilities.
- 7.46.6 Any utilities or other property that the CONTRACTOR encounters during the progress of the work, such as telephone ducts, electric ducts, water lines, sewer lines, electric lines and drainage pipes, whether shown or not on the contract plans, shall not be disturbed or damaged unless otherwise instructed in the plans and specifications.
- 7.46.7 In the event the utilities or other property are damaged or disturbed by the CONTRACTOR, the CONTRACTOR shall be liable for all such damage where the utilities or other property are:
- (a) Shown on the plan in its actual or approximate location; or
 - (b) Exposed on the job as it progresses; or
 - (c) Pointed out to the CONTRACTOR in the field.
- 7.46.8 Such utilities or other property as described above shall be "known utilities or other property." If the CONTRACTOR encounters an unknown utility or other property, it shall not proceed until it has notified the Project Manager and receives instructions. If the Project Manager directs additional work, it shall be paid for under Section 4.2, CHANGES.
- 7.46.9 The CONTRACTOR shall repair and restore to pre-damaged condition any utilities or any other property it may damage, and it shall be liable for any and all resulting damage at no cost to the Department, the work or utility owner or property owner. Any damage claim due to the disruption of service caused by the utilities being damaged shall be paid by the CONTRACTOR who shall defend, indemnify and hold harmless the Department from all suits, actions or claims of any character brought on account of such damages, whether or not the Department may have been partially at fault. Public liability and property damage insurance to be obtained by the CONTRACTOR pursuant to Section 7.3 INSURANCE REQUIREMENTS shall cover such risk of damage.
- 7.46.10 In the event the CONTRACTOR simultaneously with the discovery of an unknown utility or other property damages that utility or other property, the CONTRACTOR shall not be held liable beyond the extent of the CONTRACTOR's liability insurance but shall immediately notify the Project Manager. Upon instruction from the Project Manager, the CONTRACTOR shall repair all damages and execute a plan for dealing with the damaged utility or other property. This repair work shall be considered additional work as covered in Section 4.2, CHANGES.

~END OF ARTICLE 7~

ARTICLE 8: MEASUREMENT AND PAYMENT

8.1 MEASUREMENT OF QUANTITIES

8.1.1 All work completed under the Contract shall be measured by the Project Manager according to United States standard measures, or as stated in this Contract. The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the contract shall conform to good Managing practice. These measurements shall be considered correct and final unless the Contractor has protested same to the Project Manager and has demonstrated the existence of an error by actual physical measurement before the work has progressed in a manner, which would prohibit a proper check.

8.1.2 All measurements of the area of the various surfaces, pavement and base courses will be made in the horizontal projection of the actual surface and no deductions will be made for fixtures or structures having an area of nine (9) square feet or less. All measurements of headers, curbs, fences and any other type of construction which is to be paid for by its length will be made in the horizontal projection of the actual driven length from toe to top of cutoff, and for piles, which will be by actual length. All materials which are specified for measurement by the cubic yard "Loose Measurement" or "Measured in the Vehicle" shall be hauled in approved vehicles and measured therein at the point of delivery. Approved vehicles for this purpose may be of any type or size satisfactory to the Project Manager, provided that the body is of such type that the actual contents may be readily and accurately determined. Unless all approved vehicles on a job are of a uniform capacity each approved vehicle must bear a plainly legible identification mark indicating the specific approved capacity. The Inspector may reject all loads not hauled in such approved vehicles.

8.2 **NO WAIVER OF LEGAL RIGHTS.** The Project Manager shall not be precluded or estopped by any measurements, estimate or certificate made either before or after the completion and acceptance of the work and payment therefor, from showing the true amount and character of the work performed and materials furnished by the Contractor, or from showing that any such measurement estimate or certificate is untrue or incorrectly made, or rejecting the work or materials that do not conform in fact to the contract. The Project Manager shall not be precluded or estopped, notwithstanding any such measurement, estimate, or certificate and payment in accordance therewith, from recovering from the Contractor and its sureties such damages as the Department may sustain by reason of the Contractor's failure to comply with the terms of the Contract. Neither the acceptance by the Project Manager or any representative of the Project Manager, nor any payment for or acceptance of the whole or any part of the work, nor any extension of time, or any possession taken by the Project Manager, shall operate as a waiver of any portion of the contract, or of any power herein reserved, or any right to damage herein provided. A waiver of any notice requirement or breach of the contract shall not be held to be a waiver of any other notice requirement or subsequent breach.

8.3 PAYMENT FOR ADDITIONAL WORK

8.3.1 Additional work as defined in Section 4.2, **CHANGES**, when ordered, shall be paid for as defined in Section 4.4, **PRICE ADJUSTMENT** by a duly issued change order in accordance with the terms provided therein.

8.3.2 On credit proposals and proposals covering both increases and decreases, the application of overhead and profit shall be on the net change in direct costs for the performance of the work.

8.3.3 When payment is to be made for additional work directed by a Field Order, the total price adjustment as specified in the Field Order or if not specified therein for the work contained in the related change

order shall be considered full compensation for all materials, labor, insurance, taxes, equipment use or rental and overheads, both field and home office including extended home and branch office overhead and other related delay impact costs.

- 8.3.4 **FORCE ACCOUNT METHOD.** When, for the convenience of the Department, payment is to be made by the Force Account method, all work performed or labor and materials and equipment furnished shall be paid for as described below. Payment by the Force Account method will not alter any rights, duties and obligations under the contract.
- 8.3.4.1 **LABOR.** For all hourly workers, the Contractor will receive the rate of wage including fringe benefits when such amounts are required by collective bargaining agreement or other employment contract generally applicable to the classes of labor employed on the work, which shall be agreed upon in writing before beginning work for each and every hour that said labor is actually engaged in said work.
- (a) All markups for overhead and profit shall be added subject to limitations established in Section 4.5, **ALLOWANCES FOR OVERHEAD AND PROFIT.**
 - (b) No allowance for overtime compensation will be given without the written approval of the Project Manager prior to performance of such work.
- 8.3.4.2 **INSURANCE AND TAXES.** The Contractor and subcontractor(s) will also receive the actual additional costs paid for property damage, liability, worker's compensation insurance premiums, State unemployment contributions, Federal unemployment taxes, social security and Medicare taxes.
- 8.3.4.3 **MATERIALS.** For materials accepted by the Project Manager and used, the Contractor and subcontractor(s) shall receive the actual cost of such materials delivered and incorporated into work, plus a markup allowed under Section 4.5, **ALLOWANCES FOR OVERHEAD AND PROFIT.**
- 8.3.4.4 **SUBCONTRACTORS.** Subcontractor costs shall be the actual costs of the subcontractor marked up as defined in this Section 8.3, **PAYMENT FOR ADDITIONAL WORK** plus a markup allowed under Section 4.5, **ALLOWANCES FOR OVERHEAD AND PROFIT.**
- 8.3.4.5 **EQUIPMENT**
- (a) For machinery or special equipment (other than small tools as herein defined in Subsection 8.3.4.5.(h) owned or leased by the Contractor or a related entity, the use of which has been authorized by the Project Manager:
 - (1) The Contractor will be paid at the per-hour rental rates based on the monthly rate established for said machinery or equipment in the then-current edition of the Rental Rate Blue Book for Construction Equipment including the estimated operating cost per hour and regional correction provided therein.
 - (2) If no rate is listed for a particular kind, type or size of machinery or equipment, then the monthly, hourly rates shall be as agreed upon in writing by the Contractor and the Project Manager prior to the use of said machinery or equipment. If there is no agreement, the Project Manager will set a rate. The Contractor may contest the rate pursuant to Section 7.25, **DISPUTES AND CLAIMS.**
 - (3) Rental rates which are higher than those specified in the aforesaid Rental Rate Blue Book publication may be allowed where such higher rates can be justified by job conditions such as work in water and work on lava, etc. Request for such higher rates shall be submitted in writing to the Project Manager for approval prior to the use of the machinery or equipment in question.

- (b) For machinery or special equipment [other than small tools as herein defined in clause 8.3.4.5 (h)] rented by the Contractor or a related entity specifically for the Force Account work, the use of which has been authorized by the Project Manager, the Contractor will be paid the actual rental cost for the machinery or equipment, including mobilization and demobilization costs. A receipt from the equipment supplier shall be submitted to the Project Manager.
- (c) For machinery or special equipment [other than small tools as herein defined in clause 8.3.4.5 (h)] rented by the Contractor or a related entity for use in the project, but which will also be used for the Force Account work, the use of which has been authorized by the Project Manager, the Contractor will be paid the actual rental cost for the machinery or equipment. No additional mobilization and demobilization costs will be paid. A receipt from the equipment supplier shall be submitted to the Project Manager.
- (d) The rental rate for trucks not owned by the Contractor shall be those as established under the Hawaii State Public Utilities Commission, which will be paid for as an equipment item pursuant to Subsection 8.3.4.5, EQUIPMENT. Rental rates for Contractor owned trucks not listed in the Rental Rate Blue Book shall be agreed upon in writing by the Contractor and Project Manager prior to the use of said trucks. If there is no agreement, the Project Manager shall set the rate. The Contractor may contest the rate pursuant to Section 7.25, DISPUTES AND CLAIMS.
- (e) The rental period shall begin at the time equipment reaches the site of work, shall include each day that the machinery or equipment is at the site of the work and shall terminate at the end of the day on which the equipment is no longer needed. In the event the equipment must standby due to work being delayed or halted by reason of design, traffic, or other related problems uncontrollable by the Contractor, excluding Saturdays, Sundays and Legal Holidays, unless the equipment is used to perform work on such days, the rental shall be two (2) hours per day until the equipment is no longer needed.
 - (1) The rental time to be paid will be for the time actually used. The Project Manager prior to the performance of such work must approve any hours or operation in excess of eight (8) hours in any one (1) day.
 - (2) Rental time will not be allowed or credited for any day on which machinery or equipment is inoperative due to its breakdown. On such days, the Contractor will be paid only for the actual hours, if any, that the machinery or equipment was in operation.
 - (3) In the event the Force Account work is completed in less than eight (8) hours, equipment rental shall nevertheless be paid for a minimum eight (8) hours.
 - (4) For the purpose of determining the rental period the continuous and consecutive days shall be the normal eight (8) hour shift work day, Monday through Friday excluding legal holidays. Any work day to be paid less than eight (8) hours shall not be considered as continuous, except for equipment removed from rental for fuel and lubrication.
 - (5) No additional premium beyond the normal rates used will be paid for equipment over eight (8) hours per day or forty (40) hours per week.
- (f) All rental rates for machinery and equipment shall include the cost of fuel, oil, lubricants, supplies, small tools, necessary attachments, repairs, maintenance, tire wear, depreciation, storage, and all other incidentals.

- (g) All machinery and equipment shall be in good working condition and suitable for the purpose for which the machinery and equipment is to be used.
- (h) Individual pieces of equipment or tools having a replacement value of \$2,000 (two thousand dollars) or less, whether or not consumed by use, shall be considered to be small tools and included in the allowed markup for overhead and profit and no separate payment will be made therefor.
- (i) The total of all Force Account rental charges accrued over the duration of the contract for a specific item of equipment shall not exceed the replacement cost of that equipment.
 - (1) The Contractor shall provide the cost of replacement to the Project Manager prior to using the equipment. If the Project Manager does not agree with the replacement cost, the Project Manager shall set the replacement cost. The Contractor may contest the replacement cost pursuant to Section 7.25, DISPUTES AND CLAIMS.
- (j) Should the item of equipment be rented from an unrelated entity, the rental cost will be treated as equipment cost under Subsection 8.3.4.5, EQUIPMENT.
- (k) Transportation and/or Mobilization: The following provisions shall govern in determining the compensation to be paid to the Contractor for use of equipment or machinery on the Force Account method:
 - (1) The Project Manager shall approve the location from which the equipment is to be moved or transported.
 - (2) Where the equipment must be transported to the site of the Force Account work, the Department will pay the reasonable cost of mobilizing and transporting the equipment, including its loading and unloading, from its original location to the site of Force Account work. Upon completion of the work the Department will pay the reasonable cost of mobilizing and transporting the equipment back to its original location or to another location, whichever cost is less.
 - (3) The cost of transporting the equipment shall not exceed the rates established by the Hawaii State Public Utilities Commission. If such rates are nonexistent, then the rates will be determined by the Project Manager based upon the prevailing rates charged by established haulers within the locale.
 - (4) Where the equipment is self-propelled, the Department will pay the cost of moving the equipment by its own power from its original location to the site of the Force Account work. Upon completion of the work the Department will pay the reasonable cost of moving of the Equipment back to its original or another location, whichever cost is less.
 - (5) At the discretion of the Project Manager, when the Contractor desires to use such equipment for other than Force Account work, the costs of mobilization and transportation shall be prorated between the Force Account and non- Force Account work.
- (l) Pickup trucks, vans, storage trailers, unless specifically rented for the Force Account work, shall be considered incidental to the Force Account work and the costs therefor are included in the markup allowed under Section 4.5, ALLOWANCES FOR OVERHEAD AND PROFIT.

- 8.3.4.6 **STATE EXCISE (GROSS INCOME) TAX AND BOND.** A sum equal to the current percentage rate for the State excise (Gross Income) tax on the total sum determined in Subsections 8.3.4.1, 8.3.4.2, 8.3.4.3 and 8.3.4.4 above, and the bond premium shall be added as compensation to the Contractor. The actual bond premium not to exceed one percent (1%) shall be added to items covered by Subsections 8.3.4.1, 8.3.4.2, 8.3.4.3 and 8.3.4.4 when applicable.
- (a) The compensation as determined in Subsections 8.3.4.1, 8.3.4.2, 8.3.4.3, 8.3.4.4 and 8.3.4.5 above shall be deemed to be payment in full for work paid on a Force Account basis.
- 8.3.4.7 **RECORDS.** The Contractor and the Project Manager shall compare records of the labor, materials and equipment rentals paid by the Force Account basis at the end of each day. These daily records, if signed by both parties, shall thereafter be the basis for the quantities to be paid for by the Force Account method. The Contractor shall not be entitled to payment for Force Account records not signed by the Project Manager.
- 8.3.4.8 **STATEMENTS.** No payment will be made for work on a Force Account basis until the Contractor has submitted to the Project Manager, duplicate itemized statements of the cost of such Force Account work detailed as follows:
- (a) **Laborers.** Name, classification, date, daily hours, total hours, rate, and extension for each laborer and foreman and also the amount of fringe benefits payable if any.
- (b) **Equipment.** Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment.
- (c) **Materials:**
- (1) Quantities of materials, prices and extensions.
- (2) Costs of transporting materials, if such cost is not reflected in the prices of the materials.
- (3) Statements shall be accompanied and supported by receipted invoices for all materials used and transportation charges. However, if materials used on the Force Account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices the Contractors shall submit an affidavit certifying that such materials were taken from stock and that the amount claimed represents the actual cost to the Contractor.
- (d) **Insurance.** Cost of property damage, liability and worker's compensation insurance premiums, unemployment insurance contributions, and social security tax.
- 8.4 **PROGRESS AND/OR PARTIAL PAYMENTS**
- 8.4.1 **PROGRESS PAYMENTS.** The Contractor will be allowed progress payments on a monthly basis upon preparing the Monthly Payment Application forms and submitting the originals to the Project Manager. The monthly payment shall be based on the items of work satisfactorily completed and the value thereof at unit prices and/or lump sum prices set forth in the contract as determined by the Project Manager and will be subject to compliance with Section 7.9, PAYROLLS AND PAYROLL RECORDS.
- 8.4.1.1 **ORIGINAL INVOICES REQUIRED.** All payments under this Contract shall be made only upon submission by the CONTRACTOR of original invoices specifying the amount due and certifying that services requested under the Contract have been performed by the CONTRACTOR according to the Contract.
- 8.4.1.2 **SUBJECT TO AVAILABLE FUNDS.** Such payments are subject to availability of funds and allotment by the Director of Finance in accordance with chapter 37, HRS. Further, all payments shall be made in accordance with and subject to chapter 40, HRS.

- 8.4.2 In the event the Contractor or any Subcontractor fails to submit certified copies of payrolls in accordance with the requirements of Section 7.9, PAYROLLS AND PAYROLL RECORDS, the Project Manager may retain the amount due for items of work for which payroll affidavits have not been submitted on a timely basis notwithstanding satisfactory completion of the work until such records have been duly submitted. The Contractor shall not be due any interest payment for any amount thus withheld.
- 8.4.3 PARTIAL PAYMENT FOR MATERIALS. The Contractor will also be allowed partial payments to the extent of ninety percent (90%) of the manufacturer's, supplier's, distributor's or fabricator's invoice cost of accepted materials to be incorporated in the work on the following conditions:
- 8.4.3.1 The materials are delivered and properly stored at the site of the work; or
- 8.4.3.2 For special items of materials accepted by the Project Manager, the materials are delivered to the Contractor or subcontractor(s) and properly stored in an acceptable location within a reasonable distance to the site of the work.
- 8.4.4 Partial payments shall be made only if the Project Manager finds that:
- 8.4.4.1 The Contractor has submitted bills of sale for the materials or otherwise demonstrates clear title to such materials.
- 8.4.4.2 The materials are insured for their full replacement value to the benefit of the Department against theft, fire, damages incurred in transportation to the site, and other hazards.
- 8.4.4.3 The materials are not subject to deterioration.
- 8.4.4.4 In case of materials stored off the project site, the materials are not commingled with other materials not to be incorporated into the project.
- 8.4.5 FEDERAL FUNDS. If this Contract is payable in whole or in part from federal funds, Contractor agrees that, as to the portion of the compensation under this Contract to be payable from federal funds, the Contractor shall be paid only from such funds received from the federal government, and shall not be paid from any other funds.
- 8.4.6 Final Payment Requirements (§3-122-112, HAR). Upon receipt of the Contractor's invoice for final payment, the Department shall verify compliance with Section 103D-328 HRS via Hawaii Compliance Express (HCE).
- 8.5 PROMPT PAYMENT (§3-125-23 HAR)
- 8.5.1 Any money, other than retainage, paid to the CONTRACTOR shall be dispersed to subcontractors within ten days after receipt of the money in accordance with the terms of the subcontract; provided that the subcontractor has met all the terms and conditions of the subcontract and there are no bona fide disputes; and
- 8.5.2 BONA FIDE DISPUTES. The existence of a bona fide dispute with a subcontractor or material supplier shall not release the Contractor of its prompt payment obligations as to all sums due that are not directly affected by such dispute.

- 8.5.3 FILING NON-PAYMENT COMPLAINT. Subcontractors and material suppliers may file in writing a complaint with the Chairman regarding non-payment by the Contractor. Such complaint shall include:
- 8.5.3.1 The amount past due for work performed and already paid for by the Department;
- 8.5.3.2 That all the terms, conditions or requirements of its subcontract have been met; and
- 8.5.3.3 That no bona fide dispute over its performance exists. The Department will investigate the validity of the complaint.
- 8.5.4 The Department may withhold from future progress payments amounts to cover any sums paid to the Contractor for work performed by a subcontractor if the Department finds that the subcontractor complaint regarding non-payment by the Contractor has merit.
- 8.5.5 If the Project Manager determines that the Contractor failed to make prompt payment required to a subcontractor or material supplier with whom it has no bona fide dispute, the Project Manager shall inform the Contractor of the findings and request the Contractor make payment accordingly. If the Contractor does not act promptly, the Project Manager shall take appropriate action as allowed under this Contract and/or refer the matter to the Contractor Licensing Board for appropriate action under Section 444-17, Hawaii Revised Statutes regarding the Revocation, Suspension and Renewal of (Contractor) Licenses and/or initiate a petition for debarment of the Contractor from bidding on other Department jobs.
- 8.6 RETAINAGE
- 8.6.1 The Department will retain five percent (5%) of the total amount of progress and / or partial payments until after completion of the entire Contract in an acceptable manner at which time this balance, less any previous payments, will be certified and paid to the Contractor. After fifty percent (50%) of the work is completed and progress is satisfactory, no additional sum will be withheld. If progress is not satisfactory, the Department may continue to withhold retainage sums not exceeding five percent (5%) of the amount due the Contractor.
- 8.6.1.1 Contractor may withhold from amounts due its subcontractors, only the same percentage of retainage as that of the Contractor, and only if its subcontractors have provided valid performance and payments bonds or other bond or collateral acceptable to the Contractor.
- 8.6.1.2 Contractor or Subcontractor may negotiate with, and retain from its respective subcontractors, a different retainage percentage which cannot exceed ten percent (10%).
- 8.6.2 The retainage shall not include sums deducted as liquidated damages from monies due or that may become due the Contractor under the Contract.
- 8.6.3 Subject to approval by the Chairman, and at the Chairman's sole discretion, Contractor may withdraw from time to time the whole or any portion of the sum retained after endorsing over to the Department and depositing with the Department any general obligation bond of the State or its political subdivisions suitable to the Department but in no case with a face value less than the value established by law of the amount to be withdrawn. The Department may sell the bond and use the proceeds therefrom in the same way as it may use monies directly retained from progress payments or the final payment.

- 8.7 **WARRANTY OF CLEAR TITLE.** The Contractor warrants and guarantees that all work and materials covered by progress or partial payments made thereon shall be free and clear of all liens, claims, security interests or encumbrances, and shall become the sole property of the Department. This provision shall not, however, be construed as an acceptance of the work nor shall it be construed as relieving the Contractor from the sole responsibility for all materials and work upon which payments have been made or the restoration of any damaged work, or as waiving the right of the Department to require the fulfillment of all the items of the Contract.
- 8.7.1 **LIENS AND WARRANTIES.** Goods provided under this Contract shall be provided free of all liens and provided together with all applicable warranties, or with the warranties described in the Contract documents, whichever are greater.
- 8.8 **FINAL PAYMENT**
- 8.8.1 Upon final payment to the CONTRACTOR, full payment to the subcontractor, including retainage, shall be made within ten days after receipt of the money; provided that there are no bona fide disputes over the subcontractor's performance under the subcontract.
- 8.8.2 Sums necessary to meet any claims of any kind by the Department may be retained from the sums due the Contractor until said claims have been fully and completely discharged or otherwise satisfied.
- 8.9 **STATE'S RIGHT TO OFFSET.** The STATE may offset against any monies or other obligations the STATE owes to the CONTRACTOR under this Contract, any amounts owed to the State of Hawaii by the CONTRACTOR under this Contract or any other Contracts or pursuant to any law or other obligation owed to the State of Hawaii by the CONTRACTOR, including, without limitation, the payment of any taxes or levies of any kind or nature. The STATE will notify the CONTRACTOR in writing of any offset and the nature of such offset. For purposes of this Subsection, amounts owed to the State of Hawaii shall not include debts or obligations which have been liquidated, agreed to by the CONTRACTOR, and are covered by an installment payment or other settlement plan approved by the State of Hawaii, provided, however, that the CONTRACTOR shall be entitled to such exclusion only to the extent that the CONTRACTOR is current with, and not delinquent on, any payments or obligations owed to the State of Hawaii under such payment or other settlement plan.

~END OF ARTICLE 8~

GENERAL CONDITIONS

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GENERAL CONDITIONS

1. Coordination of Services by the STATE. The head of the purchasing agency ("HOPA") (which term includes the designee of the HOPA) shall coordinate the services to be provided by the CONTRACTOR in order to complete the performance required in the Contract. The CONTRACTOR shall maintain communications with HOPA at all stages of the CONTRACTOR'S work, and submit to HOPA for resolution any questions which may arise as to the performance of this Contract. "Purchasing agency" as used in these General Conditions means and includes any governmental body which is authorized under chapter 103D, HRS, or its implementing rules and procedures, or by way of delegation, to enter into contracts for the procurement of goods or services or both.
2. Relationship of Parties: Independent Contractor Status and Responsibilities, Including Tax Responsibilities.
 - a. In the performance of services required under this Contract, the CONTRACTOR is an "independent contractor," with the authority and responsibility to control and direct the performance and details of the work and services required under this Contract; however, the STATE shall have a general right to inspect work in progress to determine whether, in the STATE'S opinion, the services are being performed by the CONTRACTOR in compliance with this Contract. Unless otherwise provided by special condition, it is understood that the STATE does not agree to use the CONTRACTOR exclusively, and that the CONTRACTOR is free to contract to provide services to other individuals or entities while under contract with the STATE.
 - b. The CONTRACTOR and the CONTRACTOR'S employees and agents are not by reason of this Contract, agents or employees of the State for any purpose, and the CONTRACTOR and the CONTRACTOR'S employees and agents shall not be entitled to claim or receive from the State any vacation, sick leave, retirement, workers' compensation, unemployment insurance, or other benefits provided to state employees.
 - c. The CONTRACTOR shall be responsible for the accuracy, completeness, and adequacy of the CONTRACTOR'S performance under this Contract. Furthermore, the CONTRACTOR intentionally, voluntarily, and knowingly assumes the sole and entire liability to the CONTRACTOR'S employees and agents, and to any individual not a party to this Contract, for all loss, damage, or injury caused by the CONTRACTOR, or the CONTRACTOR'S employees or agents in the course of their employment.
 - d. The CONTRACTOR shall be responsible for payment of all applicable federal, state, and county taxes and fees which may become due and owing by the CONTRACTOR by reason of this Contract, including but not limited to (i) income taxes, (ii) employment related fees, assessments, and taxes, and (iii) general excise taxes. The CONTRACTOR also is responsible for obtaining all licenses, permits, and certificates that may be required in order to perform this Contract.
 - e. The CONTRACTOR shall obtain a general excise tax license from the Department of Taxation, State of Hawaii, in accordance with section 237-9, HRS, and shall comply with all requirements thereof. The CONTRACTOR shall obtain a tax clearance certificate from the Director of Taxation, State of Hawaii, and the Internal Revenue Service, U.S. Department of the Treasury, showing that all delinquent taxes, if any, levied or accrued under state law and the Internal Revenue Code of 1986, as amended, against the CONTRACTOR have been paid and submit the same to the STATE prior to commencing any performance under this Contract. The CONTRACTOR shall also be solely responsible for meeting all requirements necessary to obtain the tax clearance certificate required for final payment under sections 103-53 and 103D-328, HRS, and paragraph 17 of these General Conditions.
 - f. The CONTRACTOR is responsible for securing all employee-related insurance coverage for the CONTRACTOR and the CONTRACTOR'S employees and agents that is or may be required by law, and for payment of all premiums, costs, and other liabilities associated with securing the insurance coverage.

- g. The CONTRACTOR shall obtain a certificate of compliance issued by the Department of Labor and Industrial Relations, State of Hawaii, in accordance with section 103D-310, HRS, and section 3-122-112, HAR, that is current within six months of the date of issuance.
- h. The CONTRACTOR shall obtain a certificate of good standing issued by the Department of Commerce and Consumer Affairs, State of Hawaii, in accordance with section 103D-310, HRS, and section 3-122-112, HAR, that is current within six months of the date of issuance.
- i. In lieu of the above certificates from the Department of Taxation, Labor and Industrial Relations, and Commerce and Consumer Affairs, the CONTRACTOR may submit proof of compliance through the State Procurement Office's designated certification process.

3. Personnel Requirements.

- a. The CONTRACTOR shall secure, at the CONTRACTOR'S own expense, all personnel required to perform this Contract.
- b. The CONTRACTOR shall ensure that the CONTRACTOR'S employees or agents are experienced and fully qualified to engage in the activities and perform the services required under this Contract, and that all applicable licensing and operating requirements imposed or required under federal, state, or county law, and all applicable accreditation and other standards of quality generally accepted in the field of the activities of such employees and agents are complied with and satisfied.

4. Nondiscrimination. No person performing work under this Contract, including any subcontractor, employee, or agent of the CONTRACTOR, shall engage in any discrimination that is prohibited by any applicable federal, state, or county law.

5. Conflicts of Interest. The CONTRACTOR represents that neither the CONTRACTOR, nor any employee or agent of the CONTRACTOR, presently has any interest, and promises that no such interest, direct or indirect, shall be acquired, that would or might conflict in any manner or degree with the CONTRACTOR'S performance under this Contract.

6. Subcontracts and Assignments. The CONTRACTOR shall not assign or subcontract any of the CONTRACTOR'S duties, obligations, or interests under this Contract and no such assignment or subcontract shall be effective unless (i) the CONTRACTOR obtains the prior written consent of the STATE, and (ii) the CONTRACTOR'S assignee or subcontractor submits to the STATE a tax clearance certificate from the Director of Taxation, State of Hawaii, and the Internal Revenue Service, U.S. Department of Treasury, showing that all delinquent taxes, if any, levied or accrued under state law and the Internal Revenue Code of 1986, as amended, against the CONTRACTOR'S assignee or subcontractor have been paid. Additionally, no assignment by the CONTRACTOR of the CONTRACTOR'S right to compensation under this Contract shall be effective unless and until the assignment is approved by the Comptroller of the State of Hawaii, as provided in section 40-58, HRS.

- a. Recognition of a successor in interest. When in the best interest of the State, a successor in interest may be recognized in an assignment contract in which the STATE, the CONTRACTOR and the assignee or transferee (hereinafter referred to as the "Assignee") agree that:

- (1) The Assignee assumes all of the CONTRACTOR'S obligations;
- (2) The CONTRACTOR remains liable for all obligations under this Contract but waives all rights under this Contract as against the STATE; and
- (3) The CONTRACTOR shall continue to furnish, and the Assignee shall also furnish, all required bonds.

- b. Change of name. When the CONTRACTOR asks to change the name in which it holds this Contract with the STATE, the procurement officer of the purchasing agency (hereinafter referred to as the "Agency procurement officer") shall, upon receipt of a document acceptable or satisfactory to the

Agency procurement officer indicating such change of name (for example, an amendment to the CONTRACTOR'S articles of incorporation), enter into an amendment to this Contract with the CONTRACTOR to effect such a change of name. The amendment to this Contract changing the CONTRACTOR'S name shall specifically indicate that no other terms and conditions of this Contract are thereby changed.

- c. Reports. All assignment contracts and amendments to this Contract effecting changes of the CONTRACTOR'S name or novations hereunder shall be reported to the chief procurement officer (CPO) as defined in section 103D-203(a), HRS, within thirty days of the date that the assignment contract or amendment becomes effective.
 - d. Actions affecting more than one purchasing agency. Notwithstanding the provisions of subparagraphs 6a through 6c herein, when the CONTRACTOR holds contracts with more than one purchasing agency of the State, the assignment contracts and the novation and change of name amendments herein authorized shall be processed only through the CPO's office.
- 7. Indemnification and Defense. The CONTRACTOR shall defend, indemnify, and hold harmless the State of Hawaii, the contracting agency, and their officers, employees, and agents from and against all liability, loss, damage, cost, and expense, including all attorneys' fees, and all claims, suits, and demands therefore, arising out of or resulting from the acts or omissions of the CONTRACTOR or the CONTRACTOR'S employees, officers, agents, or subcontractors under this Contract. The provisions of this paragraph shall remain in full force and effect notwithstanding the expiration or early termination of this Contract.
 - 8. Cost of Litigation. In case the STATE shall, without any fault on its part, be made a party to any litigation commenced by or against the CONTRACTOR in connection with this Contract, the CONTRACTOR shall pay all costs and expenses incurred by or imposed on the STATE, including attorneys' fees.
 - 9. Liquidated Damages. When the CONTRACTOR is given notice of delay or nonperformance as specified in paragraph 13 (Termination for Default) and fails to cure in the time specified, it is agreed the CONTRACTOR shall pay to the STATE the amount, if any, set forth in this Contract per calendar day from the date set for cure until either (i) the STATE reasonably obtains similar goods or services, or both, if the CONTRACTOR is terminated for default, or (ii) until the CONTRACTOR provides the goods or services, or both, if the CONTRACTOR is not terminated for default. To the extent that the CONTRACTOR'S delay or nonperformance is excused under paragraph 13d (Excuse for Nonperformance or Delay Performance), liquidated damages shall not be assessable against the CONTRACTOR. The CONTRACTOR remains liable for damages caused other than by delay.
 - 10. STATE'S Right of Offset. The STATE may offset against any monies or other obligations the STATE owes to the CONTRACTOR under this Contract, any amounts owed to the State of Hawaii by the CONTRACTOR under this Contract or any other contracts, or pursuant to any law or other obligation owed to the State of Hawaii by the CONTRACTOR, including, without limitation, the payment of any taxes or levies of any kind or nature. The STATE will notify the CONTRACTOR in writing of any offset and the nature of such offset. For purposes of this paragraph, amounts owed to the State of Hawaii shall not include debts or obligations which have been liquidated, agreed to by the CONTRACTOR, and are covered by an installment payment or other settlement plan approved by the State of Hawaii, provided, however, that the CONTRACTOR shall be entitled to such exclusion only to the extent that the CONTRACTOR is current with, and not delinquent on, any payments or obligations owed to the State of Hawaii under such payment or other settlement plan.
 - 11. Disputes. Disputes shall be resolved in accordance with section 103D-703, HRS, and chapter 3-126, Hawaii Administrative Rules ("HAR"), as the same may be amended from time to time.
 - 12. Suspension of Contract. The STATE reserves the right at any time and for any reason to suspend this Contract for any reasonable period, upon written notice to the CONTRACTOR in accordance with the provisions herein.
 - a. Order to stop performance. The Agency procurement officer may, by written order to the CONTRACTOR, at any time, and without notice to any surety, require the CONTRACTOR to stop all or any part of the performance called for by this Contract. This order shall be for a specified

period not exceeding sixty (60) days after the order is delivered to the CONTRACTOR, unless the parties agree to any further period. Any such order shall be identified specifically as a stop performance order issued pursuant to this section. Stop performance orders shall include, as appropriate: (1) A clear description of the work to be suspended; (2) Instructions as to the issuance of further orders by the CONTRACTOR for material or services; (3) Guidance as to action to be taken on subcontracts; and (4) Other instructions and suggestions to the CONTRACTOR for minimizing costs. Upon receipt of such an order, the CONTRACTOR shall forthwith comply with its terms and suspend all performance under this Contract at the time stated, provided, however, the CONTRACTOR shall take all reasonable steps to minimize the occurrence of costs allocable to the performance covered by the order during the period of performance stoppage. Before the stop performance order expires, or within any further period to which the parties shall have agreed, the Agency procurement officer shall either:

- (1) Cancel the stop performance order; or
 - (2) Terminate the performance covered by such order as provided in the termination for default provision or the termination for convenience provision of this Contract.
- b. Cancellation or expiration of the order. If a stop performance order issued under this section is cancelled at any time during the period specified in the order, or if the period of the order or any extension thereof expires, the CONTRACTOR shall have the right to resume performance. An appropriate adjustment shall be made in the delivery schedule or contract price, or both, and the Contract shall be modified in writing accordingly, if:
- (1) The stop performance order results in an increase in the time required for, or in the CONTRACTOR'S cost properly allocable to, the performance of any part of this Contract; and
 - (2) The CONTRACTOR asserts a claim for such an adjustment within thirty (30) days after the end of the period of performance stoppage; provided that, if the Agency procurement officer decides that the facts justify such action, any such claim asserted may be received and acted upon at any time prior to final payment under this Contract.
- c. Termination of stopped performance. If a stop performance order is not cancelled and the performance covered by such order is terminated for default or convenience, the reasonable costs resulting from the stop performance order shall be allowable by adjustment or otherwise.
- d. Adjustment of price. Any adjustment in contract price made pursuant to this paragraph shall be determined in accordance with the price adjustment provision of this Contract.

13. Termination for Default.

- a. Default. If the CONTRACTOR refuses or fails to perform any of the provisions of this Contract with such diligence as will ensure its completion within the time specified in this Contract, or any extension thereof, otherwise fails to timely satisfy the Contract provisions, or commits any other substantial breach of this Contract, the Agency procurement officer may notify the CONTRACTOR in writing of the delay or non-performance and if not cured in ten (10) days or any longer time specified in writing by the Agency procurement officer, such officer may terminate the CONTRACTOR'S right to proceed with the Contract or such part of the Contract as to which there has been delay or a failure to properly perform. In the event of termination in whole or in part, the Agency procurement officer may procure similar goods or services in a manner and upon the terms deemed appropriate by the Agency procurement officer. The CONTRACTOR shall continue performance of the Contract to the extent it is not terminated and shall be liable for excess costs incurred in procuring similar goods or services.
- b. CONTRACTOR'S duties. Notwithstanding termination of the Contract and subject to any directions from the Agency procurement officer, the CONTRACTOR shall take timely, reasonable, and

necessary action to protect and preserve property in the possession of the CONTRACTOR in which the STATE has an interest.

- c. Compensation. Payment for completed goods and services delivered and accepted by the STATE shall be at the price set forth in the Contract. Payment for the protection and preservation of property shall be in an amount agreed upon by the CONTRACTOR and the Agency procurement officer. If the parties fail to agree, the Agency procurement officer shall set an amount subject to the CONTRACTOR'S rights under chapter 3-126, HAR. The STATE may withhold from amounts due the CONTRACTOR such sums as the Agency procurement officer deems to be necessary to protect the STATE against loss because of outstanding liens or claims and to reimburse the STATE for the excess costs expected to be incurred by the STATE in procuring similar goods and services.
- d. Excuse for nonperformance or delayed performance. The CONTRACTOR shall not be in default by reason of any failure in performance of this Contract in accordance with its terms, including any failure by the CONTRACTOR to make progress in the prosecution of the performance hereunder which endangers such performance, if the CONTRACTOR has notified the Agency procurement officer within fifteen (15) days after the cause of the delay and the failure arises out of causes such as: acts of God; acts of a public enemy; acts of the State and any other governmental body in its sovereign or contractual capacity; fires; floods; epidemics; quarantine restrictions; strikes or other labor disputes; freight embargoes; or unusually severe weather. If the failure to perform is caused by the failure of a subcontractor to perform or to make progress, and if such failure arises out of causes similar to those set forth above, the CONTRACTOR shall not be deemed to be in default, unless the goods and services to be furnished by the subcontractor were reasonably obtainable from other sources in sufficient time to permit the CONTRACTOR to meet the requirements of the Contract. Upon request of the CONTRACTOR, the Agency procurement officer shall ascertain the facts and extent of such failure, and, if such officer determines that any failure to perform was occasioned by any one or more of the excusable causes, and that, but for the excusable cause, the CONTRACTOR'S progress and performance would have met the terms of the Contract, the delivery schedule shall be revised accordingly, subject to the rights of the STATE under this Contract. As used in this paragraph, the term "subcontractor" means subcontractor at any tier.
- e. Erroneous termination for default. If, after notice of termination of the CONTRACTOR'S right to proceed under this paragraph, it is determined for any reason that the CONTRACTOR was not in default under this paragraph, or that the delay was excusable under the provisions of subparagraph 13d, "Excuse for nonperformance or delayed performance," the rights and obligations of the parties shall be the same as if the notice of termination had been issued pursuant to paragraph 14.
- f. Additional rights and remedies. The rights and remedies provided in this paragraph are in addition to any other rights and remedies provided by law or under this Contract.

14. Termination for Convenience.

- a. Termination. The Agency procurement officer may, when the interests of the STATE so require, terminate this Contract in whole or in part, for the convenience of the STATE. The Agency procurement officer shall give written notice of the termination to the CONTRACTOR specifying the part of the Contract terminated and when termination becomes effective.
- b. CONTRACTOR'S obligations. The CONTRACTOR shall incur no further obligations in connection with the terminated performance and on the date(s) set in the notice of termination the CONTRACTOR will stop performance to the extent specified. The CONTRACTOR shall also terminate outstanding orders and subcontracts as they relate to the terminated performance. The CONTRACTOR shall settle the liabilities and claims arising out of the termination of subcontracts and orders connected with the terminated performance subject to the STATE'S approval. The Agency procurement officer may direct the CONTRACTOR to assign the CONTRACTOR'S right, title, and interest under terminated orders or subcontracts to the STATE. The CONTRACTOR must still complete the performance not terminated by the notice of termination and may incur obligations as necessary to do so.

- c. Right to goods and work product. The Agency procurement officer may require the CONTRACTOR to transfer title and deliver to the STATE in the manner and to the extent directed by the Agency procurement officer:

- (1) Any completed goods or work product; and
- (2) The partially completed goods and materials, parts, tools, dies, jigs, fixtures, plans, drawings, information, and contract rights (hereinafter called "manufacturing material") as the CONTRACTOR has specifically produced or specially acquired for the performance of the terminated part of this Contract.

The CONTRACTOR shall, upon direction of the Agency procurement officer, protect and preserve property in the possession of the CONTRACTOR in which the STATE has an interest. If the Agency procurement officer does not exercise this right, the CONTRACTOR shall use best efforts to sell such goods and manufacturing materials. Use of this paragraph in no way implies that the STATE has breached the Contract by exercise of the termination for convenience provision.

- d. Compensation.

- (1) The CONTRACTOR shall submit a termination claim specifying the amounts due because of the termination for convenience together with the cost or pricing data, submitted to the extent required by chapter 3-122, HAR, bearing on such claim. If the CONTRACTOR fails to file a termination claim within one year from the effective date of termination, the Agency procurement officer may pay the CONTRACTOR, if at all, an amount set in accordance with subparagraph 14d(3) below.
- (2) The Agency procurement officer and the CONTRACTOR may agree to a settlement provided the CONTRACTOR has filed a termination claim supported by cost or pricing data submitted as required and that the settlement does not exceed the total Contract price plus settlement costs reduced by payments previously made by the STATE, the proceeds of any sales of goods and manufacturing materials under subparagraph 14c, and the Contract price of the performance not terminated.
- (3) Absent complete agreement under subparagraph 14d(2) the Agency procurement officer shall pay the CONTRACTOR the following amounts, provided payments agreed to under subparagraph 14d(2) shall not duplicate payments under this subparagraph for the following:
 - (A) Contract prices for goods or services accepted under the Contract;
 - (B) Costs incurred in preparing to perform and performing the terminated portion of the performance plus a fair and reasonable profit on such portion of the performance, such profit shall not include anticipatory profit or consequential damages, less amounts paid or to be paid for accepted goods or services; provided, however, that if it appears that the CONTRACTOR would have sustained a loss if the entire Contract would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss;
 - (C) Costs of settling and paying claims arising out of the termination of subcontracts or orders pursuant to subparagraph 14b. These costs must not include costs paid in accordance with subparagraph 14d(3)(B);
 - (D) The reasonable settlement costs of the CONTRACTOR, including accounting, legal, clerical, and other expenses reasonably necessary for the preparation of settlement claims and supporting data with respect to the terminated portion of the Contract and for the termination of subcontracts thereunder, together with reasonable storage, transportation, and other costs incurred in connection with the protection or disposition of property allocable to the terminated portion of this Contract. The total sum to be paid the CONTRACTOR under this subparagraph shall not exceed the

total Contract price plus the reasonable settlement costs of the CONTRACTOR reduced by the amount of payments otherwise made, the proceeds of any sales of supplies and manufacturing materials under subparagraph 14d(2), and the contract price of performance not terminated.

- (4) Costs claimed, agreed to, or established under subparagraphs 14d(2) and 14d(3) shall be in accordance with Chapter 3-123 (Cost Principles) of the Procurement Rules.

15. Claims Based on the Agency Procurement Officer's Actions or Omissions.

- a. Changes in scope. If any action or omission on the part of the Agency procurement officer (which term includes the designee of such officer for purposes of this paragraph 15) requiring performance changes within the scope of the Contract constitutes the basis for a claim by the CONTRACTOR for additional compensation, damages, or an extension of time for completion, the CONTRACTOR shall continue with performance of the Contract in compliance with the directions or orders of such officials, but by so doing, the CONTRACTOR shall not be deemed to have prejudiced any claim for additional compensation, damages, or an extension of time for completion; provided:

- (1) Written notice required. The CONTRACTOR shall give written notice to the Agency procurement officer:

- (A) Prior to the commencement of the performance involved, if at that time the CONTRACTOR knows of the occurrence of such action or omission;
- (B) Within thirty (30) days after the CONTRACTOR knows of the occurrence of such action or omission, if the CONTRACTOR did not have such knowledge prior to the commencement of the performance; or
- (C) Within such further time as may be allowed by the Agency procurement officer in writing.

- (2) Notice content. This notice shall state that the CONTRACTOR regards the act or omission as a reason which may entitle the CONTRACTOR to additional compensation, damages, or an extension of time. The Agency procurement officer, upon receipt of such notice, may rescind such action, remedy such omission, or take such other steps as may be deemed advisable in the discretion of the Agency procurement officer;

- (3) Basis must be explained. The notice required by subparagraph 15a(1) describes as clearly as practicable at the time the reasons why the CONTRACTOR believes that additional compensation, damages, or an extension of time may be remedies to which the CONTRACTOR is entitled; and

- (4) Claim must be justified. The CONTRACTOR must maintain and, upon request, make available to the Agency procurement officer within a reasonable time, detailed records to the extent practicable, and other documentation and evidence satisfactory to the STATE, justifying the claimed additional costs or an extension of time in connection with such changes.

- b. CONTRACTOR not excused. Nothing herein contained, however, shall excuse the CONTRACTOR from compliance with any rules or laws precluding any state officers and CONTRACTOR from acting in collusion or bad faith in issuing or performing change orders which are clearly not within the scope of the Contract.

- c. Price adjustment. Any adjustment in the price made pursuant to this paragraph shall be determined in accordance with the price adjustment provision of this Contract.

16. Costs and Expenses. Any reimbursement due the CONTRACTOR for per diem and transportation expenses under this Contract shall be subject to chapter 3-123 (Cost Principles), HAR, and the following guidelines:

- a. Reimbursement for air transportation shall be for actual cost or coach class air fare, whichever is less.
- b. Reimbursement for ground transportation costs shall not exceed the actual cost of renting an intermediate-sized vehicle.
- c. Unless prior written approval of the HOPA is obtained, reimbursement for subsistence allowance (i.e., hotel and meals, etc.) shall not exceed the applicable daily authorized rates for inter-island or out-of-state travel that are set forth in the current Governor's Executive Order authorizing adjustments in salaries and benefits for state officers and employees in the executive branch who are excluded from collective bargaining coverage.

17. Payment Procedures; Final Payment; Tax Clearance.

- a. Original invoices required. All payments under this Contract shall be made only upon submission by the CONTRACTOR of original invoices specifying the amount due and certifying that services requested under the Contract have been performed by the CONTRACTOR according to the Contract.
- b. Subject to available funds. Such payments are subject to availability of funds and allotment by the Director of Finance in accordance with chapter 37, HRS. Further, all payments shall be made in accordance with and subject to chapter 40, HRS.
- c. Prompt payment.
 - (1) Any money, other than retainage, paid to the CONTRACTOR shall be disbursed to subcontractors within ten (10) days after receipt of the money in accordance with the terms of the subcontract; provided that the subcontractor has met all the terms and conditions of the subcontract and there are no bona fide disputes; and
 - (2) Upon final payment to the CONTRACTOR, full payment to the subcontractor, including retainage, shall be made within ten (10) days after receipt of the money; provided that there are no bona fide disputes over the subcontractor's performance under the subcontract.
- d. Final payment. Final payment under this Contract shall be subject to sections 103-53 and 103D-328, HRS, which require a tax clearance from the Director of Taxation, State of Hawaii, and the Internal Revenue Service, U.S. Department of Treasury, showing that all delinquent taxes, if any, levied or accrued under state law and the Internal Revenue Code of 1986, as amended, against the CONTRACTOR have been paid. Further, in accordance with section 3-122-112, HAR, CONTRACTOR shall provide a certificate affirming that the CONTRACTOR has remained in compliance with all applicable laws as required by this section.

18. Federal Funds. If this Contract is payable in whole or in part from federal funds, CONTRACTOR agrees that, as to the portion of the compensation under this Contract to be payable from federal funds, the CONTRACTOR shall be paid only from such funds received from the federal government, and shall not be paid from any other funds. Failure of the STATE to receive anticipated federal funds shall not be considered a breach by the STATE or an excuse for nonperformance by the CONTRACTOR.

19. Modifications of Contract.

- a. In writing. Any modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract permitted by this Contract shall be made by written amendment to this Contract, signed by the CONTRACTOR and the STATE, provided that change orders shall be made in accordance with paragraph 20 herein.
- b. No oral modification. No oral modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract shall be permitted.

- c. Agency procurement officer. By written order, at any time, and without notice to any surety, the Agency procurement officer may unilaterally order of the CONTRACTOR:
 - (A) Changes in the work within the scope of the Contract; and
 - (B) Changes in the time of performance of the Contract that do not alter the scope of the Contract work.
 - d. Adjustments of price or time for performance. If any modification increases or decreases the CONTRACTOR'S cost of, or the time required for, performance of any part of the work under this Contract, an adjustment shall be made and this Contract modified in writing accordingly. Any adjustment in contract price made pursuant to this clause shall be determined, where applicable, in accordance with the price adjustment clause of this Contract or as negotiated.
 - e. Claim barred after final payment. No claim by the CONTRACTOR for an adjustment hereunder shall be allowed if written modification of the Contract is not made prior to final payment under this Contract.
 - f. Claims not barred. In the absence of a written contract modification, nothing in this clause shall be deemed to restrict the CONTRACTOR'S right to pursue a claim under this Contract or for a breach of contract.
 - g. Head of the purchasing agency approval. If this is a professional services contract awarded pursuant to section 103D-303 or 103D-304, HRS, any modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract which increases the amount payable to the CONTRACTOR by at least \$25,000.00 and ten per cent (10%) or more of the initial contract price, must receive the prior approval of the head of the purchasing agency.
 - h. Tax clearance. The STATE may, at its discretion, require the CONTRACTOR to submit to the STATE, prior to the STATE'S approval of any modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract, a tax clearance from the Director of Taxation, State of Hawaii, and the Internal Revenue Service, U.S. Department of Treasury, showing that all delinquent taxes, if any, levied or accrued under state law and the Internal Revenue Code of 1986, as amended, against the CONTRACTOR have been paid.
 - i. Sole source contracts. Amendments to sole source contracts that would change the original scope of the Contract may only be made with the approval of the CPO. Annual renewal of a sole source contract for services should not be submitted as an amendment.
20. Change Order. The Agency procurement officer may, by a written order signed only by the STATE, at any time, and without notice to any surety, and subject to all appropriate adjustments, make changes within the general scope of this Contract in any one or more of the following:
- (1) Drawings, designs, or specifications, if the goods or services to be furnished are to be specially provided to the STATE in accordance therewith;
 - (2) Method of delivery; or
 - (3) Place of delivery.
- a. Adjustments of price or time for performance. If any change order increases or decreases the CONTRACTOR'S cost of, or the time required for, performance of any part of the work under this Contract, whether or not changed by the order, an adjustment shall be made and the Contract modified in writing accordingly. Any adjustment in the Contract price made pursuant to this provision shall be determined in accordance with the price adjustment provision of this Contract. Failure of the parties to agree to an adjustment shall not excuse the CONTRACTOR from proceeding with the Contract as changed, provided that the Agency procurement officer promptly and duly makes the provisional adjustments in payment or time for performance as may be reasonable. By

proceeding with the work, the CONTRACTOR shall not be deemed to have prejudiced any claim for additional compensation, or any extension of time for completion.

- b. Time period for claim. Within ten (10) days after receipt of a written change order under subparagraph 20a, unless the period is extended by the Agency procurement officer in writing, the CONTRACTOR shall respond with a claim for an adjustment. The requirement for a timely written response by CONTRACTOR cannot be waived and shall be a condition precedent to the assertion of a claim.
- c. Claim barred after final payment. No claim by the CONTRACTOR for an adjustment hereunder shall be allowed if a written response is not given prior to final payment under this Contract.
- d. Other claims not barred. In the absence of a change order, nothing in this paragraph 20 shall be deemed to restrict the CONTRACTOR'S right to pursue a claim under the Contract or for breach of contract.

21. Price Adjustment.

- a. Price adjustment. Any adjustment in the contract price pursuant to a provision in this Contract shall be made in one or more of the following ways:
 - (1) By agreement on a fixed price adjustment before commencement of the pertinent performance or as soon thereafter as practicable;
 - (2) By unit prices specified in the Contract or subsequently agreed upon;
 - (3) By the costs attributable to the event or situation covered by the provision, plus appropriate profit or fee, all as specified in the Contract or subsequently agreed upon;
 - (4) In such other manner as the parties may mutually agree; or
 - (5) In the absence of agreement between the parties, by a unilateral determination by the Agency procurement officer of the costs attributable to the event or situation covered by the provision, plus appropriate profit or fee, all as computed by the Agency procurement officer in accordance with generally accepted accounting principles and applicable sections of chapters 3-123 and 3-126, HAR.
- b. Submission of cost or pricing data. The CONTRACTOR shall provide cost or pricing data for any price adjustments subject to the provisions of chapter 3-122, HAR.

22. Variation in Quantity for Definite Quantity Contracts. Upon the agreement of the STATE and the CONTRACTOR, the quantity of goods or services, or both, if a definite quantity is specified in this Contract, may be increased by a maximum of ten per cent (10%); provided the unit prices will remain the same except for any price adjustments otherwise applicable; and the Agency procurement officer makes a written determination that such an increase will either be more economical than awarding another contract or that it would not be practical to award another contract.

23. Changes in Cost-Reimbursement Contract. If this Contract is a cost-reimbursement contract, the following provisions shall apply:

- a. The Agency procurement officer may at any time by written order, and without notice to the sureties, if any, make changes within the general scope of the Contract in any one or more of the following:
 - (1) Description of performance (Attachment 1);
 - (2) Time of performance (i.e., hours of the day, days of the week, etc.);
 - (3) Place of performance of services;

- (4) Drawings, designs, or specifications when the supplies to be furnished are to be specially manufactured for the STATE in accordance with the drawings, designs, or specifications;
 - (5) Method of shipment or packing of supplies; or
 - (6) Place of delivery.
- b. If any change causes an increase or decrease in the estimated cost of, or the time required for performance of, any part of the performance under this Contract, whether or not changed by the order, or otherwise affects any other terms and conditions of this Contract, the Agency procurement officer shall make an equitable adjustment in the (1) estimated cost, delivery or completion schedule, or both; (2) amount of any fixed fee; and (3) other affected terms and shall modify the Contract accordingly.
 - c. The CONTRACTOR must assert the CONTRACTOR'S rights to an adjustment under this provision within thirty (30) days from the day of receipt of the written order. However, if the Agency procurement officer decides that the facts justify it, the Agency procurement officer may receive and act upon a proposal submitted before final payment under the Contract.
 - d. Failure to agree to any adjustment shall be a dispute under paragraph 11 of this Contract. However, nothing in this provision shall excuse the CONTRACTOR from proceeding with the Contract as changed.
 - e. Notwithstanding the terms and conditions of subparagraphs 23a and 23b, the estimated cost of this Contract and, if this Contract is incrementally funded, the funds allotted for the performance of this Contract, shall not be increased or considered to be increased except by specific written modification of the Contract indicating the new contract estimated cost and, if this contract is incrementally funded, the new amount allotted to the contract.
24. Confidentiality of Material.
- a. All material given to or made available to the CONTRACTOR by virtue of this Contract, which is identified as proprietary or confidential information, will be safeguarded by the CONTRACTOR and shall not be disclosed to any individual or organization without the prior written approval of the STATE.
 - b. All information, data, or other material provided by the CONTRACTOR to the STATE shall be subject to the Uniform Information Practices Act, chapter 92F, HRS.
25. Publicity. The CONTRACTOR shall not refer to the STATE, or any office, agency, or officer thereof, or any state employee, including the HOPA, the CPO, the Agency procurement officer, or to the services or goods, or both, provided under this Contract, in any of the CONTRACTOR'S brochures, advertisements, or other publicity of the CONTRACTOR. All media contacts with the CONTRACTOR about the subject matter of this Contract shall be referred to the Agency procurement officer.
26. Ownership Rights and Copyright. The STATE shall have complete ownership of all material, both finished and unfinished, which is developed, prepared, assembled, or conceived by the CONTRACTOR pursuant to this Contract, and all such material shall be considered "works made for hire." All such material shall be delivered to the STATE upon expiration or termination of this Contract. The STATE, in its sole discretion, shall have the exclusive right to copyright any product, concept, or material developed, prepared, assembled, or conceived by the CONTRACTOR pursuant to this Contract.
27. Liens and Warranties. Goods provided under this Contract shall be provided free of all liens and provided together with all applicable warranties, or with the warranties described in the Contract documents, whichever are greater.

28. Audit of Books and Records of the CONTRACTOR. The STATE may, at reasonable times and places, audit the books and records of the CONTRACTOR, prospective contractor, subcontractor, or prospective subcontractor which are related to:
- a. The cost or pricing data, and
 - b. A state contract, including subcontracts, other than a firm fixed-price contract.
29. Cost or Pricing Data. Cost or pricing data must be submitted to the Agency procurement officer and timely certified as accurate for contracts over \$100,000 unless the contract is for a multiple-term or as otherwise specified by the Agency procurement officer. Unless otherwise required by the Agency procurement officer, cost or pricing data submission is not required for contracts awarded pursuant to competitive sealed bid procedures.
- If certified cost or pricing data are subsequently found to have been inaccurate, incomplete, or noncurrent as of the date stated in the certificate, the STATE is entitled to an adjustment of the contract price, including profit or fee, to exclude any significant sum by which the price, including profit or fee, was increased because of the defective data. It is presumed that overstated cost or pricing data increased the contract price in the amount of the defect plus related overhead and profit or fee. Therefore, unless there is a clear indication that the defective data was not used or relied upon, the price will be reduced in such amount.
30. Audit of Cost or Pricing Data. When cost or pricing principles are applicable, the STATE may require an audit of cost or pricing data.
31. Records Retention.
- (1) Upon any termination of this Contract or as otherwise required by applicable law, CONTRACTOR shall, pursuant to chapter 487R, HRS, destroy all copies (paper or electronic form) of personal information received from the STATE.
 - (2) The CONTRACTOR and any subcontractors shall maintain the files, books, and records that relate to the Contract, including any personal information created or received by the CONTRACTOR on behalf of the STATE, and any cost or pricing data, for at least three (3) years after the date of final payment under the Contract. The personal information shall continue to be confidential and shall only be disclosed as permitted or required by law. After the three (3) year, or longer retention period as required by law has ended, the files, books, and records that contain personal information shall be destroyed pursuant to chapter 487R, HRS or returned to the STATE at the request of the STATE.
32. Antitrust Claims. The STATE and the CONTRACTOR recognize that in actual economic practice, overcharges resulting from antitrust violations are in fact usually borne by the purchaser. Therefore, the CONTRACTOR hereby assigns to STATE any and all claims for overcharges as to goods and materials purchased in connection with this Contract, except as to overcharges which result from violations commencing after the price is established under this Contract and which are not passed on to the STATE under an escalation clause.
33. Patented Articles. The CONTRACTOR shall defend, indemnify, and hold harmless the STATE, and its officers, employees, and agents from and against all liability, loss, damage, cost, and expense, including all attorneys fees, and all claims, suits, and demands arising out of or resulting from any claims, demands, or actions by the patent holder for infringement or other improper or unauthorized use of any patented article, patented process, or patented appliance in connection with this Contract. The CONTRACTOR shall be solely responsible for correcting or curing to the satisfaction of the STATE any such infringement or improper or unauthorized use, including, without limitation: (a) furnishing at no cost to the STATE a substitute article, process, or appliance acceptable to the STATE, (b) paying royalties or other required payments to the patent holder, (c) obtaining proper authorizations or releases from the patent holder, and (d) furnishing such security to or making such arrangements with the patent holder as may be necessary to correct or cure any such infringement or improper or unauthorized use.

34. Governing Law. The validity of this Contract and any of its terms or provisions, as well as the rights and duties of the parties to this Contract, shall be governed by the laws of the State of Hawaii. Any action at law or in equity to enforce or interpret the provisions of this Contract shall be brought in a state court of competent jurisdiction in Honolulu, Hawaii.
35. Compliance with Laws. The CONTRACTOR shall comply with all federal, state, and county laws, ordinances, codes, rules, and regulations, as the same may be amended from time to time, that in any way affect the CONTRACTOR'S performance of this Contract.
36. Conflict Between General Conditions and Procurement Rules. In the event of a conflict between the General Conditions and the procurement rules, the procurement rules in effect on the date this Contract became effective shall control and are hereby incorporated by reference.
37. Entire Contract. This Contract sets forth all of the agreements, conditions, understandings, promises, warranties, and representations between the STATE and the CONTRACTOR relative to this Contract. This Contract supersedes all prior agreements, conditions, understandings, promises, warranties, and representations, which shall have no further force or effect. There are no agreements, conditions, understandings, promises, warranties, or representations, oral or written, express or implied, between the STATE and the CONTRACTOR other than as set forth or as referred to herein.
38. Severability. In the event that any provision of this Contract is declared invalid or unenforceable by a court, such invalidity or unenforceability shall not affect the validity or enforceability of the remaining terms of this Contract.
39. Waiver. The failure of the STATE to insist upon the strict compliance with any term, provision, or condition of this Contract shall not constitute or be deemed to constitute a waiver or relinquishment of the STATE'S right to enforce the same in accordance with this Contract. The fact that the STATE specifically refers to one provision of the procurement rules or one section of the Hawaii Revised Statutes, and does not include other provisions or statutory sections in this Contract shall not constitute a waiver or relinquishment of the STATE'S rights or the CONTRACTOR'S obligations under the procurement rules or statutes.
40. Pollution Control. If during the performance of this Contract, the CONTRACTOR encounters a "release" or a "threatened release" of a reportable quantity of a "hazardous substance," "pollutant," or "contaminant" as those terms are defined in section 128D-1, HRS, the CONTRACTOR shall immediately notify the STATE and all other appropriate state, county, or federal agencies as required by law. The Contractor shall take all necessary actions, including stopping work, to avoid causing, contributing to, or making worse a release of a hazardous substance, pollutant, or contaminant, and shall promptly obey any orders the Environmental Protection Agency or the state Department of Health issues in response to the release. In the event there is an ensuing cease-work period, and the STATE determines that this Contract requires an adjustment of the time for performance, the Contract shall be modified in writing accordingly.
41. Campaign Contributions. The CONTRACTOR is hereby notified of the applicability of 11-355, HRS, which states that campaign contributions are prohibited from specified state or county government contractors during the terms of their contracts if the contractors are paid with funds appropriated by a legislative body.
42. Confidentiality of Personal Information.
- a. Definitions.
- "Personal information" means an individual's first name or first initial and last name in combination with any one or more of the following data elements, when either name or data elements are not encrypted:
- (1) Social security number;
 - (2) Driver's license number or Hawaii identification card number; or

- (3) Account number, credit or debit card number, access code, or password that would permit access to an individual's financial information.

Personal information does not include publicly available information that is lawfully made available to the general public from federal, state, or local government records.

"Technological safeguards" means the technology and the policy and procedures for use of the technology to protect and control access to personal information.

b. Confidentiality of Material.

- (1) All material given to or made available to the CONTRACTOR by the STATE by virtue of this Contract which is identified as personal information, shall be safeguarded by the CONTRACTOR and shall not be disclosed without the prior written approval of the STATE.
- (2) CONTRACTOR agrees not to retain, use, or disclose personal information for any purpose other than as permitted or required by this Contract.
- (3) CONTRACTOR agrees to implement appropriate "technological safeguards" that are acceptable to the STATE to reduce the risk of unauthorized access to personal information.
- (4) CONTRACTOR shall report to the STATE in a prompt and complete manner any security breaches involving personal information.
- (5) CONTRACTOR agrees to mitigate, to the extent practicable, any harmful effect that is known to CONTRACTOR because of a use or disclosure of personal information by CONTRACTOR in violation of the requirements of this paragraph.
- (6) CONTRACTOR shall complete and retain a log of all disclosures made of personal information received from the STATE, or personal information created or received by CONTRACTOR on behalf of the STATE.

c. Security Awareness Training and Confidentiality Agreements.

- (1) CONTRACTOR certifies that all of its employees who will have access to the personal information have completed training on security awareness topics relating to protecting personal information.
- (2) CONTRACTOR certifies that confidentiality agreements have been signed by all of its employees who will have access to the personal information acknowledging that:
 - (A) The personal information collected, used, or maintained by the CONTRACTOR will be treated as confidential;
 - (B) Access to the personal information will be allowed only as necessary to perform the Contract; and
 - (C) Use of the personal information will be restricted to uses consistent with the services subject to this Contract.

d. Termination for Cause. In addition to any other remedies provided for by this Contract, if the STATE learns of a material breach by CONTRACTOR of this paragraph by CONTRACTOR, the STATE may at its sole discretion:

- (1) Provide an opportunity for the CONTRACTOR to cure the breach or end the violation; or
- (2) Immediately terminate this Contract.

In either instance, the CONTRACTOR and the STATE shall follow chapter 487N, HRS, with respect to notification of a security breach of personal information.

e. Records Retention.

- (1) Upon any termination of this Contract or as otherwise required by applicable law, CONTRACTOR shall, pursuant to chapter 487R, HRS, destroy all copies (paper or electronic form) of personal information received from the STATE.
- (2) The CONTRACTOR and any subcontractors shall maintain the files, books, and records that relate to the Contract, including any personal information created or received by the CONTRACTOR on behalf of the STATE, and any cost or pricing data, for at least three (3) years after the date of final payment under the Contract. The personal information shall continue to be confidential and shall only be disclosed as permitted or required by law. After the three (3) year, or longer retention period as required by law has ended, the files, books, and records that contain personal information shall be destroyed pursuant to chapter 487R, HRS or returned to the STATE at the request of the STATE.

SAMPLE FORMS

FOR

**PUUKAPU PASTORAL LOTS WATER SYSTEM
OPERATION & MAINTENANCE SERVICES**

PUUKAPU, SOUTH KOHALA, ISLAND OF HAWAII, HAWAII

IFB NO.: IFB-14-HHL-011

PREPARED BY

**STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS**

FEBRUARY 2014

NOTICE OF INTENTION TO BID

Date: _____

Ms. Jobie M.K. Masagatani, Chairman
Hawaiian Homes Commission
DEPARTMENT OF HAWAIIAN HOME LANDS
91-5420 Kapolei Parkway
Kapolei, Hawaii 96707

Attention: Jeffrey Fujimoto, Land Development Division
Notice of Intention to Bid due 2:00 p.m., March 18, 2014.

Gentlemen:

In accordance with the provisions of Section 103D-310, Hawaii Revised Statutes and Hawaii Administrative Rules 3-122-111, it is the intention of the undersigned to bid on IFB No. IFB-14-HHL-011, PUUKAPU PASTORAL LOTS WATER SYSTEM OPERATION AND MAINTENANCE SERVICES, WAIMEA, SOUTH KOHALA, County of Hawaii, State of Hawaii, for which bids will be opened on **Friday, March 28, 2014, 2:00 p.m.**

_____ Name of Firm	_____ Contractor's License No.
_____ Address	_____ Hawaii General Excise Tax No.
_____ City, State and Zip Code	_____ Telephone No. / Facsimile No.
	_____ e-mail address

Respectfully submitted,

Signature

Print Name and Title

Date: _____

Gentlemen:

The Department of Hawaiian Home Lands acknowledges on this date above, your Notice of Intention to Bid on IFB-14-HHL-011.

Jobie M. K. Masagatani, Chairman
Hawaiian Homes Commission

SAMPLE

STATE OF HAWAII
STANDARD
QUALIFICATION QUESTIONNAIRE
FOR
OFFERORS

issued by the
PROCUREMENT POLICY BOARD
STATE OF HAWAII

June 16, 2003

To be filed with the procurement officer calling for offers
in accordance with Section 103D-310, HRS, as amended.

Submitted By _____

Address _____

Date _____

STANDARD QUALIFICATION QUESTIONNAIRE

COVERING EXPERIENCE, EQUIPMENT AND FINANCIAL STATEMENT OF OFFERORS. THE OFFICER CALLING FOR OFFERS MAY REQUIRE THE OFFEROR TO FURNISH ADDITIONAL INFORMATION NOT SPECIFICALLY COVERED HEREIN. ALL ITEMS MUST BE ANSWERED AND OMISSIONS MAY BE CONSIDERED GOOD CAUSE FOR UNFAVORABLE CONSIDERATION.

GENERAL INFORMATION

1. The statements contained in this Questionnaire are being furnished for consideration in submitting an offer for the following project:

(a) Project Title _____

(b) Location _____

(c) Bid Opening Date _____

2. The Questionnaire is being submitted in behalf of:

(a) Name of Offeror _____

- ☐ A Corporation
☐ A Partnership
☐ An Individual
☐ A Joint-Venture

(b) Address _____

(c) Telephone No. _____

(d) Date Submitted _____

3. If the bid is submitted by a joint venture, composed of two or more individual firms, then each member firm comprising the joint venture must submit all information listed on pages 3 through 16, inclusive, of the Questionnaire and, in addition, answer the following:

(a) Members of joint Venture _____

(b) Date of Joint Venture Agreement _____

(c) Is agreement between members comprising the joint venture joint and several liability? _____

If not, state the terms of agreement in this respect: _____

EXPERIENCE QUESTIONNAIRE

Submitted by _____ ☐ A Corporation
☐ A Partnership
☐ An Individual

Principal Office _____

The signatory of this questionnaire guarantees the truth and accuracy of all statements and of all answers to interrogatories hereinafter made

1. How many years has your organization been in business as a [General Contractor] under your present business name? _____
2. How many years experience in [construction] _____ has your organization had: (A) as a [General Contractor] _____; (B) as a [Sub-Contractor] _____
3. Show what [construction] projects your organization has completed in the past five (5) years in the following tabulation:

Contract Amt.	Class of Work	When Completed	Name and Address of Owner

4. Have you ever failed to complete any work awarded to you? _____ If so, state when, where and why? _____

5. Has any officer or partner of your organization in the past five (5) years been an officer or partner of some other organization that failed to complete a contract? If so, state name of individual, other organization and reason therefore _____

6. Has any officer or partner of your organization in the past five (5) years failed to complete a contract handled in his own name? _____ If so, state name of individual, name of Owner and reason therefore.

7. In what other lines of business are you financially interested? _____

8. For what corporations or individuals in the past five (5) years have you performed work, and to whom do you refer? _____

9. For what counties within the State of Hawaii have you performed work and to whom do you refer?

10. For what Bureaus or Departments of the State government have you performed work and to whom do you refer?

11. Have you performed work for the U. S. Government? _____ If so, when and to whom do you refer?

12. Have you ever performed any work for any other governmental agencies outside the State of Hawaii? _____ If so, when and to whom do you refer? _____

13. What is the [construction] experience of the principal individuals of your organization?

Individual's Name	Present Position or Office	Years of Work Experience	Magnitude and Type of Work	In What Capacity?

EQUIPMENT QUESTIONNAIRE

Submitted by _____

Principal Office _____

- ☐ A Corporation
☐ A Partnership
☐ An Individual

The signatory of this questionnaire guarantees the truth and accuracy of all statements and of all answers to interrogatories hereinafter made

1. In what manner have you inspected this proposed work? Explain in detail. _____
2. Explain your plan or layout for performing the proposed work. _____
3. The work, if awarded to you, will have the personal supervision of whom?
4. Do you intend to do the hauling on the proposed work with your own force? _____ If so, give amount and type of equipment to be used.
5. If you intend to sublet the hauling or perform it through an agent, state amount of sub-contract or agent's contract, and, if known, the name and address of sub-contractor or agent, amount and type of his equipment and financial responsibility _____
6. Do you intend to do grading on the proposed work with your own forces? _____ If so, give type of equipment to be used _____

-
-
-
-
-
-

- [illegible]

-
-
-
-
-
-

- [illegible]

- 7

Quantity	Item	Description, Size, Capacity, Etc.	Approximate Cost

12. How and when will you pay for the equipment to be purchased? _____

13. Do you propose to rent any equipment for this work? _____ If so, state type, quantity
 and reasons for renting _____

FINANCIAL STATEMENT

Submitted by _____

Principal Office _____

- ☐ A Corporation
☐ A Partnership
☐ An Individual

The signatory of this questionnaire guarantees the truth and accuracy of all statements and of all answers to interrogatories hereinafter made

BALANCE SHEET

As of _____, 20____

Assets

Current assets:

Cash and cash equivalents (1)	\$ _____
Short-term investments (2)	_____
Accounts receivable, net (3)	_____
Inventories (4)	_____
Costs and estimated earnings in excess of billings on uncompleted contracts (5)	_____
Prepaid expenses and other (6)	_____
Sub-Total Current Assets	_____

Property and equipment:

Land (7)	_____
Buildings (8)	_____
Vehicles, machinery and equipment (9)	_____
Furniture and fixtures (10)	_____
Less accumulated depreciation	(_____)
Sub-Total Net Property and Equipment	_____

Other assets:

Cash surrender value of life insurance policies (11)	_____
Deposits and other (12)	_____
Sub-Total Other Assets	_____

Total Assets: \$ _____

BALANCE SHEET (Continued)

Liabilities and Stockholder's Equity

Current liabilities:

Current portion of long-term debt (1)	\$ _____
Accounts payable (2)	_____
Billings in excess of costs and estimated earnings on uncompleted contracts (3)	_____
Accrued liabilities and other (4)	_____
Sub-Total Current Liabilities	_____

Long-term debt, net of current portion (5)	_____
--	-------

Sub-Total Liabilities & Long-term Debt:	\$ _____
---	----------

Stockholder's equity:

Capital stock (6)	_____
Additional paid-in capital (7)	_____
Retained earnings	_____
Treasury stock (8)	(_____)
Sub-Total Stockholder's Equity	\$ _____

Total Liabilities and Stockholder's Equity	\$ _____
--	----------

DETAILS RELATIVE TO ASSETS

(1) Cash and cash equivalents:

<u>Financial Institution</u>	<u>Type of Account</u>	<u>Amount</u>
		\$ _____

		\$ _____

(2) Short-term investments:

<u>Type of Security</u>	<u>Cost</u>	<u>Unrealized Gains</u>	<u>Unrealized Losses</u>	<u>Estimated Fair Value</u>
_____	\$ _____	\$ _____	\$ _____	\$ _____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
	\$ _____	\$ _____	\$ _____	\$ _____

(3) Accounts receivable (list major debtors):

Completed contracts

<u>Name</u>	<u>Description</u>	<u>Completion Date</u>	<u>Contract Amount</u>	<u>Amount Receivable</u>
_____		\$ _____	\$ _____	\$ _____
_____		_____	_____	_____
_____		_____	_____	_____
		\$ _____	\$ _____	\$ _____

Other than completed contracts

<u>Name</u>	<u>Description</u>	<u>Due Date</u>	<u>Amount Receivable</u>

Less allowance for doubtful accounts			(_____)
			\$ _____

(4) Inventories

<u>Description</u>	<u>Cost</u>	<u>Market Value</u>	<u>Lower of Cost or Market Value</u>
_____	\$ _____	\$ _____	\$ _____
_____	_____	_____	_____
_____	_____	_____	_____
	\$ _____	\$ _____	\$ _____

DETAILS RELATIVE TO ASSETS (Continued)

(5) Costs and estimated earnings in excess of billings on uncompleted contracts

<u>Name</u>	<u>Description</u>	<u>Completion Date</u>	<u>Contract Amount</u>	<u>Costs and Estimated Earnings to Date</u>	<u>Billings to Date</u>	<u>Costs and Estimated Earnings in Excess of Billings</u>
		\$	\$	\$	\$	
			\$	\$	\$	\$

(6) Prepaid expenses and other

<u>Description</u>	<u>Amount</u>
	\$
	\$

(7) Land

<u>Description</u>	<u>Location</u>	<u>Amount</u>
		\$
		\$

(8) Buildings

<u>Description</u>	<u>Location</u>	<u>Amount</u>
		\$
		\$

(9) Vehicles, machinery and equipment

<u>Description</u>	<u>Amount</u>
	\$
	\$

(10) Furniture and fixtures

<u>Description</u>	<u>Amount</u>
	\$
	\$

DETAILS RELATIVE TO ASSETS (Continued)

(11) Cash surrender value of life insurance policies

<u>Key Employee</u>	<u>Insurance Company</u>	<u>Policy Amount</u>	<u>Paid-Up Additional Insurance</u>	<u>CSV Amount</u>
_____	_____	\$ _____	\$ _____	\$ _____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
Less loans payable		_____	_____	(_____)
		\$ _____	\$ _____	\$ _____

(12) Deposits and other

<u>Description</u>	<u>Amount</u>
_____	\$ _____
_____	_____
_____	_____
	\$ _____

DETAILS RELATIVE TO LIABILITIES AND STOCKHOLDER'S EQUITY

(1) Current portion of long-term debt (maturing within 12 months)

<u>Lender</u>	<u>Description</u>	<u>Security Pledged</u>	<u>Due Date</u>	<u>Amount</u>
				\$ _____

				\$ _____

(2) Accounts payable (list major creditors)

<u>Name</u>	<u>Past Due Amount</u>	<u>Amount</u>
	\$ _____	\$ _____
	_____	_____
	_____	_____
	\$ _____	\$ _____

(3) Billings in excess of costs and estimated earnings on uncompleted contracts

<u>Name</u>	<u>Description</u>	<u>Completion Date</u>	<u>Contract Amount</u>	<u>Costs and Estimated Earnings to Date</u>	<u>Billings to Date</u>	<u>Billings in excess of costs and Estimated Earnings</u>
			\$ _____	\$ _____	\$ _____	\$ _____
			_____	_____	_____	_____
			_____	_____	_____	_____
			\$ _____	\$ _____	\$ _____	\$ _____

(4) Accrued liabilities and other

<u>Description</u>	<u>Amount</u>
	\$ _____

	\$ _____

(5) Long-term debt, net of current portion

<u>Lender</u>	<u>Description</u>	<u>Security Pledged</u>	<u>Due Date</u>	<u>Amount</u>
				\$ _____

				\$ _____

DETAILS RELATIVE TO LIABILITIES AND STOCKHOLDER'S EQUITY (Continued)

(6) Capital stock

<u>Type of Stock</u>	<u>Class</u>	<u>No. of Shares Authorized</u>	<u>No. of Shares Issued and Outstanding</u>	<u>Par Value</u>	<u>Amount</u>
				\$	\$
					\$

(7) Additional paid-in capital

<u>Description</u>	<u>Amount</u>
	\$
	\$

(8) Treasury stock

<u>Type of Stock</u>	<u>Class</u>	<u>No. of Shares</u>	<u>Cost</u>
			\$
			\$

STATEMENTS OF INCOME AND RETAINED EARNINGS

For the Years Ended _____, 20____ and 20____

	20____ _____	20____ _____
Contract revenues	\$ _____	\$ _____
Costs of contracts	_____	_____
Gross income from contracts		
General and administrative expenses	_____	_____
Income from operations		
Other income (expense)	_____	_____
Income before income taxes		
Income taxes	_____	_____
Net income		
Retained earnings, beginning of the year	_____	_____
Retained earnings, end of the year	\$ _____	\$ _____

If a corporation, answer this: Capital paid in cash, \$ _____ When Incorporated _____ In what State _____ Date registered in Hawaii _____ President's name _____ Vice-President's name _____ Secretary's name _____ Treasurer's name _____	If a partnership, answer this: Date of organization _____ Date registered in Hawaii _____ State whether partnership is general or limited _____ <div style="border-top: 1px solid black; height: 10px; margin-top: 5px;"></div> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <th style="width: 80%;">Name and address of partners:</th> <th style="width: 20%;">Age</th> </tr> <tr><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td></tr> </table>	Name and address of partners:	Age	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Name and address of partners:	Age												
_____	_____												
_____	_____												
_____	_____												
_____	_____												
_____	_____												

The undersigned hereby declares: that the foregoing is a true statement of the financial condition of the individual, partnership or corporation herein first named, as of the date herein first given; that this statement is for the express purpose of inducing the party to whom it is submitted to award the offeror a contract; and that any depository, vendor or other agency herein named is hereby authorized to supply such party with any information necessary to verify this statement.

NOTE: A partnership must give firm name and signatures of all partners. A corporation must give full corporate name, signature of official, and affix corporate seal.

Affidavit for Individual

STATE OF HAWAII

COUNTY OF _____

_____ being duly sworn, deposes and says that the foregoing financial statement, taken from his books, is a true and accurate statement of his financial condition as of the date thereof and that the answers to the foregoing interrogatories are true.

Sworn to before me this _____ day of _____ 20____

_____ (Applicant must also sign here)

 Notary Public

Affidavit for Partnership

STATE OF HAWAII

COUNTY OF _____

_____ being duly sworn, deposes and says that he is a member of the firm of _____; and that he is familiar with the books of the said firm showing its financial condition; that the foregoing financial statement, taken from the books of the said firm, is a true and accurate statement of the financial condition of the said firm as of the date thereof and that the answers to the foregoing interrogatories are true.

Sworn to before me this _____ day of _____ 20____

_____ (Members of firm must also sign here)

 Notary Public

Affidavit for Corporation

STATE OF HAWAII

COUNTY OF _____

_____ being duly sworn, deposes and says that he is _____ of the _____, the corporation described in and which executed the foregoing statement; that he is familiar with the books of the said corporation showing its financial condition; that the foregoing financial statement, taken from the books of the said corporation, is a true and accurate statement of the financial condition of said corporation as of the date thereof and that the answers to the foregoing interrogatories are true.

Sworn to before me this _____ day of _____ 20____

_____ (Officer must also sign here)

 Notary Public

Corporate Resolution Form

CORPORATE RESOLUTION
(Name of Corporation - Use Letterhead)

I, _____, Secretary of _____
Corporation, a _____ corporation, do hereby certify that the following is a full,
true and correct copy of a resolution duly adopted by the Board of Directors of said Corporation,
at its meeting duly called and held at the office of the Corporation located at
_____,
(address)

on the _____ day of _____, 20____, at which a quorum was present
and acting throughout; and that said resolution has not been modified, amended or rescinded and
continues in full force and effect:

"RESOLVED that any individual at the time holding the position of
President or Vice President, be, and each of them hereby is, authorized to
execute on behalf of the Corporation any bid, proposal or contract for the
sale or rental of the products of the Corporation or for services to be
performed by the Corporation and to execute any bond required by any
such bid proposal or contract with the United States Government or the
State of Hawaii or the City and County of Honolulu, or any County or
Municipal Government of said State, or any department or subdivision of
any of them."

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the corporate seal of
said _____ Corporation this _____ day of
_____, 20_____.

Secretary

(Names and Addresses of:)
President
Vice President
Secretary

EXHIBIT A

SURETY [BID] [PROPOSAL] BOND
(11/17/98)

Bond No. _____

KNOW TO ALL BY THESE PRESENTS:

That we, _____,
(Full Name or Legal Title of Offeror)

as Offeror, hereinafter called Principal, and _____,
(Name of Bonding Company)

as Surety, hereinafter called Surety, a corporation authorized to transact business as a Surety
in the State of Hawaii, are held and firmly bound unto _____,
(State/County Entity)
as Owner, hereinafter called Owner, in the penal sum of _____

(Required Amount of Bid Security)

Dollars (\$_____), lawful money of the United States of America, for the payment of
which sum well and truly to be made, the said Principal and the said Surety bind ourselves, our
heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these
presents.

WHEREAS:

The Principal has submitted an offer for _____

(Project by Number and Brief Description)

NOW, THEREFORE:

The condition of this obligation is such that if the Owner shall reject said offer, or in the
alternate, accept the offer of the Principal and the Principal shall enter into a Contract with the
Owner in accordance with the terms of such offer, and give such bond or bonds as may be
specified in the solicitation or Contract Documents with good and sufficient surety for the faithful
performance of such Contract and for the prompt payment of labor and material furnished in the
prosecution thereof as specified in the solicitation then this obligation shall be null and void,
otherwise to remain in full force and effect.

Signed this _____ day of _____, _____.

(Seal)

Name of Principal (Offeror)

Signature

Title

(Seal)

Name of Surety

Signature

Title

EXHIBIT B

PERFORMANCE BOND (SURETY)

(6/21/07)

KNOW TO ALL BY THESE PRESENTS:

That _____,
(Full Legal Name and Street Address of Contractor)

as Contractor, hereinafter called Principal, and _____

(Name and Street Address of Bonding Company)

as Surety, hereinafter called Surety, a corporation(s) authorized to transact business as a
surety in the State of Hawaii, are held and firmly bound unto the _____,
(State/County Entity)

its successors and assigns, hereinafter called Obligee, in the amount of _____

DOLLARS (\$ _____), to which payment Principal and Surety bind themselves,
their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by
these presents.

WHEREAS, the above-bound Principal has signed a Contract with Obligee on
_____, for the following project: _____

hereinafter called Contract, which Contract is incorporated herein by reference and made a part
hereof.

NOW THEREFORE, the condition of this obligation is such that:

If the Principal shall promptly and faithfully perform, and fully complete the Contract in
strict accordance with the terms of the Contract as said Contract may be modified or amended
from time to time; then this obligation shall be void; otherwise to remain in full force and effect.

Surety to this Bond hereby stipulates and agrees that no changes, extensions of time, alterations, or additions to the terms of the Contract, including the work to be performed thereunder, and the specifications or drawings accompanying same, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such changes, extensions of time, alterations, or additions, and agrees that they shall become part of the Contract.

In the event of Default by the Principal, of the obligations under the Contract, then after written Notice of Default from the Obligee to the Surety and the Principal and subject to the limitation of the penal sum of this bond, Surety shall remedy the Default, or take over the work to be performed under the Contract and complete such work, or pay moneys to the Obligee in satisfaction of the surety's performance obligation on this bond.

Signed this _____ day of _____, _____.

(Seal)

Name of Principal (Contractor)

*

Signature

Title

(Seal)

Name of Surety

*

Signature

Title

*ALL SIGNATURES MUST BE ACKNOWLEDGED
BY A NOTARY PUBLIC

EXHIBIT C

PERFORMANCE BOND

(11/17/98)

KNOW TO ALL BY THESE PRESENTS:

That we, _____,
(Full Legal Name and Street Address of Contractor)

as Contractor, hereinafter called Contractor, is held and firmly bound unto the

_____, its successors and assigns, as Oblige, hereinafter called
(State/County Entity)
Obligee, in the amount of _____

(Dollar Amount of Contract)

DOLLARS (\$ _____), lawful money of the United States of America, for the payment of which to the said Oblige, well and truly to be made, Contractor binds itself, its heirs, executors, administrators, successors and assigns, firmly by these presents. Said amount is evidenced by:

- ☐ Legal tender;
- ☐ Share Certificate unconditionally assigned to or made payable at sight to
Description _____;
_____;
- ☐ Certificate of Deposit, No. _____, dated _____, issued by
_____,
drawn on _____,
a bank, savings institution or credit union insured by the Federal Deposit
Insurance Corporation or the National Credit Union Administration, payable at
sight or unconditionally assigned to _____;
_____;
- ☐ Cashier's Check No. _____, dated _____, issued
by _____,
drawn on _____,
a bank, savings institution or credit union insured by the Federal Deposit
Insurance Corporation or the National Credit Union Administration, payable at
sight or unconditionally assigned to _____;
_____;

- ☐ Teller's Check No. _____, dated _____, issued by _____, drawn on _____, a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- ☐ Treasurer's Check No. _____, dated _____, issued by _____, drawn on _____, a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- ☐ Official Check No. _____, dated _____, issued by _____, drawn on _____, a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- ☐ Certified Check No. _____, dated _____, accepted by a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned _____;

WHEREAS:

The Contractor has by written agreement dated _____ entered into a contract with Obligee for the following Project: _____

 hereinafter called Contract, which Contract is incorporated herein by reference and made a part hereof.

NOW, THEREFORE,

The condition of this obligation is such that, if Contractor shall promptly and faithfully perform the Contract in accordance with, in all respects, the stipulations, agreements, covenants and conditions of the Contract as it now exists or may be modified according to its terms, and shall deliver the Project to the Obligee, or to its successors or assigns, fully completed as in the Contract specified and free from all liens and claims and without further cost, expense or charge to the Obligee, its officers, agents, successors or assigns, free and harmless from all suits or actions of every nature and kind which may be brought for or on account of any injury or damage, direct or indirect, arising or growing out of the doing of said work or the repair or maintenance thereof or the manner of doing the same or the neglect of the Contractor or its agents or servants or the improper performance of the Contract by the Contractor or its agents or servants or from any other cause, then this obligation shall be void; otherwise it shall be and remain in full force and effect.

AND IT IS HEREBY STIPULATED AND AGREED that suit on this bond may be brought before a court of competent jurisdiction without a jury, and that the sum or sums specified in the said Contract as liquidated damages, if any, shall be forfeited to the Obligee, its successors or assigns, in the event of a breach of any, or all, or any part of, the covenants, agreements, conditions, or stipulations contained in the Contract or in this bond in accordance with the terms thereof.

The amount of this bond may be reduced by and to the extent of any payment or payments made in good faith hereunder.

Signed this _____ day of _____, _____.

(Seal)

Name of Contractor

*

Signature

Title

*ALL SIGNATURES MUST BE ACKNOWLEDGED
BY A NOTARY PUBLIC

EXHIBIT D

LABOR AND MATERIAL PAYMENT BOND (SURETY)

(6/21/07)

KNOW TO ALL BY THESE PRESENTS:

That _____,
(Full Legal Name and Street Address of Contractor)

as Contractor, hereinafter called Principal, and _____

_____,
(Name and Street Address of Bonding Company)

as Surety, hereinafter called Surety, a corporation(s) authorized to transact business as a surety in the State of Hawaii, are held and firmly bound unto the _____,
(State/County Entity)

its successors and assigns, hereinafter called Obligor, in the amount of _____

_____ Dollars (\$ _____), to which payment Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above-bound Principal has signed Contract with the Obligor on _____ for the following project: _____

hereinafter called Contract, which Contract is incorporated herein by reference and made a part hereof.

NOW THEREFORE, the condition of this obligation is such that if the Principal shall promptly make payment to any Claimant, as hereinafter defined, for all labor and materials supplied to the Principal for use in the performance of the Contract, then this obligation shall be void; otherwise to remain in full force and effect.

1. Surety to this Bond hereby stipulates and agrees that no changes, extensions of time, alterations, or additions to the terms of the Contract, including the work to be performed thereunder, and the specifications or drawings accompanying same, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such changes, extensions of time, alterations, or additions, and agrees that they shall become part of the Contract.

2. A "Claimant" shall be defined herein as any person who has furnished labor or materials to the Principal for the work provided in the Contract.

Every Claimant who has not been paid amounts due for labor and materials furnished for work provided in the Contract may institute an action against the Principal and its Surety on this bond at the time and in the manner prescribed in Section 103D-324, Hawaii Revised Statutes, and have the rights and claims adjudicated in the action, and judgment rendered thereon; subject to the Obligee's priority on this bond. If the full amount of the liability of the Surety on this bond is insufficient to pay the full amount of the claims, then after paying the full amount due the Obligee, the remainder shall be distributed pro rata among the claimants.

Signed this _____ day of _____, _____.

(Seal)

Name of Principal (Contractor)

*

Signature

Title

(Seal)

Name of Surety

*

Signature

Title

*ALL SIGNATURES MUST BE ACKNOWLEDGED
BY A NOTARY PUBLIC

EXHIBIT E

LABOR AND MATERIAL PAYMENT BOND

(11/17/98)

KNOW TO ALL BY THESE PRESENTS:

That we, _____,
(Full Legal Name and Street Address of Contractor)

as Contractor, hereinafter called Contractor, is held and firmly bound unto the

_____, its successors and assigns, as Obligee, hereinafter called
(State/County Entity)

Obligee, in the amount of _____

(Dollar Amount of Contract)

DOLLARS (\$ _____), lawful money of the United States of America, for the payment of which to the said Obligee, well and truly to be made, Contractor binds itself, its heirs, executors, administrators, successors and assigns, firmly by these presents. Said amount is evidenced by:

- ☐ Legal tender;
- ☐ Share Certificate unconditionally assigned to or made payable at sight to
Description _____;
_____;
- ☐ Certificate of Deposit, No. _____, dated _____, issued by
_____,
drawn on _____,
a bank, savings institution or credit union insured by the Federal Deposit
Insurance Corporation or the National Credit Union Administration, payable at
sight or unconditionally assigned to _____;
_____;
- ☐ Cashier's Check No. _____, dated _____, issued by
_____,
drawn on _____,
a bank, savings institution or credit union insured by the Federal Deposit
Insurance Corporation or the National Credit Union Administration, payable at
sight or unconditionally assigned to _____;
_____;
- ☐ Teller's Check No. _____, dated _____, issued by
_____,
drawn on _____;

a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;

- ☐ Treasurer's Check No. _____, dated _____, issued by _____,
drawn on _____,
a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;

- ☐ Official Check No. _____, dated _____, issued by _____,
drawn on _____,
a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;

- ☐ Certified Check No. _____, dated _____, accepted by a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;

WHEREAS:

The Contractor has by written agreement dated _____ entered into a contract with Oblige for the following Project: _____

hereinafter called Contract, which Contract is incorporated herein by reference and made a part hereof.

NOW, THEREFORE,

The condition of this obligation is such that, if Contractor shall promptly and faithfully perform the Contract in accordance with, in all respects, the stipulations, agreements, covenants and conditions of the Contract as it now exists or may be modified according to its terms, free from all liens and claims and without further cost, expense or charge to the Oblige, its officers, agents, successors or assigns, free and harmless from all suits or actions of every

nature and kind which may be brought for or on account of any injury or damage, direct or indirect, arising or growing out of the doing of said work or the repair or maintenance thereof or the manner of doing the same or the neglect of the Contractor or its agents or servants or the improper performance of the Contract by the Contractor or its agents or servants or from any other cause, and shall promptly pay all persons supplying labor and materials for the performance of the Contract, then this obligation shall be void; otherwise it shall be and remain in full force and effect.

AND IT IS HEREBY STIPULATED AND AGREED that suit on this bond may be brought before a court of competent jurisdiction without a jury, and that the sum or sums specified in the said Contract as liquidated damages, if any, shall be forfeited to the Obligee, its successors or assigns, in the event of a breach of any, or all, or any part of, the covenants, agreements, conditions, or stipulations contained in the Contract or in this bond in accordance with the terms thereof.

AND IT IS HEREBY STIPULATED AND AGREED that this bond shall inure to the benefit of any and all persons entitled to file claims for labor performed or materials furnished in said work so as to give any and all such persons a right of action as contemplated by Sections 103D-324(d) and 103D-324(e), Hawaii Revised Statutes.

The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment of mechanics' liens which may be filed of record against the Project, whether or not claim for the amount of such lien be presented under and against this bond.

Signed this _____ day of _____, _____.

(Seal)

Name of Contractor

*

Signature

Title

*ALL SIGNATURES MUST BE ACKNOWLEDGED
BY A NOTARY PUBLIC

EXHIBIT F

COMBINATION PERFORMANCE AND PAYMENT BOND

(6/21/07)

KNOW TO ALL BY THESE PRESENTS:

That we, _____,
(Full Legal Name and Street Address of Contractor)

as Contractor, hereinafter called Principal, and _____

_____,
(Name and Street Address of Bonding Company)

as surety, hereinafter called Surety, a corporation(s) authorized to transact business as a
surety in the State of Hawaii, are held and firmly bound unto the _____,
(State/County Entity)
its successors and assigns, as Obligee, hereinafter called Obligee, in the amount of

(Twice the Dollar Amount of Contract)

DOLLARS (\$ _____) (being _____)
DOLLARS as performance bond and _____
DOLLARS as payment bond, each in the amount of one hundred percent of the contract price
as required by 103D-324, Haw. Rev. Stat.), lawful money of the United States of America, for
the payment of which to the said Obligee, well and truly to be made, Contractor and Surety bind
ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally,
firmly by these presents.

WHEREAS:

The Principal has by written agreement dated _____ signed a contract with
Obligee for the following Project: _____

_____,
hereinafter called Contract, which Contract is incorporated herein by reference and made a part
hereof.

NOW, THEREFORE,

The condition of this obligation is such that, if Principal shall promptly and faithfully perform the Contract in accordance with, in all respects, the stipulations, agreements, covenants and conditions of the Contract as it now exists or may be modified according to its terms, and shall deliver the Project to the Obligee, or to its successors or assigns, fully completed as in the Contract specified and free from all liens and claims and without further cost, expense or charge to the Obligee, its officers, agents, successors or assigns, free and harmless from all suits or actions of every nature and kind which may be brought for or on account of any injury or damage, direct or indirect, arising or growing out of the doing of said work or the repair or maintenance thereof or the manner of doing the same or the neglect of the Principal or its agents or servants or the improper performance of the Contract by the Principal or its agents or servants or from any other cause, and shall promptly pay all persons supplying labor and materials for the performance of the Contract, then this obligation shall be void; otherwise it shall be and remain in full force and effect.

AND IT IS HEREBY STIPULATED AND AGREED that no change, extension, alteration, deduction or addition, permitted by the Contract, in or to the terms of the Contract, or the plans or specifications pertaining thereto, shall in any way affect the obligation of the Surety on this bond; and the Surety does hereby waive notice of any such change, extension, alteration, deduction or addition in or to the terms of the Contract, or the plans or specifications pertaining thereto, or in or to the said Project.

AND IT IS HEREBY STIPULATED AND AGREED that suit on this bond may be brought before a court of competent jurisdiction without a jury, and that the sum or sums specified in the said Contract as liquidated damages, if any, shall be forfeited to the Obligee, its successors or assigns, in the event of a breach of any, or all, or any part of, the covenants, agreements, conditions, or stipulations contained in the Contract or in this bond in accordance with the terms thereof.

AND IT IS HEREBY STIPULATED AND AGREED that this bond shall inure to the benefit of any and all persons entitled to file claims for labor performed or materials furnished in said work so as to give any and all such persons a right of action as contemplated by Sections 103D-324(d) and 103D-324(e), Hawaii Revised Statutes.

The above-named Principal and Surety hereby jointly and severally agree with the Obligee that every person who has furnished labor or material to the Principal for the performance of the Contract who has not been paid in full therefor after ninety days from the completion and final settlement of any contract, may institute an action against the Principal and its sureties, and have their rights and claims adjudicated in the action, and judgment rendered thereon. If the full amount of the liability of the sureties on the bond is insufficient to pay the full amount of the claims, then, after paying the full amount due the Obligee, the remainder shall be distributed pro rata among the claimants. The Obligee shall not be liable for the payment of any costs or expenses of any such suit.

The amount of this bond may be reduced in accordance with and subject to section 3-122-225, Hawaii Administrative Rules.

Signed this _____ day of _____, _____.

(Seal)

Name of Principal (Contractor)

*

Signature

Title

(Seal)

Name of Surety

*

Signature

Title

*ALL SIGNATURES MUST BE ACKNOWLEDGED
BY A NOTARY PUBLIC

EXHIBIT G

**PERFORMANCE BOND (SURETY)
FOR SUPPLEMENTAL AGREEMENT
FOR GOODS AND SERVICES
(11/17/98)**

KNOW TO ALL BY THESE PRESENTS:

That _____,
(Full Legal Name and Street Address of Contractor)

as Contractor, hereinafter called Principal, and _____

(Name and Street Address of Bonding Company)

as Surety, hereinafter called Surety, a corporation(s) authorized to transact business as a surety
in the State of Hawaii, are held and firmly bound unto the _____,
(State/County Entity)
its successors and assigns, hereinafter called Obligee, in the amount of

DOLLARS (\$ _____), to which payment Principal and Surety bind themselves, their
heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these
presents.

WHEREAS, the above-bound Principal has entered into a Contract with Obligee dated
_____ for _____

and entered into Supplemental Agreement No. _____, dated _____ for the period

hereinafter collectively called Contract, which Contract is incorporated herein by reference and
made a part hereof.

NOW THEREFORE, the condition of this obligation is such that:

If the Principal shall promptly and faithfully perform, and fully complete the Contract in
strict accordance with the terms of the Contract as said Contract may be modified or amended
from time to time; then this obligation shall be void; otherwise to remain in full force and effect.

Surety to this Bond hereby stipulates and agrees that no changes, extensions of time,
alterations, or additions to the terms of the Contract, including the work to be performed
thereunder, and the specifications or drawings accompanying same, shall in any way affect its

obligation on this bond, and it does hereby waive notice of any such changes, extensions of time, alterations, or additions, and agrees that they shall become part of the Contract.

In the event of Default by the Principal, of the obligations under the Contract, then after written Notice of Default from the Obligee to the Surety and the Principal, Surety shall either remedy the Default, or take over the work to be performed under the Contract and complete such work, subject, however, to the limitation of the penal sum of this bond.

Signed this _____ day of _____, _____.

(Seal)

Name of Principal (Contractor)

*

Signature

Title

(Seal)

Name of Surety

*

Signature

Title

*ALL SIGNATURES MUST BE ACKNOWLEDGED
BY A NOTARY PUBLIC

EXHIBIT H

**PERFORMANCE BOND
FOR SUPPLEMENTAL AGREEMENT
FOR GOODS AND SERVICES**
(11/17/98)

KNOW TO ALL BY THESE PRESENTS:

That we, _____,
(Full Legal Name and Street Address of Contractor)
as Contractor, hereinafter called Contractor, is held and firmly bound unto the

_____, its successors and assigns, as Obligee, hereinafter called Obligee,
(State/County Entity)
in the amount of _____

(Dollar Amount of Contract)
DOLLARS (\$ _____), lawful money of the United States of America, for the
payment of which to the said Obligee, well and truly to be made, Contractor binds itself, its
heirs, executors, administrators, successors and assigns, firmly by these presents. Said
amount is evidenced by:

- ☐ Legal tender;
- ☐ Share Certificate unconditionally assigned to or made payable at sight to _____;
Description _____;
- ☐ Certificate of Deposit, No. _____, dated _____ issued
by _____,
drawn on _____,
a bank, savings institution or credit union insured by the Federal Deposit
Insurance Corporation or the National Credit Union Administration, payable at
sight or unconditionally assigned to _____;
_____;
- ☐ Cashier's Check No. _____, dated _____, drawn
on _____,
a bank, savings institution or credit union insured by the Federal Deposit
Insurance Corporation or the National Credit Union Administration, payable at
sight or unconditionally assigned to _____;
_____;
- ☐ Teller's Check No. _____, dated _____, drawn
on _____,
a bank, savings institution or credit union insured by the Federal Deposit
Insurance Corporation or the National Credit Union Administration, payable at
sight or unconditionally assigned to _____;
_____;

- ☐ Treasurer's Check No. _____, dated _____, drawn on _____, a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- ☐ Official Check No. _____, dated _____, drawn on _____, a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- ☐ Certified Check No. _____, dated _____, accepted by a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;

WHEREAS:

The Contractor has by written agreement dated _____ entered into a contract with Obligee for the following Project: _____

and entered into Supplemental Agreement No. _____, dated _____ for the period _____; hereinafter collectively called Contract, which Contract is incorporated herein by reference and made a part hereof.

NOW, THEREFORE,

The condition of this obligation is such that, if Contractor shall promptly and faithfully perform the Contract in accordance with, in all respects, the stipulations, agreements, covenants and conditions of the Contract as it now exists or may be modified according to its terms, and shall deliver the Project to the Obligee, or to its successors or assigns, fully completed as in the Contract specified and free from all liens and claims and without further cost, expense or charge to the Obligee, its officers, agents, successors or assigns, free and harmless from all suits or actions of every nature and kind which may be brought for or on account of any injury or damage, direct or indirect, arising or growing out of the doing of said work or the repair or maintenance thereof or the manner of doing the same or the neglect of the Contractor or its agents or servants or the improper performance of the Contract by the Contractor or its agents or servants or from any other cause, then this obligation shall be void; otherwise it shall be and remain in full force and effect.

AND IT IS HEREBY STIPULATED AND AGREED that suit on this bond may be brought before a court of competent jurisdiction without a jury, and that the sum or sums specified in the said Contract as liquidated damages, if any, shall be forfeited to the Obligee, its successors or assigns, in the event of a breach of any, or all, or any part of, the covenants, agreements, conditions, or stipulations contained in the Contract or in this bond in accordance with the terms thereof.

The amount of this bond may be reduced by and to the extent of any payment or payments made in good faith hereunder.

Signed this _____ day of _____, _____.

(Seal)

Name of Contractor

*

Signature

Title

*ALL SIGNATURES MUST BE ACKNOWLEDGED
BY A NOTARY PUBLIC



STATE OF HAWAII
STATE PROCUREMENT OFFICE

CERTIFICATION FOR HAWAII PRODUCT PREFERENCE

1. Legal Name of the company whose product is mined, excavated, produced, manufactured, raised or grown in the state of Hawaii
2. dba:

Requester:

3. Hawaii General Excise Tax Number:

4. Address

5. Email Address

6. Contact Person

7. Phone

Submit one (1) form for each product.

8. Specify and provide details of the product for which preference is claimed (ie: Milk, white, 2% low fat, 1 gallon, four (4) to a case etc.):

9. Quality Standards met by product (ie. California Milk Standards, ASTM/AHSTO, USDA, etc.) :

10. Product available on: Oahu Maui Hawaii Lanai Kauai Molokai

11. Product is certified an agricultural, aquacultural, horticultural, silvicultural, floricultural, or livestock product raised, grown, or harvested in the state of Hawaii.
- Yes or No

- 12 Definition: "Hawaii Input" is the part of the product cost attributable to production, manufacturing, or other expenses arising within the state of Hawaii.

A		B		C	
Hawaii Input		Non- Hawaii input		Total A + B	
a	Cost to mine, excavate, produce, manufacture, raise, or grow the materials in the state of Hawaii.	\$	per unit	\$	per unit
b	The added value of that portion of the cost of imported materials incurred after landing in the state of Hawaii, including but not limited to other articles, materials, and supplies, added to the imported materials.	\$	per unit	\$	per unit
c	Cost of labor, variable overhead, utilities, and services, incurred in the production and manufacturing of materials or products in the state of Hawaii	\$	per unit	\$	per unit
d	Fixed overhead cost and amortization or depreciation cost, if any, for buildings, tools, and equipment situated and located in the state of Hawaii used in the production or manufacturing of a product.	\$	per unit	\$	per unit
e	Totals	\$	per unit	\$	per unit
		(Add Column A)		(Add Column B)	(Add Column C)

Fill in every line in column s A, B, & C

13. Percent of Hawaii Input % (12e. Column A Total ÷ Column C Total)

14. Failure to adequately verify, deliver, or supply Hawaii products. A procurement officer who has awarded a contract finds the contractor has failed to comply with HRS §103D-1002, Hawaii products, the contract shall be cancelled and the findings shall be referred for debarment or suspension proceedings under HRS §103D-702. Any purchase made or any contract awarded or executed in violation of this section shall be void and no payment shall be made by any purchasing agency. If debarred, the person or company shall be prohibited from bidding on any state or county government solicitations for up to three (3) years.

Should the procurement officer receiving a protest challenging the validity of the classification of a Hawaii product request an audit of the information of the proper classification of the product as defined under HRS §103D-1002, the cost of the audit shall be paid for by the requester.

In the event of any change that materially alters the offeror's ability to supply the certified Hawaii products, the offeror shall notify in writing the procurement officer within five (5) working days of knowing of the change and the parties shall enter into discussions for the purposes of revising the contract or terminating the contract for convenience.

Information submitted is CONFIDENTIAL or PROPRIETARY DATA, and the procurement officer shall not disclose this form, pursuant to HRS §92F-13(3) on government records; exception's to general rule.

I certify, under penalties set forth in HRS §103D-1002, on Hawaii products, that the information provided herein has been examined by me and to the best of my knowledge and belief is true, correct, complete, and made in good faith pursuant to HRS §103D-101.

Signature of Authorized Representative: _____

Date: _____

Print Name of Authorized Representative: _____

Title: _____

GOVERNMENT USE ONLY

APPROVED _____
SPO-038 (Rev. 11/12/10)

DISAPPROVED _____

Procurement Officer Signature _____

Government Agency _____

FORM 1

CERTIFICATION OF BIDDER'S PARTICIPATION IN APPROVED APPRENTICESHIP PROGRAM UNDER ACT 17

I. Bidder's Identifying Information			
A. Legal Business Name: _____			
B. Project Bid Title & Reference No.: _____			
C. Contact Person's Name: _____			
1. Phone No.: _____		2. E-Mail: _____	
II. Apprenticeable Trades To Be Employed*	B. Apprenticeship Sponsor*	C. No. Enrolled	D. No. Completed
A. (List)	(One Sponsor Per Form)	(# of apprentices currently enrolled as of bidder's request date)	(# of apprentices who completed the apprenticeship program in the 12 months prior to request date)
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
III. Bidder's Certification			
I certify that the above information is accurate to the best of my knowledge. I understand that my willful misstatement of facts may cause forfeiture of the preference under Act 17 and may result in criminal action. I give permission for outside sources to be contacted and for them to disclose any information necessary to verify the bidder's preference.			
A. Name (Type) _____		B. Title _____	
C. Signature (original signature required) _____		D. Date _____	
IV. Apprenticeship Sponsor's Contact Information			
A. Training Coordinator's Name: _____			
B. Address: _____			
C. Phone No.: _____		D. E-Mail: _____	E. Fax No: _____
V. Apprenticeship Program Sponsor's Certification			
I certify that the above information is accurate to the best of my knowledge. I understand that my willful misstatement of facts may cause forfeiture of the bidder's preference and may result in criminal action. I give permission for outside sources to be contacted and for them to disclose any information necessary to verify the bidder's preference under Act 17.			
A. Name of Authorized Official _____		B. Title _____	
C. Signature (original signature required) _____		D. Date _____	

* Name of Apprenticeable Trade and Apprenticeship Sponsor must be the **same** as recorded in the List of Construction Trades in Registered Apprenticeship Programs that is posted on the State Department of Labor and Industrial Relations website.

FORM 2

MONTHLY REPORT OF CONTRACTOR'S PARTICIPATION IN APPROVED APPRENTICESHIP PROGRAM UNDER ACT 17

I. Contractor's Identifying Information		II. Reporting Period	
A. Legal Business Name:		A. Month:	B. Year:
B. Project Contract Title & Reference No.:			
C. Contact Person's Name:			
1. Phone No.:		2. E-Mail:	
III. Apprenticeship Program (Complete a separate form for <i>each</i> apprenticeship program in which workers are employed on the project.)			
A. Contractor was a party to an apprenticeship program or programs with the following sponsor: (Give sponsor's name.)*		B. Was the contractor a party to the program during the <i>entire</i> report month?	
		1. Yes <input type="checkbox"/>	
		2. No <input type="checkbox"/> If NO, state applicable period and why (may be subject to sanctions.)	
IV. Contractor's Certification			
I certify that the above information is accurate to the best of my knowledge. I understand that my willful misstatement of facts may cause forfeiture of the preference under Act 17 and may result in criminal action. I give permission for outside sources to be contacted and for them to disclose any information necessary to verify the bidder's preference.			
A. Name (Type)		B. Title	
C. Signature (original signature required)		D. Date	
V. Apprenticeship Sponsor's Contact Information			
A. Training Coordinator's Name:			
B. Address:			
C. Phone No.:		D. E-Mail:	
		E. Fax No:	
VI. Apprenticeship Program Sponsor's Certification			
I certify that the above information is accurate to the best of my knowledge. I understand that my willful misstatement of facts may cause forfeiture of the bidder's preference and may result in criminal action. I give permission for outside sources to be contacted and for them to disclose any information necessary to verify the bidder's preference under Act 17.			
A. Name of Authorized Official		B. Title	
C. Signature (original signature required)		D. Date	

* Name of Apprenticeship Sponsor must be the **same** as recorded in the List of Construction Trades in Registered Apprenticeship Programs that is posted on the State Department of Labor and Industrial Relations website.

**CERTIFICATION OF COMPLIANCE
FOR
EMPLOYMENT OF STATE RESIDENTS
HRS CHAPTER 103B, AS AMENDED BY ACT 192, SLH 2011**

Project Title: _____

Agency Project No: _____

Contract No.: _____

As required by Hawai'i Revised Statutes Chapter 103B, as amended by Act 192, Session Laws of Hawaii 2011—Employment of State Residents on Construction Procurement Contracts, I hereby certify under oath, that I am an officer of _____ and
(Name of Contractor or Subcontractor Company)

for the Project Contract indicated above, _____ was in
(Name of Contractor or Subcontractor Company)

compliance with HRS Chapter 103B, as amended by Act 192, SLH 2011, by employing a workforce of which not less than eighty percent are Hawai'i residents, as calculated according to the formula in the solicitation, to perform this Contract.

☐ I am an officer of the **Contractor** for this contract.

☐ I am an officer of a **Subcontractor** for this contract.

CORPORATE SEAL

(Name of Company)

(Signature)

(Print Name)

(Print Title)

Subscribed and sworn to me before this
_____ day of _____, 2011.

Doc. Date: _____ # of Pages _____ 1st Circuit

Notary Name: _____

Doc. Description: _____

Notary Public, 1st Circuit, State of Hawai'i
My commission expires: _____

Notary Signature

Date

NOTARY CERTIFICATION

EXHIBIT 2

PLANS
FOR
PUUKAPU PASTORAL LOTS WATER SYSTEM
OPERATION & MAINTENANCE SERVICES
PUUKAPU, SOUTH KOHALA, ISLAND OF HAWAII, HAWAII
IFB NO.: IFB-14-HHL-011

PREPARED BY
STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

FEBRUARY 2014

PLANS
FOR
PUUKAPU HYBRID WATER SYSTEM
SOUTH KOHALA, ISLAND OF HAWAII, HAWAII

PREPARED BY:

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

NOTE: The plans and technical specifications for the "Puukapu Hybrid Water System" are provided for general information and reference only. The Project is under construction and therefore the information presented is subject-to-change. The intent of inclusion of these documents is to give bidders an understanding of the physical scope and nature of the water system improvements.

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

PUUKAPU

HYBRID WATER SYSTEM

WAIMEA, SOUTH KOHALA, HAWAII

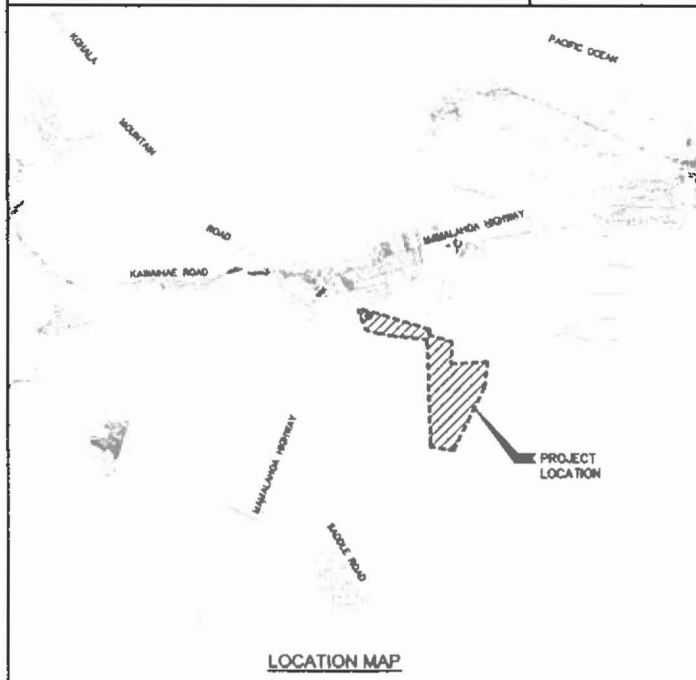
IFB-09-HHL-008

TAX MAP KEY : (3) 6-4-01: 32-38, 41-45, 51, 53, and 54

PREPARED BY:
AKINAKA & ASSOCIATES, LTD.
3049 UALENA ST., SUITE 500
HONOLULU, HAWAII 96817



ISLAND OF HAWAII



LOCATION MAP

APPROVED BY:

[Signature]
CHAIRMAN, HAWAIIAN HOMES COMMISSION
STATE OF HAWAII

6/4/09
DATE

DIRECTOR, PLANNING DEPARTMENT
COUNTY OF HAWAII

DATE

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

DATE

SANDBICH ISLES COMMUNICATION, INC.

DATE

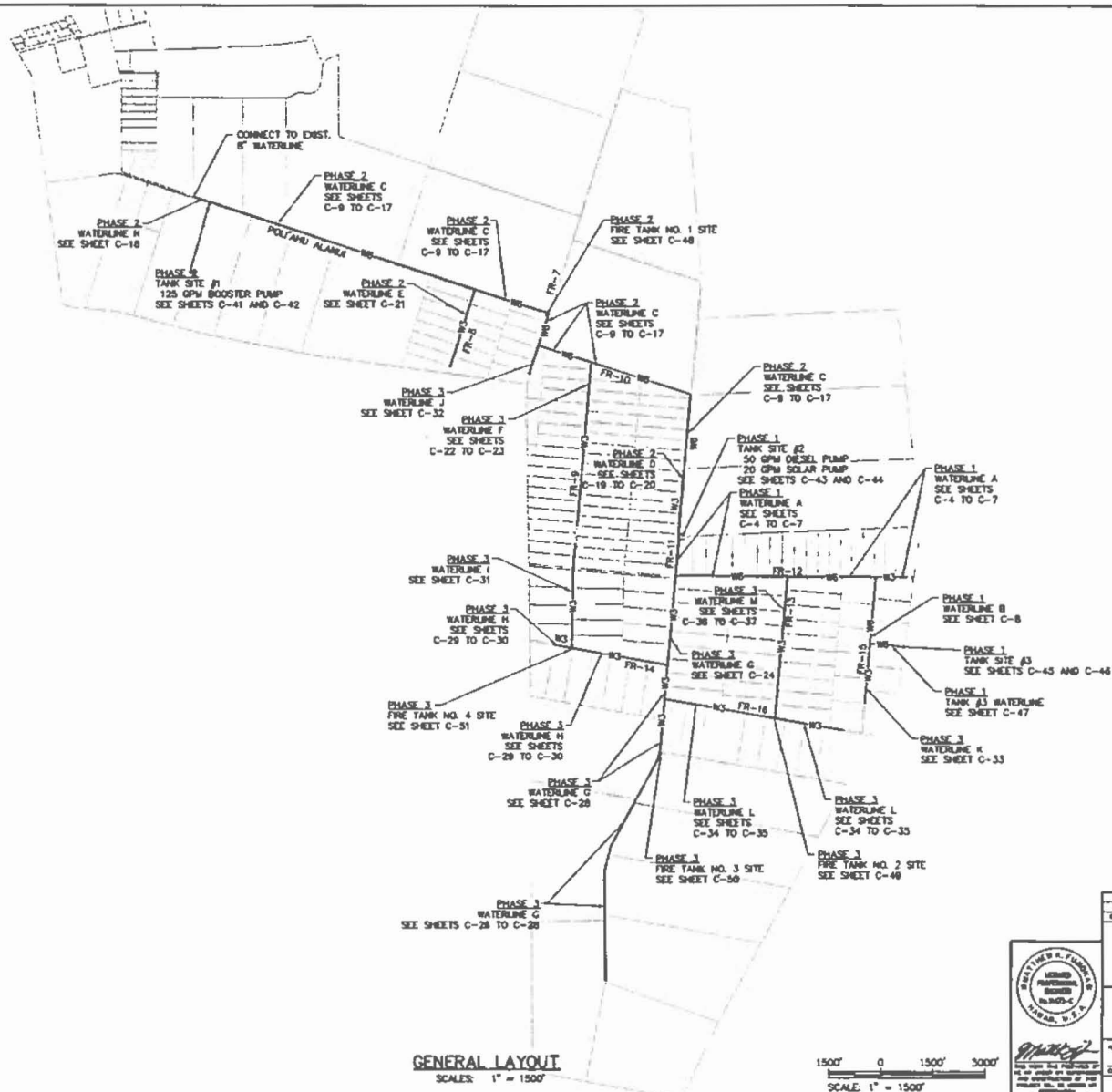
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3	C-2	GENERAL NOTES
4	C-3	TYPICAL SECTIONS
5-8	C-4 TO C-7	PHASE 1 WATERLINE A PLAN & PROFILE
9	C-8	PHASE 1 WATERLINE B PLAN & PROFILE
10-18	C-9 TO C-17	PHASE 2 WATERLINE C PLAN & PROFILE
19	C-18	PHASE 2 WATERLINE N PLAN & PROFILE
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T-1

SHEET 1 OF 70 SHEETS

Last Save by: CEM
 Last Saved: 6/15/2009
 Plotted on: 6/15/2009
 U:\DHHL\06-01\A-w\DHHL061003.dwg



TRUE NORTH
 SCALE: 1" = 1500'

GENERAL LAYOUT
 SCALE: 1" = 1500'

1500' 0 1500' 3000'
 SCALE: 1" = 1500'



DEPARTMENT OF HAWAIIAN HOME LANDS PUUKAPU HYBRID WATER SYSTEM THE MAP KEY: LG 8-4-00-20-30, 40-50, 60, 70, 80 and 90 BANAE, SOUTH KOHALA, HAWAII
GENERAL LAYOUT
ASHAKA & ASSOCIATES, LTD. CIVIL ENGINEERS

1. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSION AND EXISTING CONDITIONS AND SHALL NOTIFY THE CONTRACTING OFFICER IN WRITING, OF ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS AND EXISTING CONDITIONS PRIOR TO COMMENCING THE WORK. COMMENCEMENT OF WORK SHALL INDICATE THE CONTRACTOR'S ACCEPTANCE OF EXISTING CONDITIONS.

2. ALL ITEMS AND MATERIALS SHOWN ON THE DRAWINGS ARE NEW UNLESS OTHERWISE NOTED.
3. THE CONTRACTOR SHALL OBSERVE, COMPLY WITH, AND ACCOMPLISH ALL WORK IN ACCORDANCE WITH ALL CITY, STATE, AND FEDERAL REQUIREMENTS FOR THE REGULATION AND STANDARDS OF MAINTAINING AND CONSTRUCTION FOR THE PROTECTION OF PUBLIC HEALTH, SAFETY AND ENVIRONMENTAL QUALITY.
4. ALL WORK SHALL CONFORM TO THE UNIFORM BUILDING CODE (UBC) 1997 OR THE LATEST EDITION, AS AMENDED AND ADOPTED BY THE COUNTY OF PALM BEACH.
5. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES, WHETHER SHOWN ON THE DRAWINGS OR NOT, AND SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF ANY UTILITIES DAMAGED BY THE CONTRACTOR'S WORK OR BY CONSTRUCTION PRACTICES. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE RESPECTIVE UTILITY COMPANIES.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE RESULTING FROM THE PERFORMANCE OF HIS WORK UNDER THE CONTRACT. ANY AND ALL DAMAGES SHALL BE CONNECTED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE CONTRACTING OFFICIAL. PATCH AND FINISH ALL DAMAGED SURFACES OR AS DIRECTED BY THE CONTRACTING OFFICIAL.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING BARRIERS AROUND THE CONSTRUCTION AREA AND SAFE DETOUR ROUTES FOR PEDESTRIANS, AS FOR THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) 4.1.1(4).
8. THE CONTRACTOR SHALL RE-CONTOUR EXISTING GRADES AS NECESSARY TO CREATE PROPERLY FUNCTIONING SWALES, TRENCH DRAINS, SEWERBACK TRENCH OR PIPE DRAINS FOR CLEAR INLETS AND OUTLETS TO "VALLEY".
9. ALL CONSTRUCTION SHALL BE FULLY ACCESSIBLE AND COMPLY WITH THE ADAAG REQUIREMENTS, SECTION 4.1.1(3).
10. CONSTRUCTION LAYOUT SHALL BE COME BY A LOGGED CIVIL ENGINEER OR LICENSED SURVEYOR.

1. THE CONTRACTOR, AT HIS/HER OWN EXPENSE, SHALL KEEP THE PROJECT AND ITS SURROUNDING AREAS FREE FROM EXISTING MESS. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH. THE CITY SHALL REQUIRE SUPPLEMENTARY MEASURES IF REQUIRED.
2. THE CONTRACTOR SHALL PROVIDE, INSTALL, AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, WARNING CONES AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION OF THE PUBLIC.

- THE CONTRACTOR'S ATTENTION IS DIRECTED TO CHAPTER 46 PUBLIC HEALTH REGULATIONS OF THE ENVIRONMENTAL HEALTH, STATE OF NARVAL, "COMMUNITY NOISE CONTROL" IN WHICH MAXIMUM ALLOWABLE NOISE LEVELS HAVE BEEN SET. IF THE CONTRACTOR'S NOISE LEVELS ARE REQUIRED TO EXCEED THE MAXIMUM ALLOWABLE NOISE LEVELS, THE CONTRACTOR MUST BE REQUIRED TO OBTAIN PERMIT FROM THE DIRECTOR OF THE ENVIRONMENTAL HEALTH. THE CONTRACTOR SHALL OBTAIN A COPY OF CHAPTER 46 AND BECOME FAMILIAR WITH THE NOISE LEVEL RESTRICTIONS AND THE PROCEDURES FOR OBTAINING A PERMIT FOR CONSTRUCTION OF A PROJECT. THE CONTRACTOR SHALL OBTAIN A PERMIT FROM THE ENVIRONMENTAL HEALTH SERVICES DIVISION, 501 ALA MOUAVEN, MONROVIA, ALABAMA 36051 OR BY TELEPHONE (501-596-7700).

1. ALL APPLICABLE CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1986, AND STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984, AS AMENDED, OF THE DEPARTMENTS OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU, AND THE COUNTIES OF KAUAI, MAUI, AND HAWAII.

2. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES, APPURTENANCES AND STRUCTURES AS SHOWN ON THESE DRAWINGS WERE COMPILED FROM RECORD DRAWINGS PROVIDED BY UTILITY AND GOVERNMENT AGENCIES AND FROM THE ENGINEER'S MEASUREMENTS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF ALL UTILITIES AND STRUCTURES BY EXCAVATING AND TESTING. IF ANY DISCREPANCIES ARE FOUND, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYING FOR ALL DAMAGES TO THE EXISTING UTILITIES. THE CONTRACTOR SHALL NOT ASSUME THAT WHERE NO UTILITIES ARE SHOWN, THAT NONE EXIST.
3. THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND LICENSES, PAY ALL CHARGES, FEES AND TAXES, GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, AND REGULATIONS BEARING ON THE CONDUCT OF THE WORK AS DRAWN AND SPECIFIED.
4. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES TO THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.
5. THE CONTRACTOR SHALL PROVIDE ACCESS TO AND FROM DRIVEWAYS AND PUBLIC STREETS AT ALL TIMES EXCEPT AS NOTED ON THE PLANS.
6. WHEN TRENCH EXCAVATION IS ADJACENT TO OR UNDER EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY SHEETING AND SHORING THE EXISTING STRUCTURES OR FACILITIES TO PROTECT THEM FROM COLLAPSE AND SETTLEMENT. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES, CABLES AND SUTELCABLES AND FOR PROPERLY SUPPORTING EXISTING STRUCTURES AND FACILITIES WITH BEAMS, STRUTS OR UNDER-PINNINGS TO FULLY PROTECT THEM FROM DAMAGE.
7. BACKFILL UNDER EXISTING STRUCTURES OR FACILITIES SHALL BE SANDY OR GRAMMILL MATERIAL COMPLETELY PLACED AS SOON AS THE PIPE IS Laid AND TESTED. THE BACKFILL MATERIAL SHALL BE RAMMED WITH PROPER TOOLS UNTIL COMPACTED TO 90 TO 95 PERCENT OF ITS MAXIMUM DENSITY.
8. VERIFY AND CHECK ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCY SHALL BE IMMEDIATELY

1. DURING CONSTRUCTION, PREVENTIVE MEASURES SHALL BE USED TO CONTROL FORESEEABLE DUST, EROSION OR SEDIMENTATION PROBLEMS WHICH MAY ARISE AS THE JOB PROGRESSES.
2. DRAINAGE SYSTEMS AS SHOWN ON THE CONSTRUCTION PLANS SHALL

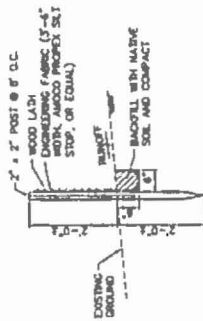
3. ALL FILL, SUBGRADE AND BASE MATERIAL PLACED WITHIN THE BOUNDARY OF THE PAVEMENT SHALL BE SUBSTANTIALLY COMPACTED BY THE END OF THE DAY.
4. THE CONTRACTOR SHALL CONDUCT HIS GRADING OPERATIONS SO THAT EXCAVATION, EMBANKMENT AND IMPORTED MATERIAL SHALL BE DAMPENED WITH WATER DURING HIS GRADING OPERATIONS AT ALL TIMES.
5. WATER TRUCK AND/OR TEMPORARY SPRINKLERS SHALL BE AVAILABLE ON THE JOB SITE AT ALL TIMES TO ENSURE BASE EARTH DOES NOT CREATE A DUST PROBLEM.

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 EXPOSE PROPER CARE IN EXCAVATING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES ARE SHOWN ON THE

1. THE CONTRACTOR SHALL EXPOSE THE EXISTING UNDERLIES AND REINFORCEMENTS TO THE NEW FOUNDATIONS AND DEEPS.
2. ACCURATE PROSSESSORS SHALL BE MADE TO PREVENT SURFACE WATER FROM DAMAGING THE GUT FACE OF AN EXCAVATION OR THE SLOPED SURFACES OF A FULL RETENTION, AN EXHAUSTIVE PROVISIONS SHALL BE MADE TO PREVENT SLOTTMENT-LATCH RUNOFF FROM LEAVING THE SITE.
3. FALLS ON SLOPES STEEPER THAN 4:1 SHALL BE NEXED.
4. THE LIMITS OF THE AREA TO BE GRADED BEFORE THE COMBINATION OF THE GRADING WORK.
5. WHERE APPLICABLE AND FEASIBLE THE MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY EARTH BORING PHASE OF THE GRADING IS INITIATED.
6. TEMPORARY EROSION CONTROLS SHALL NOT BE REDUCED BEFORE PERMANENT EROSION CONTROLS ARE IN PLACE AND ESTABLISHED.
7. APPROVAL FOR WORK INVOLVES CONTAMINATED SOIL SHALL BE SUBMITTED FOR APPROVAL PRIOR TO APPLICATION FOR GRADING PERMIT.
8. IF THE GRADING WORK INVOLVES CONTAMINATED SOIL, THEN ALL GRADING WORK SHALL BE DONE IN CONFORMANCE WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS.
9. NON-COMPLIANCE TO ANY OF THE ABOVE REQUIREMENTS SHALL MEAN IMMEDIATE SUSPENSION OF ALL WORK, AND RECDUAL WORK SHALL BE COMENCED IMMEDIATELY AFTER THE SUSPENSION OF WORK SHALL BE COMPLETED. ALL SUSPENDED WORK SHALL BE SUBMITTED TO ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES.

1. ALL MATERIAL AND CONSTRUCTION OF WATER SYSTEM FACILITIES AND APPURTENANCES UP TO THE 4" MASTER METER SHALL BE IN ACCORDANCE WITH THE COUNTY OF HAWAII'S "WATER SYSTEM STANDARDS", DATED 2002, AND ALL SUBSEQUENT AMENDMENTS AND ADDITIONS, UNLESS OTHERWISE SPECIFIED.

2. CONTRACTOR SHALL VERIFY ALL CONDITIONS AT PROJECT SITE INCLUDING, BUT NOT LIMITED TO, THE EXISTING UTILITIES, OBSTRUCTIONS, AND NOVELTY BE DISCOVERED OR ANY CONFLICTS IN THE DRAWINGS AND SPECIFICATIONS.
3. CONTRACTOR SHALL NOTIFY AND OBTAIN APPROVAL FROM THE SUPERVISOR ON ALL WORKS TO BE DONE. THE SUPERVISOR'S APPROVAL SHALL BE IN WRITING. CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO AVOID INADEQUATELY NOTIFY THE ENGINEER OF ANY DISCREPANCY OR CONFLICT PLANNED IN THE FIELD PRIOR TO OR DURING THE COURSE OF CONSTRUCTION AND SHALL NOT PROCEED WITH THE WORK UNTIL THE SUPERVISOR HAS REVIEWED AND APPROVED THE RESOLVED DISCREPANCY SHOWN ARE TYPICALLY TO THE WALL, FRESH, UNLESS INDICATED OTHERWISE.
4. COORDINATE ALL DELIVERIES WITH THE DUAL WEST HAVEN SUPERVISOR FOR MATERIAL STORAGE, DELINATE ACCESS TO AND FROM WORK SITE, SPECIAL MOVER OPERATIONS, TRAILING OF WORK, SEQUENCING OF OPERATIONS, INTERFERENCES FOR ANY WORK PLANNING REQUIREMENTS, ETC. REFER TO THE SPECIFICATIONS FOR ANY WORK PLANNING REQUIREMENTS.
5. EXISTING AREAS DAMAGED AS A RESULT OF WORK DONE UNDER THIS CONTRACT SHALL BE REPAIRED AND MODIFIED TO MATCH THE ADJACENT FINISHES.
6. COORDINATE CONTRACTOR MOBILIZATION, SCHEDULE, STORAGE, EQUIPMENT, AND ACCESS TO THE SITE WITH THE DUAL WEST HAVEN SUPERVISOR.
7. VERIFY LOCATIONS OF ALL UTILITY LINES, COMBUSTIBLE, SURFACE OR SUB-SURFACE STRUCTURES, ETC. OF ANY NATURE THAT MAY BE AFFECTED BY THE WORK BEFORE STARTING WORK.
8. CONTRACTOR SHALL, AT ALL TIME, DURING THE COURSE OF WORK, KEEP THE WORK AREA CLEAR OF ALL OBSTRUCTIONS, DEBRIS, AND OTHER ITEMS USED BY THE CONTRACTOR TO CLEAN AND FREE FROM ACCUMULATION OF WASTE MATERIALS AND RUBBISH.
9. CONTRACTOR SHALL PROTECT NEW AND EXISTING WORK, EQUIPMENT, MATERIALS AND FINISHED DAMAGED ITEMS SHALL BE REPAIRED OR REPLACED AT THE EXPENSE OF THE CONTRACTOR.
10. AT THE COMPLETION OF THE WORK, ALL SURPLUS MATERIALS AND DEBRIS SHALL BE REMOVED FROM THE RESPECTIVE PREMISES AND THOROUGHLY CLEANED UP TO THE SATISFACTION OF THE ENGINEER AND DUAL WEST HAVEN SUPERVISOR.
11. PAYMENT FOR ITEMS OF WORK SPECIFIED IN THE DRAWINGS, SPECIAL PROVISIONS AND SPECIFICATIONS FOR WHICH PAYMENT IS NOT SPECIFIED SHALL NOT BE MADE UNTIL THE WORK IS COMPLETED AND THE CONTRACTOR HAS PROVIDED SUFFICIENT EVIDENCE THAT NO ADDITIONAL PAYMENT SHALL BE MADE.



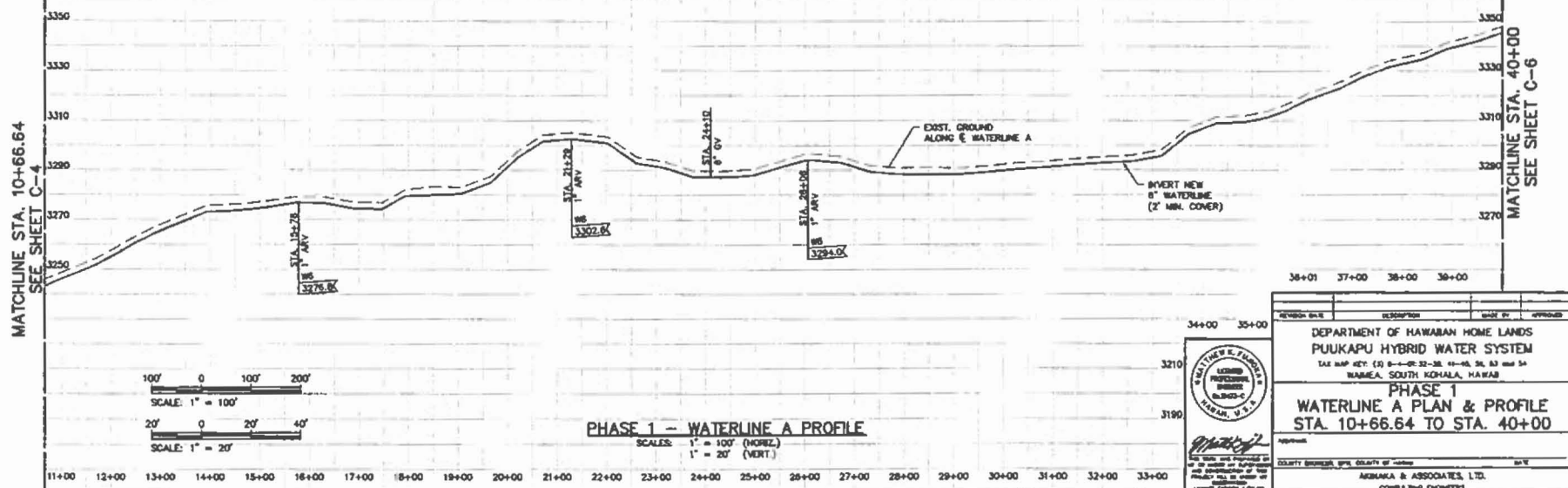
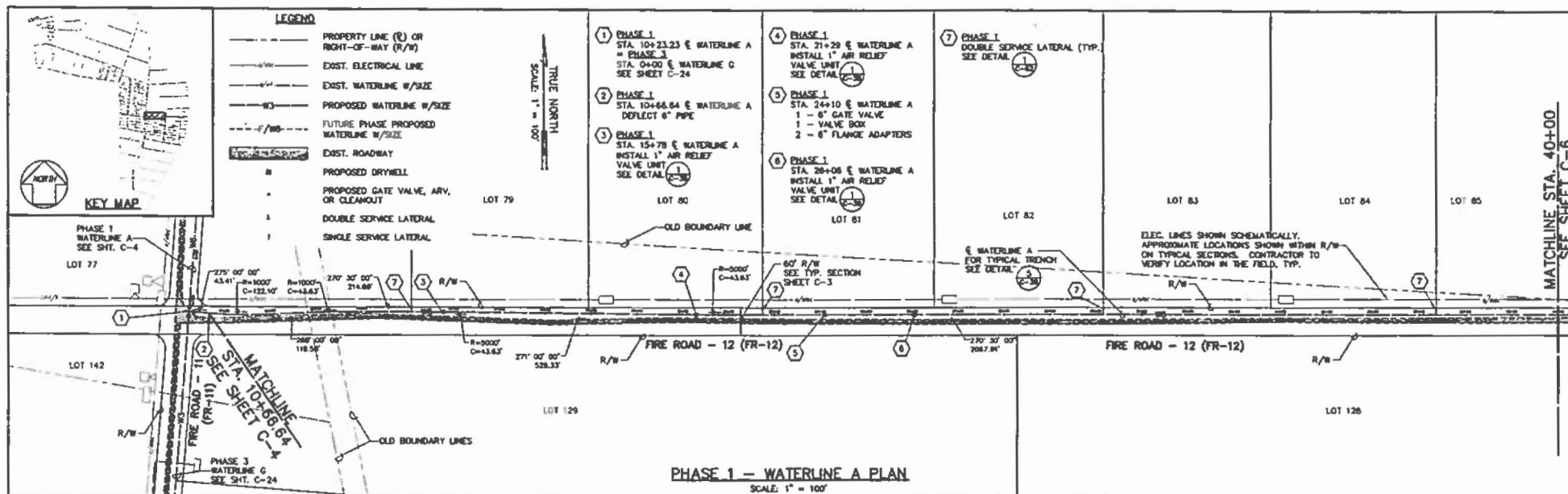
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 East Saved: 8/17/2009
 Plotted on: 6/17/2009

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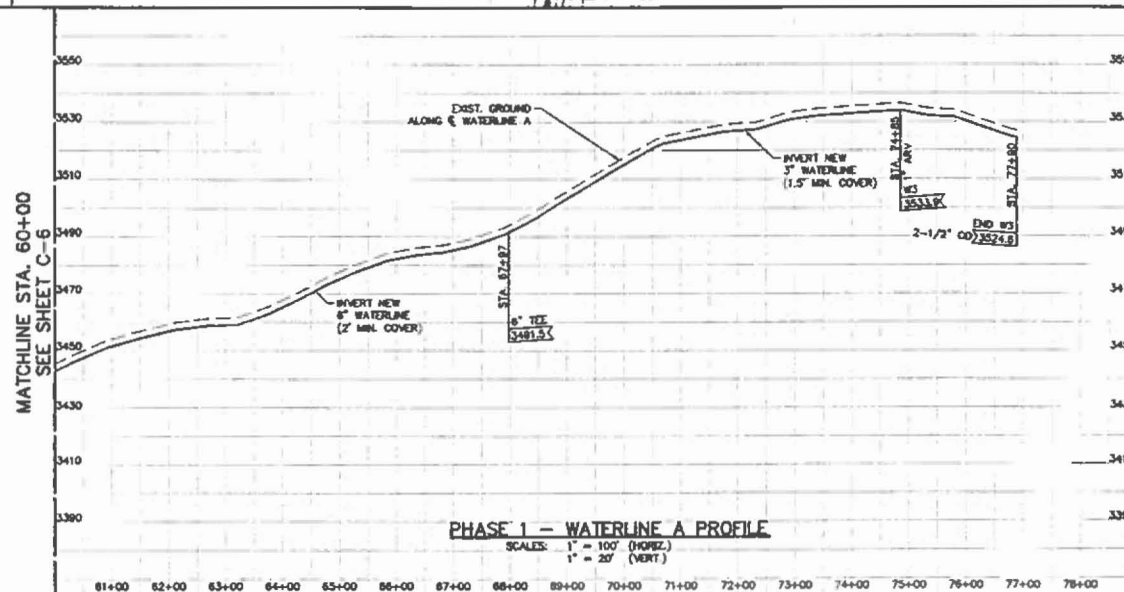
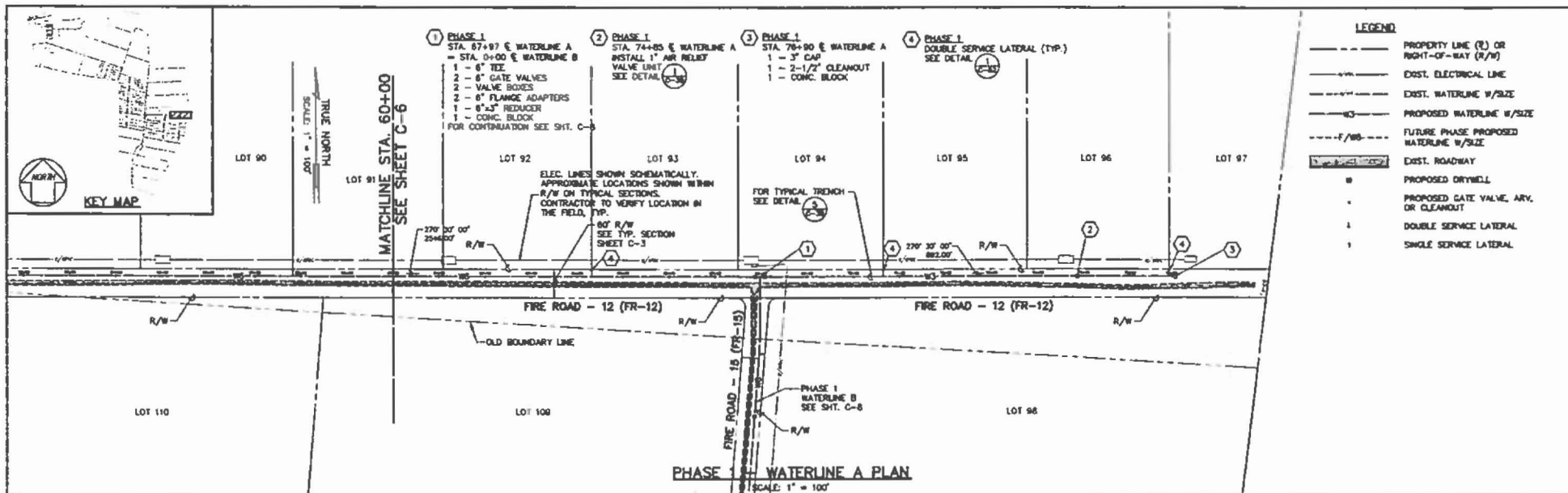


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2	06-10-02	ISSUED FOR PERMIT	CLD	CLD
3	06-10-02	ISSUED FOR PERMIT	CLD	CLD
4	06-10-02	ISSUED FOR PERMIT	CLD	CLD
5	06-10-02	ISSUED FOR PERMIT	CLD	CLD
6	06-10-02	ISSUED FOR PERMIT	CLD	CLD
7	06-10-02	ISSUED FOR PERMIT	CLD	CLD
8	06-10-02	ISSUED FOR PERMIT	CLD	CLD
9	06-10-02	ISSUED FOR PERMIT	CLD	CLD
10	06-10-02	ISSUED FOR PERMIT	CLD	CLD

DEPARTMENT OF HAWAIIAN HOME LANDS
 PUUKAPU HYBRID WATER SYSTEM
 TAC MAP KEY: (1) 0-1-02-32-36, 0-1-02-36, 0-1-02-36, 0-1-02-36, 0-1-02-36
 WAIKANA, SOUTH KOHALA, HAWAII

PHASE 1
WATERLINE A PLAN & PROFILE
STA. 10+66.64 TO STA. 40+00

APPROVED: _____
 COUNTY ENGINEER, OFFICE OF THE COUNTY ENGINEER
 AECOM & ASSOCIATES, LTD.
 CONSULTING ENGINEERS



REVISION DATE	DESCRIPTION	DESIGN BY	APPROVED

DEPARTMENT OF HAWAIIAN HOME LANDS
PUUKAPU HYBRID WATER SYSTEM
TAX MAP KEY: L30 6-4-86 32-38, 41-45, 48, 53 and 54
WAIKANA, SOUTH KONA, HAWAII

PHASE 1
WATERLINE A PLAN & PROFILE
STA. 60+00 TO END

APPROVED: _____ DATE: _____

COUNTY ENGINEER, 3RD, COUNTY OF HAWAII

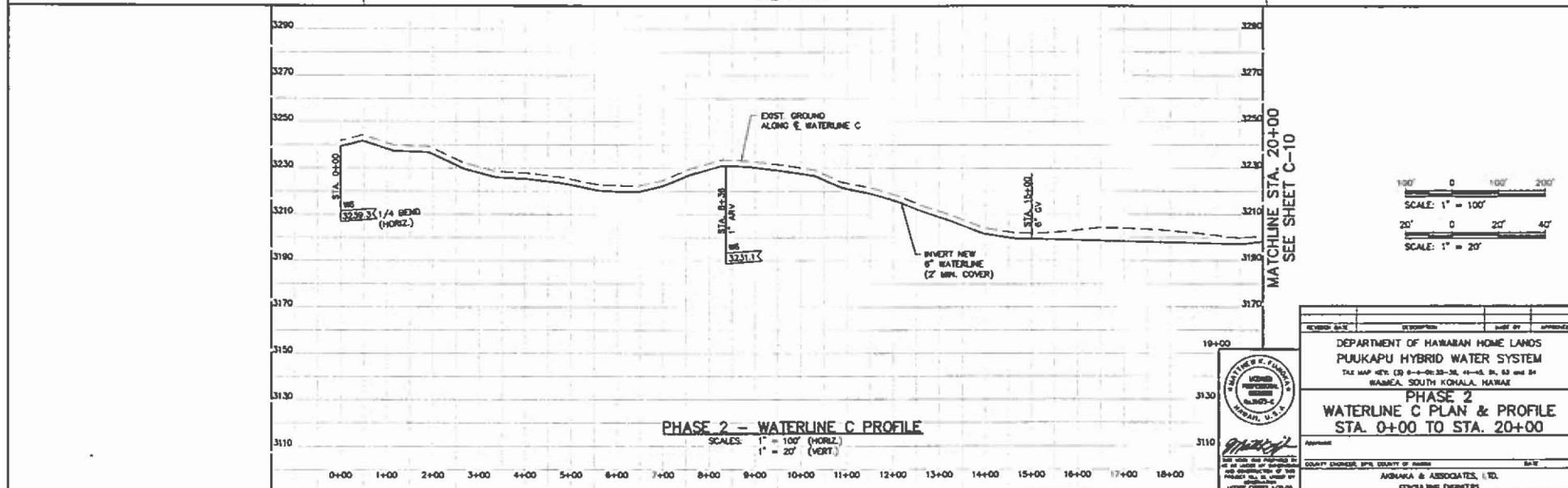
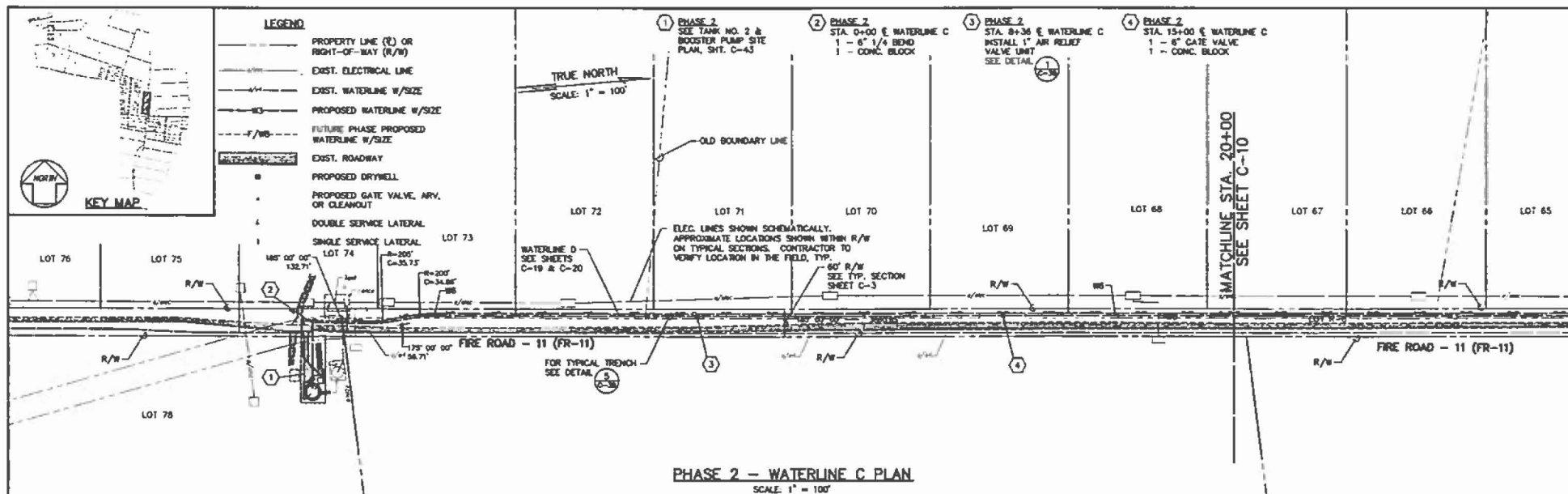
ARCHANA & ASSOCIATES, LTD.
CORPUS VLS, ENGINEERS

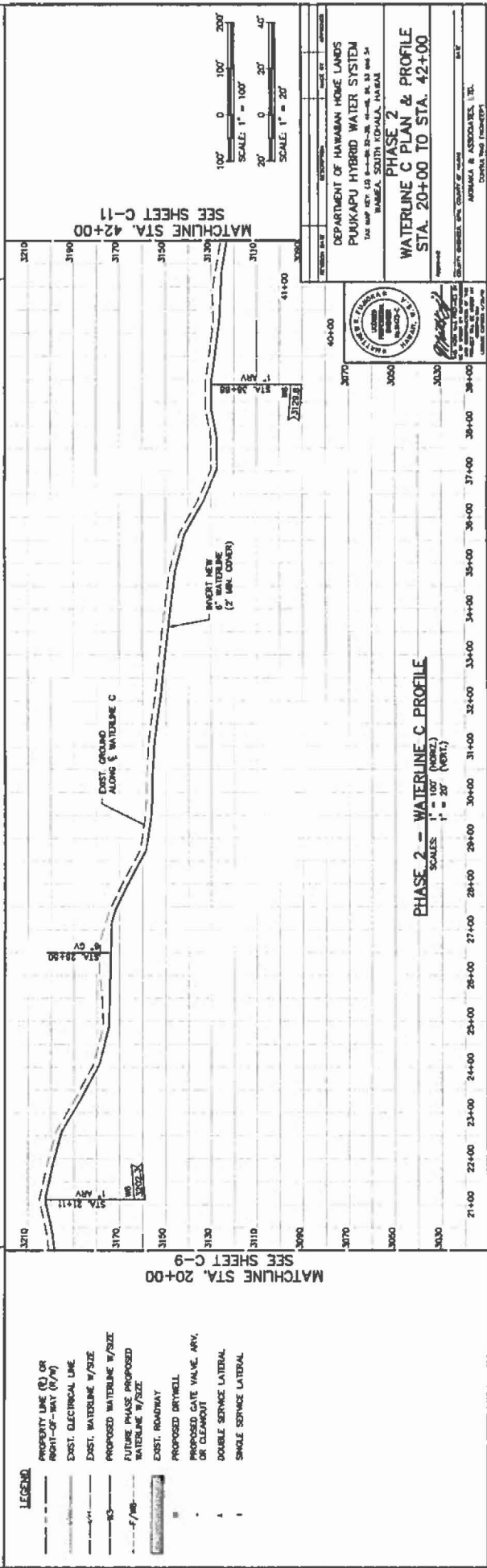
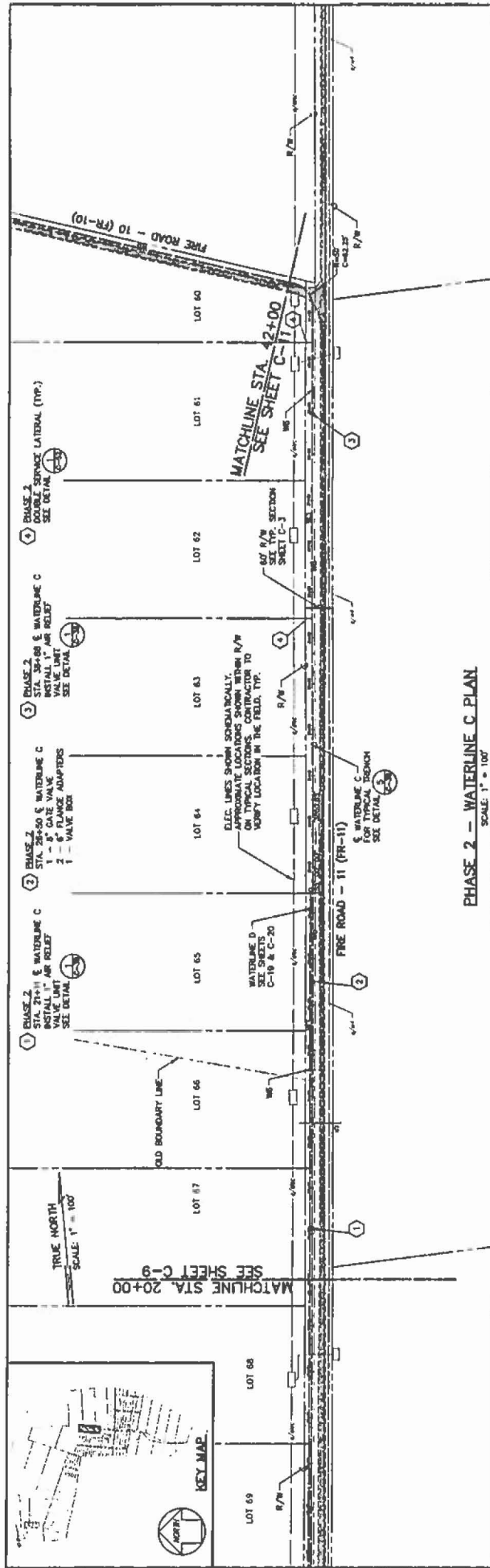
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C-7

SHEET 8 OF 70 SHEETS

Last Save by: CEM
 Last Saved: 6/15/2009
 Plotted on: 6/15/2009
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DEPARTMENT OF HAWAIIAN HOME LANDS
PUUKAPU HYBRID WATER SYSTEM
100 W. KEELE RD. #100-100, KEELE, HI 96756
HAWAII, SOUTH KODIA, HAWAII

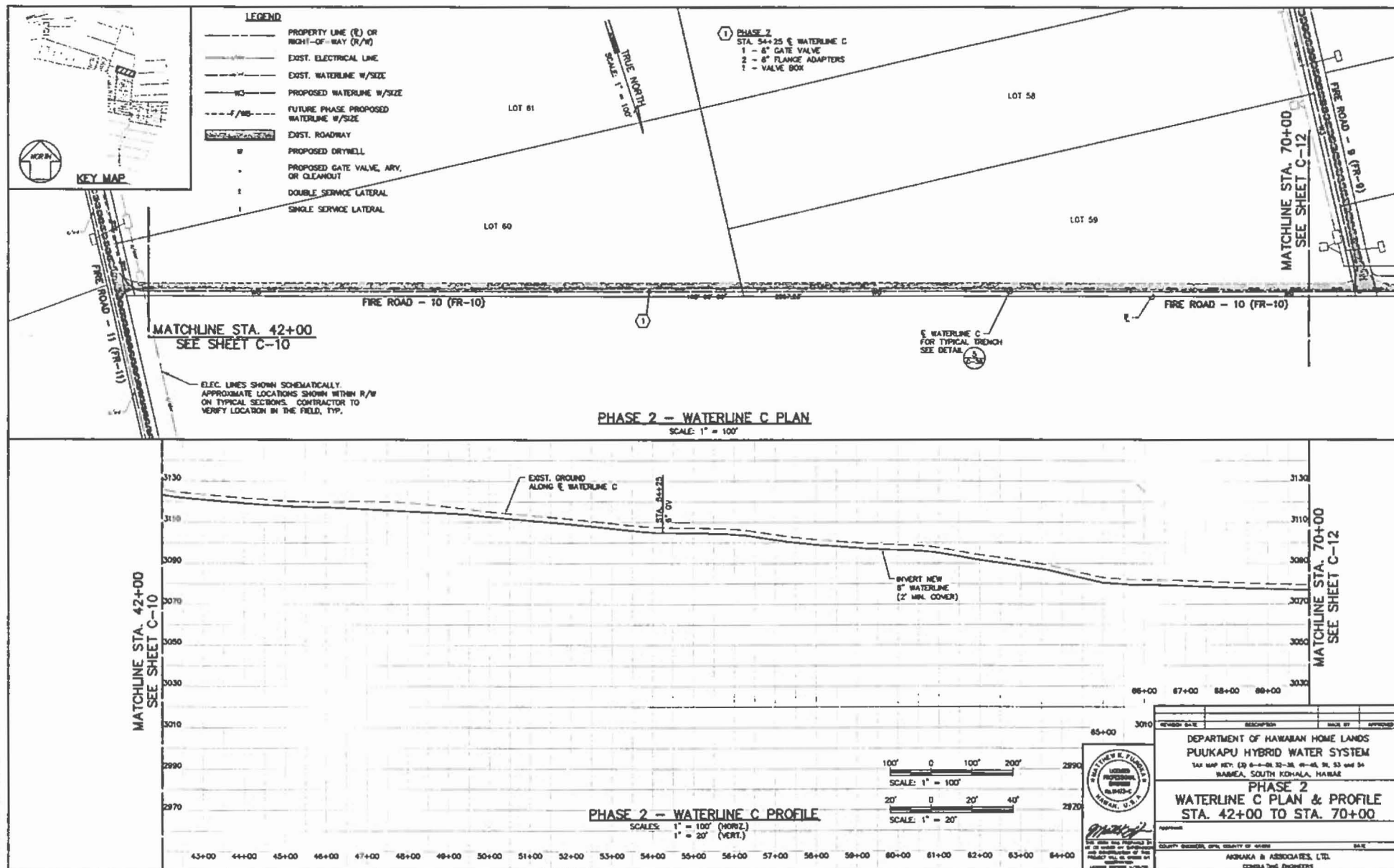
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WATERLINE C PLAN & PROFILE
STA. 20+00 TO STA. 42+00

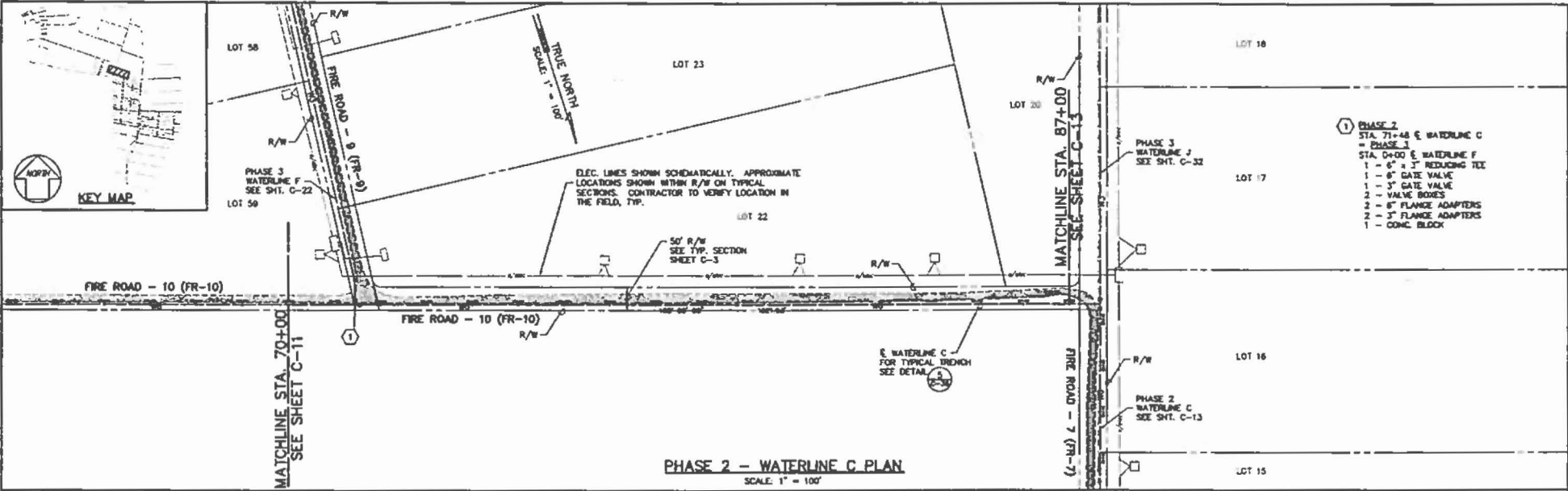
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SHEET 11 OF 70 SHEETS
C-10

Last Date by: TSM
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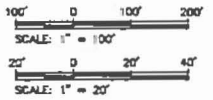
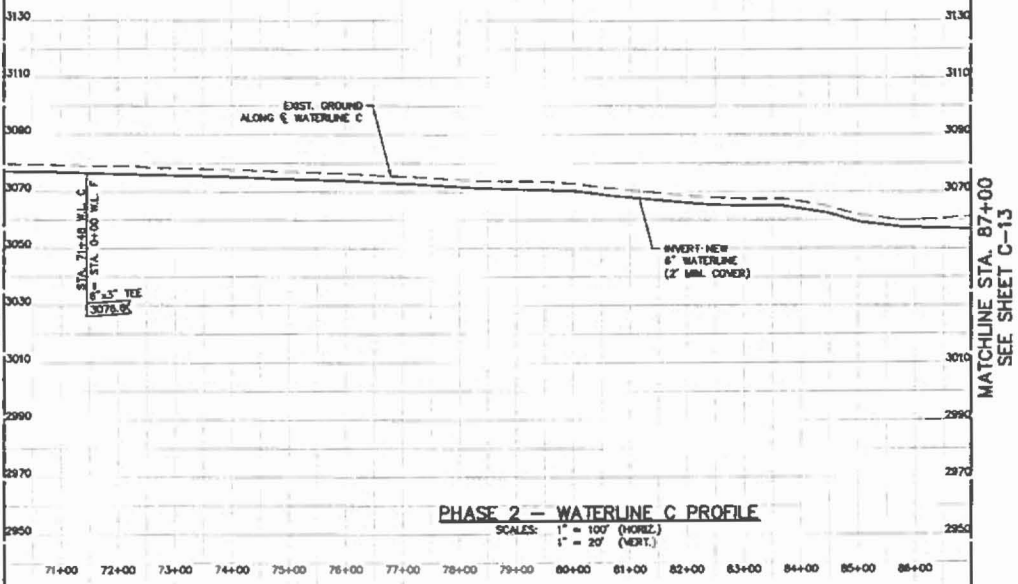
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- ① PHASE 2
STA. 71+48 @ WATERLINE C
= PHASE 3
STA. 0+00 @ WATERLINE F
1 - 6" x 3" REDUCING TEE
1 - 6" GATE VALVE
1 - 3" GATE VALVE
2 - VALVE BOXES
2 - 6" FLANGE ADAPTERS
2 - 3" FLANGE ADAPTERS
1 - CONC. BLOCK

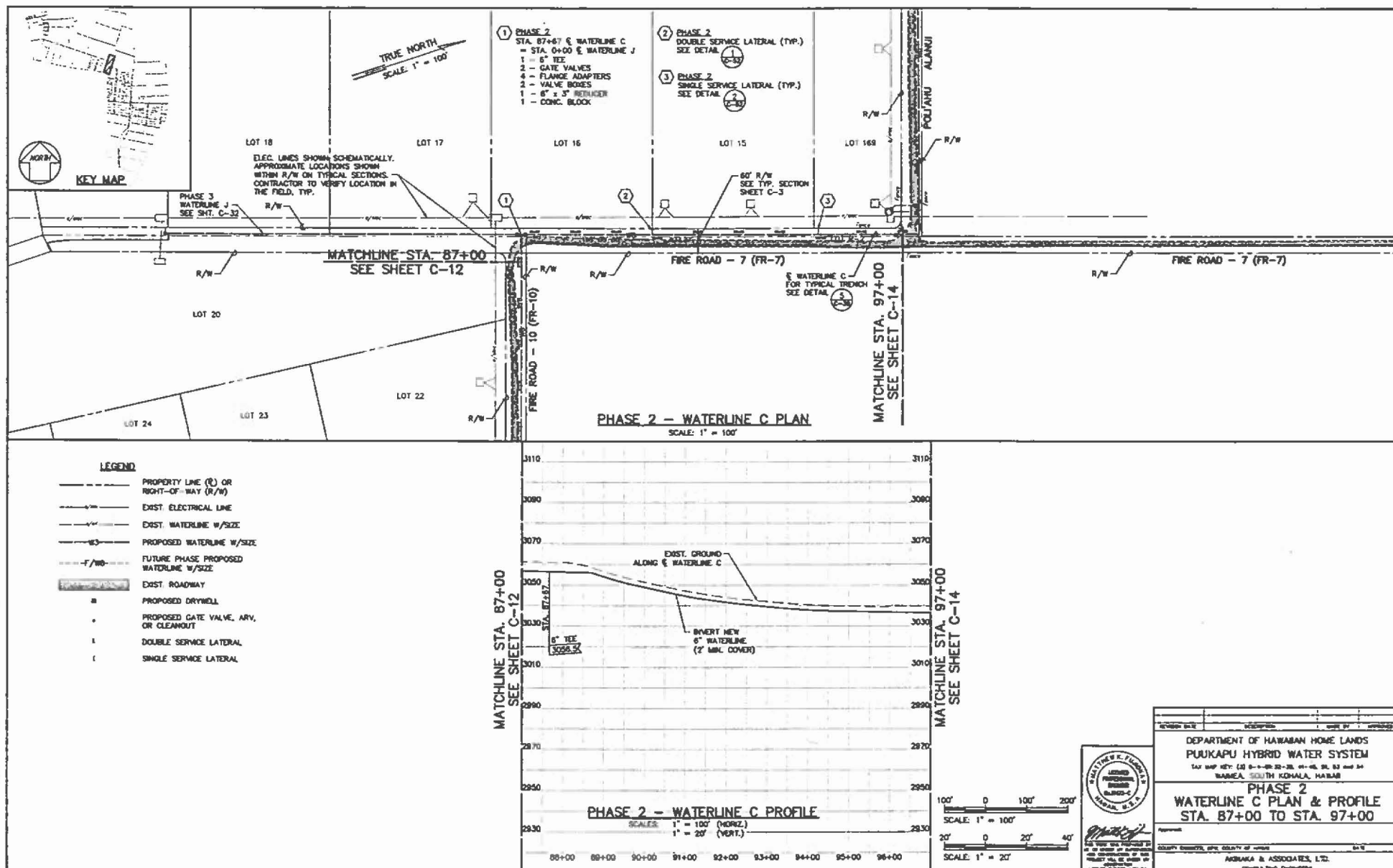
- LEGEND**
- PROPERTY LINE (P) OR RIGHT-OF-WAY (R/W)
 - EXIST. ELECTRICAL LINE
 - EXIST. WATERLINE W/SIZE
 - PROPOSED WATERLINE W/SIZE
 - FUTURE PHASE PROPOSED WATERLINE W/SIZE
 - EXIST. ROADWAY
 - PROPOSED DRYWELL
 - PROPOSED GATE VALVE, AIR, OR CLEANOUT
 - DOUBLE SERVICE LATERAL
 - SINGLE SERVICE LATERAL

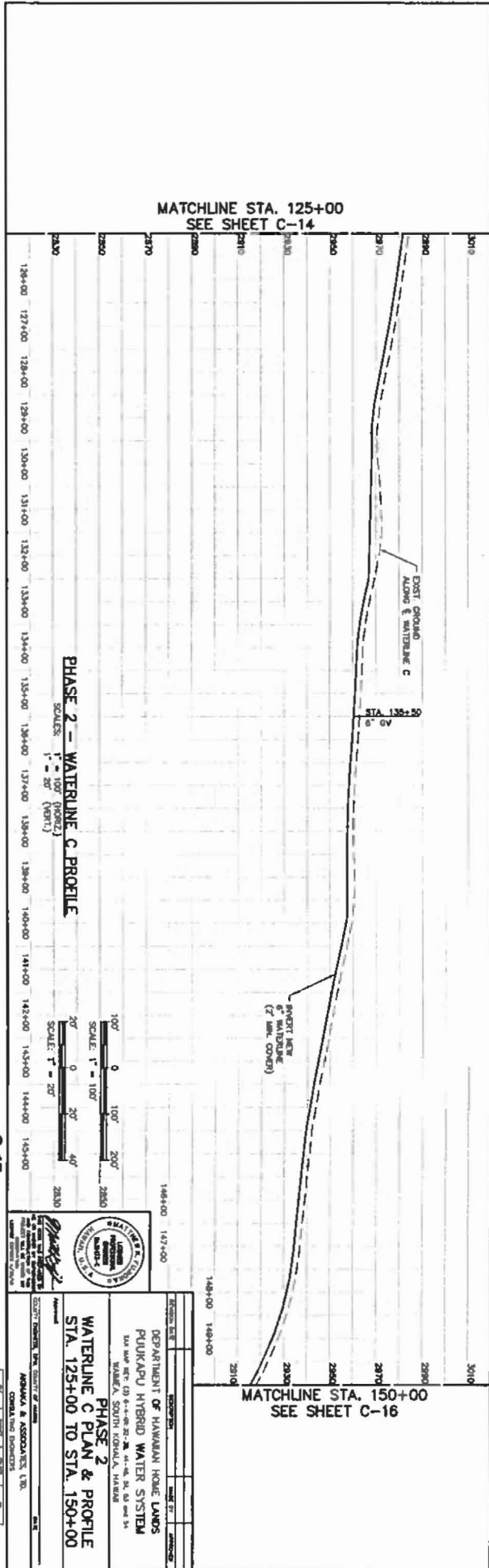


REVISION	DATE	DESCRIPTION	BY	APPROVED
DEPARTMENT OF HAWAIIAN HOME LANDS PUUKAPU HYBRID WATER SYSTEM TAX MAP KEY (S) 2-1-01, 2-2-01, 41-01, 24, 53 and 54 WAIKANA, KAUAI, KAHALA, HAWAII				
PHASE 2 WATERLINE C PLAN & PROFILE STA. 70+00 TO STA. 87+00				
COUNTY ENGINEER, DIST. DIVISION OF HAWAII COUNTY ENGINEER, DIST. DIVISION OF HAWAII COUNTY ENGINEER, DIST. DIVISION OF HAWAII				

Last Save by: CEM
 Date: 8/15/2009
 Printed at: 8/15/2009
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Last Saved: 6/16/2001
Plotted on: 6/16/2000
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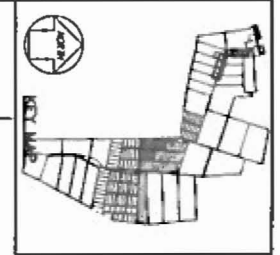




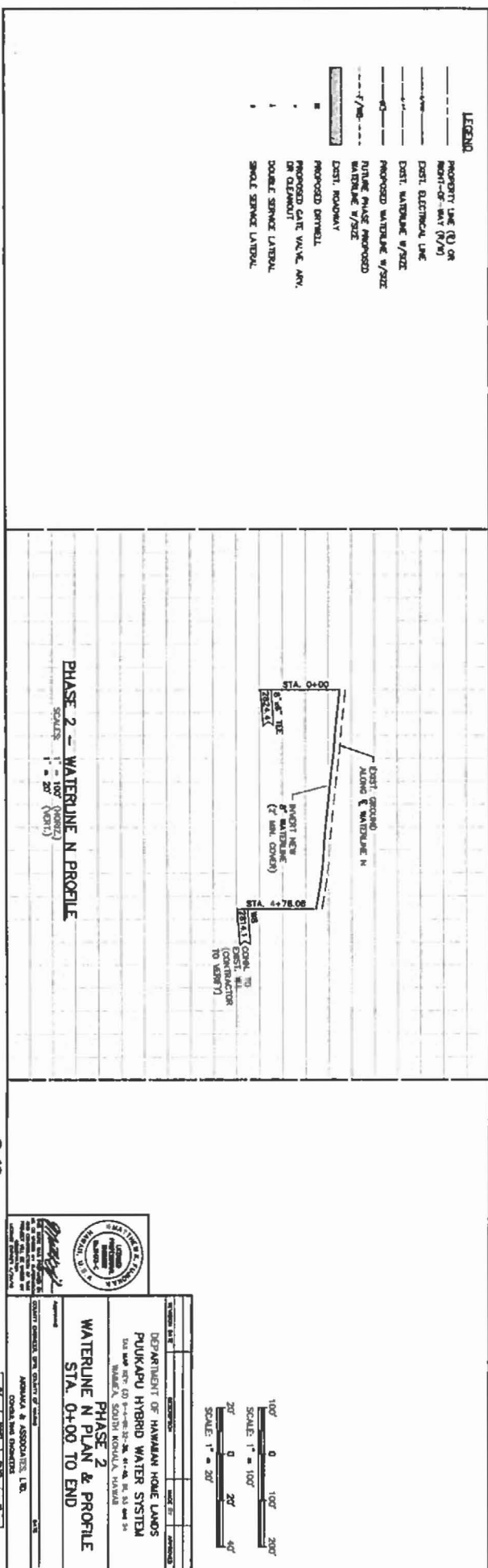
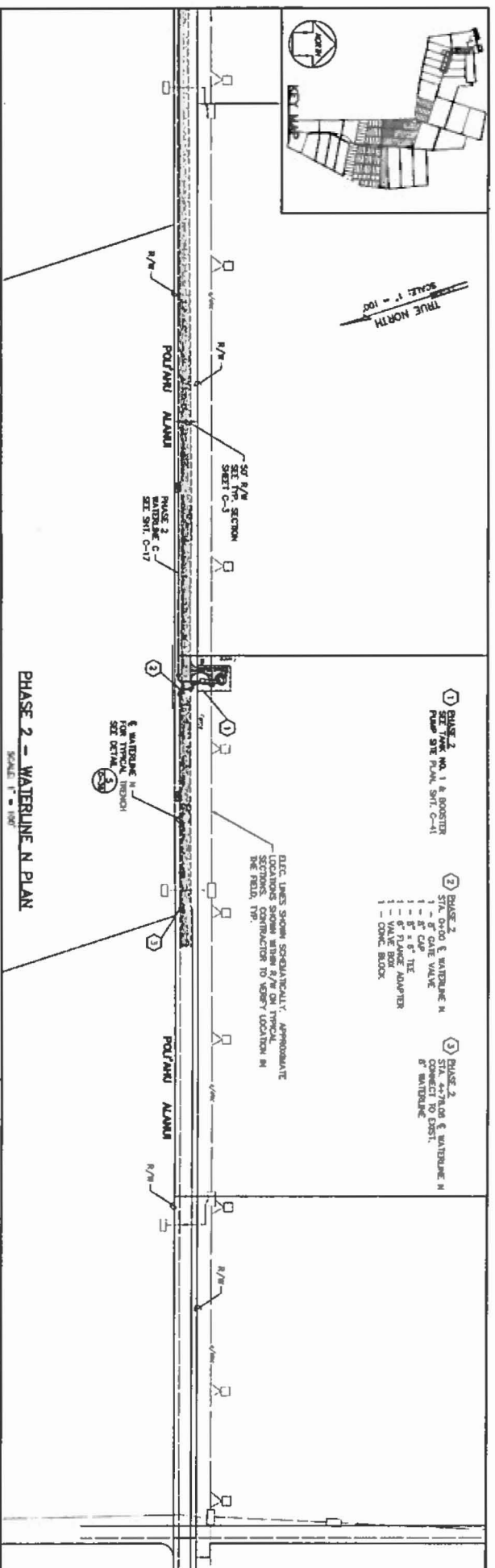
C-15

SHEET 18 OF 20 SHEETS

DEPARTMENT OF HAWAIIAN HOME LANDS
 PUKAPU HYBRID WATER SYSTEM
 WATERLINE C PLAN & PROFILE
 STA. 125+00 TO STA. 150+00
 PHASE 2
 APPROVED: [Signature]
 DATE: 6/16/2009
 PREPARED BY: [Signature]
 CHECKED BY: [Signature]
 DESIGNED BY: [Signature]
 DRAWN BY: [Signature]



TRUE NORTH
 SCALE: 1" = 100'



C-18

SHEET 18 OF 20 SHEETS

DATE: 8/15/2000

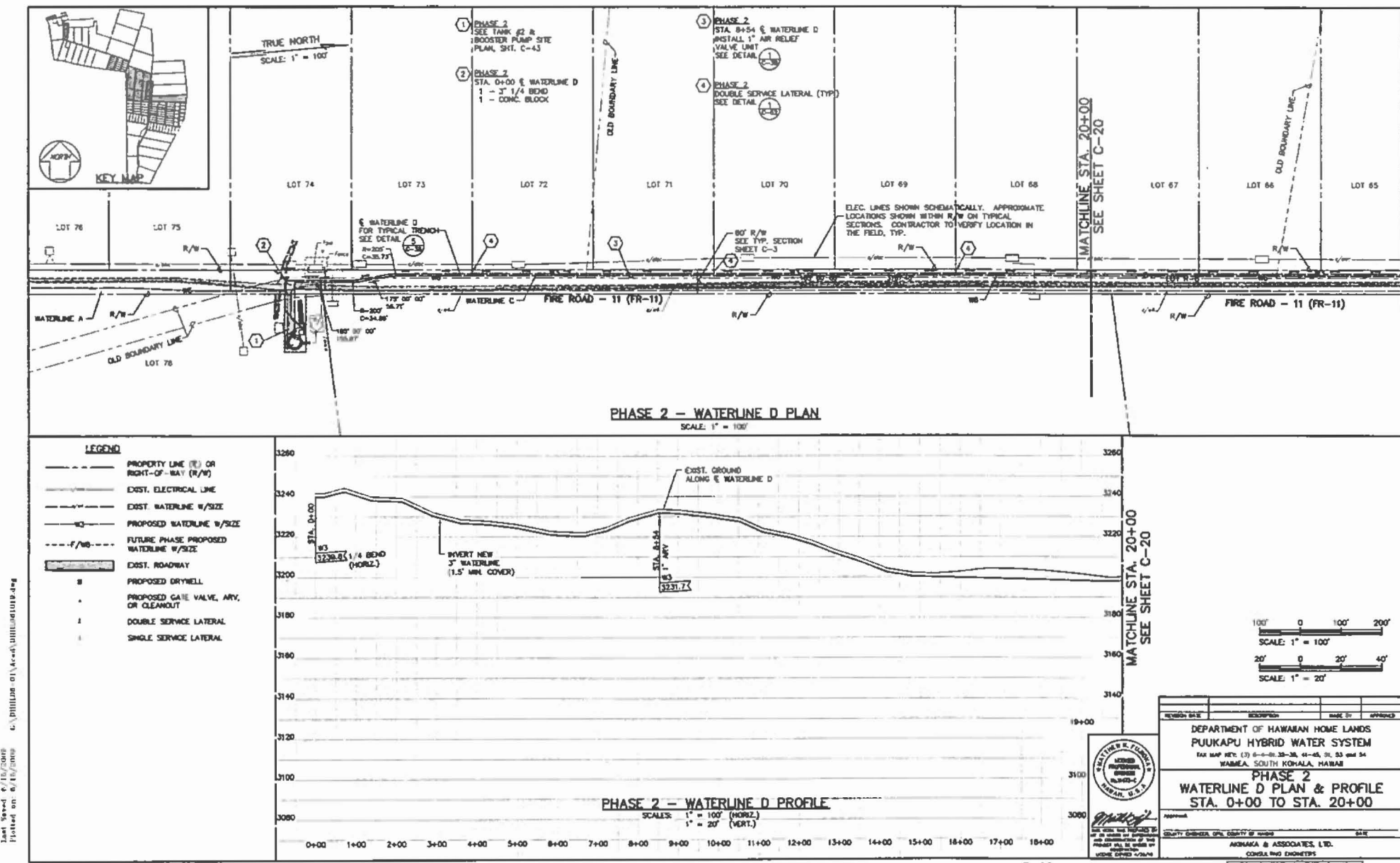


DEPARTMENT OF HAWAIIAN HOME LANDS
 PUKAPU HYBRID WATER SYSTEM
 WATERLINE N PLAN & PROFILE
 STA. 0+00 TO END

APPROVED: 8/15/2000
 C. J. D.

100' 0 100' 200'
 SCALE: 1" = 100'
 20' 0 20' 40'
 SCALE: 1" = 20'

last save by rkm
last saved 6/16/2009
Printed on 6/16/2009



REVISION DATE	DESCRIPTION	DATE	APPROVED

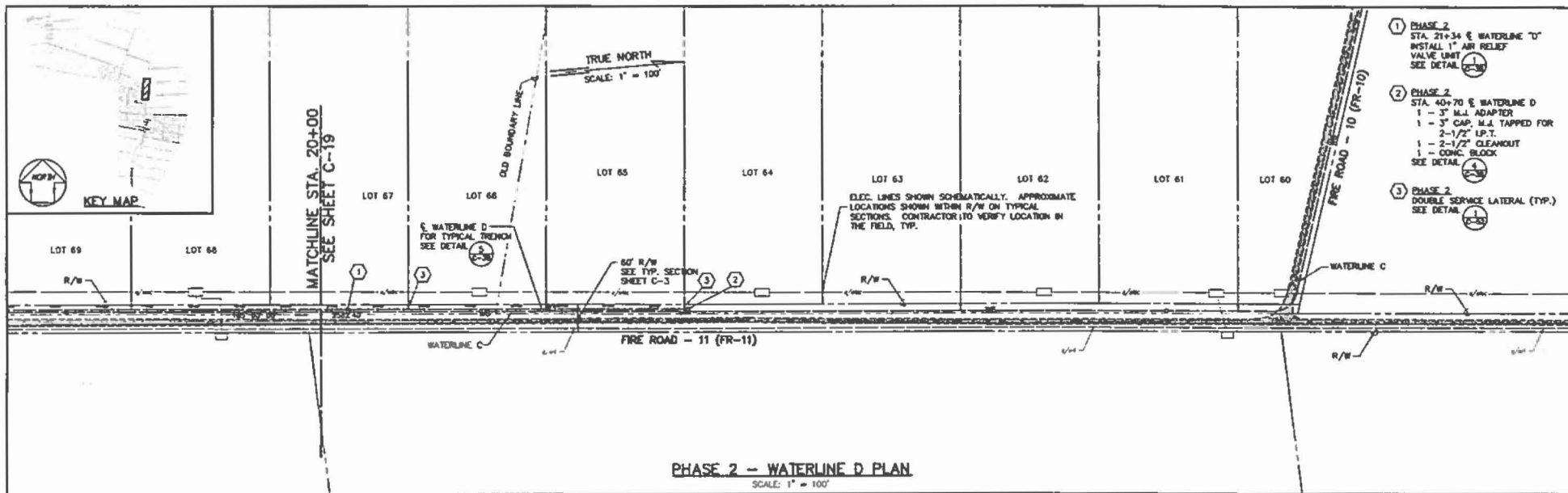
DEPARTMENT OF HAWAIIAN HOME LANDS
PUUKAPU HYBRID WATER SYSTEM
TAX MAP KEY: (1) 41-42-43-44, 45-46, 47, 53 and 54
WABEKA, SOUTH KOHALA, HAWAII

PHASE 2
WATERLINE D PLAN & PROFILE
STA. 0+00 TO STA. 20+00

APPROVED: [Signature]
DATE: [Blank]
BY: [Blank]

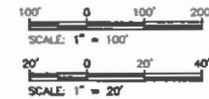
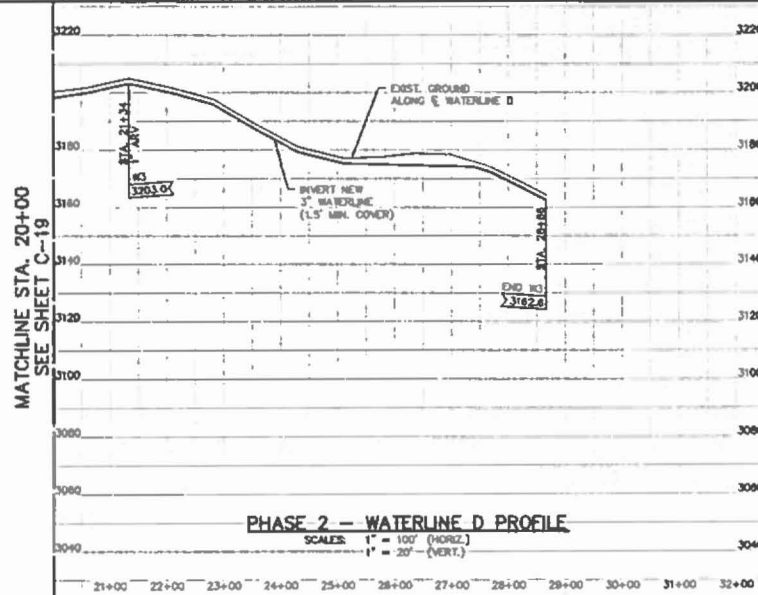
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AKIYAMA & ASSOCIATES, LTD.
CONSULTING ENGINEERS

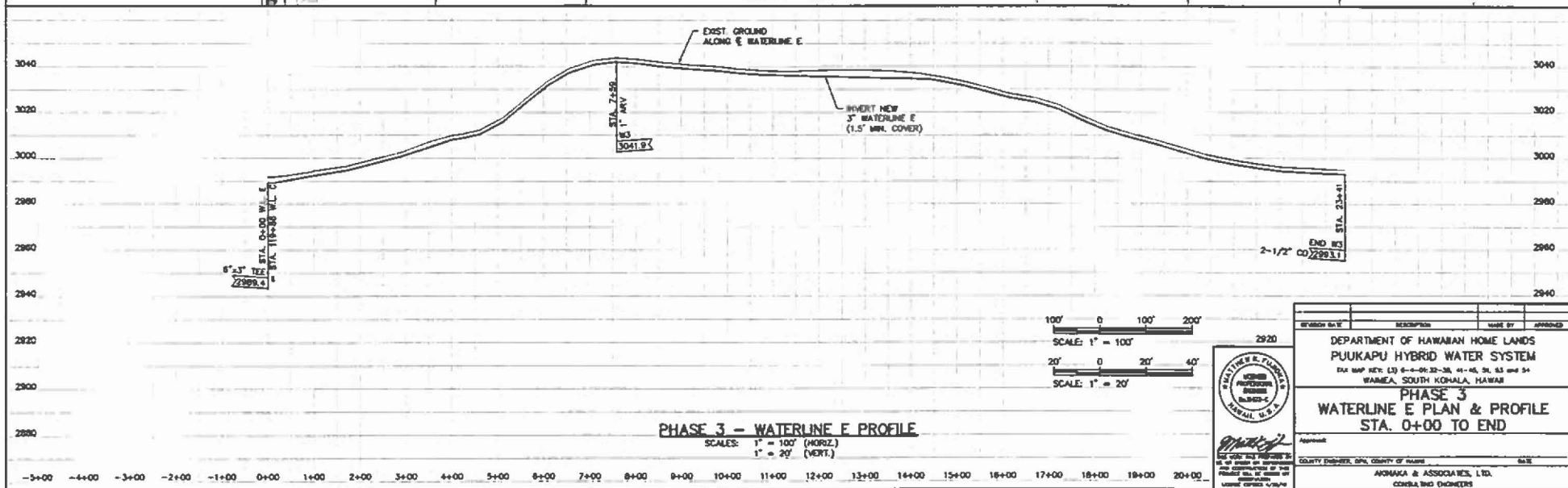
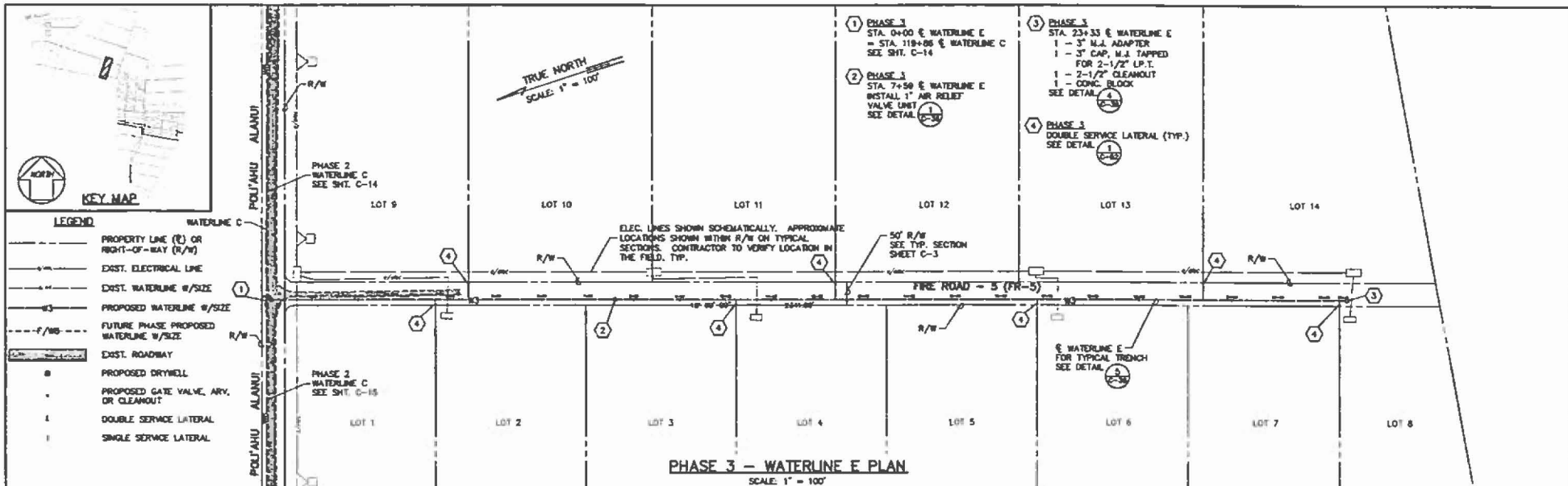


- ① PHASE 2
STA. 21+34 & WATERLINE "D"
INSTALL 1" AIR RELIEF
VALVE UNIT
SEE DETAIL ①
- ② PHASE 2
STA. 40+70 & WATERLINE D
1 - 3" M.J. ADAPTER
1 - 3" CAP, M.J. TAPPED FOR
1 - 2-1/2" I.P.T.
1 - 2-1/2" CLEANOUT
1 - CONC. BLOCK
SEE DETAIL ②
- ③ PHASE 2
DOUBLE SERVICE LATERAL (TYP.)
SEE DETAIL ③

- LEGEND**
- PROPERTY LINE (L) OR RIGHT-OF-WAY (R/W)
 - EXIST. ELECTRICAL LINE
 - EXIST. WATERLINE W/SIZE
 - PROPOSED WATERLINE W/SIZE
 - FUTURE PHASE PROPOSED WATERLINE W/SIZE
 - EXIST. ROADWAY
 - PROPOSED DRYWELL
 - PROPOSED GATE VALVE, A/RV, OR CLEANOUT
 - ① DOUBLE SERVICE LATERAL
 - ② SINGLE SERVICE LATERAL



REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
<p>DEPARTMENT OF HAWAIIAN HOME LANDS PUUKAPU HYBRID WATER SYSTEM SIX MAP KEY: (1) 8-6-01; (2) 31-45, 31, 53 and 54 WAIKANE, SOUTH KOHALA, HAWAII</p> <p>PHASE 2 WATERLINE D PLAN & PROFILE STA. 20+00 TO END</p>				
<p>APPROVED: _____ COUNTY ENGINEER, STATE OF HAWAII</p> <p>APPROVED: _____ CONSULTING ENGINEER</p>				



C-21

SHEET 22 of 70 SHEETS

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

DEPARTMENT OF HAWAIIAN HOME LANDS
PUUKAPU HYBRID WATER SYSTEM
EAS MAP REC. 13 4-0-00 22-30, 41-40, 51, 53 and 54
WAIKANA, SOUTH KOHALA, HAWAII

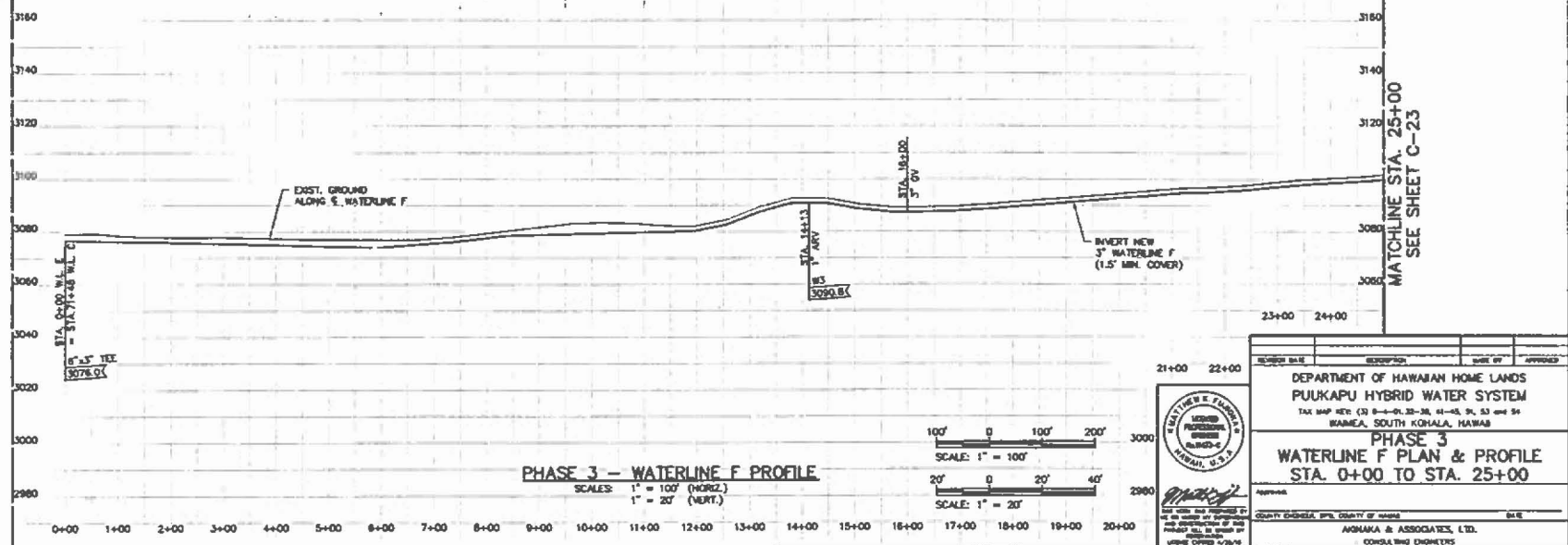
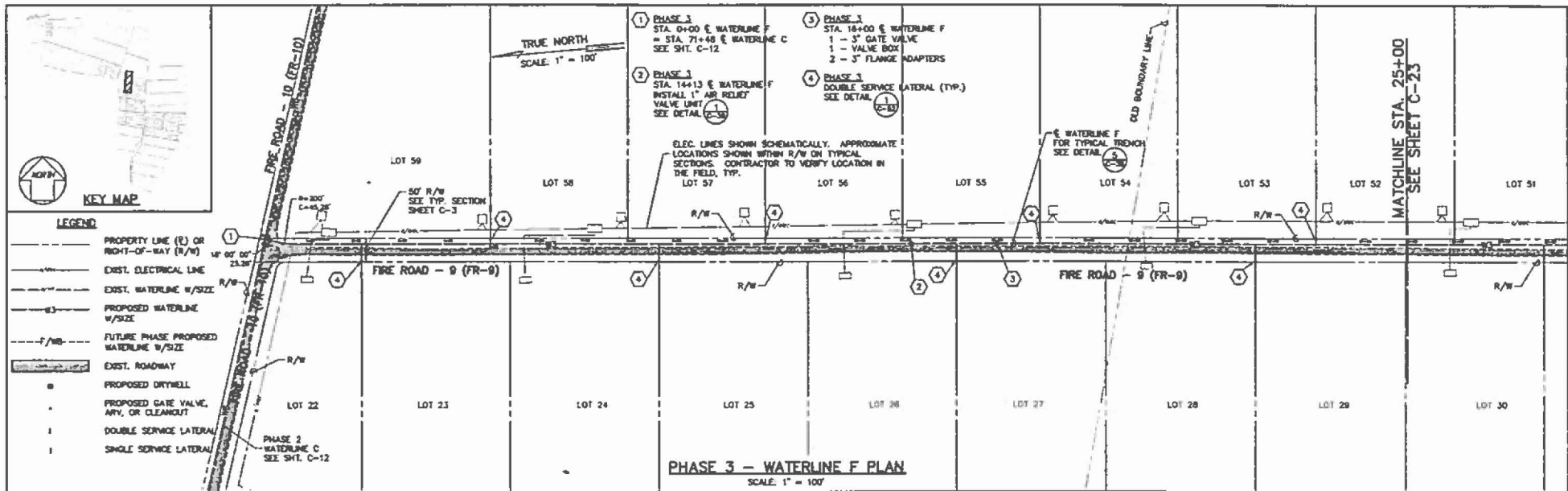
PHASE 3
WATERLINE E PLAN & PROFILE
STA. 0+00 TO END

APPROVED: _____
COUNTY ENGINEER, DPL, COUNTY OF HAWAII

AWAKANA & ASSOCIATES, LTD.
CONSULTING ENGINEERS

Drawn by: JLD
Last Revised: 6/14/2009
Printed on: 6/15/2009

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 Last Saved: 6/14/2009
 Plotted on: 6/15/2009
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C-22

SHEET 22 OF 70 SHEETS

REVISION	DATE	BY	CHK'D BY	APPROVED

DEPARTMENT OF HAWAIIAN HOME LANDS
 PULUKAPU HYBRID WATER SYSTEM
 TAX MAP NO. 13 (3) 01-01, 02-01, 03-01, 04-01, 05-01, 06-01, 07-01, 08-01, 09-01, 10-01, 11-01, 12-01, 13-01, 14-01, 15-01, 16-01, 17-01, 18-01, 19-01, 20-01, 21-01, 22-01, 23-01, 24-01, 25-01, 26-01, 27-01, 28-01, 29-01, 30-01, 31-01, 32-01, 33-01, 34-01, 35-01, 36-01, 37-01, 38-01, 39-01, 40-01, 41-01, 42-01, 43-01, 44-01, 45-01, 46-01, 47-01, 48-01, 49-01, 50-01, 51-01, 52-01, 53-01, 54-01, 55-01, 56-01, 57-01, 58-01, 59-01, 60-01, 61-01, 62-01, 63-01, 64-01, 65-01, 66-01, 67-01, 68-01, 69-01, 70-01, 71-01, 72-01, 73-01, 74-01, 75-01, 76-01, 77-01, 78-01, 79-01, 80-01, 81-01, 82-01, 83-01, 84-01, 85-01, 86-01, 87-01, 88-01, 89-01, 90-01, 91-01, 92-01, 93-01, 94-01, 95-01, 96-01, 97-01, 98-01, 99-01, 100-01

PHASE 3
WATERLINE F PLAN & PROFILE
 STA. 0+00 TO STA. 25+00

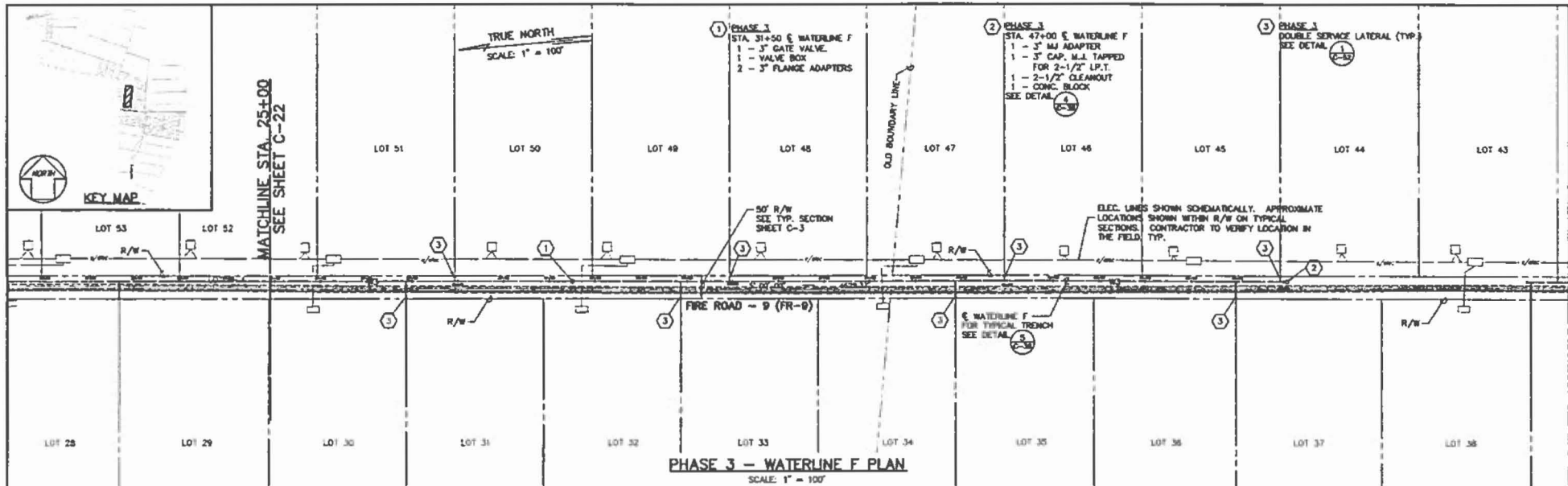
APPROVED: _____
 COUNTY ENGINEER, HONOLULU, HAWAII

DATE: _____

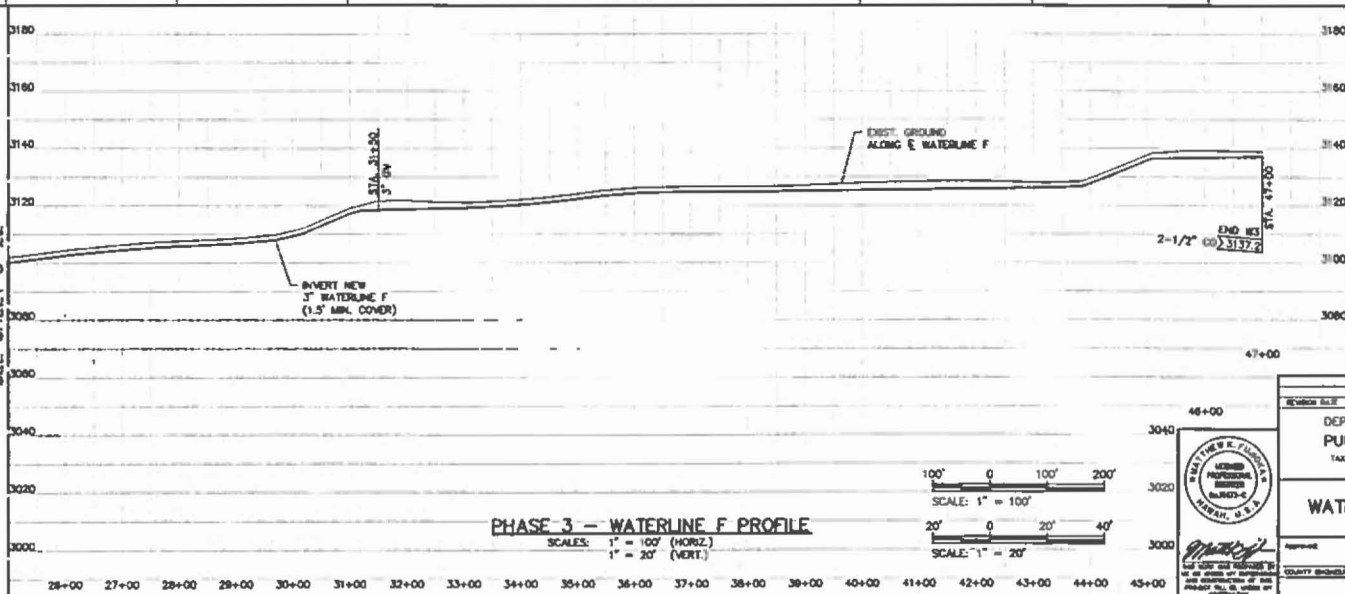
DESIGNED BY: _____
 CHECKED BY: _____
 DRAWN BY: _____

ANGELIKA & ASSOCIATES, LTD.
 CONSULTING ENGINEERS

Last Save by: CEM
Last Saved: 6/15/2019
Printed on: 6/15/2019
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MATCHLINE STA. 25+00
SEE SHEET C-22



C-23

SHEET 23 OF 70 SHEETS

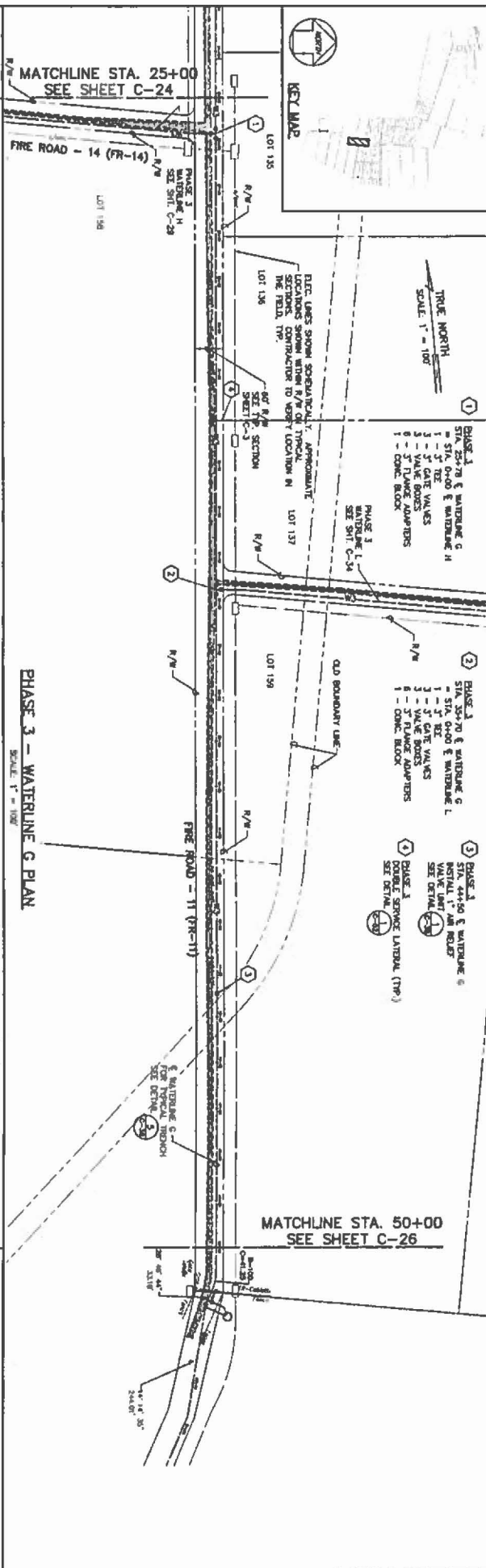
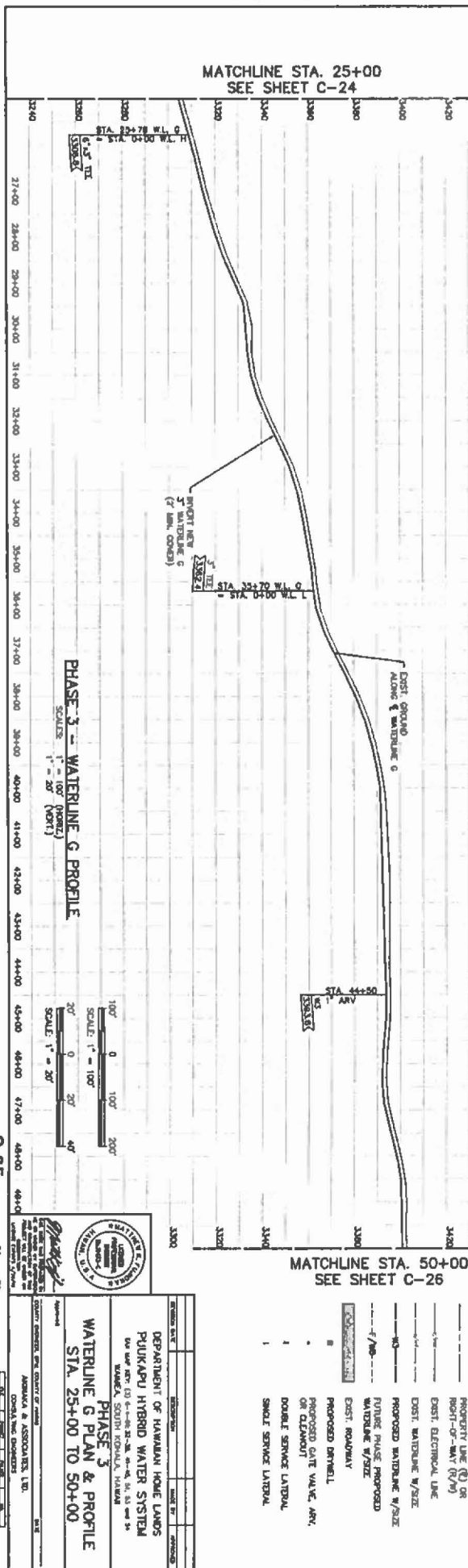
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DEPARTMENT OF HAWAIIAN HOME LANDS
PUUKAPU HYBRID WATER SYSTEM
TAX MAP KEY: (1) 8-4-01-25-38, 41-43, 51, 53 and 54
WAIHEA, SOUTH KOHALA, HAWAII

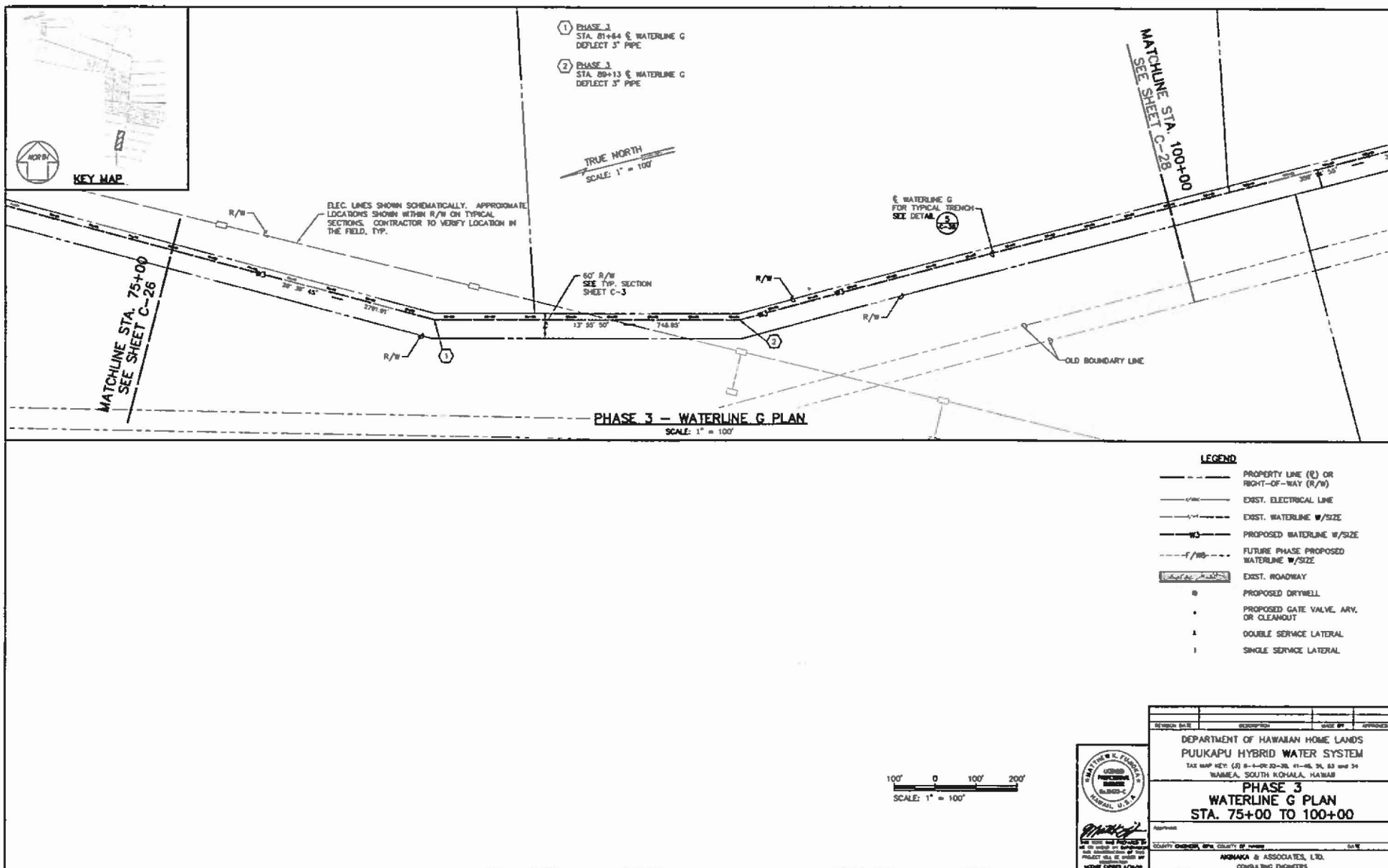
PHASE 3
WATERLINE F PLAN & PROFILE
STA. 25+00 TO END

APPROVED: _____
COUNTY ENGINEER, STATE OF HAWAII

APPROVED: _____
AQUAKA & ASSOCIATES, LTD.
CONSULTING ENGINEERS



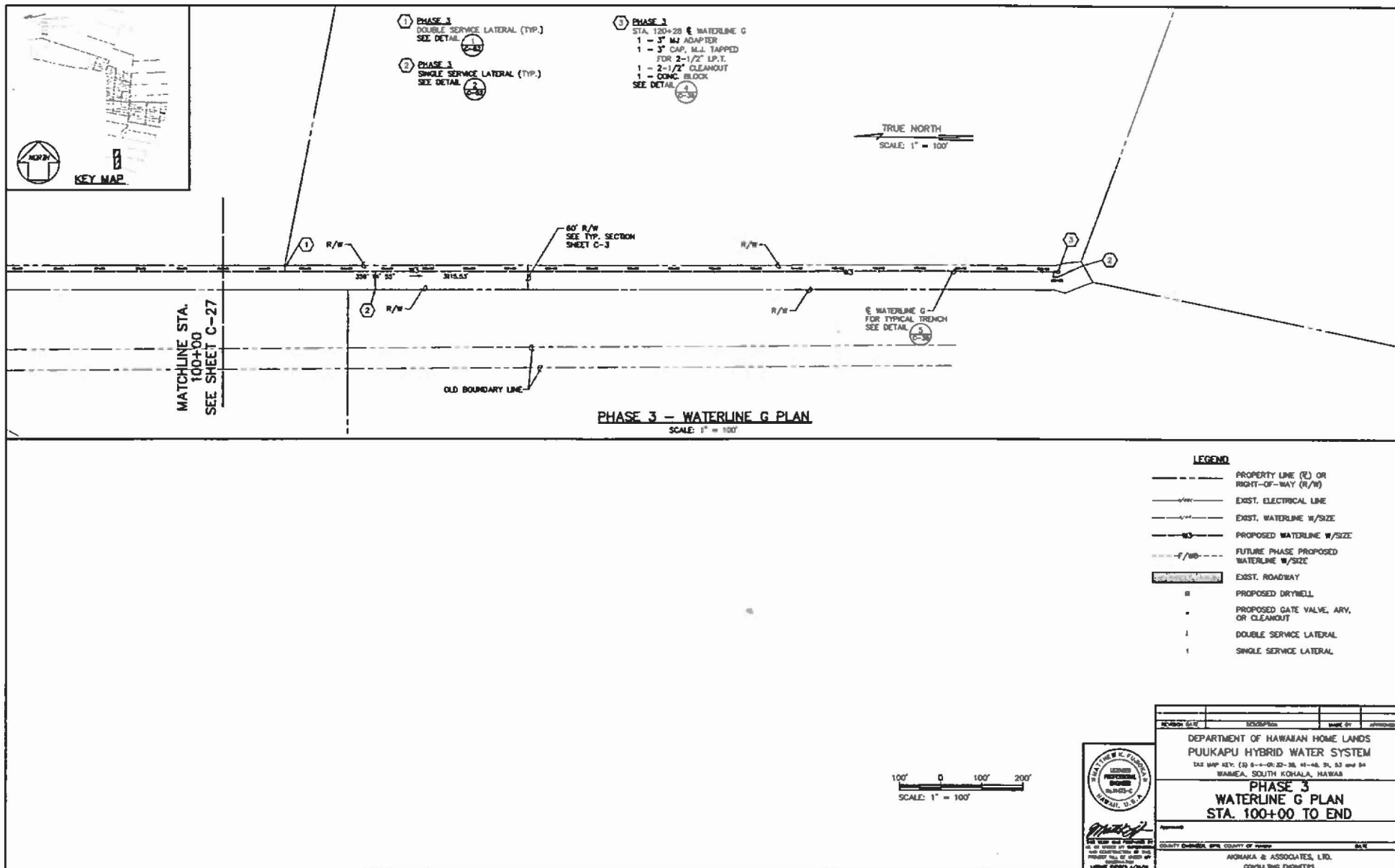
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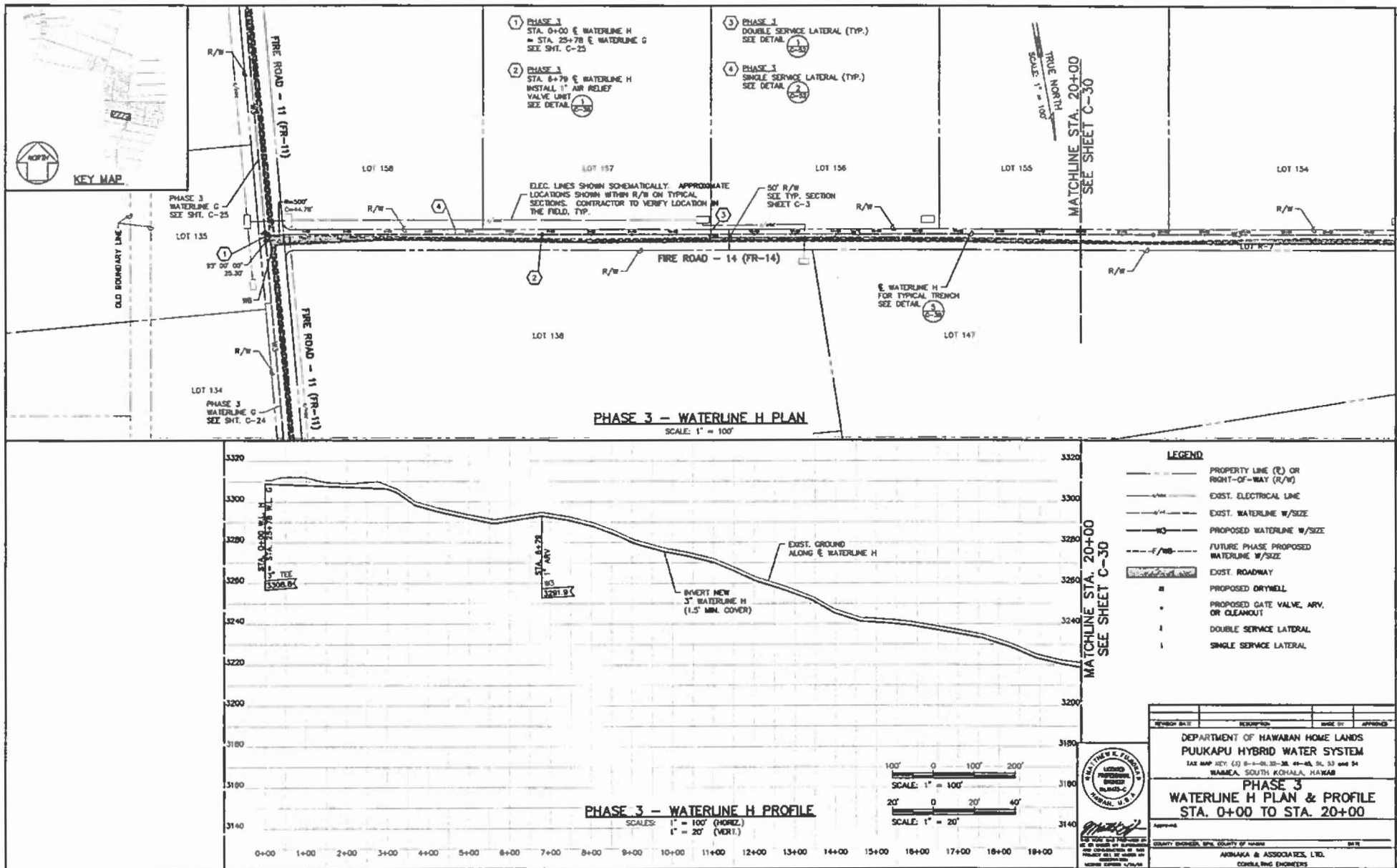
C-27

SHEET 28 OF 70 SHEETS

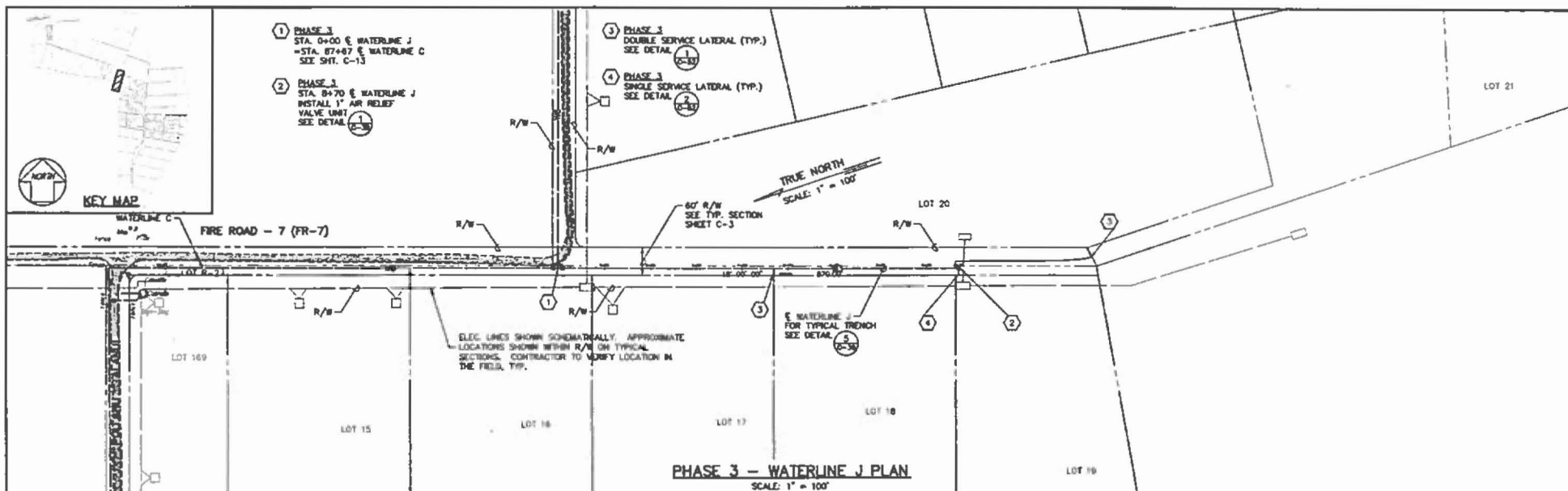
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 Plotted on: 6/16/2009
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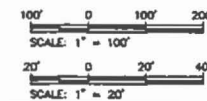


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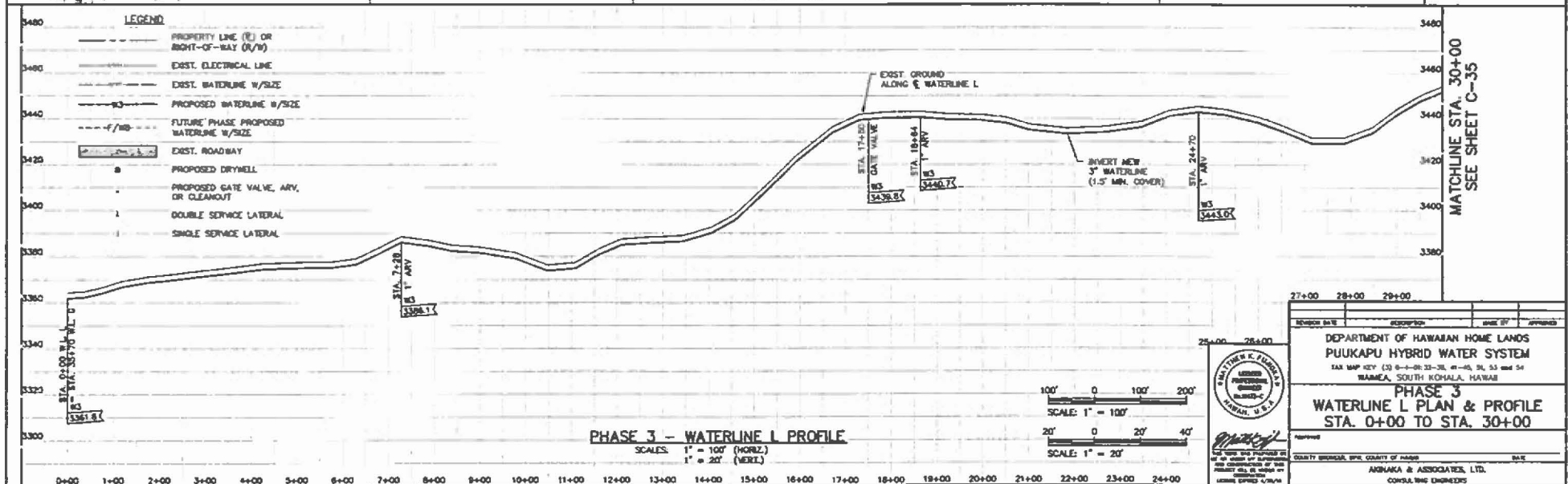
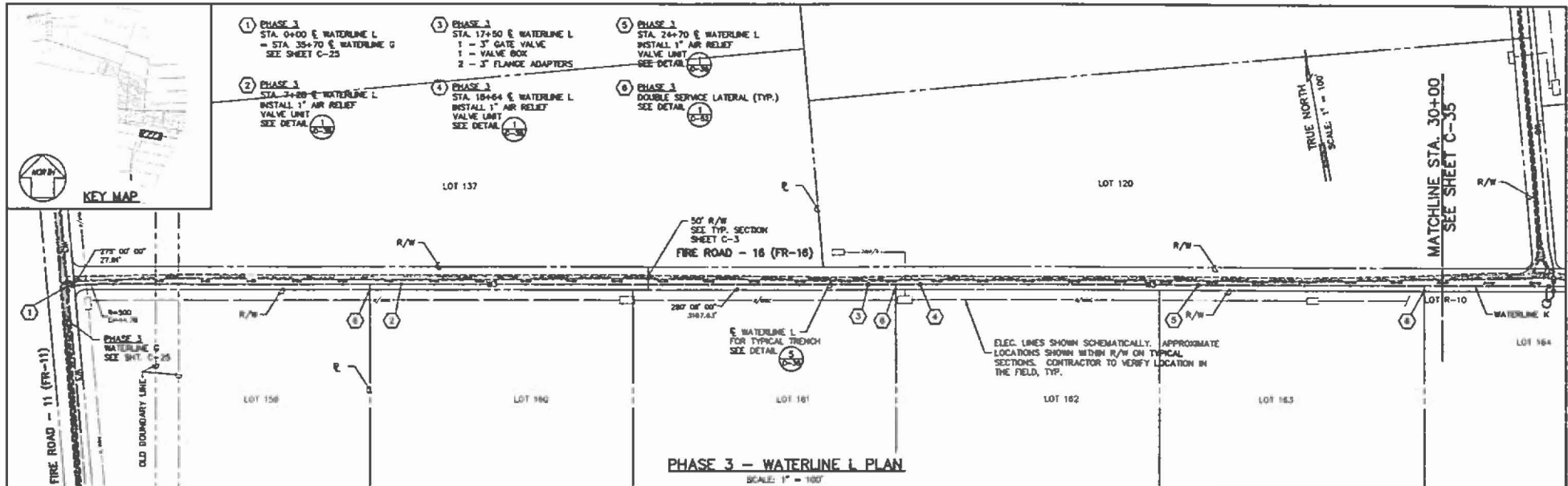


C-32

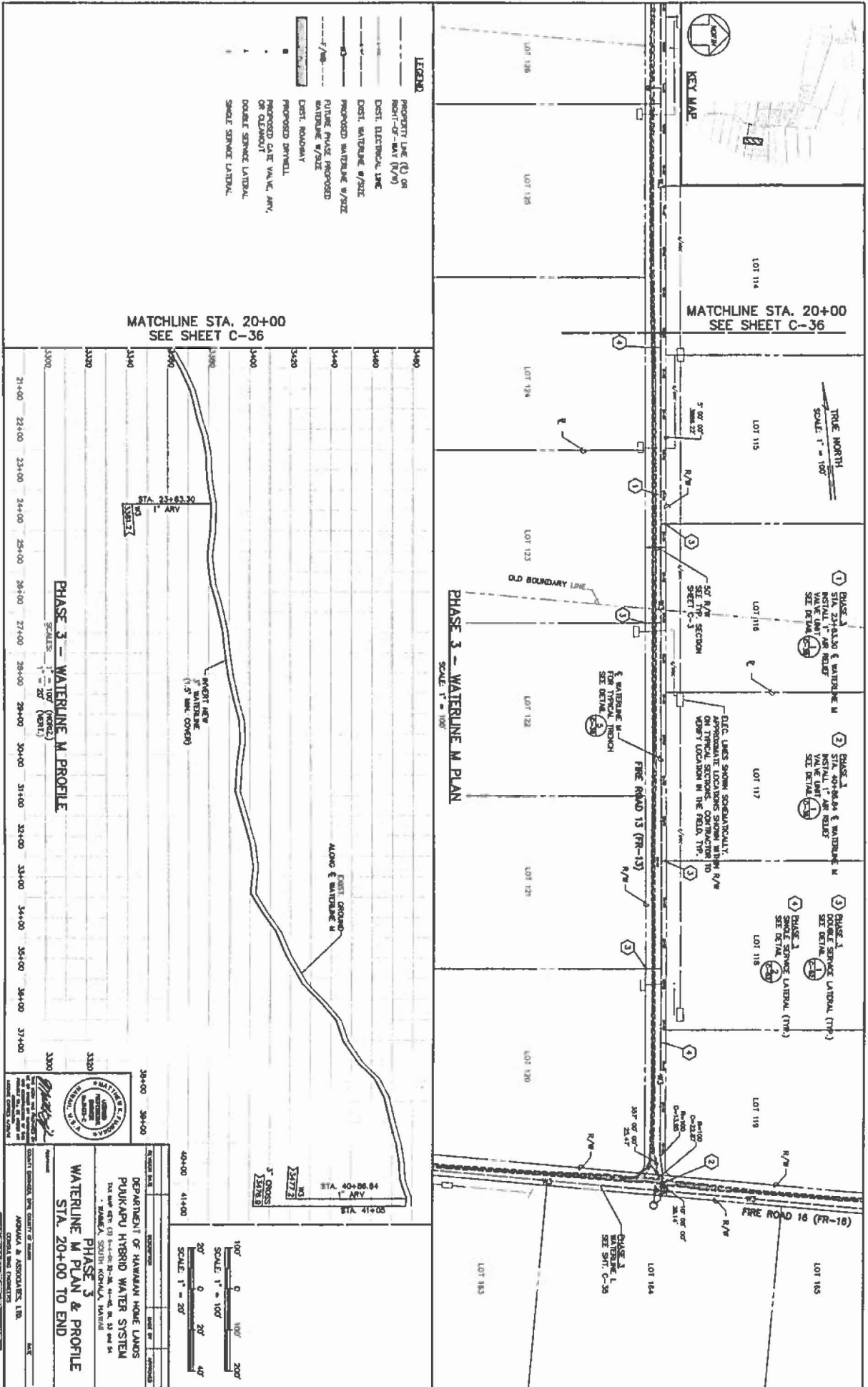
SHEET 33 OF 70 SHEETS



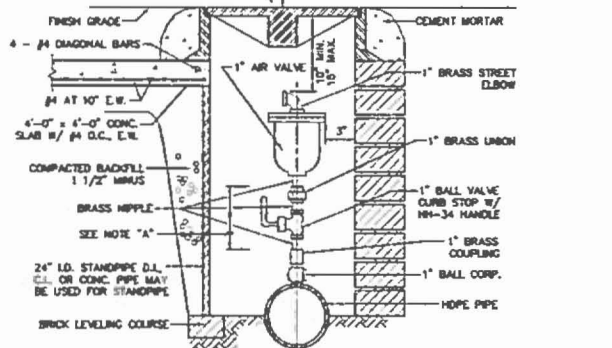
REVISION DATE	DESCRIPTION	DATE BY	APPROVED
DEPARTMENT OF HAWAIIAN HOME LANDS PUUKAPU HYBRID WATER SYSTEM TAX MAP KEY: (1) 8-4-01-32-08, 43-45, 51, 52 and 54 EABEKA, SOUTH KOHALA, HAWAII			
PHASE 3 WATERLINE J PLAN & PROFILE STA. 0+00 TO END			
COUNTY ENGINEER, PHS, COUNTY OF HAWAII		DATE	
AOMAKA & ASSOCIATES, LTD. GEOTECHNICAL ENGINEERS		DATE	



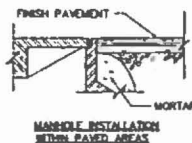




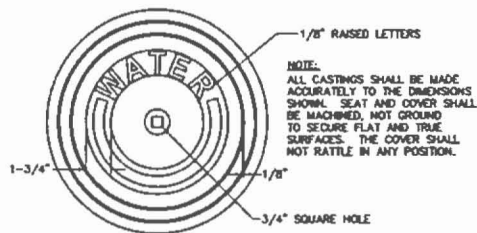
TYPICAL MANHOLE WITH 24" I.D. STANDPIPE TYPICAL MANHOLE WITH BRICKS AND MORTAR
24" DIA. STD. C.I. W.H. FRAME & COVER



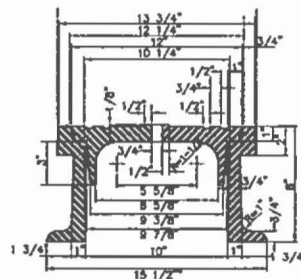
- NOTES:
A. ELIMINATE CURB STOP AND COUPLING WHERE PIPE BURY (TOP OF PIPE TO FINISH GRADE) IS LESS THAN 30 INCHES. CONNECT UNION TO BALL CORP. AND ADJUST OVERALL HEIGHT ACCORDINGLY W/ BRASS HIPPLE (CUT TO FIT).
B. FOR INSTALLATION WITHIN PAVED AREAS SEE DETAIL AT RIGHT.



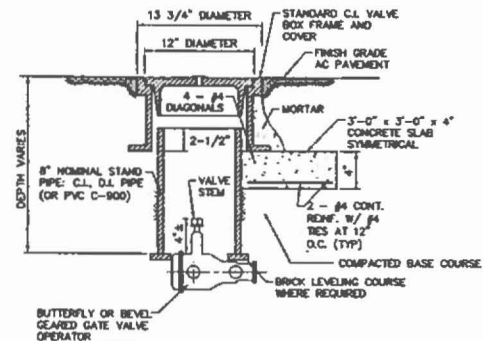
1 1" AIR VALVE UNIT DETAIL
C-38 NOT TO SCALE



NOTE:
ALL CASTINGS SHALL BE MADE ACCURATELY TO THE DIMENSIONS SHOWN. SEAT AND COVER SHALL BE MACHINED, NOT GROUND TO SECURE FLAT AND TRUE SURFACES. THE COVER SHALL NOT RATTLE IN ANY POSITION.



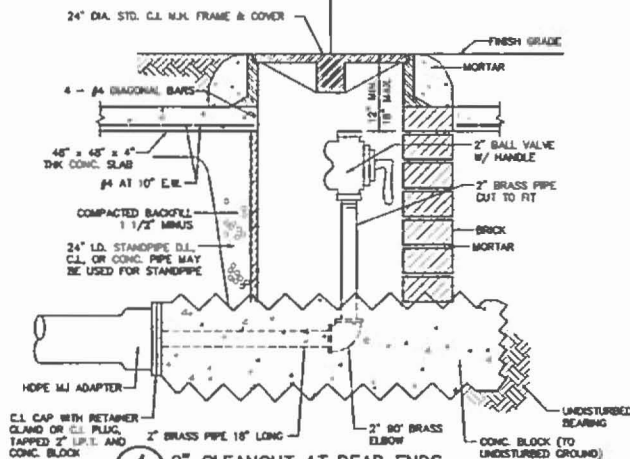
2 CAST IRON FRAME & COVER
C-38 NOT TO SCALE



- NOTE:
1. THE LIMIT OF PIPE CUSHION BACKFILL AROUND THE VALVE SHALL BE THE TRENCH WIDTH ± 4 FEET ON EACH SIDE OF VALVE AND FILL TO 8" BELOW FINISH GRADE.
2. CONCRETE SHALL BE DWS 2500.

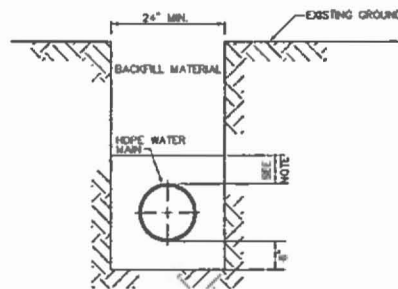
3 12" VALVE BOX INSTALLATION
C-38 NOT TO SCALE

TYPICAL MANHOLE WITH 24" I.D. STANDPIPE TYPICAL MANHOLE WITH BRICKS AND MORTAR



C.I. CAP WITH RETAINER CLAMP OR C.I. PLUG, TAPPED 2" U.P.T. AND CONC. BLOCK
2" BRASS PIPE 16" LONG
2" 90° BRASS ELBOW
UNDISTURBED BEARING
CONC. BLOCK (TO UNDISTURBED GROUND)

4 2" CLEANOUT AT DEAD ENDS
C-38 NOT TO SCALE

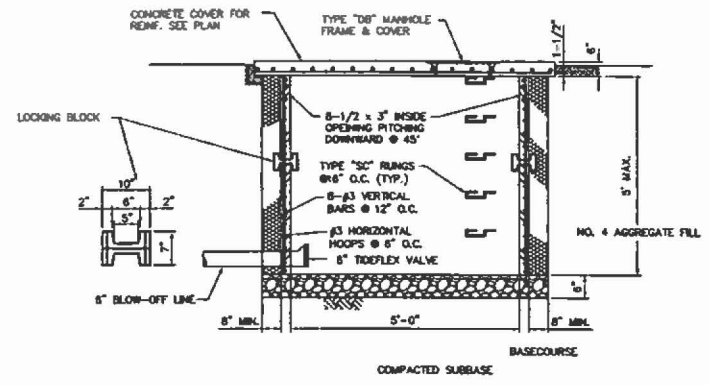
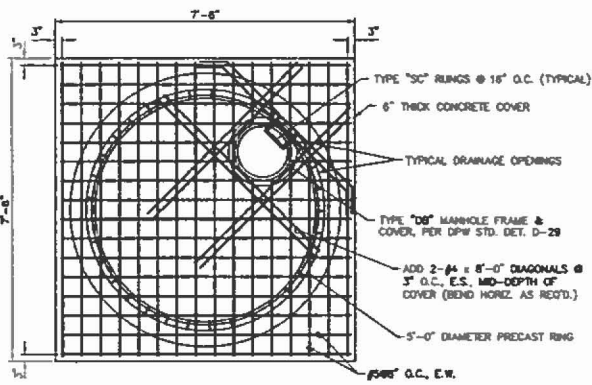


- NOTE:
1. 12" OF CUSHION MATERIAL FOR PIPES 18" OR LARGER. 6" CUSHION MATERIAL FOR PIPES 12" OR SMALLER AT LOCATIONS WHERE INVERT IS ABOVE 4-FOOT ELEVATION.

5 WATERLINE TRENCH DETAILS
C-38 NOT TO SCALE



REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
<p>DEPARTMENT OF HAWAIIAN HOME LANDS PUUKAPU HYBRID WATER SYSTEM TAX MAP KEY: (3) 8-00-02-38, 11-05, 12, 13 and 14 WAIKANA, SOUTH KOHALA, HAWAII</p>				
<p>WATER DETAILS</p>				
<p>DESIGNED BY: COUNTY ENGINEER, DEPT. OF HAWAIIAN HOME LANDS DRAWN BY: ANAKA & ASSOCIATES, LTD. CHECKED BY: ANAKA & ASSOCIATES, LTD. DATE: 10/15/2009</p>				



DRYWELL DETAILS
SCALE: NOT TO SCALE

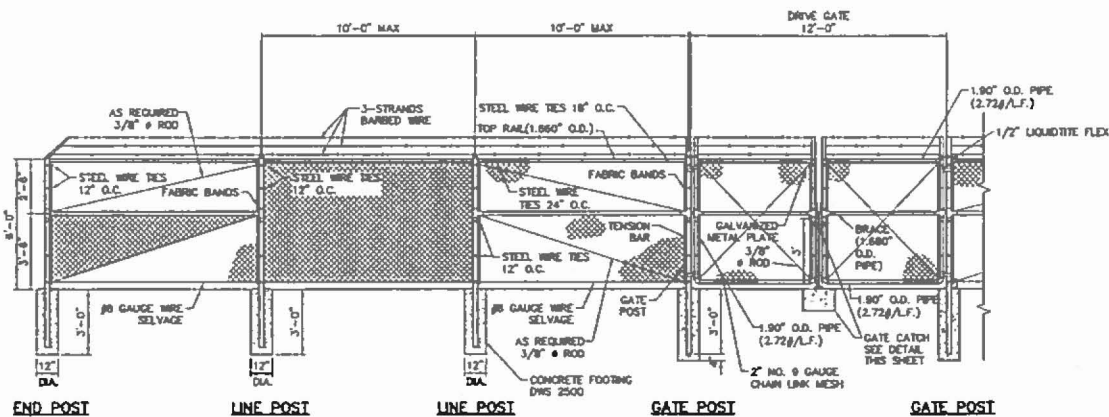
SEATTLE & TOWN
LOCAL PROFESSIONAL ENGINEER
NO. 12345
HAWAII, U.S.A.

Signature

I, the undersigned, being a duly licensed Professional Engineer in the State of Hawaii, do hereby certify that I am the author of the design and construction of the project all of which is shown on the sheets of drawings.

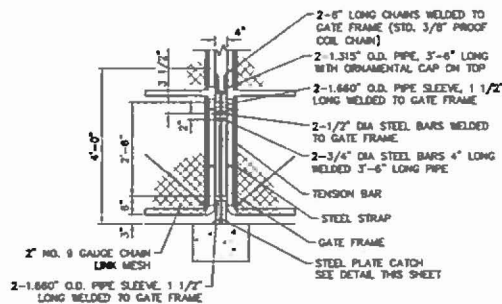
REVISION DATE	DESCRIPTION	MADE BY	APPROVED
<p>DEPARTMENT OF HAWAIIAN HOME LANDS PUUKAPU HYBRID WATER SYSTEM <small>TAX MAP KEY: L3) 8-1-01-32-38, 41-45, 54, 55 and 56</small> SEANUEA, SOUTH KOHALA, HAWAII</p> <p style="font-size: large; font-weight: bold; text-align: center;">DRYWELL DETAILS</p>			
<p>APPROVED: _____</p> <p>COUNTY ENGINEER, OFF. COUNTY OF HAWAII 8-18</p> <p style="text-align: right;">AKHAKA & ASSOCIATES, LTD. CONSULTING ENGINEERS</p>			

Last Save by jsh
 Last Saved: 8/15/2009
 Printed on: 8/15/2009
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DRIVE GATE DETAIL

SCALE: 3/8" = 1'-0"

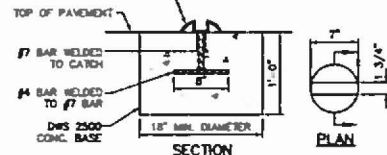


DETAIL AT CATCH JOINT

NOTES:

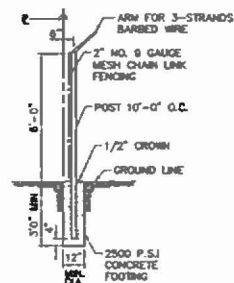
1. PROVIDE 2 GATE STOPS, SIMILAR IN CONSTRUCTION AS GATE CATCH FOR DRIVE GATES WHEN FULLY OPEN.
2. ALL MATERIALS SHALL BE HOT-DIPPED GALVANIZED UNLESS SPECIFIED OTHERWISE.

DRIVE GATE CATCH MASTER
FENCE FITTING PART NO.
15891 OR EQUAL

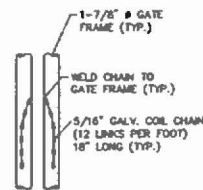


GATE CATCH DETAIL

NOT TO SCALE



SECTION



CHAIN LOCK DETAIL

NOT TO SCALE

SCALE: 3/8" = 1'-0"

FENCE & GATE DETAILS

SCALE AS SHOWN



REVISION DATE	REVISION	DATE BY	APPROVED
DEPARTMENT OF HAWAIIAN HOME LANDS PUUKAPU HYBRID WATER SYSTEM TAD MAP KEY: (1) 4-4-01-32-38, 41-45, 51, 53 and 54 WAIKANA, SOUTH KOHALA, HAWAII			
FENCE & GATE DETAILS			
County Engineer, State of Hawaii		DATE	
KONGAKA & ASSOCIATES, L.P.C.		CIVIL ENGINEER	

Last Save by: KKI
Last Saved: 5/15/2009
Printed on: 5/15/2009



SCALES 1" = 5'

5' 0 5' 1

C-41

SHEET 92 OF 70 SHEETS

- 1 PHASE 2 BOOSTER PUMP AND TANK #1 SITE EFFLUENT LINE
= STA. 180+00 & WATERLINE C
SEE SHEET C-17
- 2 PHASE 2 BOOSTER PUMP AND TANK #1 SITE
INSTALL 244 L.F. 6" HIGH CHAIN LINK FENCE SHT. C-40
- 3 PHASE 2 BOOSTER PUMP SITE AND TANK #1 SITE INFLUENT LINE
= STA. 0+00 & WATERLINE M
SEE SHEET C-18
- 4 PHASE 2 BOOSTER PUMP AND TANK #1 SITE
INSTALL 6" HIGH DOUBLE SWING CHAIN LINK GATE
SEE DETAIL SHT. C-40
- 5 PHASE 2 BOOSTER PUMP AND TANK #1 SITE
= 4" COMPOUND WATER
METER SEE DWS STD. DET. M15
- 6 PHASE 2 BOOSTER PUMP AND TANK #1 SITE
2 - 6" GATE VALVES
2 - VALVE BOXES
2 - 6" 1/4 BONDS
2 - CONC. BLOCKS
1 - 4" COMPOUND WATER
METER SEE DWS STD. DET. M16 AND M17
- 7 PHASE 2 BOOSTER PUMP AND TANK #1 SITE
= 6" - 3" REDUCER
= 2" BACKFLOW PREVENTER
SEE DETAIL (3-25)
- 8 PHASE 2 BOOSTER PUMP AND TANK #1 SITE
= 10" X 8" BOOSTER PUMP PAD
SEE TYP. SECT. DET. (2-2)
- 9 PHASE 2 BOOSTER PUMP AND TANK #1 SITE
1 - 6" 1/8 BEND
1 - CONC. BLOCK
- 10 PHASE 2 BOOSTER PUMP AND TANK #1 SITE
1 - 6" DIAMETER GRIMMELL
SEE SHEET C-39
TOP = 2727
BOT. = 2722
- 11 PHASE 2 BOOSTER PUMP AND TANK #1 SITE
REMOVE EXIST. FENCE BEGIN
- 12 PHASE 2 BOOSTER PUMP AND TANK #1 SITE
REMOVE EXIST. FENCE END
- 13 PHASE 2 BOOSTER PUMP AND TANK #1 SITE
1 - 1/8 BEND
1 - CONC. BLOCK

NO. MAP SHEET	SECTION	SHEET NO.	APPROVED
DEPARTMENT OF HAWAIIAN HOME LANDS PUUKAPU HYBRID WATER SYSTEM TAK MAP REV. (2) 6-4-80, 10-28-81, 4-19-82, 8-5 and 5-4 WAIKANE, SOUTH KOHALA, MAUI			
TANK #1 & BOOSTER PUMP SITE PLAN			
Approved:			DATE
PROJECT: Waiikane, South Kohala, Maui			SCALE
DRAWN BY: ARIYASAWA & ASSOCIATES, LTD. CORPORATE ENGINEERS			

- LEGEND**
- PROPERTY LINE (R) OR RIGHT-OF-WAY (R/W)
 - EXIST. CONTIGUOUS
 - PROPOSED CONTIGUOUS
 - EXIST. WATERLINE W/ SIZE
 - PROPOSED WATERLINE W/ SIZE
 - PROPOSED GRAVEL ACCESS ROAD
 - PROPOSED FENCE

TANK #1 & BOOSTER PUMP GRADING PLAN

SCALE: 1" = 5'

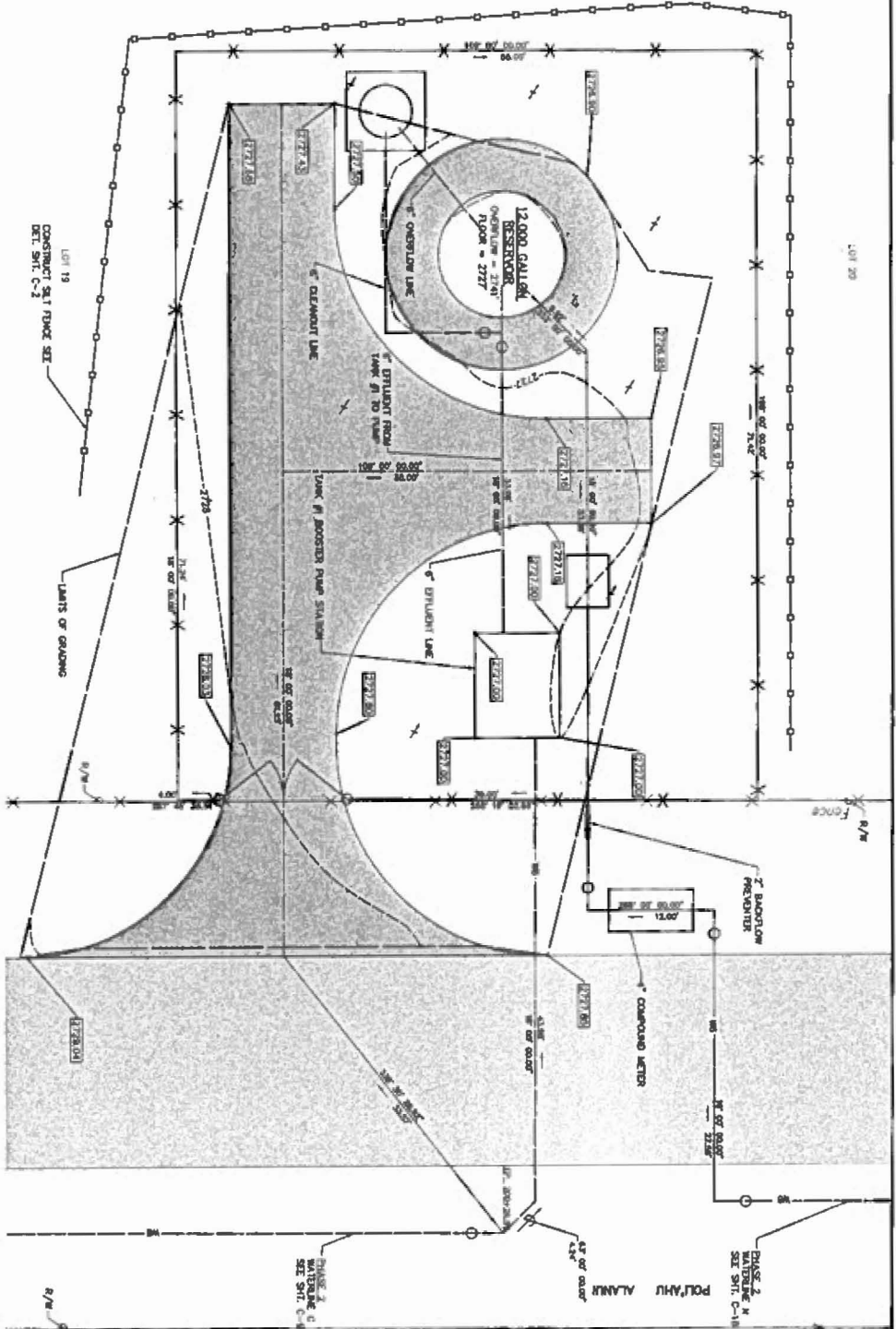


C-42

SHEET 53 OF 20 SHEETS

APRIL 15, 2010

PROJECT NO. 09-000000-01	SHEET NO. 53 OF 20
CLIENT: DEPARTMENT OF HAWAIIAN HOME LANDS PUKUKAPU HYBRID WATER SYSTEM WATER & SOLID WASTE DIVISION	
TANK #1 & BOOSTER PUMP GRADING PLAN	
DESIGNED BY BKJ	CHECKED BY BKJ
DATE 8/15/2009	SCALE 1" = 5'



TRUE NORTH
SCALE: 1" = 10'

LOT 74

BRASS DISK
N = 5343.50
E = 7876.39
ELEV. = 3245.17

PHASE 2
WATERLINE C
SEE SHT. C-9

FIRE ROAD - 11 (PR-11)

TANK #2 & BOOSTER PUMP SITE PLAN

SCALE: 1" = 10'

10' 0 10' 20'
SCALE: 1" = 10'

LEGEND

- PROPERTY LINE (P) OR RIGHT-OF-WAY (R/W)
- EXIST. CONTOURS
- PROPOSED CONTOURS
- EXIST. WATERLINE W/ SIZE
- PROPOSED WATERLINE W/ SIZE
- PROPOSED GRAVEL ACCESS ROAD
- PROPOSED FENCE

- PHASE 1 BOOSTER PUMP AND TANK #2 SITE
EFFLUENT LINE
= STA. 0+00 @ WATERLINE D
SEE SHEET C-19
- PHASE 1 BOOSTER PUMP AND TANK #2 SITE
EFFLUENT LINE TO TANK #2
= STA. 0+00 @ WATERLINE A
SEE SHEET C-4
- PHASE 1 BOOSTER PUMP AND TANK #2 SITE
INFLUENT LINE
= STA. 0+00 @ WATERLINE C
SEE SHEET C-9
- PHASE 1 BOOSTER PUMP AND TANK #2 SITE
INSTALL 379 L.F. 6" HIGH CHAIN LINK FENCE SEE DETAIL SHT. C-40
- PHASE 1 BOOSTER PUMP AND TANK #2 SITE
INFLUENT TO BOOSTER PUMP
1 - 8" 1/8 BEND
1 - CONC. BLOCK
- PHASE 1 BOOSTER PUMP AND TANK #2 SITE
EFFLUENT FROM BOOSTER PUMP
1 - 8" 1/8 BEND
1 - CONC. BLOCK
- PHASE 1 BOOSTER PUMP AND TANK #2 SITE
EFFLUENT FROM BOOSTER PUMP
1 - 8" 45' BEND
1 - CONC. BLOCK
- PHASE 1 BOOSTER PUMP AND TANK #2 SITE
INSTALL 6" HIGH DOUBLE SWING CHAIN LINK GATE SEE DETAIL SHT. C-40
- PHASE 1 BOOSTER PUMP AND TANK #2 SITE
1 - 5" DIAMETER DRYWELL
SEE SHEET C-38
TOP = 3244'
BOT. = 3236'

59,000 GALLON
RESERVOIR
OVERFLOW = 3256'
FLOOR = 3244'

TANK #2
6" OVERFLOW LINE

TANK #2
6" CLEANOUT LINE

- PHASE 1 BOOSTER PUMP AND TANK #2 SITE
1 - 6" TEE
2 - GATE VALVES
2 - VALVE BOXES
1 - CONC. BLOCK
- PHASE 1 BOOSTER PUMP AND TANK #2 SITE
1 - 8" 1/4 BEND
1 - CONC. BLOCK
- PHASE 1 BOOSTER PUMP AND TANK #2 SITE
1 - 12 x 12' BOOSTER PUMP PAD
SEE TYP. SEC. DET.

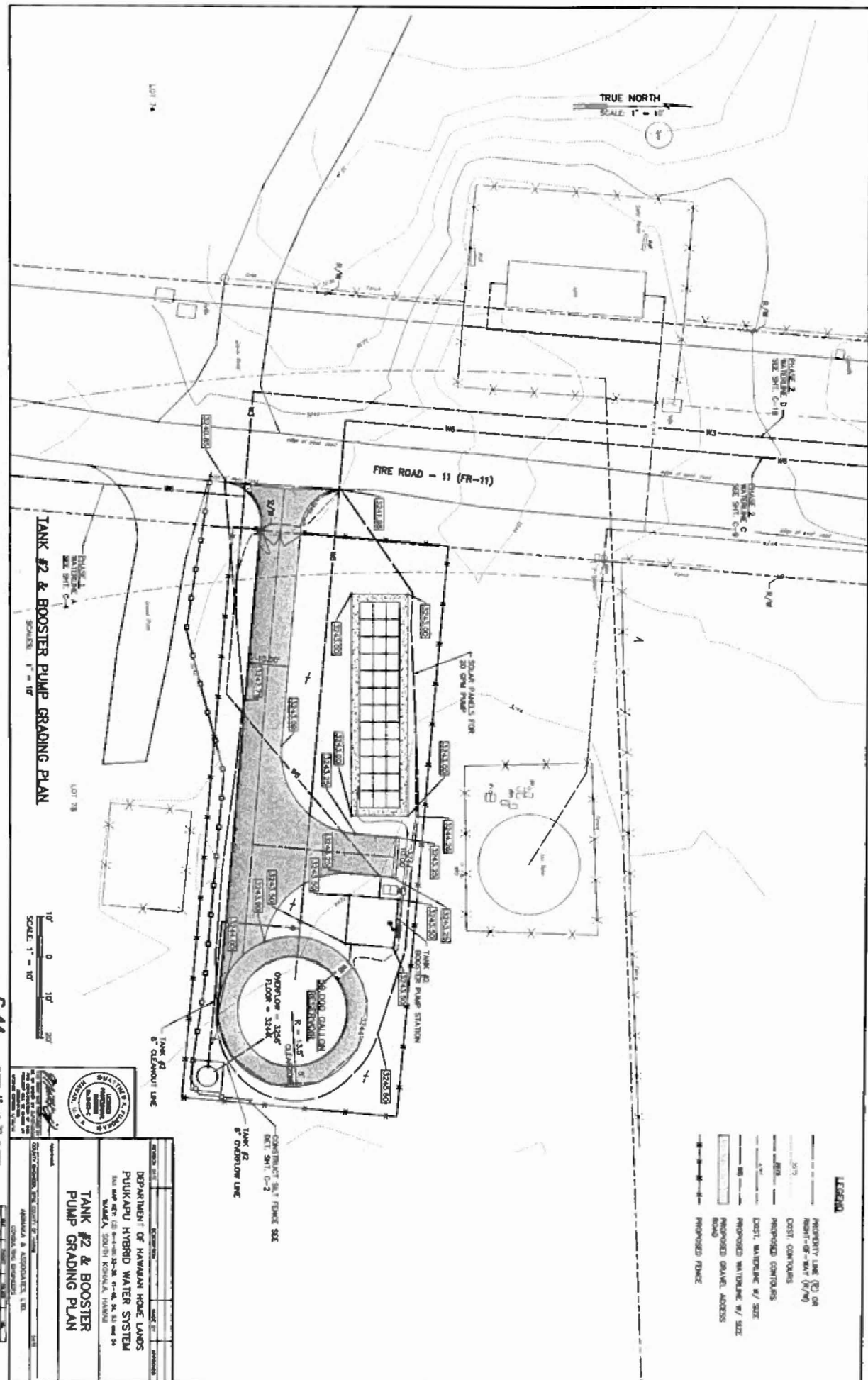


REVISION	DATE	DESCRIPTION	BY	APPROVED
<p>DEPARTMENT OF HAWAIIAN HOME LANDS PUUKAPU HYBRID WATER SYSTEM TAX MAP KEY: (3) 6-4-81: 32-38, 41-43, 51, 53 and 54 WAIKANE, SOUTH KOHALA, HAWAII</p>				
<p>TANK #2 & BOOSTER PUMP SITE PLAN</p>				
<p>APPROVED: _____ COUNTY ENGINEER, SPIRIT COUNTY OF HAWAII DATE: _____ HONOLULU, HAWAII KOHALA DISTRICT ENGINEERS</p>				

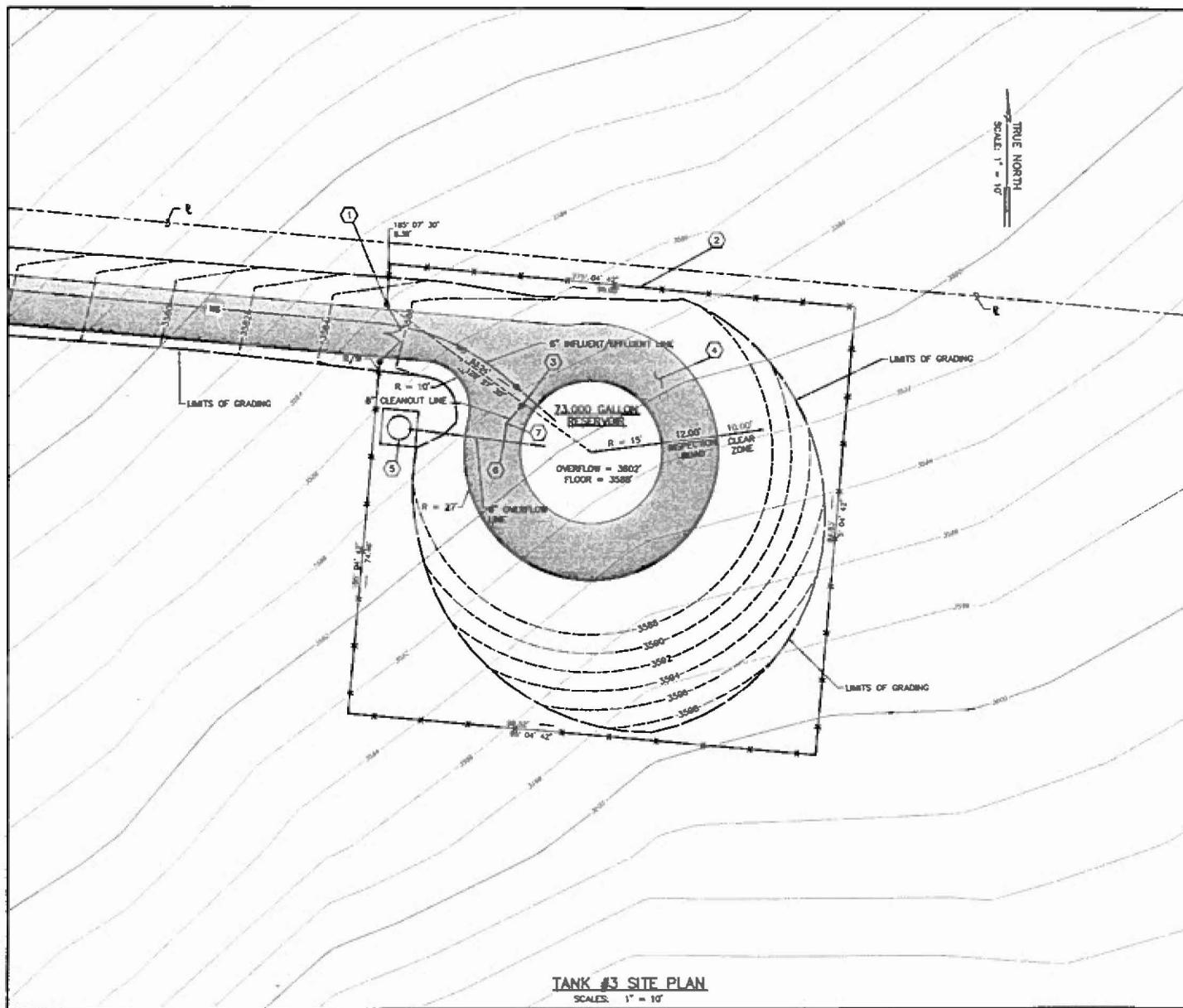
C-43

SHEET 44 OF 70 SHEETS

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Last saved: 6/15/2009
Printed on: 6/15/2009
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Drawn by: CSM
 Date: 8/18/2009
 Title: TANK #3 SITE PLAN
 C:\Users\csm\Documents\TANK #3 SITE PLAN.dwg



- 1 PHASE 1 TANK #3 SITE
INSTALL 12" WIDE 6' HIGH DOUBLE
SWING CHAIN LINK GATE
SEE DETAIL SHIT. C-40
- 2 PHASE 1 TANK #3 SITE
INSTALL 377 L.F. OF 6' HIGH
CHAIN LINK FENCE
SEE DETAIL SHIT. C-40
- 3 PHASE 1 TANK #3 SITE
1 - 6" TEE
2 - 6" GATE VALVES
2 - VALVE BOXES
1 - CONC. BLOCK
- 4 PHASE 1 TANK #3 SITE
INSPECTION ROAD SEE TYPICAL
SECTION SHIT. C-3
- 5 PHASE 1 BOOSTER PUMP AND
TANK #3 SITE
1 - 5" DIAMETER DRYWELL
SEE SHEET C-39
TOP = 3506'
BOT. = 3501'
- 6 PHASE 1 BOOSTER PUMP AND
TANK #3 SITE
1 - 6" TEE
1 - CONC. BLOCK
- 7 PHASE 1 BOOSTER PUMP AND
TANK #3 SITE
1 - 8" 1/16 BEND
1 - CONC. BLOCK

LEGEND

- PROPERTY LINE (P) OR
RIGHT-OF-WAY (R/W)
- EXIST. CONTOURS
- PROPOSED CONTOURS
- PROPOSED WATERLINE W/ SIZE
- PROPOSED ACCESS ROAD
- PROPOSED FENCE

10' 0 10' 20'
 SCALE: 1" = 10'



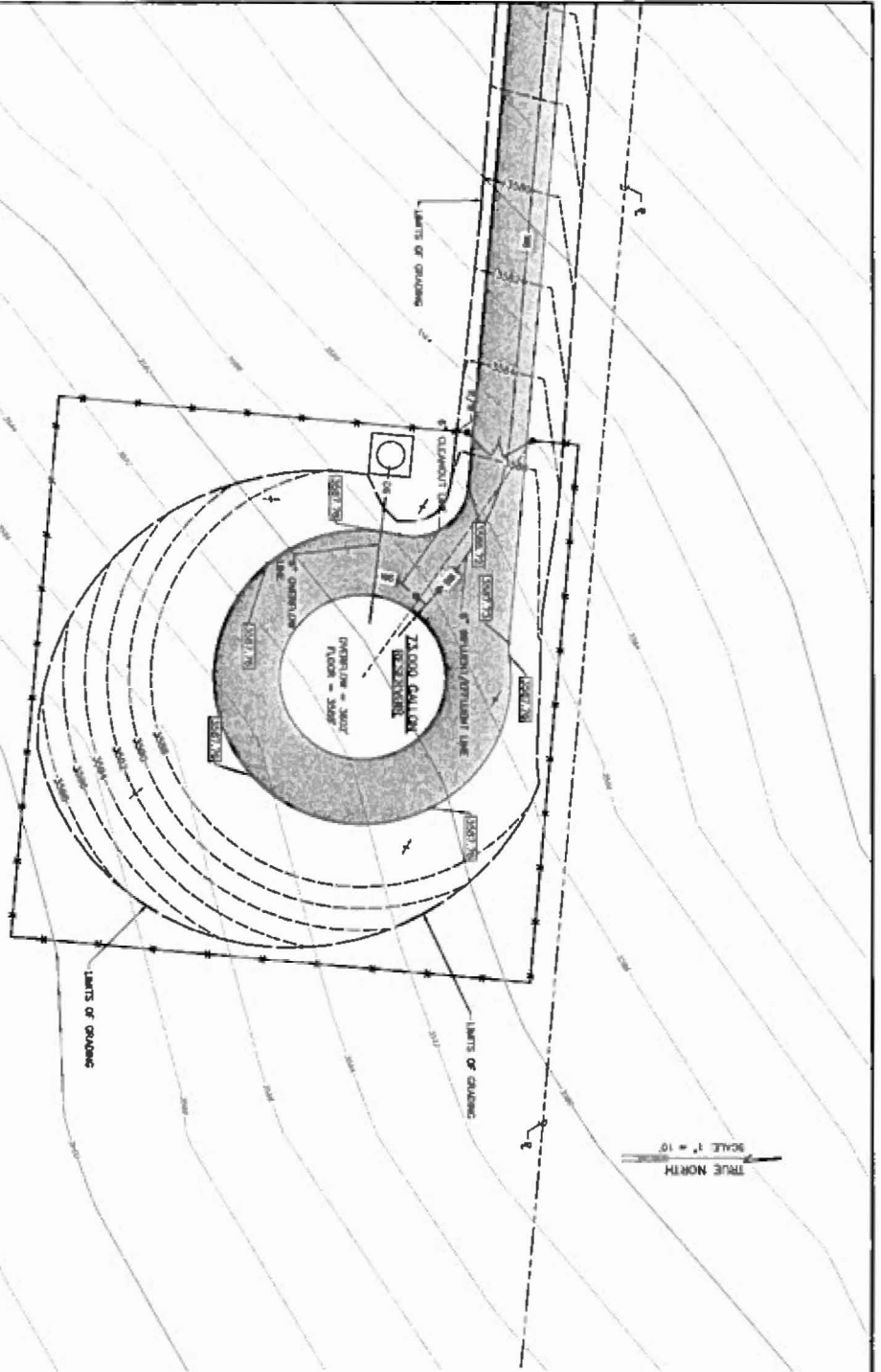
REVISION DATE	DESCRIPTION	DATE BY	APPROVED
DEPARTMENT OF HAWAIIAN HOME LANDS PUUKAPU HYBRID WATER SYSTEM TAX MAP KEY: (1) 8-0-01, 22-38, 44-45, 51, 53 and 54 WAIKAE, SOUTH KOHALA, HAWAII			
TANK #3 SITE PLAN			
COUNTY ENGINEER, STATE OF HAWAII ADDRESS: _____ AKAHUA & ASSOCIATES, LTD. 1000 KALANIAN'IMAMANI BLVD., SUITE 200 HONOLULU, HAWAII 96813			

C-45

SHEET 46 OF 70 SHEETS

TANK #3 GRADING PLAN

SCALE: 1" = 10'



C-48

SHEET 42 OF 28 SHEETS



TANK #3 GRADING PLAN

DEPARTMENT OF HAWAIIAN HOME LANDS
 PUKAPU HYBRID WATER SYSTEM
 1st and 2nd FLS 10-4-00-20-20, 10-4-00-20-20, 10-4-00-20-20
 WARDEN, SEAN KOWAL, HAWAII

CONTRACT NO. 10-4-00-20-20

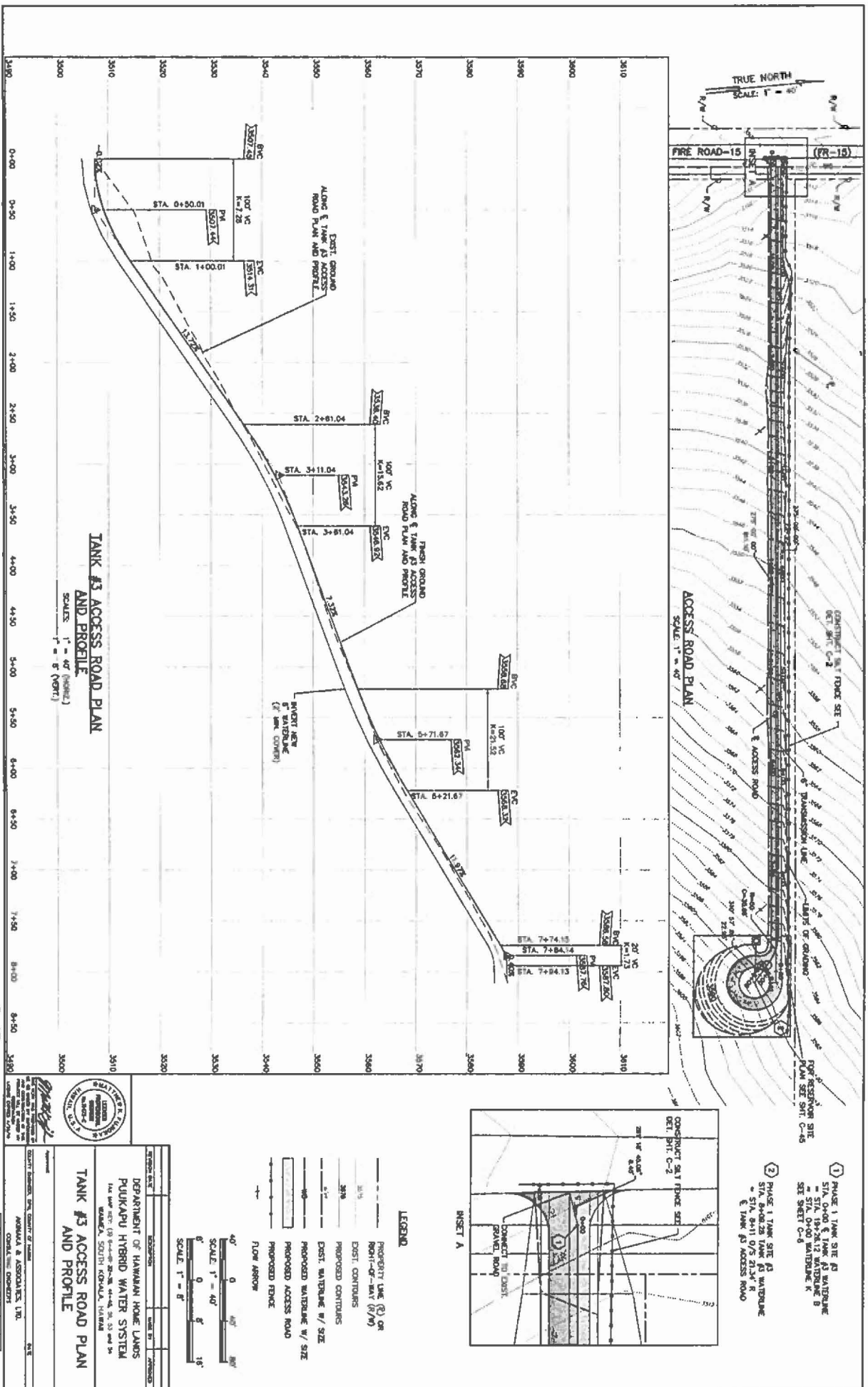
CONTRACT NO. 10-4-00-20-20

CONTRACT NO. 10-4-00-20-20

LEGEND

- PROPERTY LINE (CL) OR RIGHT-OF-WAY (R/W)
- EXIST. CONTOURS
- PROPOSED CONTOURS
- PROPOSED MAINTENANCE W/ SITE
- PROPOSED ACCESS ROAD
- PROPOSED FENCE
- FLOW ARROWS

10' 0 10' 20'
 SCALE: 1" = 10'



C-47

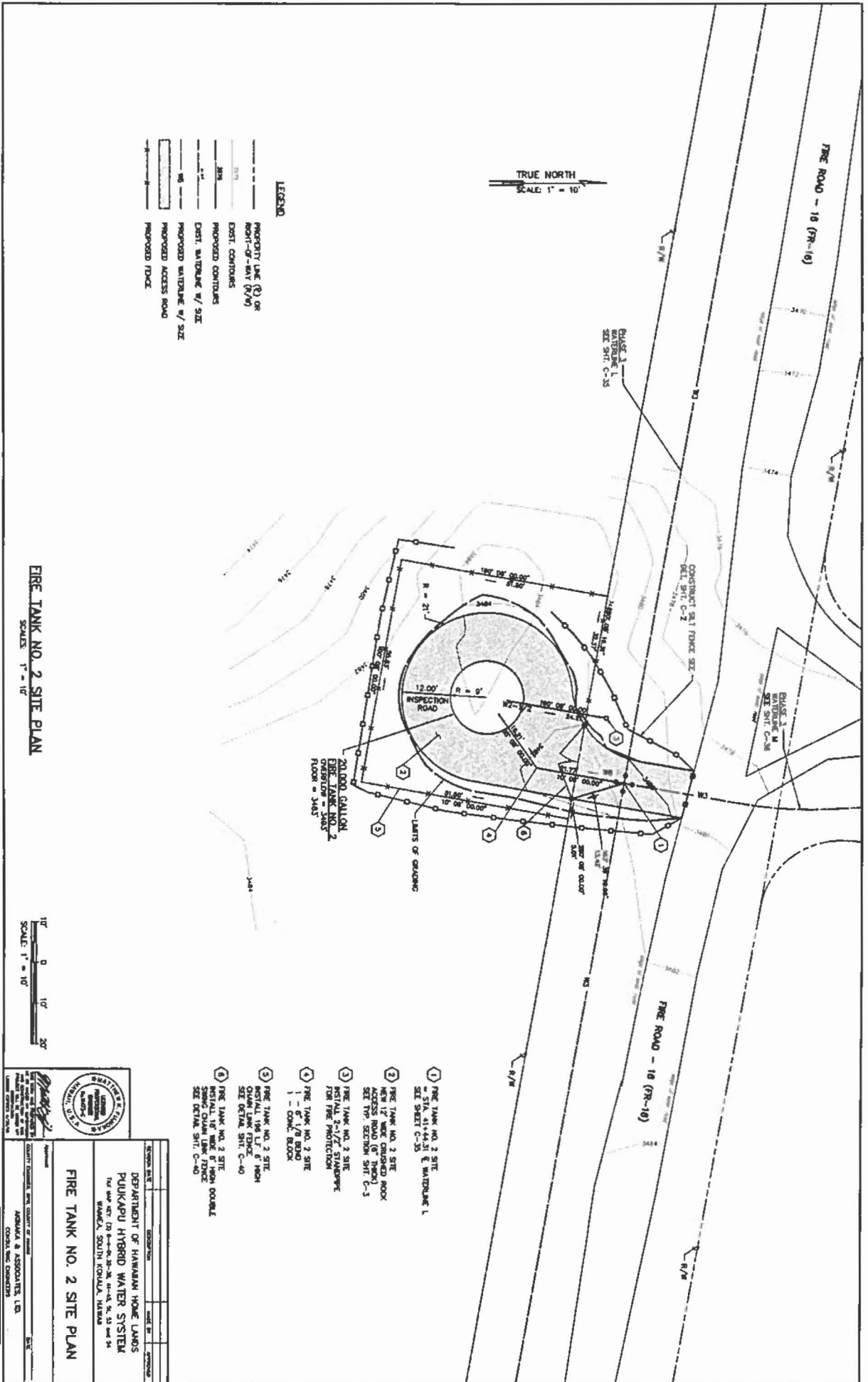
SHEET 48 OF 70 SHEETS

PREPARED BY: J. K. HARRIS
 CHECKED BY: J. K. HARRIS
 DESIGNED BY: J. K. HARRIS
 DRAWN BY: J. K. HARRIS

DATE: 5/15/2009



REVISION DATE	REVISION	DATE	APPROVED
DEPARTMENT OF HAWAIIAN HOME LANDS PUUKAPU HYBRID WATER SYSTEM TAX MAP KEY (S) 6-0-00-33-38, 41-05, 51, 53 and 54 MAHEA, SOUTH KOHALA, MAHAE			
FIRE TANK NO. 1 SITE PLAN			
Approved:			DATE:
COUNTY ENGINEER, State County of Hawaii			DATE:
AOKAWA & ASSOCIATES, LTD. ENGINEERS			



FIRE TANK NO. 2 SITE PLAN

SCALES: 1" = 10'

C-49

Sheet 50 of 70 sheets

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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FIRE TANK NO. 2 SITE PLAN

DEPARTMENT OF HAWAIIAN HOME LANDS
PUUKAPU HYBRID WATER SYSTEM

WANEKA, SOUTH KOREA, MATTHEW

FIRE TANK NO. 2 SITE

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	52
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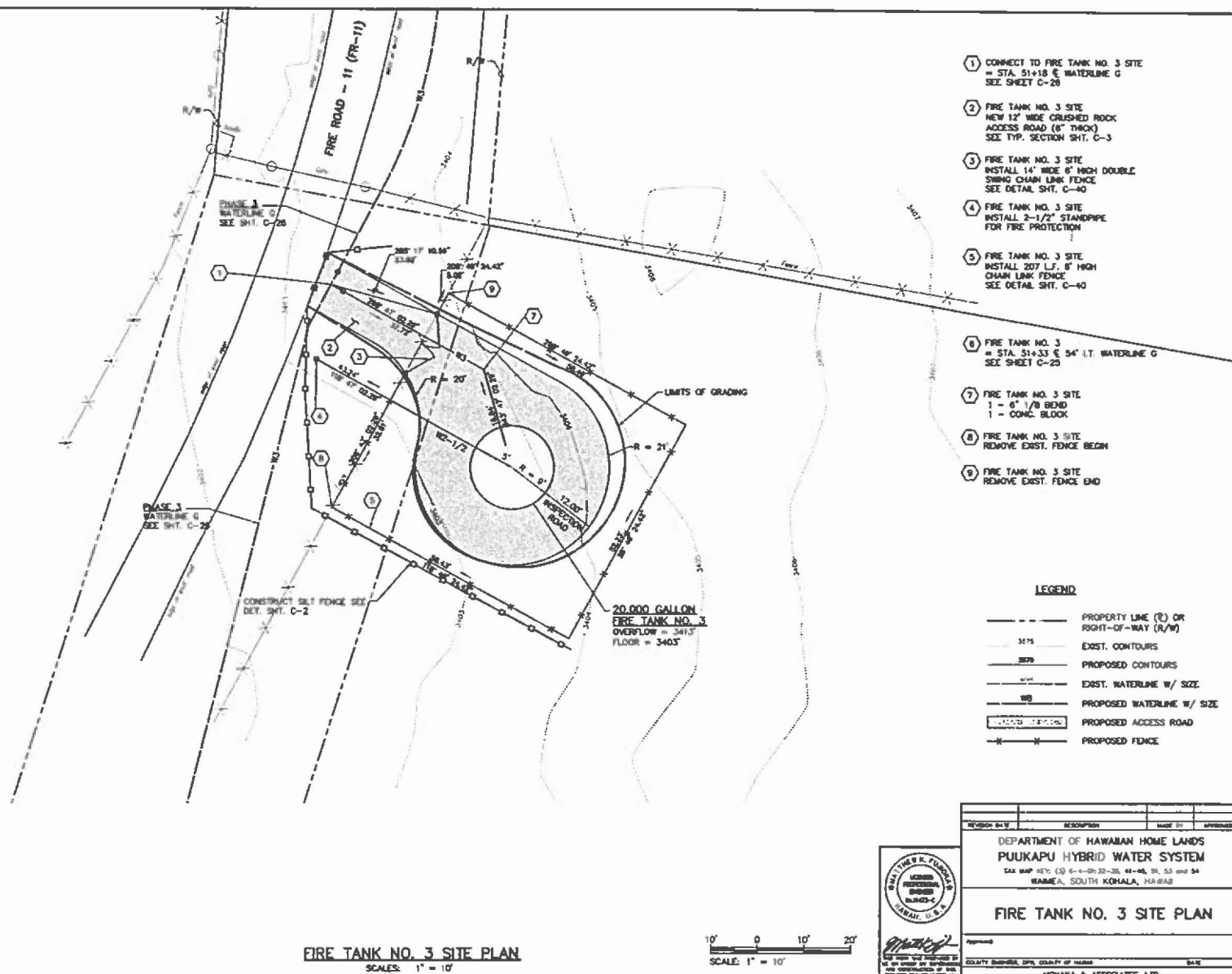
ARCHITECT & ASSOCIATES, INC.

ARMOUR & ASSOCIATES, L.P.
6000 THE PROMENADE

COUNCIL SPEC. OPERATIONS	
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Figure 1:



FIRE TANK NO. 3 SITE PLAN
SCALE: 1" = 10'

10' 0 10' 20'

SCALE: 1" = 10'

C-50

SHEET 51 OF 70 SHEETS

24	2007	2008	2009

TRUE NORTH
SCALE 1" = 10'

- ① CONNECTION TO FIRE TANK NO. 4 SITE
STA. 28+34 @ WATERLINE M
= STA. 0+00 @ WATERLINE I
SEE SHEET C-30
- ② FIRE TANK NO. 4 SITE
NEW 1/2" WIDE CRUSHED ROCK
ACCESS ROAD (6" THICK)
SEE TYP. SECTION SHT. C-3
- ③ FIRE TANK NO. 4 SITE
INSTALL 14" WIDE 6" HIGH DOUBLE
SWING CHAIN LINK GATE
SEE DETAIL SHT. C-40
- ④ FIRE TANK NO. 4 SITE
INSTALL 2-1/2" STANDOFF
FOR FIRE PROTECTION
- ⑤ FIRE TANK NO. 4 SITE
INSTALL 202 L.F. 6" HIGH
CHAIN LINK FENCE
SEE DETAIL SHT. C-40
- ⑥ FIRE TANK NO. 4
STA. 28+49 O/S 42' L.I. @ WATERLINE M
- ⑦ FIRE TANK NO. 4
REMOVE EXIST. FENCE BEGIN
- ⑧ FIRE TANK NO. 4
REMOVE EXIST. FENCE END

LEGEND

- PROPERTY LINE (P) OR
RIGHT-OF-WAY (R/W)
- EXIST. CONTOURS
- PROPOSED CONTOURS
- EXIST. WATERLINE W/ SIZE
- PROPOSED WATERLINE W/ SIZE
- PROPOSED ACCESS ROAD
- PROPOSED FENCE

20,000 GALLON
FIRE TANK NO. 4
OVERFLOW = 3188'
FLOOR = 3176'

CONSTRUCT SILT FENCE SEE
DET. SHT. C-2

FIRE TANK NO. 4 SITE PLAN
SCALE: 1" = 10'

10' 0 10' 20'
SCALE: 1" = 10'



K. H. HARRIS
K. H. HARRIS
10000
MECHANICAL ENGINEERING
STATE OF HAWAII
LICENSE EXPIRES 12/31/2014

REVISION NO.	DESCRIPTION	DATE	APPROVED
DEPARTMENT OF HAWAIIAN HOME LANDS PUUKAPU HYBRID WATER SYSTEM TAX MAP REC. (1) 8-01-03-08, 11-05, 12, 53 and 54 WAILUKU, SOUTH KOHALA, HAWAII			
FIRE TANK NO. 4 SITE PLAN			
COUNTY OF HAWAII, 1ST. DISTRICT OF HAWAII		SCALE	
K. H. HARRIS & ASSOCIATES, LTD. CONSULTING ENGINEERS			

C-51

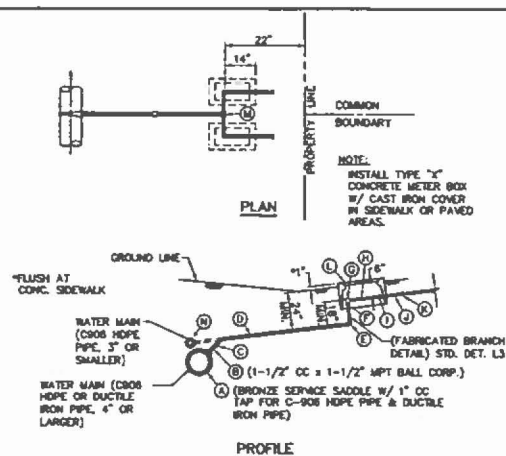
SHEET 52 OF 70 SHEETS

DATE	REVISION	BY	DATE

Local Name: K. H. HARRIS
Email: k.harris@hawaii.gov
Phone: (808) 935-1234
Fax: (808) 935-1235

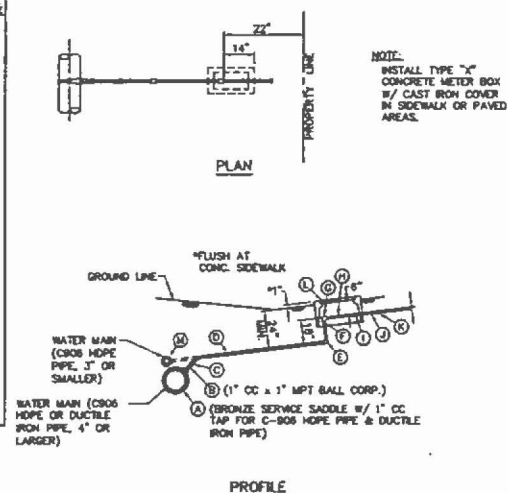
Last Save by: EMD
Last Saved: 6/10/2009
Printed on: 6/10/2009

SCHEDULE OF FITTINGS		
ITEM	DESCRIPTION	QUANTITY
A	BRONZE SERVICE SADDLE W/ 1-1/2" CC TAP FOR C-900 PVC PIPE & DUCTILE IRON PIPE	1
B	1-1/2" CC x 1-1/2" MPT BALL CORPORATION	1
C	PACK JOINT COUPLINGS (FORD C14-88 OR APPROVED EQUAL)	1
D	1-1/2" COPPER TUBE, TYPE "K" SOFT	2
E	1" 90° COPPER ELBOW, S x S	2
F	1" COPPER MALE ADAPTER, S x T (WHEN CONNECTING TO 3" OR SMALLER PVC PIPE)	2
G	ANGLE VALVE, 1" FEMALE IPT INLET x 3/4" METER COUPLING NUT OUTLET (FORD BA13-342W OR APPROVED EQUAL)	2
H	METER SPACER, SUPPLIED BY DEPT. OF WATER & INSTALLED BY CONTRACTOR	2
I	BALL VALVE W/ HANDLE, 3/4" METER COUPLING NUT INLET x 1" FEMALE IPT OUTLET (FORD B13-342 W/ HT-34 HANDLE OR APPROVED EQUAL)	2
J	LINESETTER, 1" COPPER TUBE, TYPE "K" SOFT, 12' LONG (SEE STD. DET. L3)	2
K	1" PLASTIC THREAD PROTECTOR	2
L	TYPE "B" CONCRETE METER BOX WITH CAST IRON COVER	2
M	1" x 1" x 1-1/2" COPPER TEE, S x S x S	1
N	TEE W/ 1-1/2" BUSHING (WHEN CONNECTING TO 3" OR SMALLER PIPE)	1

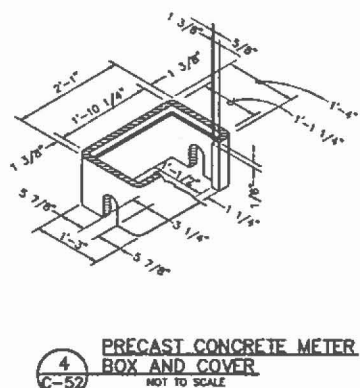
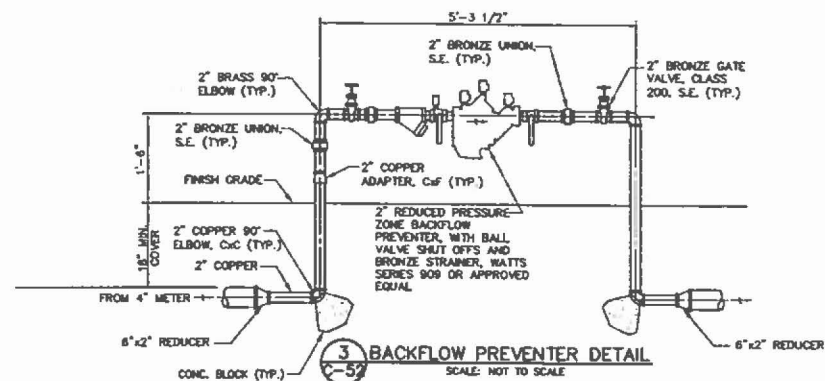


1 DOUBLE SERVICE LATERAL
C-52 NOT TO SCALE

SCHEDULE OF FITTINGS		
ITEM	DESCRIPTION	QUANTITY
A	BRONZE SERVICE SADDLE W/ 1" CC TAP FOR C-900 PVC PIPE & DUCTILE IRON PIPE	1
B	1" CC x 1" MPT BALL CORPORATION	1
C	PACK JOINT COUPLINGS (FORD C14-44 OR APPROVED EQUAL)	1
D	1" COPPER TUBE, TYPE "K" SOFT	1
E	1" 90° COPPER ELBOW, S x S	1
F	1" COPPER MALE ADAPTER, S x T (WHEN CONNECTING TO 3" OR SMALLER PVC PIPE)	1
G	ANGLE VALVE, 1" FEMALE IPT INLET x 3/4" METER COUPLING NUT OUTLET (FORD BA13-342W OR APPROVED EQUAL)	1
H	METER SPACER, SUPPLIED BY DEPT. OF WATER & INSTALLED BY CONTRACTOR	1
I	BALL VALVE W/ HANDLE, 3/4" METER COUPLING NUT INLET x 1" FEMALE IPT OUTLET (FORD B13-342 W/ HT-34 HANDLE OR APPROVED EQUAL)	1
J	LINESETTER, 1" COPPER TUBE, TYPE "K" SOFT, 12' LONG (SEE STD. DET. L3)	1
K	1" PLASTIC THREAD PROTECTOR	1
L	TYPE "B" CONCRETE METER BOX W/ CAST IRON COVER	1
M	TEE W/ 1" BUSHING (WHEN CONNECTING TO 3" OR SMALLER PIPE)	1



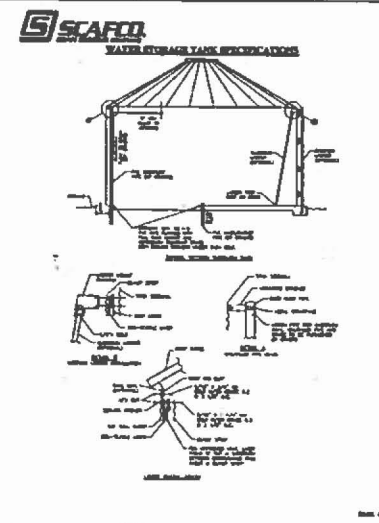
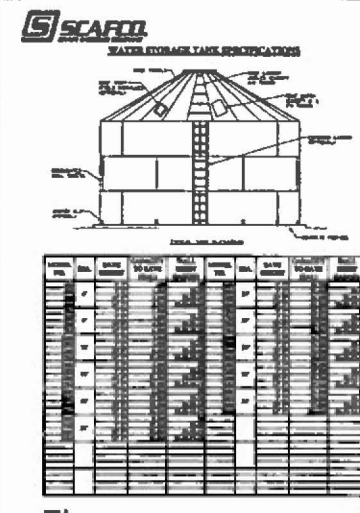
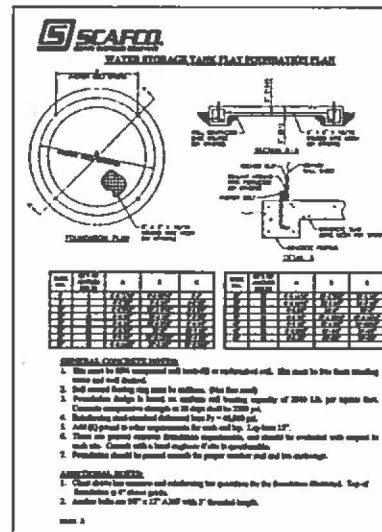
2 SINGLE SERVICE LATERAL
C-52 NOT TO SCALE



CAST IRON COVER

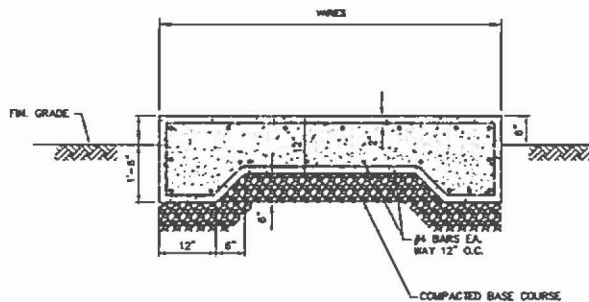


DESIGNED BY	CHECKED BY	DATE	APPROVED BY
DEPARTMENT OF HAWAIIAN HOME LANDS PUUKAPU HYBRID WATER SYSTEM TAX MAP KEY: (3) 6-6-00-30-30, 41-05, 01, 03 and 04 WAIKANA, SOUTH KOHOLA, HAWAII			
MISCELLANEOUS DETAILS			
COUNTY ENGINEER, KING COUNTY OF HAWAII			
AISHANKA & ASSOCIATES, LTD. CONSULTING ENGINEERS			



- NOTES:**
1. DETAILS SHOWN ABOVE ARE EXCERPTS FROM THE INSTALLATION INSTRUCTIONS FOR SCAFOO WATER STORAGE SYSTEMS.
 2. PREFABRICATED TANK COMPONENTS DO NOT INCLUDE THE REINFORCED CONCRETE FOUNDATION OR THE PIPE INLETS/OUTLETS THROUGH THE TANK FLOOR.

1 PREFABRICATED WATER STORAGE TANK
SCALE: NOT TO SCALE



2 TYPICAL CONCRETE PAD SECTION
SCALE: NOT TO SCALE



DESIGN DATE	REVISION	DATE BY	APPROVED
DEPARTMENT OF HAWAIIAN HOME LANDS PUUKAPU HYBRID WATER SYSTEM TAX MAP KEY: (3) 6-1-01-32-38, 41-43, 51, 53 and 54 WAIKANA, SOUTH KOHALA, HAWAII			
MISCELLANEOUS DETAILS			
COUNTY ENGINEER, STATE OF HAWAII			
ARCHITECT & ASSOCIATES, LTD. 1000 KALANIANA'OLUHIA DRIVE, SUITE 1000 HONOLULU, HAWAII 96813			

C-53

SHEET 34 OF 70 SHEETS

DATE: 10/1/2009

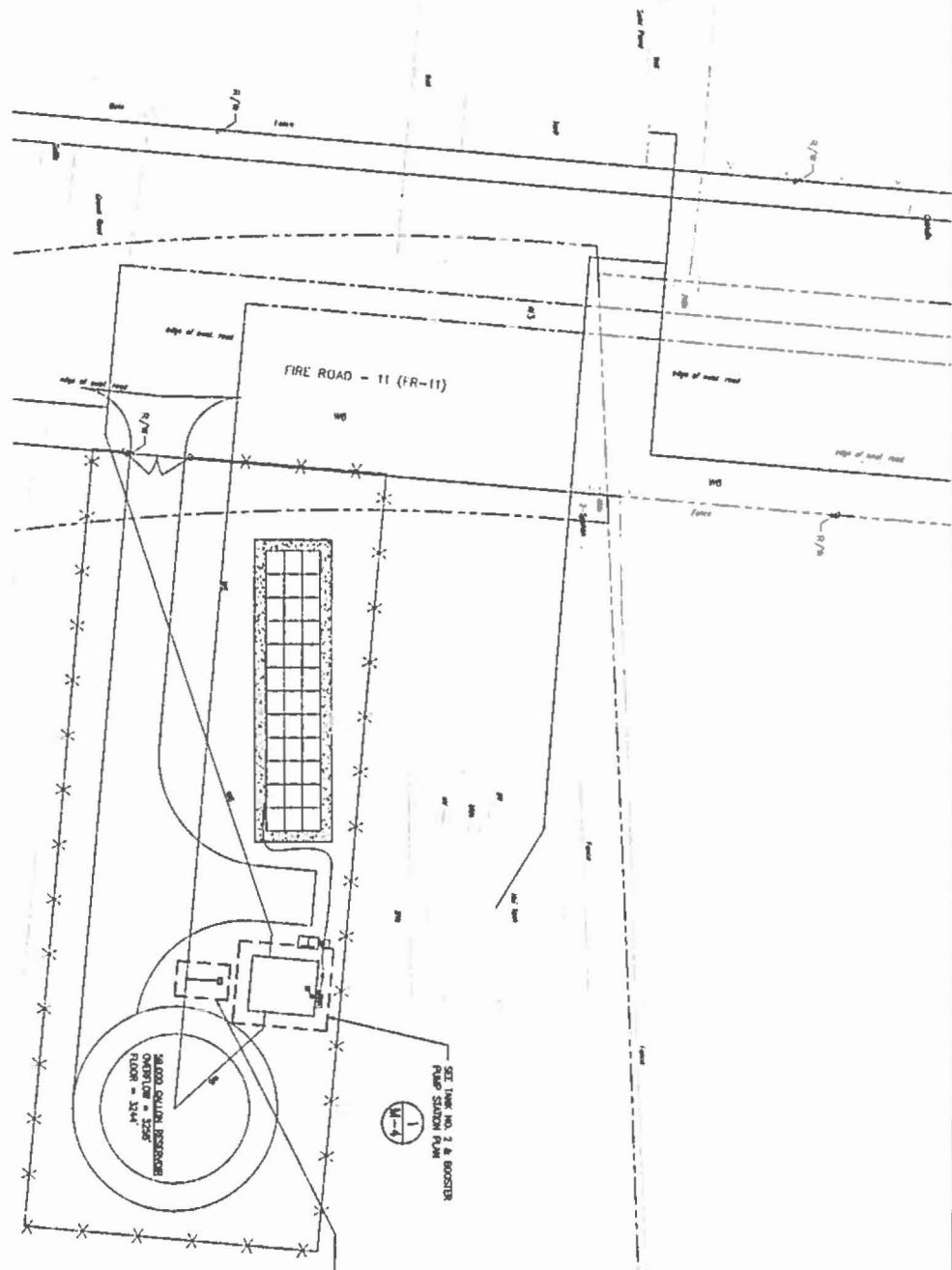


M-1

Vertical Line Counting					
Below	At	At	At	At	At

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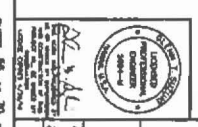
TRUE NORTH
SCALE: 1" = 10'



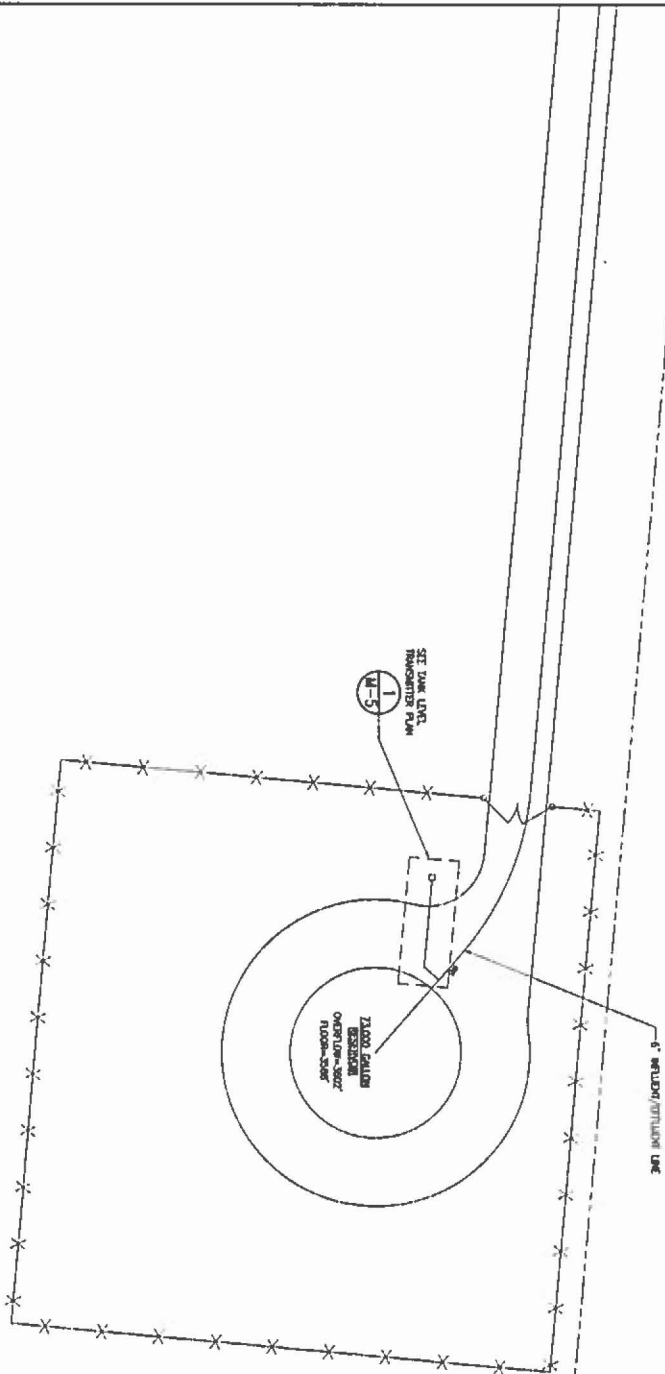
TANK NO. 2 & BOOSTER PUMP STATION PLAN
SCALE: 1" = 10'


M-2

SHEET 56 OF 70 SHEETS



DEPARTMENT OF HAWAIIAN HOME LANDS
PUUKAPU HYBRID WATER SYSTEM
TANK NO. 2 & BOOSTER PUMP STATION PLAN
HAWAII, SOUTH KONA, HAWAII
YAMAKA & ASSOCIATES, LTD.
CONSULTING ENGINEERS





 TANK NO. 3 SITE PLAN

 SCALE 1" = 10'

M-3

SHEET 37 OF 70 SHEETS

APPROVAL

TANK NO. 3 SITE PLAN

DEPARTMENT OF HAWAIIAN HOME LANDS
 PUKAPU HYBRID WATER SYSTEM
 100 W. ST. IN KAHALA, HAWAII 96741
 WAIKOA SOUTH KOHOLA, HAWAII

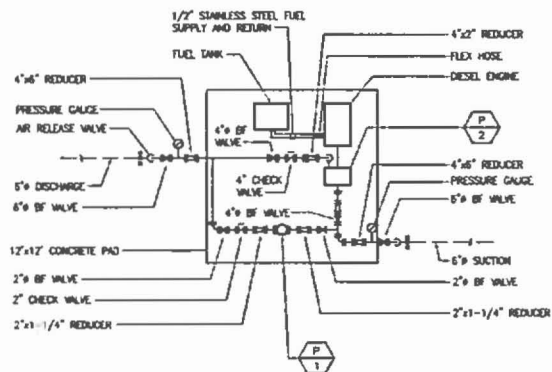


David A. Smith
 Professional Engineer
 License No. 10000
 State of Hawaii

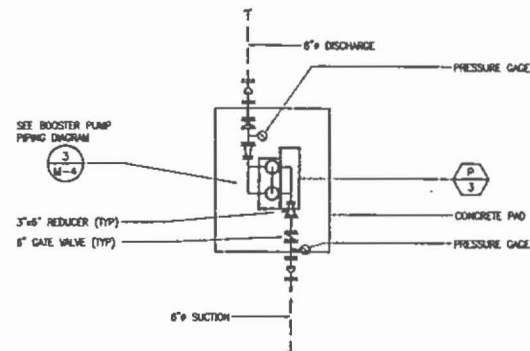
REVISION	DATE	BY	APP'D

APPROVAL

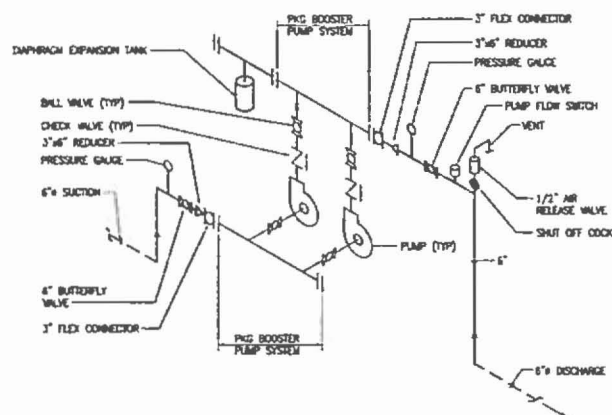
DATE



1 TANK NO. 2 & BOOSTER PUMP STATION PLAN
SCALE: 1/4" = 1'-0"

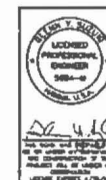


2 TANK NO. 1 & BOOSTER PUMP STATION PLAN
SCALE: 1/4" = 1'-0"



3 BOOSTER PUMP PIPING DIAGRAM
NOT TO SCALE

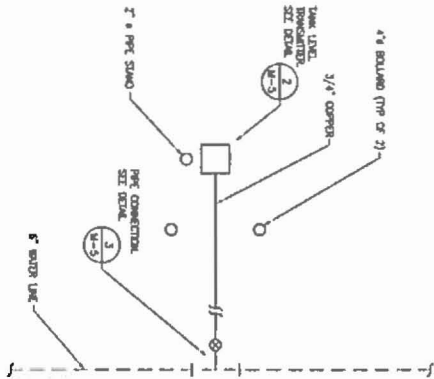
PUMP SCHEDULE									
SYMBOL	QTY	TYPE	SERVICE	GPM	TOTAL HEAD IN FT.	RPM	ELECTRICAL		REMARKS
							HP	VOLTAGE	
	1-EA	PHOTOVOLTAIC POWERED VERTICAL MULTISTAGE CENTRIFUGAL	BOOSTER	20	370	3500	5	208/3/60	GOULDS MODEL 15V814L9
	1-EA	DIESEL DRIVEN HORIZONTAL SPLIT CASE CENTRIFUGAL	BOOSTER	50	370	3000	10	208/3/60	MTH PUMPS MODEL 153L
	1-EA	SKID MOUNTED DUPLEX CENTRIFUGAL	BOOSTER	125	560	3500	20	208/3/60	GOULD MODEL 45V2F0K48M1



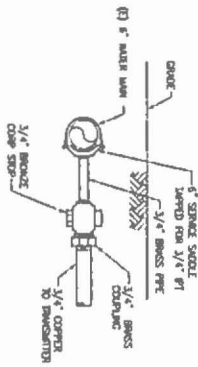
REVISION NO.	DESCRIPTION	DATE	BY
DEPARTMENT OF HAWAIIAN HOME LANDS PUUKAPU HYBRID WATER SYSTEM TAX MAP KEY: CD 6-4-08-32-20, 41-40, 81.53 and 54 WAIHEA, SOUTH KOHALA, HAWAII			
PHASE 1 AND PHASE 2 BOOSTER PUMP PLAN			
APPROVED COUNTY ENGINEER, CITY AND COUNTY OF HAWAII		DATE	
Akiyama & Associates, Ltd. CIVIL ENGINEERS			

M-4

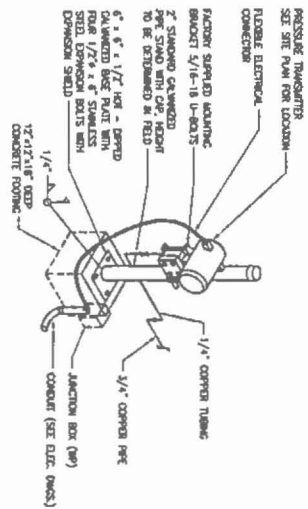
SHEET 58 OF 70 SHEETS



1 TANK LEVEL TRANSMITTER PLAN
SCALE 1/4" = 1'-0"



3 PIPE CONNECTION DETAIL
SCALE NOT TO SCALE



2 TANK LEVEL TRANSMITTER DETAIL
SCALE NOT TO SCALE

M-5

SHEET 58 OF 70 SHEETS

MECHANICAL DETAILS

DEPARTMENT OF HAWAIIAN HOME LANDS PUKAPU HYBRID WATER SYSTEM FOR WATER AND SEWERAGE WAILUKU, SOUTH HONOLULU, HAWAII	
MECHANICAL DETAILS	
DESIGNED BY DAVID A. KOPP	CHECKED BY DAVID A. KOPP
DRAWN BY DAVID A. KOPP	APPROVED BY DAVID A. KOPP

DUCT SECTION BACKFILL NOTES:

TYPE "A" BACKFILL - EARTH & GRAVEL. ROCK SIZE TO BE 1" MAX & THE MIXTURE TO CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES. 95% COMPACTION.

TYPE "B" BACKFILL - EARTH & GRAVEL. MIXTURE MUST PASS A 1/2" MESH SCREEN & CONTAIN NOT MORE THAN 20% BY VOLUME OF ROCK PARTICLES. 95% COMPACTION.

NOTE - IF NORMAL MATERIAL AT BOTTOM OF TRENCH IS NOT TYPE "B" AN ADDITIONAL 3" SHALL BE EXCAVATED & TYPE "B" BACKFILL PROVIDED.

CONCRETE - 3" ENCASEMENT, 3000 PSI COMPRESSIVE STRENGTH @ 28 DAYS.

DESIGNATION DESCRIPTIONS

ELEC - PRIMARY OR SECONDARY ELECTRIC
CTL - CONTROL
SIG - INSTRUMENTATION OR ANTENNA CABLE

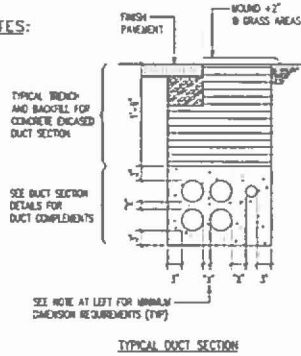
MINIMUM TRENCH DUCT SEPARATION REQUIREMENTS

ELEC - ELEC = 1 1/2"

ELEC - CTL/SIG = 3"

CTL/SIG - CTL/SIG = 1 1/2"

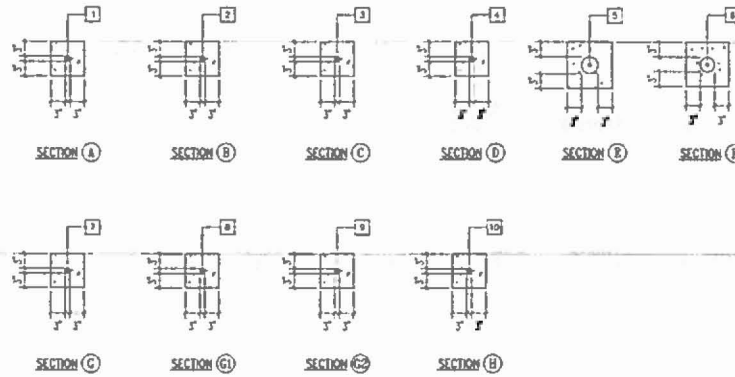
MINIMUM OF 3" CONCRETE ENCASEMENT AROUND DUCTBANK



SEE DUCT SECTION DETAILS FOR DUCT COMPLEMENTS

SEE NOTE AT LEFT FOR MINIMUM DIMENSION REQUIREMENTS (TYP)

TYPICAL DUCT SECTION



DUCT AND WIRE SCHEDULE

NO.	DUCT SIZE	WIRE SIZE	DESTINATION OR USE
1	1"	1-12/24 THHN, BULKED CABLE 4/0-0	INSTRUMENTATION CIRCUIT FROM TANK LEVEL TRANSMITTER TO LIMIT VALUE SWITCH
2	1"	4/0 1/0 0-0	UNIVERSAL SOLAR PUMP CONTROLLER TO SOLAR BOOSTER PUMP "P-1"
3	1"	4/0 1/0 0-0	TELEMETRY SYSTEM TO REMOTE SWITCH INPUT AT THE UNIVERSAL SOLAR PUMP CONTROLLER
4	1"	4/0 1/0 0-0	TELEMETRY SYSTEM TO DIESEL DRIVEN BOOSTER PUMP "P-2" CONTROL PANEL
5	3"	3/0 0-0	FIELD SERVICE POLE TO ELECTRICAL SERVICE COMPARTMENT
6	2.5"	3/0 0-0	FEEDER TO PACKAGED DUPLEX BOOSTER PUMP "P-3" CONTROL PANEL
7	1"	2/0 1/0 0-0	120V CIRCUITS TO DUPLEX RECEPTACLE OUTLET AND 24VDC POWER SUPPLY
8	1"	2/0 1/0 0-0	120V CIRCUIT TO DUPLEX RECEPTACLE OUTLET
9	1"	2/0 1/0 0-0	120V CIRCUIT TO 24VDC POWER SUPPLY
10	1"	4/0 1/0 0-0	TELEMETRY SYSTEM TO PACKAGED DUPLEX BOOSTER PUMP "P-3" CONTROL PANEL

NOTES

- ALL CONCRETE ENCASED DUCTS SHALL BE SCHEDULE 40 PVC.
- ALL DIRECT BURIED DUCTS SHALL BE SCHEDULE 80 PVC.
- PC INDICATES PROVIDE PULLCORD.

DUCT SECTION DETAILS AND REQUIREMENTS

NOT TO SCALE



ANDREW J. THOMPSON
REGISTERED PROFESSIONAL ENGINEER
NO. 45404
STATE OF HAWAII

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

DEPARTMENT OF HAWAIIAN HOME LANDS
PUUKAPU HYBRID WATER SYSTEM
TAN MAP KEY: (1) 41-42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54
WAIHEA, SOUTH KOHALA, HAWAII

DUCT SECTION DETAILS AND REQUIREMENTS

PROJECT NO.
COUNTY ENGINEER, OFFICE OF THE COUNTY OF HAWAII
DATE
AKIYAKA & ASSOCIATES, LTD.
CONSULTING ENGINEERS

TANK NO. 1 AND BOOSTER PUMP STATION ELECTRICAL SITE PLAN



GRAPHIC SCALE
0 25' 50' 75' 100' 150'

NOTES: 1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 70B. 2. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC) STANDARDS. 3. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) STANDARDS. 4. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS (IEEE) STANDARDS. 5. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) STANDARDS. 6. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) STANDARDS. 7. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE AMERICAN SOCIETY OF ELECTRICAL ENGINEERS (ASEE) STANDARDS. 8. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) STANDARDS. 9. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) STANDARDS. 10. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE AMERICAN SOCIETY OF ELECTRICAL ENGINEERS (ASEE) STANDARDS.

E-3

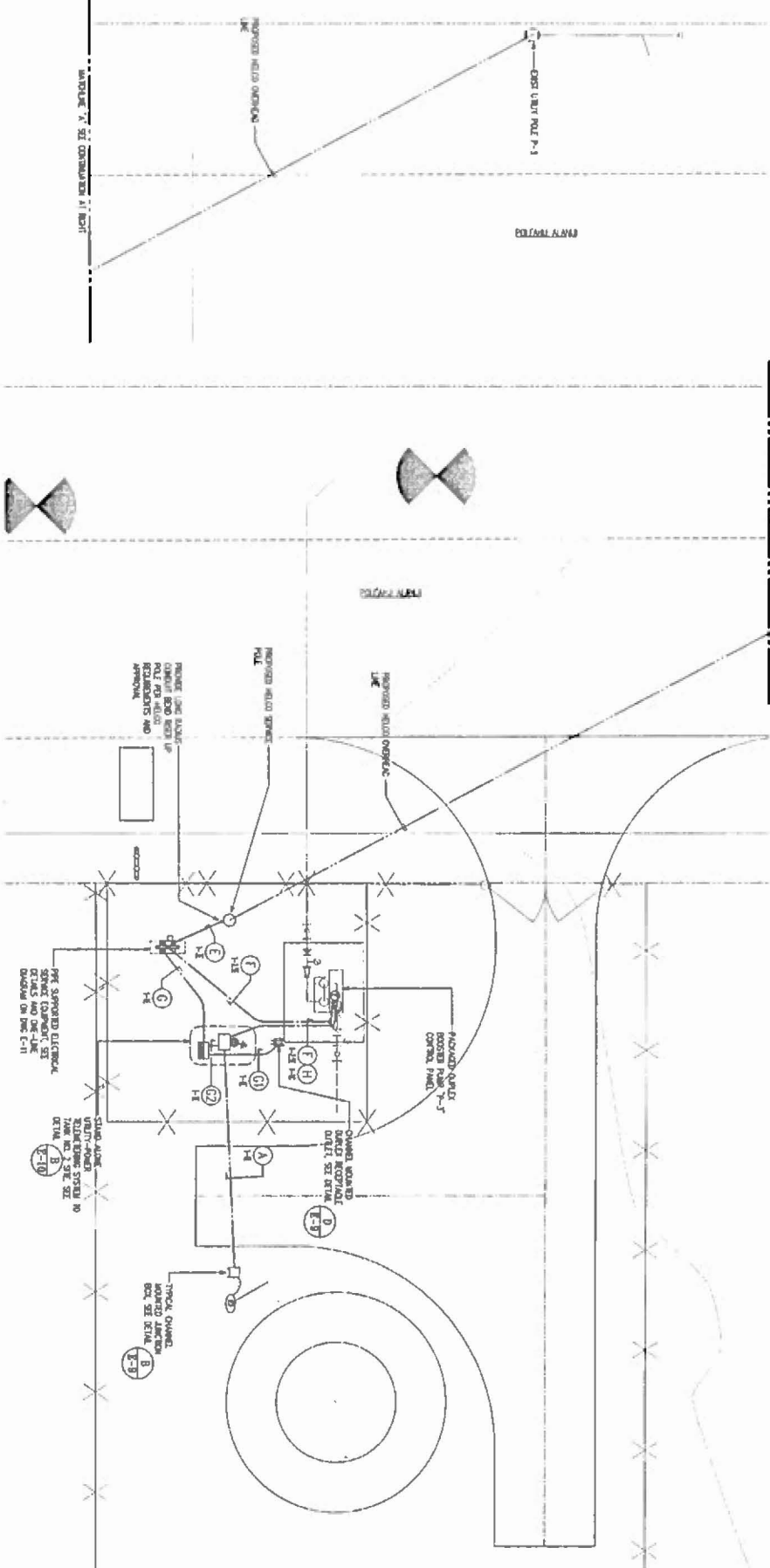
SHEET 11 OF 11 SHEETS

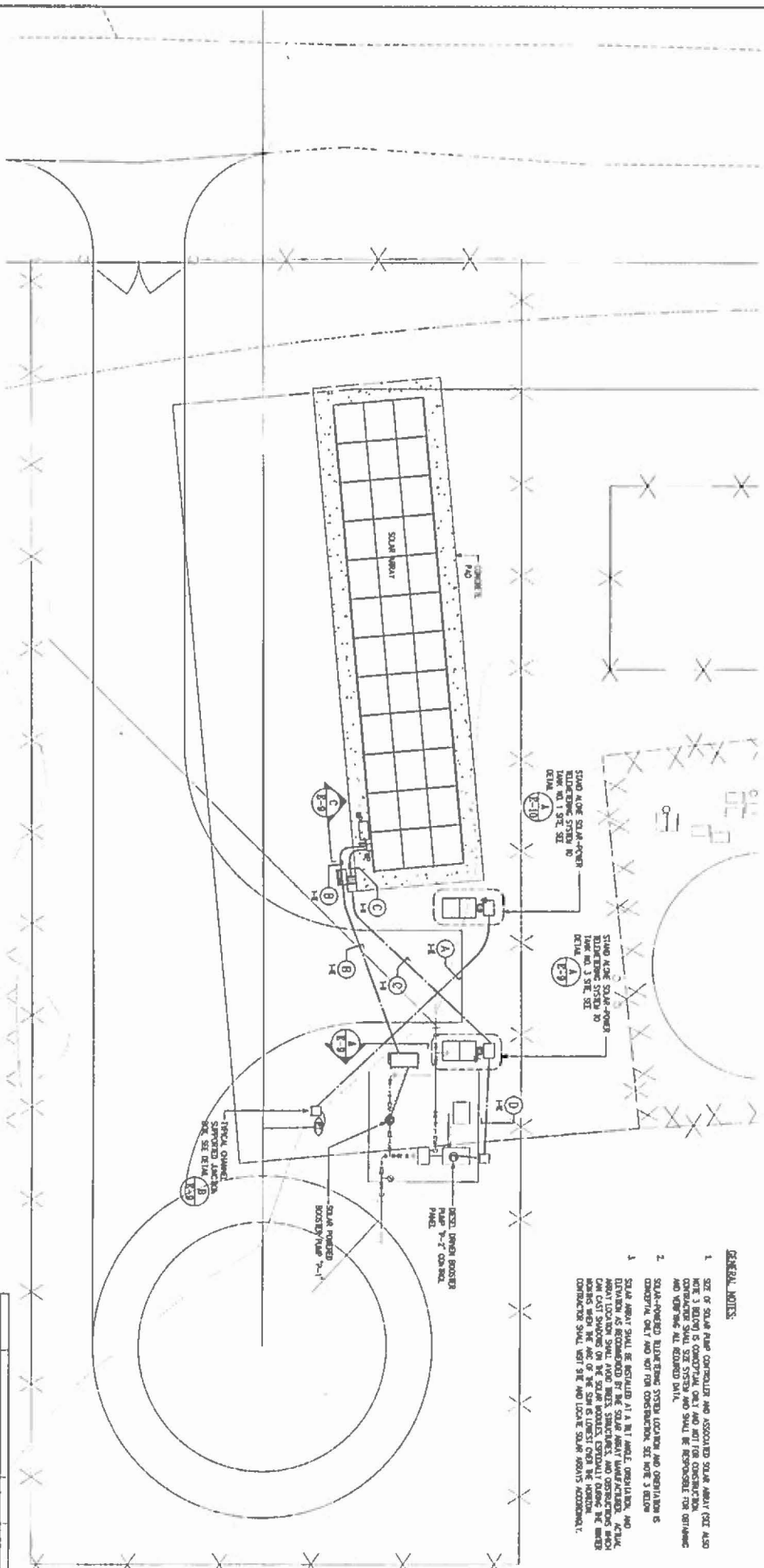
DATE: 10/10/2018
DRAWN BY: J. H. HARRIS
CHECKED BY: J. H. HARRIS
APPROVED BY: J. H. HARRIS



DEPARTMENT OF HAWAIIAN HOME LANDS
PUUKAPU HYBRID WATER SYSTEM
KAPALEA, SOUTH KOHALA, HAWAII
TANK NO. 1 AND BOOSTER PUMP STATION
ELECTRICAL SITE PLAN

REVISION	DATE	DESCRIPTION	BY	APPROVED
1	10/10/2018	ISSUED FOR PERMIT	J. H. HARRIS	J. H. HARRIS





1 TANK NO. 3 ELECTRICAL SITE PLAN E-5 SCALE 1"=5'



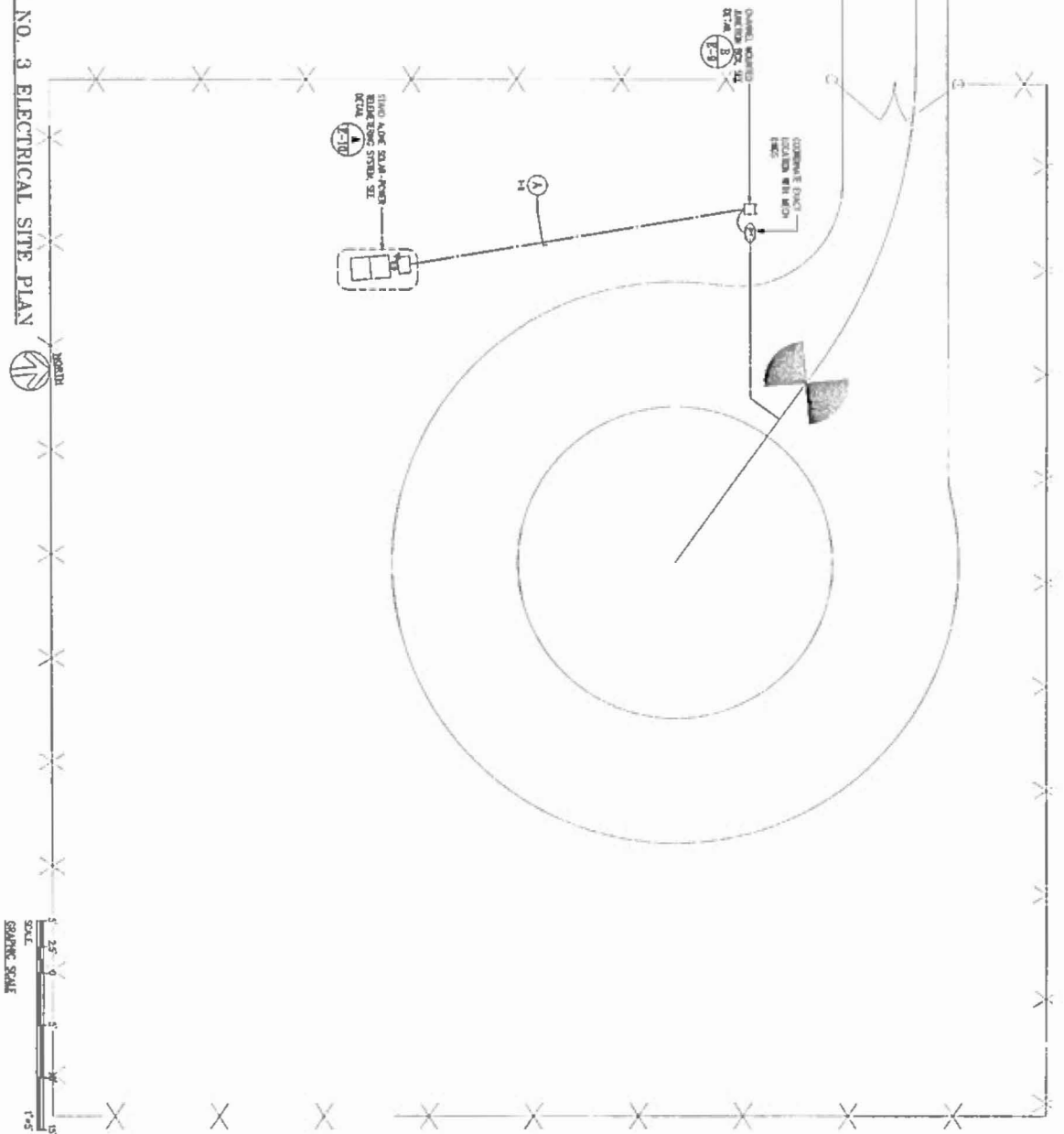
SCALE
1"=5'



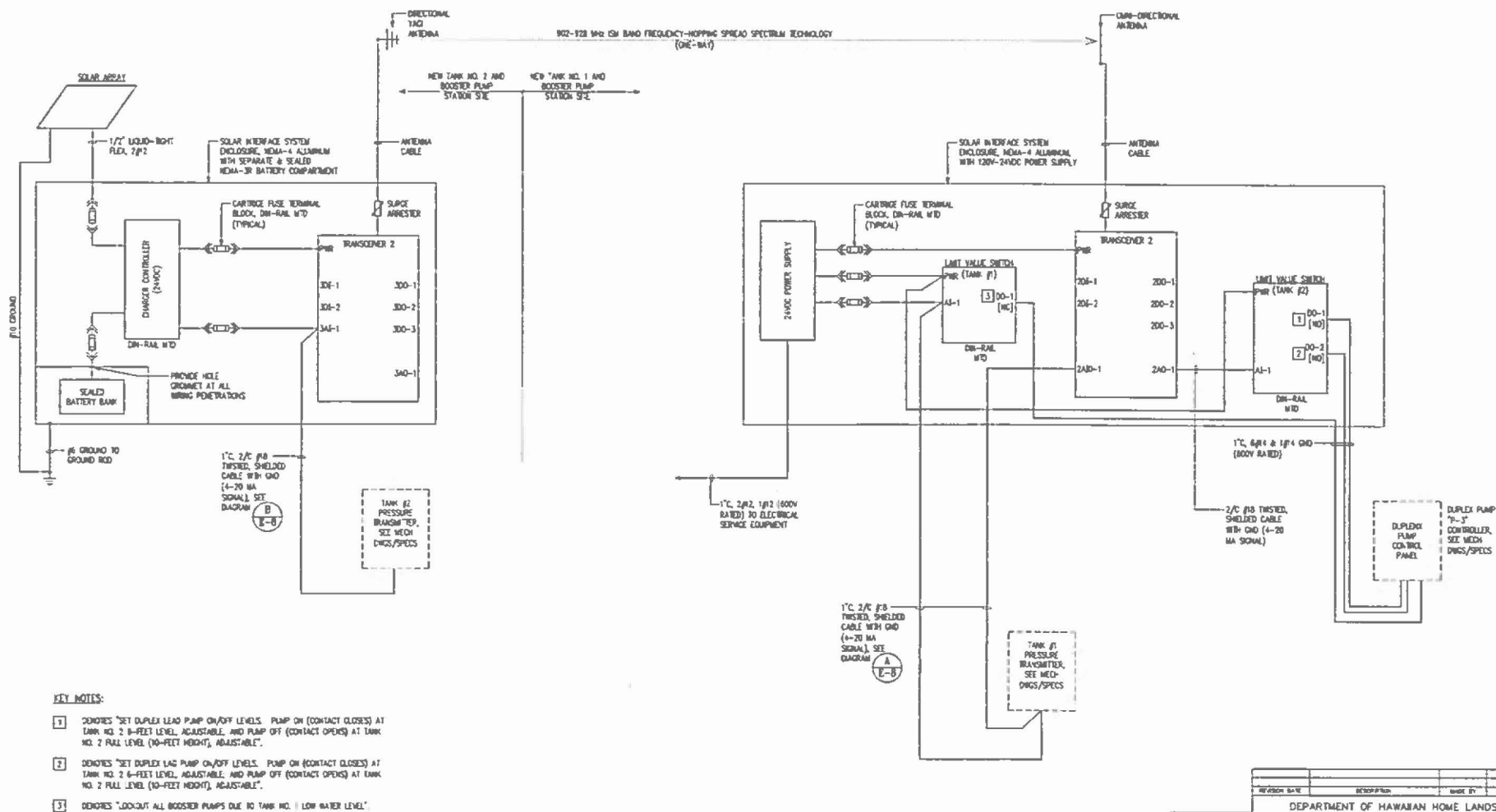
DEPARTMENT OF HAWAIIAN HOME LANDS
PUUKAPU HYBRID WATER SYSTEM
TANK NO. 3 ELECTRICAL SITE PLAN
KOA, SOUTH KOHOLA, HAWAII

AMAKUA & ASSOCIATES, LTD.
CONSULTING ENGINEERS

NO.	DATE	BY	CHKD.
1	10/1/01	DAVID J. HARGRAVE	DAVID J. HARGRAVE



- GENERAL NOTES:**
1. SOLAR-PANEL ARRAY LOCATIONS AND ORIENTATION IS CONCEPTUAL ONLY AND NOT FOR CONSTRUCTION. SEE NOTE 2 BELOW.
 2. SOLAR-PANEL ARRAY SHALL BE INSTALLED AT A 10% ANGLE ORIENTATION AND ELEVATION AS RECOMMENDED BY THE SOLAR ARRAY MANUFACTURER. ACTUAL ARRAY LOCATION SHALL ALSO BE SUBJECT TO LOCAL, STATE, AND FEDERAL REGULATIONS. THE SOLAR ARRAY SHALL BE LOCATED ON THE TANK NO. 3 ELECTRICAL SITE PLAN. THE SOLAR ARRAY SHALL BE LOCATED ON THE TANK NO. 3 ELECTRICAL SITE PLAN. THE SOLAR ARRAY SHALL BE LOCATED ON THE TANK NO. 3 ELECTRICAL SITE PLAN. THE SOLAR ARRAY SHALL BE LOCATED ON THE TANK NO. 3 ELECTRICAL SITE PLAN.



TELEMETERING DIAGRAM BETWEEN TANK NO. 1 AND TANK NO. 2 SITES

GENERAL NOTES:

- 70,000 GALLON TANK SPILLWAY ELEVATION = 3,685 FEET.
- NOT USED.

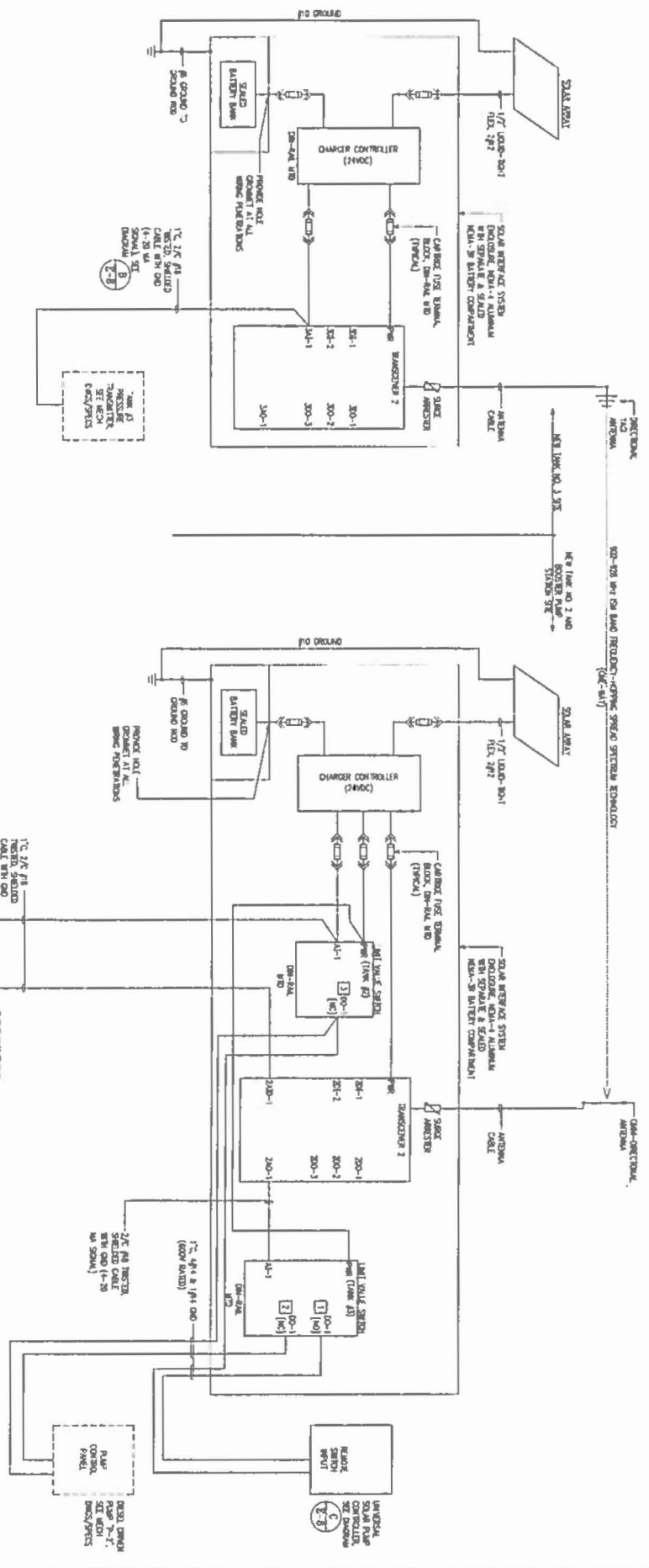


REVISION DATE	DESCRIPTION	DATE BY	APPROVED
DEPARTMENT OF HAWAIIAN HOME LANDS PUUKAPU HYBRID WATER SYSTEM TAX MAP KEY (3) 6-6-01 22-28, 41-43, 51, 52 AND 54 WAILUEA, SOUTH KOHALA, HAWAII TANK 1 SITE TO TANK 2 SITE TELEMETERING DIAGRAM			
COUNTY ENGINEER, DIST. COUNTY OF HAWAII AKOYAKA & ASSOCIATES, LTD. CONSULTING ENGINEERS DATE			

NOTES:
1. SEE SHEET E-7 FOR TANK NO. 1 AND TANK NO. 2 SITES.
2. SEE SHEET E-7 FOR TANK NO. 3 AND TANK NO. 4 SITES.

TELEMETERING DIAGRAM BETWEEN TANK NO. 2 AND TANK NO. 3 SITES

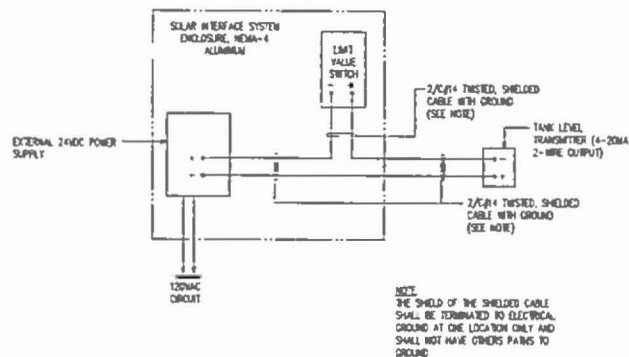
- NOTES:
1. TANK NO. 2 AND TANK NO. 3 SITES ARE LOCATED AT THE SAME LOCATION. TANK NO. 2 IS A 100,000 GPM TANK AND TANK NO. 3 IS A 50,000 GPM TANK.
 2. TANK NO. 2 AND TANK NO. 3 SITES ARE LOCATED AT THE SAME LOCATION. TANK NO. 2 IS A 100,000 GPM TANK AND TANK NO. 3 IS A 50,000 GPM TANK.
 3. TANK NO. 2 AND TANK NO. 3 SITES ARE LOCATED AT THE SAME LOCATION. TANK NO. 2 IS A 100,000 GPM TANK AND TANK NO. 3 IS A 50,000 GPM TANK.



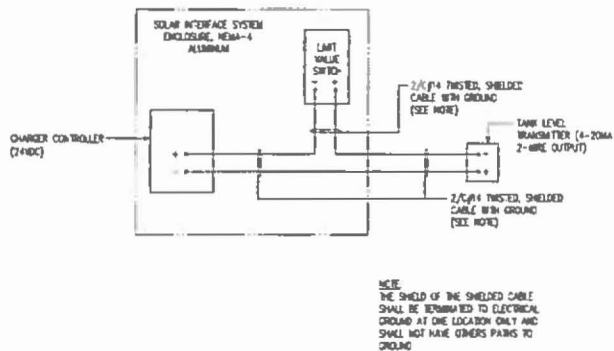
E-7

SHEET 16 OF 18 SHEETS

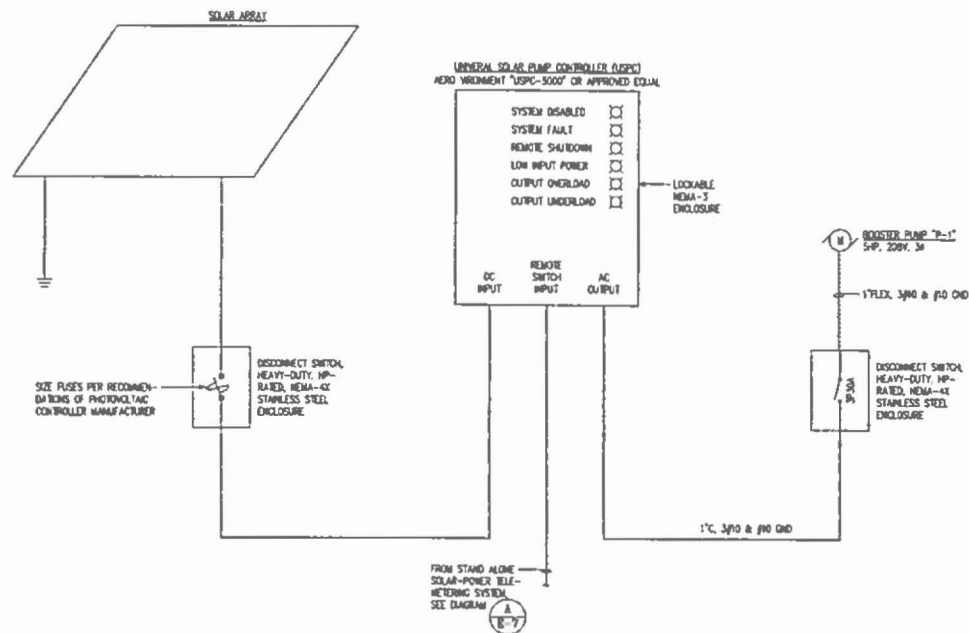
<p>DEPARTMENT OF HAWAIIAN HOME LANDS PUUKAPU HYBRID WATER SYSTEM WATER, SOLID, KONA, HAWAII</p>							
<p>TELEMETERING DIAGRAM</p>	<p>DATE: 10/1/81 BY: [Signature] CHECKED: [Signature] APPROVED: [Signature]</p>						
<p>REVISIONS:</p> <table border="1"> <tr> <th>NO.</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> <tr> <td>1</td> <td>ISSUED FOR CONSTRUCTION</td> <td>10/1/81</td> </tr> </table>	NO.	DESCRIPTION	DATE	1	ISSUED FOR CONSTRUCTION	10/1/81	<p>SCALE: 1/4\"/> </p>
NO.	DESCRIPTION	DATE					
1	ISSUED FOR CONSTRUCTION	10/1/81					



A TANK WATER LEVEL SIGNAL INSTRUMENTATION DIAGRAM
E-8 TANK SITE NO. 1



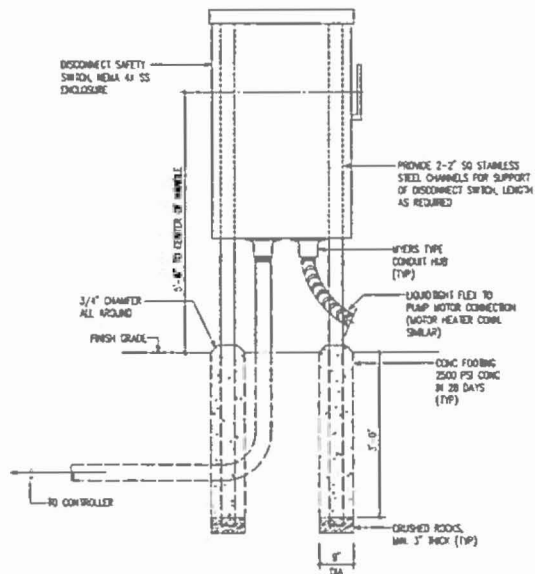
B TANK WATER LEVEL SIGNAL INSTRUMENTATION DIAGRAM
E-8 TYPICAL AT TANK SITE NOS. 2 AND 3



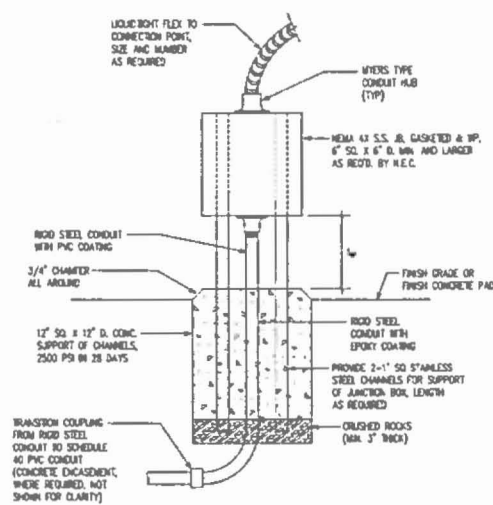
C SOLAR-POWERED PUMP WIRING DIAGRAM
E-8 (TANK NO. 2 SITE AND BOOSTER PUMP STATION SITE)



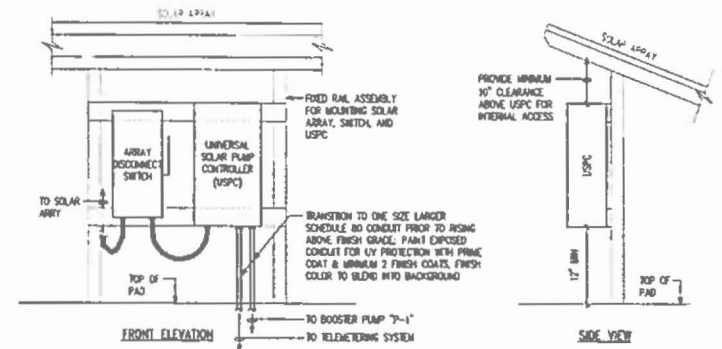
REVISION DATE	DESCRIPTION	DATE BY	APPROVED
DEPARTMENT OF HAWAIIAN HOME LANDS PUUKAPU HYBRID WATER SYSTEM TANK MAP KEY: (1) 8-4-01 22-38, 41-45, 51, 53 and 54 BAAHUA, SOUTH KOHALA, HAWAII TYPICAL INSTRUMENTATION WIRING DIAGRAMS			
Approved: _____ COUNTY ENGINEER, OFFICE COUNTY OF HAWAII DATE: _____ AONAKA & ASSOCIATES, LTD. CONSULTING ENGINEERS			



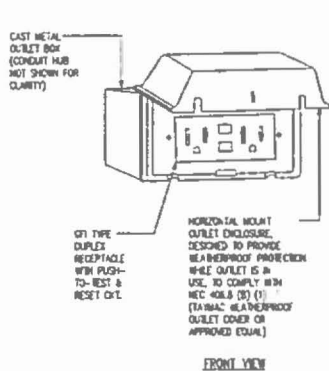
A DISCONNECT SWITCH MOUNTING DETAIL
E-9 NOT TO SCALE



B CHANNEL SUPPORTED JUNCTION BOX DETAIL
E-9 NOT TO SCALE

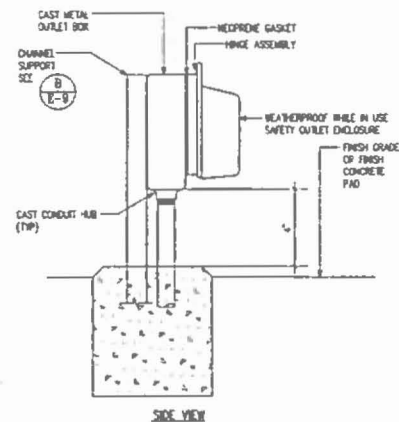


C PUMP CONTROLLER AND SWITCH MOUNTING DETAIL
E-9 NOT TO SCALE

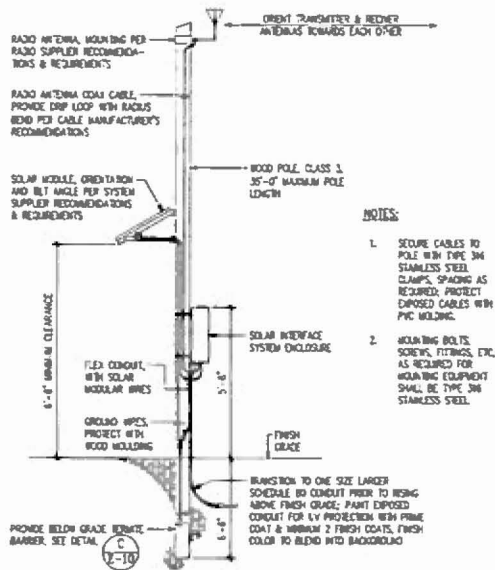


NOTE: ALL MOUNTING HARDWARE SHALL BE TYPE 304 STAINLESS STEEL.

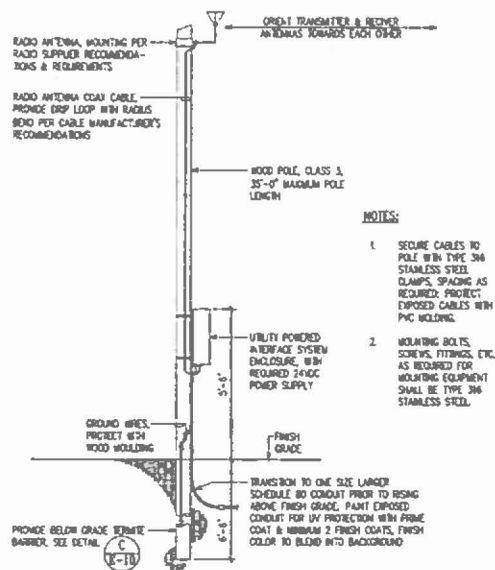
D WEATHERPROOF RECEPTACLE DETAIL
E-9 NOT TO SCALE



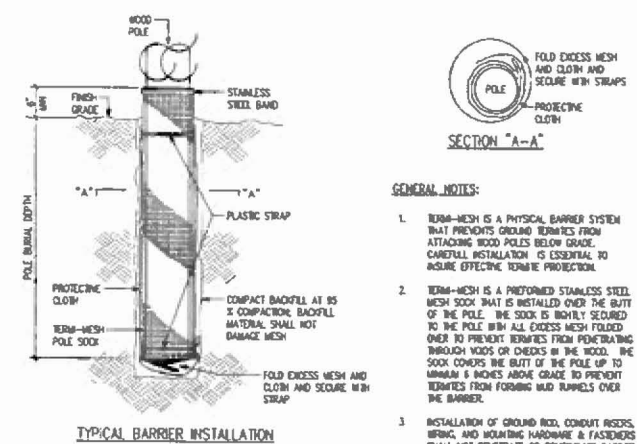
REVISION	DATE	DESCRIPTION	BY	APPROVED
DEPARTMENT OF HAWAIIAN HOME LANDS PUUKAPU HYBRID WATER SYSTEM TAX MAP KEY: (3) 4-4-01 32-38, 41-43, 51, 53 AND 54 KAHALA, SOUTH KOHALA, HAWAII TYPICAL INSTRUMENTATION WIRING DIAGRAMS				
APPROVED: _____ COUNTY ENGINEER, 3RD, COUNTY OF HAWAII ARCHANA & ASSOCIATES, LTD. CONSULTING ENGINEERS				



A
E-10
**STAND ALONE SOLAR-POWER
TELEMETERING SYSTEM
MOUNTING DETAIL**
NOT TO SCALE



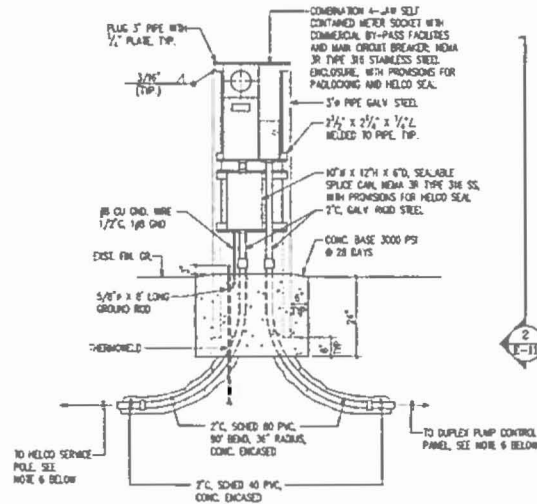
B
E-10
**UTILITY-POWER
TELEMETERING SYSTEM
MOUNTING DETAIL**
NOT TO SCALE



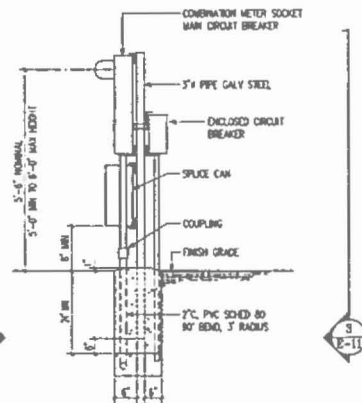
C
E-10
TERMITE BARRIER INSTALLATION DETAIL
NOT TO SCALE



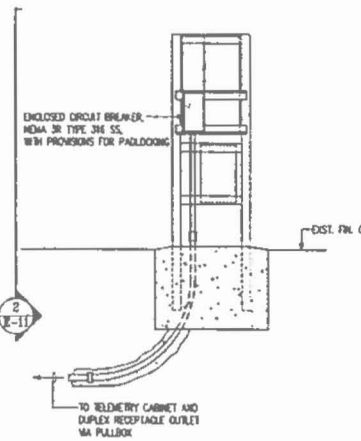
REVISION DATE	DESCRIPTION	MADE BY	DATE
DEPARTMENT OF HAWAIIAN HOME LANDS PUUKAPU HYBRID WATER SYSTEM TAD MAP KEY: (1) 6-1-01-32-38, 41-45, 51, 53 and 54 WAIALEA, SOUTH KOHALA, HAWAII MISCELLANEOUS ELECTRICAL DETAILS II			
APPROVED: _____ COUNTY ENGINEER, 3RD, COUNTY OF HAWAII			
ACHILLES & ASSOCIATES, LTD. CONSULTING ENGINEERS			



1 FRONT ELEVATION
E-11 (TOWARD ROAD)



2 SIDE ELEVATION
E-11



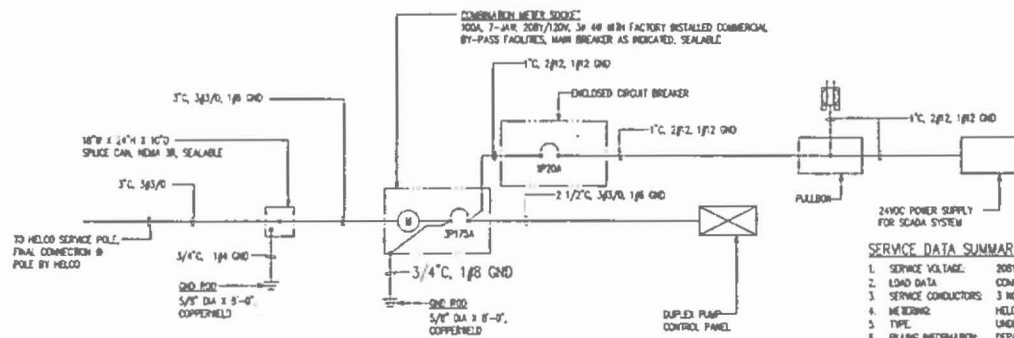
3 BACK ELEVATION
E-11

NOTES:

1. CONTRACTOR SHALL MAKE ALL ELECTRICAL CONNECTION TO DUPLEX PUMP CONTROL PANEL.
2. ALL CONDUITS TO CONTAIN A POLYOLEFIN PULL LINE (JET LINE CAT #232 OR EQUIV).
3. PEDESTAL SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
4. ALL FASTENING BOLTS, NUTS & WASHERS SHALL BE STAINLESS STEEL. PROVIDE ONE COAT SHOP PRIMER & TWO COATS OF ACRYLIC ENAMEL FINISH, COLOR TO MATCH CONTROLLER CABINET.
5. PROVIDE 4 FT CLEARANCE IN FRONT OF METER.
6. SEE SITE PLAN FOR EXACT ORIENTATION OF CONDUIT RUNS TO HELLO SECONDARY SERVICE AND DUPLEX BOOSTER PUMP CONTROL PANEL.

A TANK SITE NO. 1 METER INSTALLATION DETAILS

E-11 (NOT TO SCALE)



TANK SITE NO. 1 ELECTRICAL SERVICE ONE-LINE DIAGRAM

SERVICE DATA SUMMARY NOTES:

1. SERVICE VOLTAGE: 208Y/120V, 3-PHASE, 4-WIRE
2. LOAD DATA: CONNECTED: 25 KVA, ESTIMATED DEMAND: 24.1 KVA
3. SERVICE CONDUCTORS: 3 NO. 1
4. METERING: HELLO METER STANDARD B-B, RATE SCHEDULE "G"
5. TYPE: UNDERGROUND
6. BILLING INFORMATION: DEPARTMENT OF HAWAIIAN HOME LANDS, WEST OAHU DISTRICT OFFICE, 64-756 MAHALANOA HIGHWAY, KAMUELA HI 96743, ATTN: MR. JIM DUPONT



REVISION DATE	DESCRIPTION	MADE BY	APPROVED
DEPARTMENT OF HAWAIIAN HOME LANDS PUUKAPU HYBRID WATER SYSTEM 134 MAP KEY: 139 B-1-00-12-30, 11-1-15, 31, 33 and 34 KAMUELA, SOUTH KOHOLA, HAWAII			
TANK SITE NO. 1 ELECTRICAL SERVICE DETAILS			
APPROVED: _____ DATE: _____ COUNTRY ENGINEER, STATE OF HAWAII ANDRUKA & ASSOCIATES, LTD. CONSULTING ENGINEERS			

TECHNICAL SPECIFICATIONS
FOR
PUUKAPU HYBRID WATER SYSTEM
WAIMEA, ISLAND OF HAWAII, HAWAII

Prepared by
AKINAKA & ASSOCIATES, LTD.
3049 Ualena Street, Suite 500
Honolulu, HI 96819-1947

JUNE 2009

<u>SECTION</u>		<u>Pages</u>
01010	General Requirements	2
01340	Drawings to be Furnished by Contractor	2
01430	Environmental Protection	5
01440	Archaeological Findings	1
01750	Guarantee	1
02100	Clearing and Grubbing	3
02210	Site Earthwork	3
02270	Temporary Soil Erosion Control	3
02510	HDPE Potable Water Pipe	3
05600	Pre-fabricated Steel Water Tank	2
15050	Pump Station Mechanical Equipment	4
15100	Booster Pumps	7
16050	Basic Electrical Materials and Methods	14
16100	Exterior Underground Electrical Work	8
16500	Solar Pump Controller System	9
16700	Solar Telemetry System	12

All applicable sections of the following are incorporated by reference (inclusive):

1. WATER SYSTEM STANDARDS, of the Department of Water Supply - County of Hawaii, Board of Water Supply - City and County of Honolulu, Department of Water - County of Kauai, and Department of Water Supply - County of Maui, State of Hawaii, dated 2002, as amended (bound separately).

CAUTION: For measurement and payment purposes, if there are discrepancies between these technical specifications, the Standard Specifications, and the proposal schedule, measurement and payment will be in accordance with the PROPOSAL SCHEDULE.

SECTION 01010 - GENERAL REQUIREMENTS

PART 1 - GENERAL

- 1.01 GENERAL REQUIREMENTS AND COVENANTS: The General Conditions, General Specifications, Special Provisions, and other applicable documents preceding these specifications shall govern all work specified hereinafter in all Divisions and Sections.
- 1.02 APPLICABLE REGULATIONS: The Contractor shall comply with all local laws, ordinances, rules and regulations pertaining to such work and must obtain all required permits, licenses, and certificates and publish and post all notices required thereby.
- 1.03 DESCRIPTION OF THE WORK: These specifications are divided for convenience into titled divisions and sections as set forth in the TABLE OF CONTENTS preceding these specifications and shall not be considered an accurate or complete segregation of the several units of labor and materials. No responsibility, either direct or implied is assumed by the Department of Hawaiian Home Lands (DHHL) for omissions or duplications of the subject matter. The Contractor will be held responsible for the complete work whenever or wherever the parts are described in one or more trade heads. Any mention in these sections or indication on the drawings of articles, materials, operations, or methods, require that the Contractor furnish each item so mentioned or indicated, of the kind, type, or design and quality of each item so mentioned on the drawings, and that the Contractor furnish all labor, materials, equipment, incidentals and supervision necessary to complete the work in accordance with the drawings and the true meaning and intent of these specifications, even though such mention of articles, materials, operations, methods, quality, qualifications or condition is not expressed in complete sentences.

Where devices or items, or parts thereof are referred to in the singular, it is intended that such references shall apply to as many such devices, items, or parts as are required to properly complete the work.

Schedule of work included in these specification sections are given for convenience and shall not be considered as a comprehensive list of items necessary to complete the work of any section.

The Contractor shall employ the usual standard practice of coordinating the work covered in each section with the work of other sections. The necessary information and the items, accessories, anchors, connections, patterns, templates, etc., shall be delivered when required in order to prevent any delay in the progress and completion of the work.

- 1.04 PLANS AND SPECIFICATIONS: These specifications are intended to cover all labor, materials and standards of workmanship employed in the work indicated on the plans and called for in the specifications or reasonably implied therein. The plans and specifications complement one another. Any part of the work mentioned in one and not represented in the other, shall be done the same as if it had been mentioned or represented in both.

The Contractor shall not alter from the drawings and specifications. In the event of errors or discrepancies, the Contractor shall immediately notify the Engineer.

All figured dimensions take precedence over scaled measurements. No important dimension shall be determined by scale.

Specifications and drawings are prepared in abbreviated form and may include incomplete sentences. Omissions of words or phrases such as "the Contractor shall", "as shown on the drawing", "a", "an", and "the", are intentional. Omitted words and phrases shall be provided by inference to form complete sentences.

- 1.05 REFERENCE STANDARDS: All work shall be done in accordance with the most current standards listed below as amended and/or amplified herein.

ASA American Standards Association

ASTM American Society for Testing and Materials

AISC American Institute of Steel Construction

ACI American Concrete Institute

UBC Uniform Building Code - current edition

END OF SECTION

SECTION 01340 - DRAWINGS TO BE FURNISHED BY CONTRACTOR

The following shall supplement the General Conditions.

- 1.01 Shop drawings and submittals shall be made in accordance with Section 5.5 - Shop Drawings and Other Submittals of the General Conditions.
- 1.02 The Contractor's stamp and verification of drawings shall consist of the following format:

KAWAIHAE 304.5' AND 632' RESERVOIRS
SYSTEM IMPROVEMENTS AND EARTHQUAKE REPAIR WORK
DHHL CONTRACT NO. IFB-08-HHL-003

(Contractor's Name) _____

(Signature) _____ (Date) _____

This submittal has been checked and verified in accordance with the requirements of the contract documents and any equipment submitted herewith can be installed in the allocated spaces.

Submittal No. _____

Specification Section No. _____

Paragraph No. _____

Contract Drawing Ref. _____

Subcontractor _____

Supplier _____

Manufacturer _____

Exceptions Taken: Yes _____ No _____

Details of Exception _____

- 1.03 The person signing the Contractor's submittal stamp shall be the one designated under the contract agreement with the DHHL. The signature shall be in original ink. Stamped signature will not be acceptable. Submittal for shall be completely filled out, signed and dated.

- 1.04 All changes made to the submittal drawings by the Contractor in the form of written or typewritten markings shall be initialed and dated by the Contractor.
- 1.05 When the Contractor takes any exception to the submittal drawings, such exception shall be brought to the attention of the Engineer. The exception shall be submitted with the shop drawings together with sufficient details and justifications.
- 1.06 Within 30 days after receipt of notice to proceed, the Contractor shall submit to the Engineer in duplicate, a schedule, listing all items that will be submitted for review and approval action by the DHHL, the State Department of Transportation, or the County. The schedule shall include, among other things, a list of shop drawings and manufacturer's literature, certificates of compliance, material samples, and guarantees. The schedule shall indicate the type of item, contract requirement reference; the Contractor's scheduled date for submitting the above items and projected needs for approval answers and procurement dates. In preparing the schedule, adequate time (minimum of 15 days) shall be allowed for review and approval; additional time shall be allowed to provide for possible resubmittal. Also, the scheduling shall be coordinated with the approved progress schedule.
- 1.07 The Contractor shall maintain at the job site two sets of full size contract drawings, marking them in red to show all variations between the construction actually provided and that indicated or specified in the contract documents, including buried or concealed herein, or where variations in scope or character of work from that of the original contract are authorized, the drawings shall be marked to define the construction actually provided. Where equipment installation is involved, the size, manufacturer's name, model number and power input or output characteristics are applicable shall be shown on the as-built drawings. The representations of such changes shall conform to standard and detail as necessary to clearly portray the as-built construction. The drawings shall be maintained and updated on a daily basis.

Monthly and final payments of the Contractor shall be subject to prior approval of the drawings.

On completion of the work, both sets of marked-up drawings shall be delivered to the Engineer, and shall be subject to his approval before acceptance.

END OF SECTION

SECTION 01430 - ENVIRONMENTAL PROTECTION

PART 1 - GENERAL

- 1.01 **GENERAL:** This section covers prevention of environmental pollution and damage during and as the result of construction operations under this contract and for those measures set forth in other sections of the TECHNICAL SPECIFICATIONS. For the purpose of this specification, environmental pollution and damage is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to utility of the environment for aesthetic, cultural and/or historical purposes. The control of environmental pollution and damage requires consideration of air, water, and land, and includes management of visual aesthetics, noise, solid waste, as well as other pollutants. It is the responsibility of the Contractor to investigate and comply with all applicable Federal, State and County laws and regulations concerning environmental protection and pollution control, and to secure all necessary permits.
- 1.02 **SUBMITTALS:** The Contractor shall submit an environmental protection plan in accordance with the provisions as herein specified. Environmental protection plan shall include but not be limited to the following:
- A. Methods for protection of features to be preserved within authorized work areas. The Contractor shall prepare a listing of methods to protect resources needing protection; i.e., trees, shrubs, vines, grasses and ground cover, landscape features, air and water quality, fish and wildlife, soil, historical, archaeological, and cultural resources.
 - B. Procedures to be implemented to provide the required environmental protection and to comply with all applicable laws and regulations. The Contractor shall set out the procedures to be followed to correct pollution of the environment due to accident, natural causes, or failure to follow the procedures set out in accordance with the environmental protection plan.
 - C. Drawings showing locations of any proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles or spoil material.
 - D. Environmental monitoring plans for the job site, including land, water, air and noise monitoring.
 - E. Methods of protecting surface and groundwater during construction activities.
 - F. Training for his personnel during the construction period.
- 1.03 **IMPLEMENTATION:** After receipt of Notice to Proceed, the Contractor shall submit in writing the above environmental protection plan for approval of the Engineer within 5 days after Notice to Proceed. Approval of the contractor's plan will not relieve the Contractor of his responsibility for adequate and continuing control of pollutants and their environmental protection measures.

- 1.04 **SUBCONTRACTORS:** Assurance of compliance with this section by subcontractors will be the responsibility of the Contractor.
- 1.05 **NOTIFICATION:** The Engineer will notify the Contractor in writing of any observed noncompliance with the aforementioned Federal, State or local laws or regulations, permits, and other elements of the Contractor's environmental protection plan. The Contractor shall, after receipt of such notice, inform the Engineer of proposed corrective action and take such action as may be approved. If the Contractor fails to comply promptly, the Engineer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or costs or damages allowed to the Contractor for any such suspension.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

- 3.01 **PROTECTION OF ENVIRONMENTAL RESOURCES:** The environmental resources within the project boundaries and those affected outside the limits of permanent work under this contract shall be protected during the entire period of this contract. The Contractor shall confine his activities to areas defined by the drawings and specifications.
- 3.02 **PROTECTION OF LAND RESOURCES:** Prior to the beginning of any construction, the Contractor shall identify all land resources to be preserved within the Contractor's work area. Except in areas indicated on the drawings or specified to be cleared, the Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without special permission from the Engineer. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. Where such special emergency use is permitted, the Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs.
- A. **Work Area Limits:** Prior to any construction, the Contractor shall mark the areas that are not required to accomplish all work to be performed under this contract. Isolated areas within the general work area, which are to be saved and protected shall also be marked or fenced. Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, the markers shall be visible. The Contractor shall convey to his personnel the purpose of marking and/or protection of all necessary objects.
 - B. **Protection of Landscape:** Trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques.
 - C. **Reduction of Exposure of Unprotected Erodible Soils:** Earthwork brought to final grade shall be finished as indicated and specified. Side slopes and back slopes shall be protected as soon as practicable upon completion of rough grading. All earthwork shall be planned and conducted to minimize the duration of exposure of unprotected soils. Runoff from the construction site shall be controlled by construction of diversion ditches, benches, and berms to retard and divert runoff

to protected drainage courses.

- D. Disposal of Solid Waste by Removal From State Property: The Contractor shall transport all solid waste off State property and dispose of it in compliance with Federal, State and local requirements for solid waste disposal.
- E. Disposal of Chemical Waste: Chemical waste shall be stored in corrosion resistant containers, removed from the work area and disposed of in accordance with Federal, State, and local regulations.

3.03 PROTECTION OF WATER RESOURCES: The Contractor shall keep construction activities under surveillance, management and control to avoid pollution of surface and groundwaters. Special management techniques as shall be implemented to control water pollution.

- A. Protection of Waterways: Construction of drainage facilities as well as performance of other contract work which will contribute to the control of siltation shall be carried out in conjunction with the earthwork operations or as soon as thereafter as is practicable.

Prior to or during any suspension of construction operations for any appreciable length of time, the Contractor shall provide for any temporary erosion control measures deemed necessary. Such measures shall be continued until the permanent drainage facilities have been constructed and when called for, until the protective ground cover is sufficiently established to be an effective erosion deterrent. Should such measures fail and an appreciable quantity of material begins to erode into the natural waterway, the Contractor shall act immediately to bring the siltation under control.

- B. Pollution: The Contractor shall exercise every reasonable precaution throughout the life of the project to prevent pollution of rivers, streams or impoundments. Pollutants such as chemicals, fuels, lubricants, bitumens, raw sewage and other harmful waste shall not be discharged into or alongside of the stream, or into natural or manmade channels leading thereto. The Contractor shall also comply with the applicable regulations of the State Department of Land and Natural Resources and other statutes relating to the prevention and abatement of pollution.

The Contractor shall conduct his operations near harbors, bays, swimming and water recreation areas, to avoid and minimize pollution. He shall comply with the applicable regulations of the United States Department of Interior, State Department of Health and other authority having jurisdiction.

Monitoring of water areas affected by construction activities shall be the responsibility of the Contractor. All water areas affected by construction activities shall be monitored by the Contractor.

3.04 PROTECTION OF FISH AND WILDLIFE RESOURCES: The Contractor shall keep construction activities under surveillance, management and control to minimize interference with, disturbance to and damage of fish and wildlife.

3.05 PROTECTION OF AIR RESOURCES: The Contractor shall keep construction activities under surveillance, management and control to minimize pollution of air resources. All activities, equipment, processed, and work operated or performed by the Contractor in accomplishing the specified construction shall be in strict accordance with the State of Hawaii Public Health Regulations, Chapter 43, "Air Pollution Control." Special management techniques as set out below shall be implemented to control air pollution by the construction activities, which are included in the contract.

- A. Particulates: Dust particles, aerosols, and gaseous by-products from all construction activities and processing and preparation of materials shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain all excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and all other work areas within or outside the project boundaries free from particulates which would cause the air pollution standards mentioned above to be exceeded or which would cause a hazard or a nuisance. Sprinkling or other methods approved by the Engineer will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated at such intervals as to keep the disturbed area damp at all times. The Contractor must have sufficient competent equipment available to accomplish this task. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs.
- B. Hydrocarbons and carbon monoxide emissions from equipment shall be controlled to Federal and State allowable limits at all times.
- C. Odors shall be controlled at all times for all construction activities, processing and preparation of materials.
- D. Monitoring of air quality shall be the responsibility of the Contractor. All air areas affected by the construction activities shall be monitored by the Contractor.

3.06 PROTECTION FROM SOUND INTRUSIONS: The Contractor shall adhere to the requirements of the Department of Health and shall implement acceptable noise abatement methods to minimize the construction noise level.

Noise shall be kept within acceptable levels at all times in conformance with Title II, Administration Rules, Chapter 43, Community Noise Control, State Department of Health, Public Health Regulations. The Contractor shall obtain the pay for community noise permit from the State Department of Health when the construction equipment or other devices emit noise at levels exceeding the allowable limits.

All internal combustion engine-powered equipment shall have mufflers to minimize noise and shall be properly maintained to reduce noise to acceptable levels.

3.07 POST CONSTRUCTION CLEANUP: The Contractor shall clean up areas used for construction.

- 3.08 RESTORATION OF LANDSCAPE DAMAGE: The Contractor shall restore all landscape features damaged or destroyed during construction operations outside the limits of the approved work areas. Such restoration shall be in accordance with the plan submitted for approval by the Engineer. This work will be accomplished at the Contractor's expense.
- 3.09 MAINTENANCE OF POLLUTION CONTROL FACILITIES: The Contractor shall maintain all constructed facilities and portable pollution control devices for the duration of the contract or for that length of time construction activities create the particular pollutant.
- 3.10 TRAINING OF CONTRACTOR PERSONNEL IN POLLUTION CONTROL: The Contractor shall train his personnel in all phases of environmental protection. The training shall include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of facilities (vegetative covers and instruments required for monitoring purposes) to ensure adequate and continuous environmental pollution control.

END OF SECTION

SECTION 01440 - ARCHAEOLOGICAL FINDINGS

PART 1 - GENERAL

- 1.01 PRESERVATION AND RECOVERY OF HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES: Existing historical, archaeological, and cultural resources within the Contractor's work area will be so designated by the Engineer if any have been identified. The Contractor shall take precautions to preserve all such resources as they existed at the time they were pointed out to him. The Contractor shall provide and install all protection for these resources so designated and shall be responsible for their preservation during this contract. If during excavation or other construction activities in areas with existing or known resources, as well as in any other work area, any previously unidentified or unanticipated resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Such temporary suspension of work shall not be attributable to the Contractor. These resources of cultural remains (prehistoric or historic surface or subsurface) include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rocks or coral alignments, parings, wall, or other constructed features; and any indication or agricultural or other uses. Upon such discovery or find, the Contractor shall immediately notify the Engineer. When so notified, the Engineer will notify the State Historic Preservation Officer (SHPO) for further direction.

As directed by the Engineer, the Contractor may be allowed to continue any operation which would not further disturb the site(s); however, all work within the protected area shall be suspended until the Engineer is notified by the SHPO that all investigations or salvage operations have been completed.

END OF SECTION

SECTION 01750 - GUARANTEE

The Contractor guarantees all materials and equipment furnished to be in operable condition upon final acceptance of the work and that all such materials and equipment conform to the requirements of this contract and be fit for the use intended.

He further guarantees all such materials and equipment against defects and poor workmanship and the Contractor guarantees their work to meet the criteria and operating requirements specified in the bid documents.

The period of this guarantee shall commence upon acceptance of the work by the appropriate agency, and shall extend through the project performance evaluation period not to exceed 1 year for all materials and equipment, provided that this period shall be extended from the time of correction of any defect or failures, corrected under the terms of this guarantee, for a like period for the corrected work.

The Contractor shall correct all defects or failures discovered within the guarantee period. The appropriate agency will give the Contractor prompt written notice of such defects or failures following their discovery. The Contractor shall commence corrective work within 10 days following notification and shall diligently prosecute such work to completion. The Contractor shall bear all costs of corrective work, which shall include necessary disassembly, transportation, reassembly and retesting, as well as repair or replacement of the defective material or equipment, and any necessary disassembly and reassembly of adjacent work.

Any period that a particular equipment is not operable due to its failure shall not be considered as a part of the guarantee period. The guarantee period shall be extended for a like period. If due to failure of other equipment the equipment is unable to perform its intended function, the guarantee period shall be extended for a like period. Time that equipment is operating shall be counted as applying to the warranty. Such time shall be determined by use of plant operator's log or other suitable documentation.

If the Contractor fails to perform corrective work in the manner and within the time stated, the Department of Hawaiian Home Lands (DHHL) may proceed to have such work performed at the Contractor's expense and his sureties will be liable therefor. The DHHL shall be entitled to reasonable attorney's fees and court costs necessarily incurred by the Contractor's refusal to honor and pay such costs of corrective work.

The Contractor's performance bond shall continue in full force and effect during the period of this guarantee.

The rights and remedies of the DHHL under this provision do not preclude the exercise of any other rights or remedies provided by this contract or by law with respect to unsatisfactory work performed by the Contractor.

This guarantee shall be deemed supplemental to guarantee provisions provided in other sections of the specifications for the individual units and systems of units so specified.

END OF SECTION

DIVISION 2 - SITE WORK

SECTION 02100 - CLEARING AND GRUBBING

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

- A. Furnish all labor, materials, equipment and tools necessary to accomplish all clearing and grubbing work as indicated on the plans and as specified herein.
- B. It shall be the responsibility of the Contractor to examine the project site and determine for himself the existing conditions.
- C. Obvious conditions of the site existing on the date of the bid opening shall be accepted as part of the work, even though they may not be clearly indicated on the plans and/or described herein or may vary therefrom.
- D. All debris of any kind accumulated from clearing or grubbing shall be disposed of off-site weekly and the whole area left clean. The Contractor shall be required to make all necessary arrangements related to the proposed place of disposal.
- E. Burning onsite will not be permitted.

PART 2 – PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 SEQUENCE OF WORK: All sequence of work shall be subject to the approval of the Engineer.

3.02 PROTECTION

- A. Adequate precautions shall be taken before commencing and during the course of the work to insure the protection of life, limb and property.
- B. The Contractor shall protect from damage all surrounding structures, trees, plants, grass, walks, pavements, utility boxes, etc. Any damages will be repaired or replaced by the Contractor to the satisfaction of the Engineer and at no cost to the State or DHHL.

- 3.03 **PERMITS:** The Contractor shall apply for and obtain the necessary permits prior to the commencement of work. The Contractor shall pay for all fees.
- 3.04 **BARRICADE:** Erect temporary barricade to prevent people and animals from entering the project area, to the extent as approved by the Engineer. Such barricades shall not be less than 5'-0" in height. The extent of barricades may be adjusted as necessary with the approval of the Engineer. This work shall be accomplished to the satisfaction of the Department and at no extra cost to the Department. Barricades shall be removed upon completion of work and job site premises left clean.
- 3.05 **MAINTAINING TRAFFIC**
- A. The Contractor shall conduct operations with minimum interference to streets, driveways, sidewalks, etc.
 - B. When necessary, the Contractor shall provide, erect and maintain lights, barriers, etc., as required by traffic and safety regulations with special attention to protection of life.
- 3.06 **CONSTRUCTION LINES, LEVELS AND GRADES**
- A. The Contractor shall verify all lines, levels and elevations indicated on the plans before any clearing, excavation or construction begins. Any discrepancy shall be immediately brought to the attention of the Engineer and any change shall be made in accordance with his instruction. The Contractor shall not be entitled to extra payment if he fails to report the discrepancies before proceeding with any work whether within the area affected or not.
 - B. All lines and grades shall be established by a Surveyor licensed in the State of Hawaii.
- 3.07 **CLEARING AND GRUBBING**
- A. The Contractor shall clear off and remove from the entire area within the area to be graded, all rubbish, grass and weeds, stumps, large roots, buried logs, garbage, boulders, asphalt, concrete or masonry, abandoned vehicles, boats, appliances, fences and other unsuitable material. Where soft wet soils are encountered, light equipment should be used.
 - B. The Contractor shall grub the ground surface within the area to be graded of all grass and weeds to 6 inches below present grades. Grub out tree root structures.
 - C. Any stumps and roots larger than 3 inches in diameter shall be removed to a depth not less than 18 inches below the original grade level. Fill voids with select fill to maintain indicated grade. Providing material to fill void, placement and compaction to be considered incidental.
 - D. No excavation or filling shall be undertaken until area has been cleared and grubbed.

- 3.08 VERIFICATION OF EXISTING GRADES: Verify existing grades, inverts, and improvements before any clearing and grubbing work is done. Immediately bring to the attention of the Engineer any discrepancy, and make any changes in accordance with his instructions. Starting of clearing and grubbing operations will be construed to mean that the Contractor agrees that the existing grades, inverts, and improvements are essentially correct as indicated. No extra compensation will be allowed if existing grades, inverts, and improvements are in error after verification thereof or if he fails to report the discrepancies before proceeding with any work.
- 3.09 CLEAN-UP: Clean up and remove all debris accumulated from construction operations from time to time, when and as directed by the Engineer. Upon completion of the construction work and before final acceptance of work, remove all surplus materials, equipment, etc., and leave entire job site clean and neat.

END OF SECTION

SECTION 02210 – SITE EARTHWORK

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, services, equipment and related items necessary to excavate, fill, remove, transport, stockpile and dispose of all materials within the limits of the project required to construct the site work improvements in accordance with these specifications, dimensions, sections and details shown on the plans, and the approval of the Department.

1.03 RELATED WORK IN OTHER SECTIONS

SUBSURFACE SOIL DATA: The Contractor is expected to examine the site and decide for himself the character of materials to be encountered.

1.04 PROTECTION

A. Erosion Control: The Contractor shall incorporate into his work schedule the Temporary Erosion Control Measures and the Permanent Erosion Control procedures indicated on the plans and as specified in the contract.

B. Dust Control: Every effort shall be made by the Contractor to keep dust to a minimum. Spraying the ground with water or other means of control shall be used wherever possible. The Contractor shall have an adequate supply of water for moisture conditioning of fill material.

Without limiting the generality or applicability of other indemnity provisions of the contract, the Contractor agrees that he shall indemnify and hold harmless the Department from and against all suits, actions, claims, demands, damages, costs and expenses (including but not limited to attorney's fees) arising out of any damage to any property whatsoever or injury to any person whomsoever, in any way caused or contributed to by dust from the Contractor's operations.

C. Existing Utilities and Work Areas: The Contractor shall be responsible for the protection of existing surface and subsurface utilities and poles within and abutting the project site, trench excavations and other work areas.

D. Finished Grades and Subgrades: All subgrades shall be kept moist until covered by subbase, base course, or concrete. All finished grades shall be kept moist until covered by landscaping or other permanent groundcover. Where shrinkage cracks are noted after compaction of the subgrade or finished grade, the subgrade or finished grade shall be rescarified, moisture-conditioned to above the optimum moisture content, and recompacted to the specified requirement at no additional cost to the Department. During construction, the Contractor shall properly grade and maintain all excavated surfaces to provide positive drainage and prevent ponding of water. In the event that ponding of water caused

softening of the subgrades, the Contractor shall remove the soft soils and shall backfill the excavation with compacted fill at no additional cost to the Department.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

3.01 MASS GRADING

- A. Excavations: All excavation shall be made to the lines and grades as shown on the project plans.

Suitable material from excavation shall be used in the fill, and unsuitable material free of organic material from excavation shall be disposed of offsite unless otherwise directed by the engineer.

- B. Slopes: For fill slopes consisting of granular materials (six inches or less in size) and cut slopes, maximum slopes of two horizontal to one vertical (2:1) shall be used. Fill slopes shall be constructed by overfilling and cutting back to the required slope ratio.

- C. Drainage: Care shall be exercised during grading so that areas involved will drain properly. Water shall be prevented from running over the slopes by the temporary berms or drainage swales. Runoff diversion by ditches shall be completed in the time specified in the Proposal.

- D. Supervision: At all times, the Contractor shall have a responsible field superintendent on the project in full charge of the work with authority to make decisions. He shall cooperate with the Engineer in carrying out the work. Any instructions given to him by the Engineer shall be considered to have been given to the Contractor personally.

- E. Rainy Weather: No fill shall be placed, spread or rolled during unfavorable weather. When the work is interrupted by rain, operations shall not be resumed until field tests by the Engineer indicate that conditions will permit satisfactory results.

- F. Unforeseen Conditions: If unforeseen or undetected soil conditions such as soft spots, existing utility trenches, structure foundations, voids or cavities, boulders, seepage water or expansive soil pockets, etc. are encountered, the Contractor at his sole expense shall make all necessary corrective measures in the field as such conditions are detected. Providing, placing and compacting of replacement materials shall be at the Contractor's expense and at no additional cost to the State or DHHL.

- 3.02 UNSUITABLE EXCAVATED MATERIAL: The Contractor shall remove from the site all unsuitable excavated material unless specified otherwise by the Engineer. The unsuitable material not containing organic material shall be hauled and placed in the excavation for coralline material where shown on the drawings. Unsuitable material containing organic material shall be disposed of off-site.

Removal, including hauling and disposal, of the unsuitable material will not be paid for directly, but shall be considered incidental to the project.

END OF SECTION

SECTION 02270 – TEMPORARY SOIL EROSION CONTROL

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: Submit three (3) sets of the erosion control materials for approval by the Engineer. Furnish all labor, materials, services, equipment and related items necessary to implement the temporary erosion control measures, submitted separately, as required by these specifications and as ordered by the Engineer during the life of the contract to control water pollution through the use of berms, dikes, dams, sediment basins, fiber mats, netting, gravel, mulches, grasses, slope drains, and other erosion control devices or methods.
- A. Temporary erosion and siltation control measures as described herein shall be applied to any erodible material within this project, including local material sources and work areas.
 - B. The Contractor shall be responsible for providing the necessary erosion control measures which are shown on the plans or which may be ordered by the Engineer. All grading operations shall be performed in conformance with the applicable provisions of the "Water Pollution Control and Water Quality Standards" contained in the "Public Health Regulations," State Department of Health.
 - C. The Contractor shall be responsible for promptly (next day after storms) removing all silt and debris resulting from his work and deposited in drainage facilities, roadways, neighboring lands, and other areas.

1.03 RELATED WORK IN OTHER SECTIONS

Site Earthwork..... Section 02210

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Mulches: To be bagasse, hay, straw, fiber mats, netting, wood cellulose, bark, wood chips, or other suitable material acceptable to the Engineer and shall be reasonably clean and free of noxious weeds and deleterious materials.
- B. Slope Drains: To be constructed of fiber mats, plastic sheets, or other materials acceptable to the Engineer.

PART 3 – EXECUTION

3.01 TEMPORARY EROSION CONTROL

- A. The Engineer has the authority to limit the surface area exposed by clearing and grubbing and to limit the surface area exposed by excavation, borrow and fill operations. The Engineer may also direct the Contractor to provide immediate, permanent, or temporary pollution control measures to prevent contamination of streams, lakes, ponds, drainage channels and pipes, roads, neighboring lands, and other areas.

Except for specified measures which may be shown on the plans, the Contractor shall determine the appropriate erosion control measures to use. Such work may involve the construction of temporary berms, dikes, dams, sediment basins, and slope drains, and the use of temporary mulches, mats, and grassing, or the construction and use of other control devices or methods as necessary to control erosion.

- B. The Contractor shall incorporate all erosion control measures shown in the plans. The erosion controls may be modified as necessary to adjust to conditions that develop during construction. All modifications are subject to approval by the Engineer.
- C. The Contractor shall limit the surface area exposed by grubbing, stripping of topsoil, and grading to that which is necessary for him to perform the next operation and which is within his capability and progress in keeping the finish grading, mulching, grassing, and other such pollution control measures current.

The grubbing of the vegetative root mat and stumps and the stripping of topsoil shall be confined within the limits of grading which can be actively and continuously prosecuted within 15 calendar days. The area to be graded shall be limited to the minimum area necessary to accommodate the Contractor's equipment and work force and shall not at any time exceed 15 acres, unless otherwise stated on plans, without prior approval of the Engineer.

Any area remaining bared or cleared for more than 10 calendar days and which is not within the limits of active construction shall be immediately hydro-mulch seeded or remedied as directed by the Engineer at the Contractor's expense without cost to the Department. All areas where finish grading has been completed shall be grassed within three calendar days after the completion of grading for that area.

- D. The Contractor shall, at the end of each work operation in any one day, shape the earthwork in such a manner as to control and direct the runoff to minimize the erosion of soils. He shall construct earth berms along the top edges of embankments or along the property line with adjacent properties, streams and water channels, to intercept any runoff. Temporary slope drains shall be provided by carry runoff from the top of cuts and fills. Temporary facilities for controlled discharges shall be provided for runoff impounded, directed, or controlled by project activities or by any erosion control measure employed.

- E. Cut slopes shall be shaped, topsoil added if necessary, and planted as the work progresses. In no case shall the exposed surface be greater than 15 feet in height. Whenever major excavation is suspended or halted and the slope is bared for more than 15 consecutive days, the exposed surfaces shall be hydro-mulch seeded or protected as directed by the Engineer at the Contractor's expense without cost to the Department of Hawaiian Home Lands.

Fill slopes shall be finished as specified and in accordance with the requirements outlined for cut slopes above.

- F. Construction of berms, cofferdams, or other such construction in or near the vicinity of streams, ponds, waterways, or other bodies of water shall be with approved materials.
- G. The temporary erosion and siltation control measures outlined in these specifications are minimum requirements and shall not preclude the provision of any additional measures which the Contractor may deem necessary. Damages caused by the erosion of soils and the pollution of downstream areas shall be the responsibility of the Contractor and all costs for repairing, correcting, replacing and cleaning damaged or polluted facilities shall be borne by the Contractor.

END OF SECTION

SECTION 02510 –HDPE POTABLE WATER PIPE

PART 1 – GENERAL

- 1.01 DESCRIPTION: The work in this section consists of providing High Density Polyethylene (HDPE) pipe and fittings.
- 1.02 QUALITY ASSURANCE: References, American National Standards Institute (ANSI), American Society for Testing and Materials (ASTM), Federal Specifications (FS), International Standards Organization (ISO), and manufacturer's printed recommendations.
- 1.03 SUBMITTALS: Material list naming each product to be used identified by manufacturer and type number, in accordance with Section 01340.
- 1.04 PRODUCT HANDLING: Handle pipe and fittings to insure delivery in a sound undamaged condition.
- 1.05 JOB CONDITIONS: Do not lay pipe when trenches or weather conditions are not suitable for such work.

PART 2 – PRODUCTS

2.01 PIPE

- A. 3 Inches and Larger - Pipe shall be manufactured from a PE 3408 resin listed with the Plastic Pipe Institute (PPI) as TR-4. The resin material will meet the specifications of ASTM D3350 with a cell classification of PE:345464C. Pipe shall have a manufacturing standard of ASTM F714. Pipe O.D. sizes 4" to 24" shall be available in both steel pipe sizes (IPS) and ductile iron pipe sizes (DIPS). Pipe O.D. sizes 26" to 54" shall be available in steel pipe sizes (IPS). Pipe shall be DR 11 (160psi WPR) for pipe sizes up to 36" unless otherwise specified on the plans. The pipe shall contain no recycled compounds except that generated in the manufacturer's own plant from resin of the same specification from the same raw material. All pipes shall be suitable for use as pressure conduits, listed as NSF 61, and per AWWA C906 Pressure Class (PC) 160 have a nominal burst value of three and one-half times the Working Pressure Rating (WPR) of the pipe. Peak flow water velocity of 5 ft/sec shall be used in the hydraulics engineering design.

2.02 FITTINGS

- A. Butt Fusion Fittings - Fittings shall be PE3408 HDPE, Cell Classification of 345464C as determined by ASTM D3350-02, and approved for AWWA use. Butt Fusion Fittings shall have a manufacturing standard of ASTM D3261. Molded & fabricated fittings shall have a pressure rating equal to the pipe unless otherwise specified in the plans. Fabricated fittings are to be manufactured using Data Loggers. Temperature, fusion pressure and a graphic representation of the fusion cycle shall be part of the quality control records. All fittings shall be suitable for use as pressure conduits, and per AWWA C906, have nominal burst

values of three and one-half times the Working Pressure Rating (WPR) of the fitting.

- B. Electrofusion Fittings - Fittings shall be PE3408 HDPE, Cell Classification of 345464C as determined by ASTM D3350-02. Electrofusion Fittings shall have a manufacturing standard of ASTM F1055. Fittings shall have a pressure rating equal to the pipe unless otherwise specified on the plans. All electrofusion fittings shall be suitable for use as pressure conduits, and per AWWA C906, have nominal burst values of three and one-half times the Working Pressure Rating (WPR) of the fitting.
- C. Flanged and Mechanical Joint Adapters - Flanged and Mechanical Joint Adapters shall be PE 3408 HDPE, Cell Classification of 345464C as determined by ASTM D3350-02. Flanged and Mechanical Joint Adapters shall have a manufacturing standard of ASTM D3261. Fittings shall have a pressure rating equal to the pipe unless otherwise specified on the plans.

PART 3 – EXECUTION

3.01 GENERAL

- A. Pipe and Fittings: Size as indicated on the plans. Install as shown in accordance with manufacturer's recommendations.

3.02 HAULING, UNLOADING AND DISTRIBUTING PIPE

- A. During loading, transportation and unloading, every precaution shall be taken to prevent injury to the pipe. No pipe shall be dropped from cars or trucks, or allowed to roll down slides without proper retaining ropes. During transportation each pipe shall rest on suitable pads, strips, skids or blocks securely wedged or tied in place. Any pipe damaged shall be replaced.

3.03 FUSION

- A. Sections of polyethylene pipe should be joined into continuous lengths on the jobsite above ground. The joining method shall be the butt fusion method and shall be performed in strict accordance with the pipe manufacturer's recommendations. The butt fusion equipment used in the joining procedures should be capable of meeting all conditions recommended by the pipe manufacturer, including, but not limited to, temperature requirements of 400 degrees Fahrenheit, alignment, and an interfacial fusion pressure of 75 PSI. The butt fusion joining will produce a joint weld strength equal to or greater than the tensile strength of the pipe itself. All welds will be made using a Data Logger to record temperature, fusion pressure, with a graphic representation of the fusion cycle shall be part of the Quality Control records.
- B. Sidewall fusions for connections to outlet piping shall be performed in accordance with HDPE pipe and fitting manufacturer's specifications. The heating irons used for sidewall fusion shall have an inside diameter equal to the

outside diameter of the HDPE pipe being fused. The size of the heating iron shall be ¼ inch larger than the size of the outlet branch being fused.

- C. Mechanical joining will be used where the butt fusion method can not be used. Mechanical joining will be accomplished by either using a HDPE flange adapter with a Ductile Iron back-up ring or HDPE Mechanical Joint adapter with a Ductile Iron back-up ring.
- D. Socket fusion, hot gas fusion, threading, solvents, and epoxies will not be used to join HDPE pipe.

3.04 INSPECTION

- A. Inspect the pipe for defects before installation and fusion. Defective, damaged or unsound pipe will be rejected.

3.05 TESTING

- A. Pressure testing shall be conducted in accordance with ASTM F2164, Field Leak Testing of Polyethylene Pressure Piping Systems Using Hydrostatic Pressure. The HDPE pipe shall be filled with water, raised to test pressure and allowed to stabilize. The test pressure shall be 1.5 times the operating pressure at the lowest point in the system. In accordance with section 9.8, the pipe shall pass if the final pressure is within 5% of the test pressure for 1 hour. For safety reasons, hydrostatic testing only will be used.

END OF SECTION

SECTION 05600 – Prefabricated Steel Water Tank

PART 1 – GENERAL

1.01 Qualifications of Tank Supplier/Manufacturer.

- A. Tank Supplier/Manufacturer shall maintain production facilities specializing in the design and fabrication of corrugated, galvanized steel water tanks with liners and shall maintain a licensed professional engineer on its staff. Tank shall be manufactured by Scafco Corporation or approved equal.

1.02 Qualifications of Tank Erector

- A. Tank Erector shall be licensed to perform General Engineering "A" construction work in the State of Hawaii and shall have erected, at least, 5 storage tanks of similar design and size in the State of Hawaii.

1.03 Design Criteria

- A. Tank Size. Tank shall conform to the size and capacity requirements shown on the construction plans.
- B. Tank Design Standards. Tank bolt together tank shall conform to AWWA D-103-97. The tank design shall allow for 90 mph wind load per UBC Exposure C. The tank design shall allow for AWWA D-103-87 Seismic Zone 4. The tank design shall allow for a 16 psf live load on the tank roof.

PART 2 – PRODUCTS

2.01 Tank Materials

- A. Wall Staves - All wall sheets to 17 Ga. conform to ASTM A-446, C, Fy = 45,000 P.S.I G-90 galvanized or better. All wall sheets 15 Ga. or thicker conform to ASTM A653 SQ, Grade 57 653 SQ commercial quality. Sheets standard corrugation 2 2/3" x 1/2". Sheets have 42 2/3" x 112 1/2" typical coverage.
- B. Bolting Hardware - All bolts are grade 8, with neoprene washer. Bolts have mechanical zinc plating .0006" thick. Vertical seams are bolted at 1 1/3" on center. Horizontal seams are bolted at 9 3/8" on center.

- C. Vinyl Liner - Tank liner construction of 25 mil vinyl side and bottom, FDA approved for potable water. Tank liner shall be protected from tank steel body and tank floor with geotextile material.
- D. Tank Roof - Tank roof sheets shall be triangular sections of galvanized steel with raised ribs along each side, flat area between ribs, and a 90 degree formed deep edge at the eave. Panels are manufactured from G-90 galvanized steel conforming to ASTM A 446, Grade C, or better. Tank roof shall be self supporting and shall have a 15 degree pitch. Tank roof shall include an entry hatch, an apex vent/access manway and safety steps of cold formed steel angle.
- E. Tank Coatings - Tank interior shall be coated with suitable heavy solids zinc or aluminum urethane primer following a wash system suitable for coating system. Tank exterior shall be coated with a primer and top coat system for galvanized steel following as wash system suitable for the coatings. Color shall be per Engineer.

PART 3 - EXECUTION

3.01 Tank Erection

- A. Tank shall be erected on a foundation and pad per the manufacturer's recommended foundation design for soil with a bearing capacity of 2,000 psf.
- B. Tank shall be erected by an experience tank erector using a tank jacking system to prevent damage to the liner.
- C. Tank penetrations shall be through the tank floor using fittings per the manufacturer's recommended design.

3.02 Testing and Disinfection

- A. Finished structure shall be filled and checked for leaks. Water shall be supplied by the Engineer.
- B. Tank shall be disinfected in accordance with AWWA standard D-652. Tank shall be sampled and pass microbiological testing before facility is placed in operation.

END OF SECTION

DIVISION 15 - MECHANICAL

SECTION 15050 - PUMP STATION MECHANICAL EQUIPMENT

PART 1 - GENERAL

- 1.01 The following shall supplement DIVISION 300 - CONSTRUCTION, Section 304.04 – PUMP STATION MECHANICAL EQUIPMENT in the Water System Standards, 2002.

PART 2 - PRODUCTS

2.01. GENERAL DESCRIPTION

A. Pump Piping and Valves:

Pump suction and discharge piping and valves, including silent check valve, butterfly valves, air release valves, flow switches, tank level transmitters, pressure gages, and all necessary appurtenances and piping shall be furnished as shown on the plans.

1. Check Valves:

- a) Number required: Two (2)
- b) Size of valves: 4 inch (P-2)
2 inch (P-1)
- c) Minimum pressure rating of valve: 150 psi
- d) Class of flange: 125 lb., ANSI B16.1

2. Air Release Valves:

- a) Number required: Two (2)
- b) Size of valves: 1/2 inch
- c) Minimum pressure rating of valve: 300 psi
- d) Location: As shown on plans

3. Butterfly Valves:

- a) Number required: Eight (8)
- b) Size of valve:
 - 6 inches (P-3 suction and discharge)
 - 6 inches (P-2 and P-1 main line suction and discharge)
 - 4 inches (P-2 suction and discharge)
 - 2 inches (P-1 suction and discharge)
- c) Minimum pressure rating of valve: 150/300 psi
- d) Class of valve flange:
 - 6 inches (P-3 suction and discharge) – 250 lb
 - 6 inches (P-2 and P-1 main line suction and discharge) – 125 lb
 - 4 inches (P-2 suction and discharge) – 125 lb
 - 2 inches (P-1 suction and discharge) – 125 lb

4. Pump Flow Switches:

- a) Total Number Required: Three (3)
- b) Pipe Size: 6 inch (P-3 discharge line)
2 inch (P-1 discharge line)
4 inch (P-2 discharge line)
- c) Vane Area: As recommended by the manufacturer
- d) Flow Rate: 125 gpm (P-3)
20 gpm (P-1)
50 gpm (P-2)
- e) Minimum Pressure Rating: 300 psi
- f) Location: As shown on plans

5. Tank Level Transmitters:

- a) Total Number Required: Three (3)
- b) Range: 0-30 feet
- c) Location: At reservoirs

6. Pressure Gages:

- a) Total Number Required: Four (4)
- b) Range:
 - Pump No. 1 & Pump No. 2:
 - 0-30 psi (At pump suction)
 - 0-200 psi (At pump discharge)
 - Pump No. 3:
 - 0-30 psi (At pump suction)
 - 0-300 psi (At pump discharge)

B. SILENT CHECK VALVE

The pump discharge silent check valve shall be wafer type, center-guided check valve, APCO Globe Style Series 300, or approved equal. The valve body shall be semi-steel or cast iron with bronze trim, stainless steel spring and bronze-bushed center-guides. The valve shall be installed between flanges on the discharge line of the pump.

C. AIR RELEASE VALVE

Air release valve shall be screwed inlet, simple lever, APCO No. 50, Valve and Primer Corporation or approved equal. The valve body shall be cast iron with brass seat, stainless steel float and bronze linkage.

D. BUTTERFLY VALVE

The flanged rubber-seated butterfly valve and handwheel operator shall conform in all respects with AWWA C504, unless otherwise stated in these specifications. The valve shall be Dezurik, Henry Pratt, Clow, Allis-Chalmers, American Valve and Hydrant, Mueller, or approved equal.

The valve shall be designed for a differential pressure of 250 psi for the Class 125 valve, and 400 psi for the Class 250 valve. The valve shall be equipped with a right angle handwheel type manual operator, with a handwheel, enclosed gear, indicator and scale, and adjustable stops. The operator shall be of the worm gear type with an alloy steel worm shaft and bronze worm gear. The operator shall be capable of holding the valve in any open position.

E. FLOW SWITCH

The flow switch shall be an OMEGA Model FSW 42A-SS, with an internal screw adjustment which provides continuous switch adjustment while in operation. Multiple drag disks and strips shall be provided with each unit to provide incremental switch point adjustment to match flow condition. Spare drag disks or strips shall be delivered to the owner as spare parts. The flow switch shall be a single pole double-throw snap switch, 15 Amp, 120 volts, 60 Hz power. "Duct Seal" is to be used to seal the flow switch chamber from the incoming conduit and packed tightly around the leads.

F. TANK LEVEL TRANSMITTER:

- a) TRANSMITTER: The transmitter shall be a Rosemount Model 3051CD, Foxboro Model 841G, Bristol Model 2508, Yokogawa EJA530A, ABB 264 GS or approved equal. The transmitter shall transmit a 4 to 20 milliamp DC signal proportional to pressure.

Power supply for the instrument shall be 24 volt, DC power.

- b) PRESSURE SNUBBER: Pressure snubber shall be furnished with all gages and pressure instruments and shall be RAY, or approved equal.
- c) GAUGE COCK: Gauge cocks shall be furnished for all gauges and pressure instruments and shall be Ashcroft No. 1094, or approved equal, bronze, extra heavy ground key cocks with lever handle and union.
- d) PAYMENT: Payment for pressure transmitter and appurtenant equipment shall be made as a lump sum bid item.

G. PRESSURE GAGE

The diameter of the dial shall be 3-1/2 inches with a standard pressure range specified on the plans, liquid filled, 1 percent full scale accuracy, and a minimum ASME Grade 1A rating. The gage shall be all welded stainless steel construction. Process connection shall be 1/4-inch NPT with a brass snubber, petcock, and union between gage and pipe. Pressure gage shall be Ashcroft Model 1009 or approved equal. Pressure snubbers shall be furnished with all gages and pressure instruments and shall be RAY or approved equal. Gage, snubber and petcock union shall be supplied as a unit and shall be located as shown on the plans.

PART 3 - EXECUTION

2.01. PUMP DISCHARGE PIPING AND VALVES PAYMENT

No separate payments will be made for the work covered by this section of the specifications. All costs in connection with furnishing and installing of the various items shall be included in the Lump Sum Price Bid of which the item is a part.

2.02. COMPENSATION

Payment for the furnishing and installing of equipment will be made at the Lump Sum Price Bid of which the item is a part and shall be full compensation for all work in connection therewith, complete and finished in accordance with the drawings and specifications.

SECTION 15100 – BOOSTER PUMPS

PART 1 – GENERAL

1.01 The following shall supplement DIVISION 300- CONSTRUCTION, Section 304.01 - PUMPS of the Water System Standards, 2002

1.02 WARRANTY

The Contractor shall guarantee the equipment covered by these specifications against any defective material and workmanship for one year after the date of acceptance of the installed pump unit. The Contractor shall replace and correct all defective parts within this period and pay for all costs thereof including shipping, removal and reinstallation of the necessary parts. It shall be understood that any shipping damages shall be corrected and paid for by the Contractor, and final acceptance and payment will be subject to satisfactory delivery of the equipment.

PART 2 – PRODUCTS

2.01 BOOSTER PUMPS:

The following requirements are for the furnishing and installation of the booster pumps, motors, diesel engine, and appurtenances.

A. SKID MOUNTED VERTICAL CENTRIFUGAL BOOSTER PUMPING UNIT (P-3):

This section of the specification covers the furnishing and installing of one new skid mounted, factory fabricated, duplex, vertical, motor-driven, centrifugal pumping unit.

1. Pump Characteristics:

Number Required: Two (2)

Pump Rated Capacity and Head: 125 gpm at 560 ft. head

Pump used to dimension plans and specify pump performance characteristics: Gould Pumps, model 4SV2F0K46M1 (3500 rpm, 6 Stages)

2. Motor Characteristics:

Number Required: Two (2)

Electrical Motor Rating: 20 HP

Power: 3-Phase, 60 Hertz, 208 Volts

3. Booster Pump Description:

Booster pump system shall be skid-mounted factory fabricated duplex pump constant speed pumping unit, with automatic start/stop, manual override, and lead/lag capability.

a) Each pump shall provide flow of 125 gpm at 560 feet head with a

minimum suction pressure of (-)4 feet gauge and a maximum suction pressure of 25 feet gauge.

- b) Pumps shall be 316L stainless steel vertical inline centrifugal type with mechanical seal, ceramic shaft bushings.
- c) Motors shall be NEMA Premium Efficiency totally enclosed fan-cooled type. Minimum class F insulation, 1.15 service factor.
- d) Piping shall be Schedule 40, type 304 stainless steel. Isolation valves shall be brass body full port ball valves. Pump discharge shall be equipped with spring-loaded non-slam check valve. Provide glycerin filled bourdon tube type pressure gauges for both suction and discharge manifolds. Gauges shall be 2.5 inch diameter and have stainless steel housings. Flanges shall be Class 250.
- e) Expansion tank shall be provided on the pump discharge header, sized for the pump system capacity. Stainless steel tank with butyl diaphragm, factory pre-charged for system pressure.
- f) Factory installed booster pump control panel with disconnects and starters. Panel shall be a NEMA 3R stainless steel enclosure with integral latches. Pump controller shall have programmable pump logic. The controller shall provide a LCD display and keypad for data entry. Program settings shall be changeable and stored in non-volatile memory without the use of a backup battery. Standard system functions shall include: loss of suction, lack of NPSHa, pump run-out protection, "dead-head" protection, quadratic differential flow calculation, system curve compensation, low suction tank level shutdown, pump start-stop input, adjustable timed alternation of primary-standby pump operation, overpressure shutdown, and low flow shutdown.

B. PHOTOVOLTAIC VERTICAL MULTISTAGE CENTRIFUGAL PUMP (P-1):

This section of the specification covers the furnishing and installing of one new vertical, multistage, motor-driven, centrifugal pumping unit.

1. Pump Characteristics:

Number Required: One (1)
Pump Rated Capacity and Head: 20 gpm at 370 ft. head
Pump used to dimension plans and specify pump performance characteristics: Gould Pumps, Model 2SVB (3500 rpm, 11 Stages)

2. Motor Characteristics:

Number Required: One (1)
Electrical Motor Rating: 5 HP
Power: 3-Phase, 60 Hertz, 208 Volts

3. **Booster Pump Description:**

Booster pump system shall be photovoltaic powered vertical inline centrifugal type with mechanical seal, ceramic shaft bushings. Pump shall provide indicated flow and head with a minimum suction pressure of 0 feet gauge and a maximum suction pressure of 25 feet gauge. Pump shall be of 316L stainless steel. Motor shall be NEMA Premium Efficiency totally enclosed fan-cooled type. Minimum class F insulation, 1.15 service factor. Flanges shall be Class 125.

C **DIESEL DRIVEN HORIZONTAL REGENERATIVE TURBINE PUMP (P-2):**

This section of the specification covers the furnishing and installing of one new horizontal, multistage, diesel driven, regenerative turbine pumping unit.

1. **Pump Characteristics:**

Number Required: One (1)
Pump Rated Capacity and Head: 50 gpm at 370 ft. head
Pump used to dimension plans and specify pump performance characteristics: MTH Pumps, Model 153L (1750 rpm)

2. **Engine Characteristics:**

Number Required: One (1)
Diesel Engine Rating: 33 HP at 1750 RPM
Engine used to dimension plans and specify pump performance characteristics: Deutz Corporation, Model D2011L031 (1750 rpm)

3. **Diesel Driven Regenerative Turbine Pump Description:**

- a) Booster pump system shall be regenerative turbine type with ceramic mechanical seals. Pump shall provide indicated flow and head with a minimum suction pressure of 0 feet gauge and a maximum suction pressure of 25 feet gauge. Pump shall be all bronze construction. Flanges shall be Class 125.
- b) Engine shall be air-cooled, 3 cylinder, 142 cid, diesel engine with factory installed control panel, gauge panel, starter, alternator, air cleaner, exhaust muffler and extension, flywheel and rigid motor mounts.
- c) Provide fuel tank, piping, valves and hoses for a complete operating system. Fuel tank shall be UL listed single wall 150 gallon capacity, with vent cap, lockable fill cap, strainer, tank gauge, drain plug, and plugged openings for additional connections. Elevate tank above engine fuel pump.

D. SUBSTITUTION OF SPECIFIED PUMP UNITS

Pumping units to be furnished are that used to specify pump unit performance characteristics or their approved equal. This specific model has been used to dimension plans. Substitute pump units can be used only if the following conditions are met:

1. All changes in dimensions resulting from the substitution of the specified pump and motor/engine shall be the responsibility of the Contractor.
2. The substitute pump and motor/engine must have performance characteristics equal to or better than the specified pump unit. Specific performance characteristics that shall be compared are the required horsepower, efficiency and head capacity curve. The pump and motor/engine shall be OEM units and be provided with manufacturer's data.

E. PRELIMINARY PUMP CHARACTERISTIC CURVE

The Contractor shall submit three copies of the preliminary pump characteristic curve for approval prior to ordering and shipping the unit. The curve shall show the proposed head, efficiency and brake horsepower versus capacity characteristics of the pump to be furnished.

F. INSTALLATION INSTRUCTIONS AND MAINTENANCE MANUAL

The pump manufacturer shall also provide at least four copies of the instructions for the installation of the pumping unit and proper maintenance of the same in bound folders.

PART 3 - EXECUTION

3.01 EQUIPMENT ASSEMBLY

Alignment of rotating shaft centers at couplings shall not exceed proper allowance for the expansions of the driving and driven units when operating; and faces of coupling halves, with coupling square on their shafts, shall be parallel.

Shimming and grouting of equipment bases and supports shall be performed after final positioning at proper elevation, with all piping, leveling and aligning completed and with anchors tightened. Once grouted, the item shall not be operated or subjected to other vibration or stresses until the grout has reached an age of seven days minimum.

The Contractor shall do lubrication of all moving parts with the lubricants recommended by the manufacturer. Rotating equipment, which has been shipped dismantled for assembly in the field or is not shipped with lubricants, shall have the bearings flushed clean and lubricated when assembly is complete.

All surfaces of equipment shall be cleaned prior to assembling and erecting. All internal surfaces shall be maintained clean and free of dirt, water, loose scale and all other foreign

materials during assembling and erecting, and shall subsequently be thoroughly cleaned prior to initial operation or use.

3.02 PAINTING

Paintings of new pump units, all exposed pipes, fittings, and valves associated with the new booster pump stations shall be as specified herein and in Division 300 - Construction, Section 303.27 Painting, of the Water System Standards, 2002. Paint shall be delivered to the site in factory-sealed containers and applied in accordance with the manufacturer's instructions. All surfaces to be painted shall be thoroughly cleaned of dirt, dust, oil or grease with clean, dry rags and solvents. Rust, mill scale, stain and any other injurious materials shall be removed by scraping, chipping, wire brushing or sand blasting. Drop cloths and other suitable covering shall be used to eliminate paint drips or overspray beyond the painted surfaces. Do not paint stainless steel surfaces. Provide corrosion resistant coating for all ferrous surfaces exposed to weather.

3.03 LAYOUT DRAWINGS

Three sets of the pump and piping layout drawings shall be submitted for approval to the Owner prior to construction. All dimensions of the pump, valves, piping, fittings, and appurtenances shall be shown.

3.04 FIELD TESTING OF PUMP UNIT

After installation of all equipment and before any field tests are conducted, the pump shall be operated continuously for a period as determined by the Engineer. The Contractor shall make his own arrangements and pay for power and other costs.

Throughout the operating test, the pumping unit shall run smoothly without vibration or heating of the bearings. If, during or as a result of this test, any structural or mechanical defect or weakness develops, or if the equipment fails to deliver its required discharge at the respective head under required conditions, the Owner reserves the right to reject any part or all of the equipment and demand reconstruction or replacement to meet the requirements of these specifications at no cost to the Owner.

After the operating test has been completed to the satisfaction of the Engineer, a pump test shall be made for each pump, covering a period of not less than two hours. This test shall be made by the Contractor in the presence of the Engineer. The capacity of the pumping unit will be tested under the head capacity conditions specified.

All gauges and equipment required for tests, which are not available in the permanent equipment, will be furnished, installed and tested by the Contractor. All gauges and equipment shall be calibrated and calibration curves shall be submitted to the Engineer.

The quantity of water delivered shall be based on the readings of the contractor furnished flow meter. No special calibration will be made. Tests shall be made with the electric current normally furnished by Hawali Electric Light Company, Ltd. and the photovoltaic system. No adjustment of the electrical power will be allowed.

3.05 AS-BUILT DRAWINGS

The Contractor at no additional cost shall return one set of red marked as-built drawings to the Owner.

3.06 PACKING AND SHIPMENT

Pump equipment shall be packed in substantial containers to protect them adequately from damages during normal handling in transit.

3.07 STORAGE

The Contractor shall, as a minimum, comply with the following requirements for protection of all equipment during storage.

Equipment shall be stored off the ground, properly supported on skids, blocking, cribbing or other suitable support. Equipment having saddle or dollies shall be supported mainly from these supports. Equipment supports shall be leveled and aligned on wedges or shims as necessary to prevent any twisting or bending stresses on the supported equipment.

At the time of delivery, the factory-installed closures on nozzles and equipment openings shall be inspected for weather-tightness. Any closures, which are punctured, or missing shall be replaced with temporary closures and made weather-tight. All closures shall be maintained weather-tight and left in place until the Engineer or his representative authorizes removal.

Motor and controls shall be stored only in an enclosed cover, except that if outdoor storage of a short duration is necessary, these items may, for that period, be stored off the ground and fully covered with a suitable waterproof covering free from punctures or tears and secured against displacement. The protective measure for all such outdoor storage will be provisional upon approval by the Engineer.

3.08 COORDINATION OF WORK

The Contractor's work and installation of equipment and materials shall be closely coordinated with the project manager and other contractors working on the site to avoid all possible interferences, delays, omissions, and overlapping of responsibilities.

3.09 PAYMENT

The pumping units, which includes motor/engine and appurtenances as provided above, will be paid for at the applicable contract unit price, upon delivery and installation at the project site.

Price shall be full compensation for furnishing, handling, installing, and testing pumping unit; and for all equipment, tools, labor, materials, including drawings and instruction books, and incidentals necessary to complete the work.

Payment for the item shall be made as follows:

Forty percent of the total cost for the item will be paid when the complete pumping unit is acceptably delivered at the job site.

An additional 40 percent of the total cost for the item will be paid after the pumping unit has been installed.

The remaining 20 percent of the total cost for the item will be paid after the pumping unit has been tested and accepted.

DIVISION 16 - ELECTRICAL

SECTION 16050 - BASIC ELECTRICAL MATERIALS AND METHODS

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:

- A. The Contractor shall furnish all labor, materials (except as hereinafter noted), tools, equipment and appliances required to provide and install all Electrical Work, complete, as indicated on the drawings and/or as herein specified. The drawings note various sizes of equipment as determined for basis of design; the electrical work, however, shall be installed to comply with the equipment furnished by the successful supplier. The work shall include but not necessarily be limited to, the following:
1. Equipment utilizing electricity shall be provided by respective sections of specification. Installation of complete power wiring to equipment shall be part of electrical work.
 2. Connection and testing of appliances and equipment furnished by others requiring electrical connections.
 3. It is the intent of these Specifications and other Contract Documents to require an installation complete in every detail. Consequently, the Contractor will be responsible for minor details or for any special construction which may be found necessary to properly furnish, install, adjust, test, and place in successful and continuous operation, the lighting system and the cost of same shall be included in the contract price.
 4. Before bidding on this work, carefully examine each of the drawings and the site. By submitting a proposal of the work included in this contract, the Contractor shall be deemed to have made such examination and to be familiar with and accept all conditions of the job site.
 5. Test complete installation and correct all defects and malfunctions of material and workmanship.

1.03 RELATED SECTIONS:

- A. DIVISION 15 – MECHANICAL sections.
- B. This section applies to all sections of DIVISION 16, ELECTRICAL, of this project specification unless specified otherwise in the individual sections.

1.04 CODES AND STANDARDS:

A. The materials and completed work shall conform to the requirements of all locally applicable codes and regulations; General Order No. 10, Public Utilities Commission, State of Hawaii; regulations and standard practices of respective utility companies; applicable instructions of manufacturers of equipment and materials supplied for this project; and of standards referenced herein. Applicable rules, standards and specifications of the following associations shall apply to materials and workmanship.

1. American National Standards Institute (ANSI).
2. American Society for Testing and Materials (ASTM).
3. American with Disabilities Act Accessibility Guidelines (ADAAG).
4. Disability and Communication Access Board (DCAB) Interpretive Opinion.
5. Edison Electric Institute (EEI).
6. Electronic Industries Alliance (EIA).
7. Institute of Electrical and Electronics Engineers (IEEE).
8. Insulated Power Cable Engineers Association (IPCEA).
9. National Board of Fire Underwriters (NBFU).
10. National Electrical Code (NEC).
11. National Electrical Manufacturers Association (NEMA).
12. National Fire Protection Association (NFPA).
13. U.S. Department of Commerce, National Bureau of Standards (National Electrical Safety Code).
14. Underwriters' Laboratories, Inc. (UL).

1.05 **APPLICABLE PUBLICATIONS:** The publications listed herein shall form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

1.06 SUBMITTALS:

A. Shop Drawings:

1. Submit, in accordance with Section 01330 – SUBMITTAL PROCEDURES, complete shop drawings and manufacturer's literature for review before any work is fabricated.

2. Shop drawings and catalogue cuts for materials shall clearly specify compliance with and/or deviation from specified material. Certification shall not contain statements to imply that the item does not meet requirements specified, such as "as good as"; and "achieve the same end use and results as materials formulated in accordance with the referenced publications". Certifications shall simply state that the item conforms to the requirements specified. Certificates shall be printed on the manufacturer's letterhead and shall be signed by the manufacturer's official authorized to sign certificates of compliance. Review of shop drawings and catalogue cuts shall not release Contractor from complying with intent of specification and drawings.
- B. Operation and Maintenance Manuals: Provide operational manual in 8 ½ x 11 inch three-ring binders. Sections shall be separated by heavy plastic dividers with tabs that identify the material in the section. Drawings shall be folded blue lines, with the title block visible, and placed in 8 ½ x 11 inch plastic pockets with reinforced holes. Manuals shall include, but not be limited, to the following:
1. An instruction manual with pertinent items and information highlighted.
 2. An outline drawing, including front view and sectional views with items and devices identified.
 3. All system components shall be clearly specified as to the type, manufacturer, and model number for later needs for replacement and service.
 4. Prices for spare parts and supply list that identify readily available sources.
 5. Routine and field acceptance test reports.
 6. Troubleshooting and routine maintenance procedures.
 7. Manufacturer's recommended maintenance schedule.
 8. Description and requirements for installation, operation, and safety.
 9. Date of purchase.

1.07 DELIVERY, STORAGE, AND HANDLING:

- A. Equipment delivered and placed in storage shall be kept clean and protected from physical damage, weather, humidity and temperature variation, dirt, dust, corrosive marine environment, and any other contaminants.
- B. All materials shall be delivered to project site in original unopened containers, and shall be kept clean and protected during transit and job storage. Coordinate deliveries to avoid interferences or construction delays. Use all means necessary to protect the materials of this division before, during, and after

installation and to protect the installed work and materials of all other trades. In the event of damage, immediately make all repairs and replacements necessary to the satisfaction of the Engineer and at no increase in cost to the contract.

- C. Coordinate deliveries to avoid interferences or construction delays.
- D. Use all means necessary to protect the materials of this division before, during, and after installation and to protect the installed work and materials of all other trades.
- E. In the event of damage, immediately make all repairs and replacements necessary to the satisfaction of the Engineer and at no increase in cost to the contract.

1.08 QUALITY ASSURANCE:

- A. In each of the publications referred to herein, consider the advisory provisions to be mandatory, as though the word, "shall" had been substituted for "should" wherever it appears. Interpret references in these publications to the "authority having jurisdiction", or words of similar meaning, to mean the Engineer. Equipment, materials, installation, and workmanship shall be in accordance with the mandatory and advisory provisions of NFPA 70 unless more stringent requirements are specified or indicated.
- B. Provide materials and equipment that are products of manufacturers regularly engaged in the production of such products that are of equal material, design and workmanship. Products shall have been in satisfactory commercial or industrial use for 2-years prior to bid opening. The 2-year period shall include applications of equipment and materials under similar circumstances and of similar size. The product shall have been on sale on the commercial market through advertisements, manufacturers' catalogs, or brochures during the 2-year period. Where two or more items of the same class or equipment are required, these items shall be products of a single manufacturer; however, the component parts of the item need not be the products of the same manufacturer unless stated in this section. Products having less than a 2-year field service record will be acceptable if a certified record of satisfactory field operation for not less than 6000-hours, exclusive of the manufacturers' factory or laboratory tests, are furnished. Products manufactured more than 3 years prior to date of delivery to site shall not be used, unless specified otherwise.
- C. All materials shall be new, except as specifically noted, and shall meet requirements of NFPA 70 and also bear the label of Underwriter's Laboratories whenever standards have been established and label service is normally and regularly furnished by the agency.
- D. Contractor shall afford every opportunity for the Engineer to ascertain skill and competency of labor. Concealed work shall be reopened at random as directed during formal inspections by the Engineer or Electrical Inspector.
- E. The responsibility for performance to this specification shall not be divided among individual component manufacturers, but must be assumed solely by the

primary manufacturer. This includes system design, manufacture, test, and having a local supplier responsible for service, parts, and warranty for the total system.

- F. Products that are assembled from individual component parts strictly for conformance to this project are not acceptable.
- G. Systems Responsibility:
1. All materials shall be provided under the supervision of a single systems house, chosen by the Contractor, which is regularly engaged in the design and installation of such systems of similar scope and complexity. Contractor is responsible to the State or DHHL for performance of all systems as specified.
 2. Equipment specified herein shall be provided by the manufacturer nominated in the listing set forth below. The nominated manufacturer shall assume complete responsibility for the efficiency, sufficiency and reliability of all equipment and appurtenances specified. As a condition precedent to the Engineer's review of submittals required under these specifications, the Contractor shall furnish the manufacturers' statements accepting unit responsibility. The purpose of this provision is to both ensure compatibility of all components specified under the specific technical specification and also to provide sole source responsibility for system performance and maintenance. Notwithstanding these provisions, however, the Contractor is not relieved of his responsibility for the indicated portions of the work. Equipment to be furnished under the provisions and requirements set forth above shall include the following:

Applicable Item	Responsible Manufacturer
Solar Array Assembly Battery Assembly Charger Controller Wireless I/O Interface Transmitter/Receiver Antenna Assembly Fusing Limit Value Switch System Enclosure Wiring and Appurtenances	Solar Interface Systems Manufacturer

1.09 WARRANTY:

- A. Any item of material, apparatus, and equipment furnished and installed, or construction by the Contractor showing defects in design, construction, quality or workmanship shall be replaced by such new material, apparatus or parts as may be found necessary to make such defective portion of the complete system conform to the true intent and meaning of the specification and/or the drawings. The Contractor or his surety, free of all expense to the State or DHHL, shall make such repairs or replacement.

- B. The equipment items shall be supported by service organizations which are reasonable convenient to the equipment installation in order to render satisfactory service to the equipment on a regular and emergency basis during the warranty period of the contract.

1.10 COORDINATION WITH OTHER TRADES, AND SUPPLIERS:

- A. During bidding and construction, Contractor shall coordinate his work with other trades and suppliers to avoid conflicts, omissions and overlapping of responsibilities.
- B. Contractor shall notify other trades and suppliers of the project voltages, characteristics, properties and other limitations.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. Raceways and Fittings:

1. Rigid Metallic Conduit and Fittings: Galvanized rigid steel, 3/4" minimum diameter; NEMA C80.1, UL 6. Ferrous fittings shall be threaded-type, split couplings are unacceptable, with cadmium- or zinc- coating; UL 514B.
2. Plastic-Coated Rigid Steel Conduit and Fittings: Conduit system, including fittings and mounting appurtenances, shall be hot dip galvanized inside and out with clear coated urethane over hot galvanized threads, with polyvinylchloride (PVC) jacket and red urethane interior coating. Conduit shall be round bore, smooth inside finish, electrical type, and for use with approved threaded fittings. The PVC jacket shall be bonded to the galvanized steel and shall have a minimum thickness of 40 mils. Robroy "Plasti-Bond REDH20T" conduit system or equal; NEMA RN1.
3. Non-metallic rigid conduit and Fittings: PVC Schedule 40 or 80; NEMA TC2, UL 651 and NEMA TC3, UL 514B.
4. Flexible Metal Conduit: UL 1, liquid-tight flexible steel conduit per UL 360. Ferrous fittings shall be cadmium- or zinc- coated, UL 514B.
5. Fittings for Metal Conduit and Flexible Metal Conduit: UL 514B, ferrous fittings shall be cadmium-coated or zinc-coated in accordance with UL 514B.

B. Wires and Cables:

1. Conductors shall be 600-volt, copper, No. 12 AWG minimum; No. 10 AWG and smaller, solid and round; No. 8 AWG and larger, 7 or 19 strands concentric; insulation type THWN conforming to UL 83, unless

otherwise noted. Color shall be green for grounding conductors. Color of ungrounded conductors in different voltage systems shall be as follows:

- a. 208/120 volt, 3-phase: Phase A - black; Phase B - yellow; Phase C - red.
 - b. DC wiring: Negative power connection (-) - black; Positive power connection (+) - red.
2. Bonding conductors shall be solid bare copper wire for sizes No. 8 AWG and smaller diameter conforming to ASTM B1; stranded bare copper wire for sizes No. 6 SWG and larger diameter conforming to ASTM B8, Class B.
- C. Splices and Termination Components: UL 486A, as applicable, for wire connectors and UL 510 for insulating tapes. Connectors for No. 10 AWG and smaller diameter wires shall be insulated, pressure-type in accordance with UL 486A or UL 486C (twist-on splicing connector). Provide solderless terminal lugs on stranded conductors.
- D. Outlet and Small Junction Boxes: Exposed boxes and weather-exposed boxes shall be cast iron, or ferrous alloy, prime painted and enamel finished, with threaded hubs for conduit connection. All screws for weather-exposed boxes shall be Type 316 stainless steel.
- E. Large Junction Boxes: For exterior and damp or wet locations, the box shall be type 316 stainless steel with matching gasketed cover. All screws shall be type 316 stainless steel.
- F. Equipment Disconnect Switch: Heavy-duty, horse-power rated when used as motor disconnect, lever-operated contacts, spring-loaded, NEC standard fuse rejection type holders when used with current limiting fuses. NEMA-4x enclosure shall be fabricated from Type 316 stainless steel, and (where available) prime painted and enamel finished according to NEMA specifications. General Electric Co. type TH or approved equal.
- G. Individual Circuit Breaker: Individual circuit breaker shall consist of molded plastic case circuit breaker with toggle operated mechanism and thermal-magnetic overload trips. Interchangeable trip shall be provided when available. Toggle positions "On" and "Off", engraved or embossed on body. NEMA 4X enclosure shall be fabricated from Type 316 stainless steel.
- H. Metering Equipment: Metering equipment shall be sealable type and size as noted, conforming to regulations of the local utility company. Meter sockets shall be equipped with test by-pass facilities when required. Enclosures shall be sealable and rated NEMA 3R, Type 316 Stainless Steel.
- I. Hardware, Supports, Backing, Etc.: All hardware, supports, backing and other accessories necessary to install electrical equipment shall be provided. Type 316 stainless steel for corrosion protection in damp or wet locations; non-ferrous materials shall be brass or bronze.

- J. Grounding and Bonding Equipment: Ground rods shall be 5/8" x 10'-0" copper-clad steel core. Copperweld Steel Company or equal acceptable to the Engineer.
- K. Nameplates: NFPA 70; provide permanently engraved, fully descriptive identification nameplate for each equipment enclosures, and switches. Each nameplate inscription shall identify the function and, when applicable, the position. Laminated plastic nameplates shall be 1/8-inch thick melamine plastic, black with white center core; minimum 1-inch by 2-1/2 inch dimensions; and minimum 1/4-inch high normal block lettering. Embossed tape, press type, etc., are not acceptable.
 - 1. Switches, etc.: By designation/use, voltage, phase, amperage and circuit number (as applicable).
 - 2. Cabinets: By designation/use.
- L. Pull Wire: Pull wire shall be plastic having a minimum tensile strength of 200 pounds.
- M. Factory Applied Finish: Provide manufacturer's coatings for touch-up work.
- N. All equipment and mounting hardware provided shall be Type 316 Stainless Steel, unless otherwise noted.

PART 3 - EXECUTION

3.01 GENERAL:

- A. Rules and Permit: The entire installation shall be made in strict accordance with the latest rules and regulations of the National Board of Fire Underwriters, the currently adopted edition of the National Electrical Code; ADAAG; DCAB interpretive opinion; the local Electrical Bureau; General Order No. 10, Public Utilities Commission, State of Hawaii; regulations and standard practices of respective local utility company; applicable instructions of manufacturers of equipment and materials supplied for this project; and standards referenced herein. The Contractor shall obtain and pay for all required permits as required by local laws and rules, and licenses and royalties as necessary to accomplish work. The proper local authorities shall inspect all work as it progresses. The Contractor shall pay all required inspection and testing fees and shall deliver certificates of completion and inspection to the Engineer before final payment will be made. Costs of permits and inspection fees shall be included in the Contractor's bid price.
- B. Construction Methods: Construction shall conform to construction practices as recommended by the American Electricians Handbook by Croft (latest edition), Edison Electric Institute, Institute of Electrical and Electronics Engineers, National Electrical Code, National Electrical Safety Code, and applicable

instructions/recommendations of manufacturers of equipment and material supplied for this project.

- C. **Materials and Workmanship:** All labor and materials of every kind shall be subject to the approval of the Engineer, who shall be afforded every facility for ascertaining the competence of such labor and examining such materials, as he may deem necessary. Materials shall be new and shall bear the inspection label of the Underwriters' Laboratories, Inc. Brand names and catalog numbers used in this specification indicate the standards of design and quality required. Substitution of other brands or catalog numbers shall be as approved by the Engineer.
- D. **Record Drawings:** The Contractor shall maintain an accurate and adequate record of each change as it occurs, regardless of how ordered.
- E. **Drawings and Specification:** This specification is intended to cover all labor, materials and standards of workmanship to be employed in the work indicated on the drawings and called for in the specification or reasonably implied therein. The drawings and specification supplement one another. Any part of the work mentioned in one and not represented in the other, shall be done the same as if it has been mentioned in both. The Contractor shall not make alterations in the drawings and specification.
- F. **Discrepancies and Interpretations:**
 - 1. Should the Contractor find any discrepancies in or omissions from any of the documents or be in doubt as to their meaning, he shall advise the Engineer who will issue any necessary clarification within a time period which does not disrupt the progress of the work.
 - 2. All interpretation and supplemental instructions will be in the form of a written addendum to the Contract Documents.
 - 3. Should any discrepancy arise from the failure of the Contractor to notify the Engineer, the higher quality or larger quantity of item shall prevail. The Engineer shall make the final interpretation and judgment.
 - 4. In the event of a discrepancy between small scale drawings and large scale details, or between drawings and specification, on which is in violation of any regulations, ordinances, laws or codes, the discrepancy, if known by the Contractor, shall be immediately brought to the attention of the Engineer for a decision before proceeding with the particular work involved. Work carried out disregarding these instructions will be subject to removal and replacement at the Contractor's expense.
- G. **Symbols:** The standard electrical symbols together with the special symbols, notes and instructions shown on the drawings indicate the work and outlets required and are all to be included as a part of this specification.
- H. **Coordination:** This specification is accompanied by sections, elevations, and site plans indicating locations of all telemetering equipment, pump controller,

switches, circuit runs, and other electrical apparatus and wiring. These locations are approximate and, before installing, the Contractor shall study the adjacent civil and mechanical details/plans and actually make the installation in the most logical manner. Any outlet may be relocated within ten feet before installation at the direction of the Engineer. The circuit routing is typical only and may be varied in any logical manner.

3.02 INSTALLATION:

- A.** Electrical installations, including weatherproof locations and ducts, plenums and other air-handling spaces, shall conform to requirements of NFPA 70 and IEEE C2 and to requirements specified herein.
- B.** Grounding and Bonding: Provide in accordance with NFPA 70. Ground exposed, non-current-carrying metallic parts of electrical equipment, metallic raceway systems, grounding conductor in metallic and non-metallic raceways, telecommunications system grounds, grounding conductor of multiconductor cable, and neutral conductor of wiring systems.
 - 1.** Grounding conductor shall be separate from electrical system neutral conductor. Provide insulated green equipment grounding conductor for circuit(s) installed in conduit and raceways. All grounding wire runs within building shall be routed together with circuit conductors.
 - 2.** Ground Rods: Provide cone pointed ground rods. The resistance to ground shall be measured using the fall-of-potential method described in IEEE Std 81. The maximum resistance of a driven ground shall not exceed 25 ohms under normally dry conditions. If this resistance cannot be obtained with a single rod, one additional rod not less than 6-feet on centers shall be provided. If the resultant resistance exceeds 25 ohms measure not less than 48 hours after rainfall, notify the Engineer who will decide on the number of ground rods to add.
 - 3.** Make grounding connections that are buried or otherwise normally inaccessible, by exothermic weld or compression connector.
 - a.** Make exothermic welds strictly in accordance with the weld manufacturer's written recommendations. Welds which are "puffed up" or which show convex surfaces indicating improper cleaning is not acceptable. Mechanical connectors are not required at exothermic welds.
 - b.** Make compression connections using a hydraulic compression tool to provide the correct circumferential pressure. Tools and dies shall be as recommended by the manufacturer. An embossing die code or other standard method shall provide visible indication that a connector has been adequately compressed on the ground wire.
 - 4.** Protect ground cables crossing expansion joints or similar separations in structures and pavements by use of approved devices or methods of

installation that provide the necessary slack in the cable across the joint to permit movement. Use stranded or other approved flexible copper cable across such separations.

- C. **Wiring System:** Provide insulated conductors installed in rigid steel conduit, except where specifically indicated or specified otherwise or required by NFPA 70 to be installed otherwise. Conceal conduit under floor slabs on-grade (do not install conduits horizontally in slabs on-grade).
1. Below grade or below slab on-grade, use Schedule 40 PVC (do not use above grade, except where indicated otherwise).
 - a. Provide separate ground wire and rise out of ground with PVC jacketed rigid steel conduit when exposed (PVC coating shall extend from at least 2 inches within the concrete to the first coupling or fitting outside the concrete, minimum of 12 inches from penetration). Protect exposed PVC jacket from damage with protective PVC schedule 80 sleeve, extending at least 2 inches within concrete and extending minimum of 12 inches from penetration; fill completely all spacing between PVC-coated conduit and protective sleeve with suitable sealant that will not shrink or crack and is compatible with PVC-jacket and suitable for environment involved.
 - b. Conduit run under floor slab shall be located a minimum of 12-inches below the vapor barrier. Seal around conduits at penetrations thru vapor barrier.
 - c. Where conduits rise through floor slabs, curved portion of bends shall not be visible above finished slab.
 2. Provide flexible conduit between 3 and 6 feet in length for equipment subject to vibration, noise transmission, or movement; and for motors. Install flexible conduit to allow 20 percent slack. Minimum flexible steel conduit size shall be ½ inch diameter. Provide separate ground conductor across flexible connections.
 3. Raceway system shall be continuous from outlet to outlet or fitting to fitting so that electrical continuity is obtained between all raceways of the system.
 4. Make bends and offsets with hickey or conduit-bending machine. Do not use vise or pipe tee. Flattened or crushed raceway not acceptable.
 5. Use of running threads not permitted. Where standard threaded couplings cannot join conduits, approved water-tight conduit unions shall be used.
 6. Fasten conduits to sheet metal boxes and cabinets with two locknuts where required by NFPA 70, where insulated bushings are used, and where bushings cannot be brought into firm contact with the box;

otherwise, use at least minimum single locknut and bushing. Install bushings on ends of conduits and provide insulating type where required by NFPA 70.

D. Conductors:

1. Mechanical means for pulling shall be torque-limiting type and not used for #2 AWG and smaller wires.
2. Pulling tension shall not exceed wire manufacturer's recommendations. Monitor pulling tension during cable installation to ensure maximum pulling tension is not exceeded.
3. Where necessary, use lubricants that are specifically recommended by the cable manufacturer for assisting in pulling cables through conduit. Lubricant shall not be deleterious to the cable sheath, jacket, or outer coverings.
4. Form neatly in enclosures and boxes for minimum of crossovers.
5. Provide conductor identification within each enclosure where tap, splice, or termination is made. For conductors No. 6 AWG and smaller diameter, color-coding shall be by factory-applied, color-impregnated insulation. For conductors No. 4 AWG and larger diameter, color-coding shall be by colored nylon cable ties and plates; or heat shrink-type sleeves.

E. Pull Wire: Pull wire shall be placed in all empty raceways ten feet in length or longer. Leave minimum 36-inches of slack at each end of pull wire.

F. Splicing of Wire and Cable: Make splices in accessible locations. Make splices in conductors No. 10 AWG and smaller diameter with insulated, pressure-type connector. Make splices in conductors No. 8 AWG and larger diameter with solderless connector and cover with insulation material equivalent to conductor insulation.

G. Boxes: Provide boxes in raceway systems wherever required for pulling of wires, and making connections. Boxes for metallic raceways shall be cast-metal, hub-type when located in damp or wet locations, when surface mounted on outside of exterior surfaces, when surface mounted on interior surfaces exposed up to 7-feet above finish floors, and when specifically indicated. Boxes in other locations shall be sheet steel. Each box shall have volume required by NFPA 70 for number of conductors enclosed in box.

1. Provide gaskets for boxes installed in damp or wet locations.
2. Tag all circuits passing through common pull box to indicate clearly electrical characteristics, circuit number, and panel designation.
3. Wires shall be neatly formed in boxes for minimum of crossovers.

- H. **Nameplate Mounting:** Fasten nameplates to the device with a minimum of two screws or two rivets.
- I. **Workmanship:** Lay out work in advance. Exercise care where cutting, channeling, chasing, or drilling of surfaces that are necessary for proper installation, support, or anchorage of raceways, or other electrical work. Repair damage to structures, piping, and equipment using skilled craftsmen of trades involved to the satisfaction of the Engineer and at no additional cost to the State or DHHL.
- J. **Finishing:**
1. Repair any surface damaged or marred by notching, drilling or any other process necessary for installation of electrical work. Cutting, repairs and refinishing subject to the approval of the Engineer. Need for remedial work as determined by Engineer as attributable to poor coordination and workmanship shall be cause for reconstruction to the satisfaction of the Engineer at Contractor's expense.
 2. Close unused knockouts in boxes or enclosures with metal knockout seals in conformance with NFPA 70.
 3. Wipe clean all exposed raceways and enclosures with rag and solvent. Unfinished raceways and enclosures shall be prime-painted and finished to blend into background or as directed by the Engineer. Do not cover nameplates. Factory finished enclosures shall not be painted.
 4. Painting shall be as specified elsewhere in contract specification. Correct damage to factory applied coatings per manufacturer's recommendations and instructions at no increase in contract amount.
- K. **Miscellaneous Details:**
1. Attachment of electrical equipment to wood by non-ferrous wood screws. Attachment to concrete by expansion anchors. Powder-charge-driven studs and anchors permitted only with prior approval.
 2. Complete all panel circuit directories, using typewriter. Verify "room" and "use" designations before typing.
 3. Tag all empty conduits in terminal cabinets and boxes giving destination. Use fiber disc tags in bushing.
 4. Dissimilar metals in contact anywhere in the system shall be avoided to eliminate the possibility of galvanic action. Where contact is unavoidable, suitable insulation shall be provided between adjoining surfaces so as to eliminate direct contact and any resultant electrolysis. The insulation shall be bituminous impregnated felt, heavy bituminous coatings, nonmetallic separators or washer, or other acceptable materials, as applicable.

3.03 CLEAN-UP:

- A. During the progress of work, all rubbish, waste lumber, displaced materials, etc. shall be removed as soon as possible and upon completion of the work, Contractor shall remove from the construction site and from all public and private property, at his own expense, all temporary structures, rubbish and waste material resulting from his operations and leave the premise in broom clean condition as acceptable to the Engineer.
- B. All equipment, fixtures and appurtenances supplied and installed for this project shall be thoroughly cleaned and ready for use.

3.04 TESTING AND INSPECTION:

- A. Furnish all necessary test equipment (newly calibrated) and personnel. Test complete installation and correct all defects of material and workmanship as well as all malfunctions of equipment and systems prior to final inspection at no increase in contract amount. Complete installation shall be tested to insure proper operation according to functions specified herein; and in other sections of these specifications, on drawings and conform to industry practice.
- B. Conduct a preliminary test to ensure that the requisite degree of operational and installation parameters are provided.
 - 1. Each device subject to manual operation shall be operated at least five times, demonstrating satisfactory operation each time.
 - 2. The Contractor shall test all portions of the electrical system furnished by him for proper operation and freedom from accidental or unspecified grounds, shorts and wrong connections.
 - 3. Test grounding system to ensure continuity, and that resistance to ground is not excessive and as specified herein. Test each ground rod for resistance to ground before making connections to rod; tie grounding system together and test for resistance to ground. Make resistance measurements in dry weather, not earlier than 48 hours after rainfall. Submit written results of each test to Engineer, and indicate location of rods as well as resistance and soil conditions at time measurements were made.
- C. If the Engineer (or Engineer's representative) discovers any errors, the Contractor, at his own expense, shall go over all similar portions of the entire job, taking the necessary or directed remedial action.
- D. The Contractor shall retape splices that have been bared for inspection at no increase in the contract amount.
- E. Wherever test or inspection reveals faulty equipment or installation, the Contractor shall take corrective action, at his own expense, repairing or replacing equipment or installation as directed.

END OF SECTION

SECTION 16100 - EXTERIOR UNDERGROUND ELECTRICAL WORK

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: The work shall include but not necessarily be limited to, the following:
- A. Complete underground electrical ductline system, including trenches, ducts, and cables.
 - B. Testing and cleaning of completed underground ductlines and immediately installing end plugs.
 - C. Provide pullwire in all empty ducts and conduits, unless indicated otherwise.
- 1.03 RELATED SECTIONS:
- A. Division 2 – SITEWORK sections.
 - B. Division 3 – CONCRETE sections.

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. Non-metallic Conduit and Ducts: Conduit accessories, such as couplings, spacers, plugs, etc., shall be of similar type material as the conduits and ducts, suitable for intended use and as recommended by the manufacturer of conduits and ducts.
 - 1. For direct burial use, PVC Schedule 80, UL 651.
 - 2. For concrete encasement, PVC Schedule 40, UL 651.
 - 3. Compounds for sealing conduit and ducts shall have a putty-like consistency workable with the hands at temperatures as low as 35°F, shall neither slump at a temperature of 300°F, nor harden materially when exposed to the air. Compounds shall adhere to clean surfaces of fiber or plastic ducts; metallic conduits or conduit coatings; concrete, masonry, or lead; any cable sheaths, jackets, covers, or insulation materials; and the common metals. Compounds shall form a seal without dissolving, noticeably changing characteristics, or removing any of the ingredients. Compounds shall have no injurious effect upon the hands or workmen or upon materials.
- B. Buried Warning and Identification Tape: Provide detectable aluminum foil plastic-backed tape or detectable magnetic plastic tape manufactured specifically for warning and identification of buried conduits for entire length of ductline

system. Tape shall be detectable by an electronic detection instrument. Provide tape in rolls, 3-inches minimum width, color coded for the utility involved with warning and identification imprinted in bold black letters continuously and repeatedly over entire tape length. Use permanent code and letter coloring unaffected by moisture and other substances contained in trench backfill material.

- C. **Concrete and Reinforcement:** Concrete work shall have minimum 3000-psi compressive strength and conform to the requirements of Division 3 – CONCRETE. Concrete reinforcing shall be as specified in Division 3 – CONCRETE.

PART 3 - EXECUTION

3.01 GENERAL:

- A. Existing underground utilities indicated on the drawings are approximate in location. It is not the intention of the drawings to imply that all existing utilities are drawn and located. It shall be the responsibility of the Contractor to tone affected areas and take all necessary precautions prior to doing any excavation work. The Contractor at no cost to the State or DHHL shall repair any damage to existing utilities.
- B. Installation shall comply with the requirements and recommendations of NFPA 70 and IEEE C2 as applicable.
- C. Contractor shall become familiar with details of the work, shall verify dimensions in the field, and shall advise the Engineer of any discrepancy before performing any work.

3.02 INSTALLATION:

- A. **Duct Lines:**
 - 1. Numbers and sizes of ducts shall be as indicated. Ducts shall be installed promptly after excavation in order to keep the trenches open as short a time as possible. Duct lines shall be laid with a minimum slope of 4-inches per 100-feet. Depending on the contour of the finished grade, the high point may be at a terminal, handhole, or between handholes.
 - 2. Short-radius manufactured 90° duct bends may be used only for equipment risers, unless specifically indicated as acceptable. The minimum manufactured bend radius shall be 18-inches for ducts of less than 3-inches in diameter. Otherwise, long sweep bends having a minimum radius of 25-feet shall be used for a change of direction of more than 5°, either horizontally or vertically. Both curved and straight sections may be used to form long sweep bends, but the maximum curve used shall be 30° and manufactured bends shall be used.
 - 3. Ducts shall be kept clean of concrete, dirt, or foreign substances during construction. Field cuts requiring tapers shall be made with proper tools

and match factory tapers. A coupling recommended by the duct manufacturer shall be used whenever an existing duct is connected to a duct of different material or shape. Ducts shall be stored to avoid warping and deterioration with ends sufficiently plugged to prevent entry of any water or solid substances. Ducts shall be thoroughly cleaned before being laid. Plastic ducts shall be stored on a flat surface and protected from direct rays of the sun.

4. **Concrete Encasement:** Ducts requiring concrete encasements shall comply with NFPA 70. The separation between adjacent electric power and communications ducts shall conform to IEEE C2. Duct line encasements shall be monolithic construction. Where a connection is made to a previously poured encasement, the new encasement shall be well bonded or doweled to the existing encasement. At any point, tops of concrete encasements shall be not less than the cover requirements listed in NFPA 70. Separators or spacing blocks shall be made of concrete, plastic, or a combination of these materials placed not farther apart than 4-feet on centers. Ducts shall be securely anchored to prevent movement during the placement of concrete and joints shall be staggered at least 6-inches vertically. When pouring concrete, prevent heavy masses of concrete from falling directly on ducts. If unavoidable, protect ducts with plank. Direct flow of concrete down sides of duct bank to bottom, allowing concrete to rise between ducts, filling all open spaces uniformly. To insure against voids in concrete, work a long, flat splicing bar or spatula liberally and carefully up and down the vertical rows of ducts. Mechanical vibrators shall be used for stacked duct banks of three ducts or higher. Cure concrete for a minimum of 72 hours before permitting traffic and/or backfilling.
5. **Non-Encased Direct-Burial:** Provide minimum 3-inches of earth around each duct, except that between adjacent electric power and communication ducts, 12-inches of earth is required. Bottoms of trenches shall be graded toward handholes and shall be smooth; where rocks, soft spots and/or sharp-edge materials are encountered, excavate the bottom for an additional 3-inches, fill and compact, to approximate densities of surrounding firm soil, level with original bottom with sand or earth free from particles that would be retained on ½-inch sieve before installing ducts. Joints in adjacent tiers of duct shall be vertically staggered at least 6-inches. The first 6-inch layer of backfill cover shall be sand or earth free from particles that would be retained on ½-inch sieve, compacted as previously specified. The rest of the excavation shall be backfilled and compacted in 3- to 6-inches layers. Duct banks may be held in alignment with earth. However, high-tiered banks shall use a wooden frame or equivalent form to hold ducts in alignment prior to backfilling.
6. **Joints:** Joints in each type of duct shall be made up in accordance with the manufacturer's recommendations for the particular type of duct and coupling selected. Duct joints shall be made by brushing plastic solvent cement on insides of plastic coupling fittings and on outsides of duct ends. Each duct and fitting shall then be slipped together with a quick ¼-turn twist to set the joint tightly.

7. **Test Mandrel:** As each section of a duct line is completed from structure to structure, draw a flexible testing mandrel approximately 14-inches long with a diameter of ½-inch less than the inside diameter of the conduit through each conduit. If burrs or obstructions are encountered, that section shall be replaced at no additional cost to the State or DHHH and retested. When no burrs or obstructions are encountered, draw a stiff bristle brush through the conduit, until conduit is clear of particles of earth, sand, and gravel; then immediately install end plugs.
8. **Conduit Plugs and Pull Rope:** Conduit indicated as being unused or empty shall be provided with plugs on each end. Plugs shall contain a weephole or screen to allow water drainage. Provide pull rope having 3-feet of slack at each end of unused or empty conduits.
9. **Connections to Equipment Enclosures or Boxers:** Conduits shall be extended to termination point as indicated. After installation of cables, conduits shall be sealed with sealing compound to prevent entrance of moisture or gases, rodents, insects, or other foreign matter.
10. **Duct Line Markers:** Bury detectable warning and identification tape with the printed side up at a depth of 12-inches below the top surface of earth or the top surface of the subgrade under pavements.

B. Conductors:

1. **Cable Pulling:** Pull cables down grade with the feed-in point at the handholes, pullboxes, or buildings of the highest elevation. Use flexible cable feeds to convey cables through handhole openings and into duct runs. Do not exceed the specified cable bending radii when installing cable under any conditions, including turnips into equipment enclosures. If basket-grip type cable-pulling devices are used to pull cable in place, cut off the section of cable under the grip before splicing and terminating.
2. **Cable Lubricants:** Use lubricants that are specifically recommended by the cable manufacturer for assisting in pulling jacketed cables. Lubricant shall not be deleterious to the cable sheath, jacket, or outer coverings.
3. **Cable Pulling Tensions:** Tensions shall not exceed the maximum pulling tension recommended by the cable manufacturer. Monitor pulling tension during cable installation to ensure maximum pulling tension is not exceeded.

- C. Construction Joints:** During construction wherever a construction joint is necessary in a duct bank, prevent debris such as mud, and, dirt from entering ducts by providing suitable conduit plugs. Fit concrete envelope of a partially completed duct bank with reinforcing steel extending a minimum of 2 feet back into the envelope and a minimum of 2 feet beyond the end of the envelope. Provide one No. 4 bar in each corner, 3 inches from the edge of the envelope. Secure corner bars with two No. 3 ties, spaced approximately 1 foot apart. Restrain reinforcing assembly from moving during concrete pouring.

D. Excavation, Trenching and Backfilling: Except as covered herein, excavation, trenching, and backfilling shall conform to the requirements of Division 2 – SITEWORK.

1. Trench Excavation:

- a. Dimensions and locations of trenches for ductlines shall be as indicated on the drawings. Trench width and depths shall be sufficient to accommodate proper installation of conduit banks.
- b. Where a trench is excavated on slope, sides are to be vertical, and depth measured at lowest side. All measurements are to be based on final grades.
- c. Bottom of trenches to be flat, well graded, clean and smooth.
- d. Trenches shall be widened at concrete transformer pad sites to permit proper entry of conduits.
- e. Sheathing and bracing as required shall be provided to support sides of excavations from cave-ins.
- f. Provide drainage and pumps to keep trenches dry.
- g. Saw cut all edges of existing sidewalks and pavement before trenching.
- h. Excavate trenches along straight lines from structure to structure before ducts are laid or structure constructed so the elevation can be adjusted, if necessary, to avoid unseen obstruction.
- i. Slope trenches so that duct banks shall have a continuous slope downward toward underground structures and away from buildings.

2. Backfill:

- a. Backfilling shall be to finished grades indicated on accompanying drawings.
- b. Backfill material shall be completely free of wood or other debris.
- c. Backfill material shall be placed in maximum of 8" layers in loose thickness before compacting. Backfill shall be thoroughly compacted with hand or mechanical tampers to 95% of ASTM D1557 maximum dry density. In no case shall tamping be accomplished by using the wheels or tracks of a vehicle. Jetting or flooding of backfill will not be permitted.
- d. Backfill over concrete encased ducts shall be backfill Type A.

- e. At road crossings, backfill shall be 8" thickness of backfill Type A and remaining backfill may be normal road base course.

E. Concrete:

1. Concrete work shall conform to the requirements of Division 3 -- CONCRETE.
2. Convey concrete from mixer to forms rapidly to prevent segregation. Free drop shall be limited to five feet, unless authorized by inspector.
3. Placing:
 - a. Clean and remove all debris from inside forms and trenches before placing concrete.
 - b. Place concrete only on clean damp surfaces, free from water.
 - c. Place concrete in forms, in horizontal layers not exceeding 18" thickness.
 - d. Place concrete to avoid segregation of materials and displacement of ducts, inserts and reinforcing.
 - e. Vibrate structural concrete thoroughly during and immediately after placing to insure dense watertight concrete.
4. Forming:
 - a. Forms shall be of good sound lumber with sufficient strength and conforming to shapes and dimensions indicated on the drawings.
 - b. Forms shall be treated with non-staining form oil immediately before each use.
5. Patching: Patch all voids, pour joints and holes before concrete is thoroughly dry. Use mortar of same proportions as original concrete.
6. Curing: Curing of concrete shall be accomplished by impervious membrane method with liquid membrane compound. Apply two or more coats to obtain a total of one gallon for each 150 square feet of concrete surface.
7. Reinforcing Steel:
 - a. Clean reinforcing of mill or rust scale and form to dimensions indicated.
 - b. Install reinforcing in proper locations and secure in place to prevent movement during concrete placing or vibrating.

F. Reconditioning of Surfaces:

1. **Unpaved Surfaces:** Restore to their original elevation and condition unpaved surfaces disturbed during installation of duct. Preserve sod and topsoil removed during excavation and reinstall after backfilling is completed. Replace sod that is damaged by sod of quality equal to that removed. When the surface is disturbed in a newly seeded area, re-seed the restored surface with the same quantity and formula of seed as that used in the original seeding.
2. **Paving Repairs:** Where trenches, pits, or other excavations are made in existing areas of pavement where surface treatment of any kind exists, restore affected surface treatment or pavement to the same thickness and in the same kind as previously existed, except as otherwise indicated, and to match and tie into the adjacent and surrounding existing surfaces.

G. Repairing:

1. The Contractor shall restore all removed or damaged pavement, gutters, curbs, sidewalks, sign posts, trees and landscape damaged by his operations to as near their original condition or better.
2. Any existing underground piping, conduit or structures that are encountered shall be properly shored and protected from damage. Any damage to existing systems resulting from the Contractor's operations shall be repaired at Contractor's expense.

3.03 **TESTING AND INSPECTION:** Underground conductors, including splices, shall be tested for insulation resistance after they are installed in their final configuration, ready for connection to equipment and prior to energization. The test voltage shall be 500-volts dc, applied for 1-minute between each conductor and ground and between all possible combinations of conductors in the same duct, with all other conductors in the same duct. The minimum allowed value of resistance shall be "R in megohms = (rated voltage in kV + 1) x 1000 / (length of cable in feet)". Each conductor failing this test shall be repaired or replaced and retested until failures have been eliminated, at no cost to the State or DHHL. Submit written results of each test to Engineer, and indicate resistance and weather conditions at time measurements were made.

END OF SECTION

SECTION 16500 – SOLAR PUMP CONTROLLER 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:** The work shall include but not necessarily be limited to, the following:
- A. Complete solar pump controller system, inclusive of solar array and associated fixed mounting assembly, disconnect switch, and low-voltage array wiring.
 - B. Test complete installation and correct all defects and malfunctions of material and workmanship.
- 1.03 **RELATED SECTIONS:** DIVISION 15 – MECHANICAL sections, for solar pump requirements.
- 1.04 **APPLICABLE PUBLICATIONS:** The publications listed herein shall form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.
- 1.05 **SUBMITTALS:** Complete shop drawings and manufacturer's literature shall include, but not be limited to, the following:
- A. Solar Pump Controller and associated solar array, including but not limited to required accessories, and system sizing documentations.
 - B. Fixed mounting assembly for the solar array, including but not limited to dimensions, wind load determined in accordance with AASHTO LTS4, seismic protection, and required accessories. Complete submittals shall be stamped and signed by a licensed professional engineer.
 - C. Disconnect Switch.
- 1.06 **QUALIFICATIONS:**
- A. The sizing of the solar pump controller system shall be performed by a manufacturer authorized supplier or dealer familiar with sizing solar pumping applications. The Contractor shall be responsible to obtain and verify all data needed to perform the system sizing.
 - B. The design of the solar array's fixed mounting assembly shall be performed by a licensed professional engineer who is regularly engaged in such designs. The professional engineer, registered to practice engineering in the state in which the project is located and responsible for the design, shall stamp and sign the design documents.
- 1.07 **SEISMIC PROTECTION:** Rigidly mounted equipment furnished under this contract shall be constructed and assembled to withstand the seismic forces in conformance with local codes. The Contractor shall design the bracing. Resistance to lateral forces induced by

earthquakes shall be accomplished without consideration of friction resulting from gravity loads.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. **Solar Pump Controller:** Aero Vironment Inc. Model USPC-5000, Universal Solar Pump Controller, or approved equal.

1. **Description:** Controller shall convert high voltage, direct current (Vdc) from a photovoltaic (PV) array into highly controlled, three-phase pulse width modulated (PWM) alternating current (Vac) to run a standard 208Vac three-phase water pump motor.
 - a. The controller continuously monitors system performance and incorporates a number of features for pump system protection. In the event of a fault detection, the controller will indicate the type of fault through LED indicators. For most fault modes, the controller will periodically attempt restart. The microprocessor technology gives the controller the capability to monitor the system and automatically shut down in the event of the following:
 - 1) Full reservoir.
 - 2) Underload from a dry well or dry pump.
 - 3) Overload from a bad pump motor (internal electrical short or bad bearing) or fouled pump.
 - 4) Low input power detection (using minimum motor speed selection).
 - b. Automatic shutdown protects the pump and motor from damage during unattended operation.
 - c. In the morning, the controller begins monitoring power from the PV array. When there is enough power to operate the system (based on the preselected conditions), the controller delivers power to the pump motor while monitoring the motor power requirements. If the motor requirements are not too low (dry well) or too high (locked rotor), the system continues to provide power to the pump throughout the day in proportion to the amount of power received from the PV array. Power is always limited to the maximum power specified for the pump motor.
 - d. Proportional power delivered from the PV array allows the system to run at variable speed. Variable speed operation means there is no in-rush or surge of energy during the pump motor start-up, helping to eliminate wear on the motor and pumping system. One of the main causes of pump motor failure is the stress applied to

motors during a full voltage start-up. The controller's variable speed operation ramps up the speed smoothly, which eliminates starting stress. This should allow the pump motor to last longer. There is no starter box or motor starter to purchase, maintain or have fail. The start winding is controlled by the controller and the controller provides motor overload protection.

- e. The microprocessor-controlled converter has customized settings of minimum motor speed, allowing the motor to run more efficiently and maximize the amount of water pumped during a solar day. Proper minimum motor speed settings ensure each pump site will obtain the maximum amount of water possible during marginal solar intensity conditions, like hazy or overcast days.
- 2. **Product Qualification:** The controller conforms to the requirements of UL Standard 1741 (power conditioning units for use in residential photovoltaic power systems) and all requirements of National Electric Code (NEC), including Article 690.
 - 3. **Features:**
 - a. **Universal Pump Motor Interface:** The controller shall be capable of working with most commonly available AC pump motors. The controller characterizes the pump motor operation automatically, so there is no need for special programming. Motors may use three-phase (3 or 4 wire plus ground) or single-phase (start and run windings plus ground) and 208-230Vac or 115/230/240Vac, 50/60 Hz.
 - b. **Universal Photovoltaic Array Interface:** The controller shall be capable of working with most commonly available PV arrays. The controller tracks peak power from PV arrays, regardless of the PV material type – though all the PV modules used must be made from the same material (cannot mix and match material types). Any manufacturing process for producing PV arrays is acceptable, including single or poly-crystalline silicon or thin-film technology.
 - c. **Optimized Operation in Marginal Weather:** A fast foldback algorithm allows the controller to be highly tolerant of varying light intensity caused by changing weather conditions. Rapid changes in light, like the passing of a cloud, have a negative effect on the power from the PV array. The controller compensates for the rapid change in power with minimum interruption, which maximizes the water output of the system during marginal weather conditions. This standard feature is automatic and requires no user adjustments.
 - d. **Underload and Overload Protection:** The controller incorporates user-selectable underload and overload protection. Underload protection can prevent damage in the event of a dry well, dry pump, or a decoupled pump and motor. Overload protection

shuts down the system when there is evidence of a fouled pump or motor, electrical short, bad motor or improper connection to the motor. Adjustable sensitivity fault detection allows the user to minimize nuisance fault conditions.

- e. **Overdrive Feature:** The overdrive feature pushes the pump motor to drive at a speed 5 Hz over the nominal motor frequency. Overdrive results in additional water flow when the PV array can deliver the power. Consult with pump supplier before selecting this feature.
- f. **Selectable Minimum Motor Operating Speed:** Users can select minimum motor operating speed settings as low as 10 Hz to maximize the flow of water when the PV array is producing minimal power due to the angle of the sun or during marginal weather conditions. Setting a motor minimum frequency to a value near that required to achieve flow will minimize the motor and pump wear. If uncertain, use 30 Hz. Consult with pump supplier before selecting 10 Hz.
- g. **Input Protection:** The controller offers high PV array dc voltage input protection via a clamp circuit that protects internal circuit components from over voltage and maintains the input maximum voltage at 400V when connected to the PV array. This standard feature is automatic and requires no user adjustment.
- h. **Smart Restart:** The controller's "smart" restart plan allows the system to achieve maximum water output while minimizing wear on the motor and pump components, as follows:
 - 1) Schedule A – for low input power, underload faults.
 - 2) Schedule B - for overload and system faults.
 - 3) Schedule C – for low input power before achieving minimal speed set by the user.
- i. **Internal Isolation Disconnect Device:** Device disconnects the dc input power for added safety protection during installation and servicing of the unit.
- j. **External Reset Switch:** The reset switch will clear the memory and begin the system start-up sequence.
- k. **Thermal Protection:** The controller automatically limits the maximum power to the pump motor when the ambient temperature is high. Lower power results in a lower internal temperature of the controller unit, allowing the pump motor operation to continue at a reduced level, even on very hot days. This standard feature is automatic and requires no user adjustment.

- I. Remote or Float Switch: A remote on/off switch and a float switch can be wired to the unit for manual or automatic system shutdown. Multiple switches can be wired in series for system shutdown if any switch is opened.

4. Performance Specifications:

a. Input Parameters:

Maximum PV Array Open Circuit Voltage:	600Vdc.
Maximum Input Operating Voltage:	400Vdc.
Minimum Starting Voltage:	150Vdc.
Minimum Operating Voltage:	70Vdc.
PV Array Optimal Operating Voltage (for 60 Hz operations):	
115V, 1-phase motor:	210Vdc.
230V, 1-phase motor:	385Vdc.
230V, 3-phase motor:	380Vdc.
Maximum Input Power:	5.5kW.
Maximum PV Array Short Circuit Current:	20A.

b. Output Parameters:

Power Max Sustained:	5.0kW (5,000 watts)
Selectable Minimum Frequency:	10,20,30,40 Hz.
Selectable Motor Frequency*:	50,60 Hz.
+5 Hz Overdrive Feature*:	55,65 Hz.
Output Wave Form:	Sine Weighted PWM.
Maximum Output Current:	32A pk/25Arms.
Three-Wire, 3-phase Motor**:	5HP at 208Vac.
Inverter Efficiency for 3-phase Motor:	97% at full power.
Serial Communication:	RS-232C.

* - Maximum speed limited by array voltage and maximum frequency selected.

** - Connecting a motor rated higher than indicates will give reduced performance due to input power limitations.

c. Environmental Conditions:

Temperature:	-20° to 60°C.
Humidity:	>95% (Non-Condensing)
Noise:	No Audible Noise.
Vibration, Humidity & Corrosion:	MIL-STD-883 & MIL-STD-202F.
Starter Box:	None Required.
Unit Dimensions:	18"Hx9"Wx6"D.
Shipping Dimensions:	20"Hx12"Wx10"D.
Weight:	18 lbs.

5. Construction: Rugged, lockable NEMA-3 steel enclosure.

6. **Normal Operation Modes:**
 - a. Peak power tracking, variable speed operation at constant V/Hz.
 - b. Fault detection and system monitoring.
 - c. System protection.
 - d. Internal temperature regulation.
7. **Fault Detection Modes (externally displayed):**
 - a. System Disabled (switch OFF or reset mode).
 - b. System Fault (module overcurrent, overtemperature or system problem).
 - c. Remote Shutdown (remote switch open).
 - d. Low Input Power (insufficient solar power).
 - e. Output Underload (dry well, disconnected or bad motor).
 - f. Output Overload (locked/fouled rotor, electrical short).
8. **Protection Modes:**
 - a. Overtemperature (internal temperature regulated and power device protected).
 - b. Overcurrent (max current regulation and power device protected).
 - c. Input Overvoltage (clamping circuit protection).
 - d. Installation (reverse polarity dc connection and output short circuit).

B. Photovoltaic Modules: Kyocera Model KC175GT, or approved equal.

1. **Description:**
2. **Product Qualification:** Modules shall meet or exceed the requirements of IEEE Standard 1262-1995, Recommended Practice for Qualification of Photovoltaic Modules, and Underwriters Laboratories (UL) Standard 1703, Standard for Safety for Flat-Plate Photovoltaic Modules and Panels.
3. **Construction:** The conversion efficiency of the solar cell is over 16%. These cells are encapsulated between a tempered glass cover and a pottant with PVF back sheet to provide efficient protection from the severest environmental conditions. The entire laminate is installed in an

anodized aluminum frame to provide structural strength and ease of installation, and is equipped with plug-in connectors.

4. Performance Specifications:

- a. Electrical Performance under Standard Test Conditions (STC: Irradiance 1000W/m², AM1.5 spectrum, module temperature 25°C):

Maximum Power (P _{max}):	175W (+10%/-5%).
Maximum Power Voltage (V _{mpp}):	23.6V.
Maximum Power Current (I _{mpp}):	7.42A.
Open Circuit Voltage (V _{oc}):	29.2V.
Short Circuit Current (I _{sc}):	8.09A.
Max System Voltage:	600V.
Temperature Coefficient of V _{oc} :	-1.09x10 ⁻³ V/°C.
Temperature Coefficient of I _{sc} :	3.18x10 ⁻³ A/°C.

- b. Electrical Performance at 800W/m², NOCT (Nominal Operating Cell Temperature: 47°C), AM1.5:

Maximum Power (P _{max}):	125W.
Maximum Power Voltage (V _{mpp}):	20.9V.
Maximum Power Current (I _{mpp}):	5.99A.
Open Circuit Voltage (V _{oc}):	26.5V.
Short Circuit Current (I _{sc}):	6.53A.

- c. Module Characteristics:

Number per Module:	48 cells.
Dimensions:	50.8"Lx39"Wx1.4"D.
Weight:	35.3 lbs.
Cable:	(+)28.3", (-)70.9".

- d. Junction Box Characteristics:

Dimensions:	4.5"Lx3"Wx0.4"D.
IP Code:	IP65.

- e. Reduction of Efficiency under Low Irradiance (1000W/m² to 200W/m²; module temperature 25°C):

Reduction:	5.1%.
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- C. Solar Array Disconnect Switch: Switch shall be as specified in Section 16050 - BASIC ELECTRICAL MATERIALS and METHODS.

- D. Solar Array Module Output Cables: Conductors shall be 600-volt, stranded copper per ASTM B-8, XLP type USE-2 conforming to UL 44 and 854, sunlight-resistant rated output cables with male and female connectors.

E. **Hardware, Supports, Backing, Etc.:** As specified in Section 16050 - BASIC ELECTRICAL MATERIALS and METHODS.

1. Do not use aluminum when in contact with earth or concrete.
2. Where connected to dissimilar metals, protect by approved fittings and treatment.

PART 3 - EXECUTION

3.01 **INSTALLATION:** Construction shall conform to NEC 690 and 720, and applicable instructions and recommendations of manufacturers of equipment and material supplied for this project. Plans indicating equipment locations are conceptual only and not for construction. Contractor shall visit site and locate and orient system in logical manner in conformance with manufacturer's recommendations and requirements to optimize performance in all applications.

A. **Pump Controller:**

1. The photovoltaic array structure, modules and wiring harness must be properly assembled according to the manufacturer's installation instructions before installing the pump controller. Locate the pump controller closest to the array wire harness and near a good electrical ground.
2. The pump controller shall be located out of the path of direct sunlight and away from any heat or moisture, in an area free of vegetation.
3. The pump controller shall be mounted vertically, at a minimum of 12 inches above the ground; 3 feet to 4 feet above ground is optimal. A minimum clearance of 10 inches must be maintained above the controller to allow the lid to rise for wire installation and allow airflow around the heat sink. To completely remove the pump controller cover, 19 inches clearance above is required.

B. **Solar Array:**

1. Solar array shall be installed in a location where they will receive maximum sunlight throughout the year. Avoid trees, buildings, structures, or obstructions which can cast shadows on the solar modules, especially during the winter months when the arc of the sun is lowest over the horizon.
2. Solar array shall be installed at a tilt angle, orientation, and elevation as recommended by the solar array manufacturer.
3. Array support shall be installed in accordance with the recommendations of the solar array manufacturer. For optimal performance in all applications, clearance between the solar module frame and the mounting surface is required to allow cooler ambient air to circulate around the back of the module.

4. Grounding: Attach all solar module frames to an earth ground in accordance with the NEC. Proper grounding is achieved by connecting the solar module frames and structural members continuously to one another using a suitable grounding conductor.

C. Grounding: Ground per NEC 250 and 690.

3.02 TESTING AND INSPECTIONS:

- A. Pre-Power Polarity Check: Provide polarity correctness check before full power is applied to the system in conformance with pump controller manufacturer's instructions.
- B. Low Power Logic Test: Before the pump is connected to the system, provide a low power logic test in conformance with the pump controller manufacturer's instruction.

END OF SECTION

SECTION 16700 – SOLAR TELEMETERING 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:** The work shall include but not necessarily be limited to, the following:
- A. Complete telemetering system, inclusive of mounting poles, stand alone solar-power system designed to support wireless applications in remote locations, radio and antenna, input/output modules, limit switch value module, and wiring.
 - B. Test complete installation and correct all defects and malfunctions of material and workmanship.
- 1.03 **RELATED SECTIONS:**
- A. Division 2 – SITEWORK sections.
 - B. DIVISION 15 – MECHANICAL sections, for pressure transmitter, and diesel-driven pump control requirements.
 - C. Section 16500 – SOLAR PUMP CONTROLLER SYSTEM, for pump controller's remote switch input requirements.
- 1.04 **APPLICABLE PUBLICATIONS:** The publications listed herein shall form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.
- 1.05 **SUBMITTALS:** Complete shop drawings and manufacturer's literature shall include, but not be limited to, the following:
- A. Stand alone solar interface system, inclusive of all necessary appurtenances for a complete and operable wireless transmitter system and system sizing documentations.
 - B. Stand alone solar interface system, inclusive of all necessary appurtenances for an operable wireless receiver system and system sizing documentations.
 - C. Mounting pole, including RUS approved Quality Mark "WQC".
- 1.06 **QUALIFICATIONS:** The sizing of the solar telemetering system shall be performed by a manufacturer authorized supplier or dealer familiar with sizing solar telemetering applications. The Contractor shall be responsible to obtain and verify all data needed to perform the system sizing.
- 1.07 **QUALITY ASSURANCE:** Ensure the quality of pressure treated wood poles. Furnish an inspection report (for wood poles) of an independent inspection agency, approved by the Engineer, stating that offered products comply with AWPA M6 and RUS BULL 345-67 standards. The RUS approved Quality Mark "WQC" on each pole will be accepted, in

lieu of inspection reports, as evidence of compliance with applicable AWP treatment standards.

- 1.08 **SEISMIC PROTECTION:** Rigidly mounted equipment furnished under this contract shall be constructed and assembled to withstand the seismic forces in the project site. The Contractor shall design the bracing. Resistance to lateral forces induced by earthquakes shall be accomplished without consideration of friction resulting from gravity loads.
- 1.09 **DELIVERY, STORAGE, AND HANDLING:** Stack wood poles stored for more than 2 weeks on decay-resisting skids arranged to support the poles without producing noticeable distortion. Store poles to permit free circulation of air; the bottom poles in the stack shall be at least one foot above ground level and growing vegetation. Do not permit decayed or decaying wood to remain underneath stored poles. Do not drag treated poles along the ground. Do not use pole tongs, cant hooks, and other pointed tools capable of producing indentation more than one inch in depth in handling the poles. Do not apply tools to the groundline section of any pole.

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. Solar Interface System: Stand alone dc solar-powered systems, designed to support wireless applications in remote locations. Phoenix Contact RAD-SOL-SET-24 or approved equal.

1. Description: Major components that make up the solar interface system are as follows:

- a. Photovoltaic solar modules.
- b. Solar Module mounting bracket with stainless steel hardware.
- c. NEMA-4 rugged aluminum outdoor equipment enclosure with separate louver ventilated NEMA-3R battery compartment, white powder-coated finish, lockable. 30.128" high x 19.252" wide x 13.295" deep enclosure dimensions.
- d. Sealed, gel-cell, deep-cycle batteries.
- e. Pre-wired and installed electronics panel with charger/load controller, fuses and labeled terminal blocks.

2. Technical Specifications:

- a. Solar Interface System:

System voltage	24Vdc.
Solar Module input wattage	40/60/80/100W.

- b. Solar Charge Controller: Phoenix Contact RAD-SOL-CHG-24-10 or approved equal.

Nominal voltage	24Vdc.
Rated solar input	10A.
Rated load current	10A.
Regulation voltage	28.2V.
Sealed battery	
Load disconnect	23V.
Load reconnect	25.2V.
Temperature compensation (mV/°C)	-56mV.
Self consumption	10mA.
Operating temperature range	-40 to +85°C.
Wire size	10AWG.

- c. Solar Battery:

Type	Valve-regulated lead-acid, deep-cycle gelled electrolyte.
Alloy	Lead calcium.
Nominal voltage	12V.

- 1) 40-watt System: Phoenix Contact RAD-SOL-BAT-12-40 or approved equal.

Ampere Hour (Ah) capacity	48Ah at a 100 hour discharge rate.
Dimensions	7.75"Lx6.63"Wx6.88"H.
Weight	32.5 lbs.

- 2) 60-watt System: Phoenix Contact RAD-SOL-BAT-12-70 or approved equal.

Ampere Hour (Ah) capacity	70Ah at a 100 hour discharge rate.
Dimensions	10.19"Lx6.63"Wx7"H.
Weight	42 lbs.

- 3) 80/100-watt System: Phoenix Contact RAD-SOL-BAT-12-84 or approved equal.

Ampere Hour (Ah) capacity	84Ah at a 100 hour discharge rate.
Dimensions	10.9"Lx6.8"Wx9.9"H.
Weight	53.5 lbs.

- d. Solar Module: Typical assembly consists of two photovoltaic modules.

- 1) 40-watt System: Phoenix Contact RAD-SOL-PAN-12-20 or approved equal.

Total power output at peak sun	
Volts	16.8V.
Amps	1.19A.
Watts	18W.
Dimensions	
Length	16.7 inches.
Width	19.8 inches.
Thickness	1.97 inches.
Weight	6.5 lbs.
Certification/Approval	UL listed.

2) 60-watt System: Phoenix Contact RAD-SOL-PAN-12-30 or approved equal.

Total power output at peak sun	
Volts	16.8V.
Amps	1.78A.
Watts	27W.
Dimensions	
Length	23.4 inches.
Width	19.8 inches.
Thickness	1.97 inches.
Weight	8.5 lbs.
Certification/Approval	UL listed.

3) 80-watt System: Phoenix Contact RAD-SOL-PAN-12-40 or approved equal.

Total power output at peak sun	
Volts	16.9V.
Amps	2.34A.
Watts	40W.
Dimensions	
Length	20.7 inches.
Width	25.7 inches.
Thickness	1.42 inches.
Weight	9.9 lbs.
Certification/Approval	UL listed.

4) 100-watt System: Phoenix Contact RAD-SOL-PAN-12-50 or approved equal.

Total power output at peak sun	
Volts	16.7V.
Amps	3.00A.
Watts	50W.
Dimensions	
Length	25.2 inches.
Width	25.7 inches.
Thickness	2.1 inches.
Weight	11 lbs.
Certification/Approval	UL listed.

3. Additional Components:

a. Wireless I/O Interface Transmitter/Receiver Set: Phoenix Contact RAD-ISM-900-SET-UD-ANT or approved equal.

1) Description: The set is an integrated radio and I/O module designed to eliminate cable and conduit for one 4-20mA current loop and two digital signals in harsh industrial environments and utilizes 902-928Mhz Industrial, Scientific and Medical (ISM) band Frequency-Hopping spread spectrum technology to guarantee a license-free, interference-free link between remote devices and the Booster Pump Station.

2) Technical Data:

a) General Specifications:

Temperature range	-40 to 70°C (-40 to 158°F).
Humidity	0-95% non-condensing.
Dimensions	4"Lx4.5"Hx0.7"W.
Mounting	DIN rail.
Environmental	NEMA-1.
Approvals	UL and cUL listed (Class I, Div. 2, Groups A,B,C,D).

3) Technical Specifications:

a) Transmitter:

Transmitter power	1W.
Range:	
In-plant, no line of sight	600-1,000 feet.
Line of sight, flat terrain, raised antenna	4-5 miles.
Line of sight, flat terrain, directional antenna*	20+ miles.
Frequency	902-928Mhz.
Power source	12-30Vdc regulated.
Power consumption	8.4W peak (350mA@24Vdc), 1.8W avg. (75mA@24Vdc).
Inputs	1 4-20mA (250Ω impedance), 2 5-30V dc/ac.

* denotes "Requires professional propagation study and installation".

b) Receiver:

Frequency	902-928MHz.
Power source	12-30Vdc regulated.
Power consumption	3W (125Ma@24Vdc).
Outputs	1 4-20mA (12-bit resolution), 3 120Vac, 0.5A dry-contact.
Loop impedance, max.	450-1350Ω for power supply voltages of 12-30Vdc.
Repeatability	0.02%.
Accuracy	0.2% full scale.

b. Antennas:

- 1) 6.5dB Yagi Antenna for 900MHz (Transmitter): Phoenix Contact RAD-ISM-900-ANT-YAGI-6.5-N or approved equal. Antenna Specifications as follows:

Bottom operating frequency	890MHz.
Top operating frequency	960MHz.
Nominal gain	6.5dBd.
Horizontal Beamwidth (Deg-3dB)	100°.
Vertical Beamwidth (Deg-3dB)	62°.
Front to back ration	15dB.
Length	6.8 inches.
Width	2.38 inches.
Antenna weight	1.3 lbs.
Rated wind velocity	125mph.
Connector	2 feet RG-213 with N-Type Female.

- 2) 3dB Fiberglass Omni Antenna for 900MHz (Receiver): Phoenix Contact RAD-ISM-900-ANT-OMNI-FG-E-N or approved equal. Antenna Specifications as follows:

Bottom operating frequency	902MHz.
Top operating frequency	928MHz.
Nominal gain	3.0dBd.
Horizontal Beamwidth (Deg-3dB)	360°.
Vertical Beamwidth (Deg-3dB)	28°.
Length	51.1 inches.
Width	2.38 inches.
Antenna weight	4 lbs.
Rated wind velocity	125mph.
Connector	N-Type Female.

- c. Low Loss Coaxial Antenna Cables: Phoenix Contact RAD-CAB-LMR500 or approved equal. Technical Data as follows:

Connector type	N(male) at both ends.
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Cable type	LMR-500.
Temperature rating	-40°F to 185°F (-40°C to 85°C).
Outer diameter	0.50 inches.
Min. bending radius	1.25 inches.
Weight	9.7 lbs/100 feet.
Insertion attenuation	Approx. 3.13 dB/100 feet.
Jacket material	Polyethylene.

d. Bulkhead Surge Protection Assembly for 900MHz Radios:
Phoenix Contact CN-UB-280DC-BB-BB-ASSY or approved equal.

1) Description: Assembly is a gas-filled surge protection device designed to protect wireless radio stations from surge voltages caused by lightning or other electrical sources that are induced onto antenna cables.

2) General Specifications:

Max. continuous operation voltage	280Vdc.
Max. circuit operating current	≤5A at 25°C.
Max. high-frequency power with a Standing Wave Ratio (SWR)=1.1 in a 50Ω system	700W.
Rated discharge surge current (8/20μs test curve)	20kA.
Rated discharge surge current (10/1000μs test curve)	100A.
Output voltage tested with 1kV/μs waveform line to shield (ground)	≤700V.
Response time (common mode line to ground)	≤100ns.
Insertion loss (50Ω systems)	≤0.1dB up to 1.2GHz, ≤0.2dB up to 2.2GHz.
DC cutoff frequency (3dB)	>3GHz.
Leakage current, line-ground	≤1μA.
Voltage Standing Wave ratio (SWR)	≤1.1 to 2.0GHz.
Capacitance (common mode)	1.5pF.
Connector type	N, 50Ω.
Temperature range	-20°C to +80°C.

e. Radio Connector Adapter: Phoenix Contact RAD-CON-MCX-N-SS or approved equal. Technical Data as follows:

Length	4 feet.
MCX(M) connector	
Body style	Straight cable connections.
N(M) connector	Straight cable connections.

Body style	
Cable	
Type	RG-316 coaxial.
Outer diameter	0.098 inches.
Min. bending radius	1 inch.
Impedance	50 ohms.
Max. pulling tension	21 lbs.
Temperature rating	-70 to 200°C (-94 to 392°F).
Jacket material	FEP Teflon®.
Weight	10 lbs per 1,000 feet.
Attenuation	27.3dB per 100 feet.

f. **Limit Value Switch Module:** Phoenix Contact MCR-2SP-UI-DC or approved equal.

1) **Description:** The threshold switches are used to control and monitor automation process. Two threshold values each of which can be set separately are available for the evaluation of an analog input signal (0...10V or 0...20mA; selectable with DIP switches). The input status can be sampled via two relay outputs. The threshold value is set either via coding switches or via externally supplied analog signal values. A combination of both options (adding up the different threshold values) is also possible. It can be defined by means of DIP switches whether the relay is to pick up or to release when a threshold is exceeded/not reached. A relay pick-up delay can be set with two potentiometers within a range from 0 to 4s. The actual-value input is laid out as a differential input.

2) **Front Panel Switch/Potentiometer Settings:** The front panel features two 2-digit coding switches, two potentiometer knobs, two LED indicators and one supply voltage indicator LED.

- a) **Coding Switches:** Switches are able to set a threshold value within a range of 0...99% of the selected input signal.
- b) **Potentiometer Knobs:** The two knobs are used to set separate pick-up delays for each relay.
- c) **Two Yellow LEDs** are used to indicate the relay status: LED is on = Relay has picked up.

3) **Technical Data:**

a) **Input Data:**

Description of input	Analog input.
Configurable/programmable	Yes.

Voltage input signal	0V ... 10V.
Current input signal	0mA ... 20mA.
Max. input voltage	13V.
Max input current	100mA.
Input resistance of voltage input	200k Ω .
Input resistance of current input	50 Ω .
Internal hysteresis	Approx. 100mV. Approx. 200 μ A.
Setting option	2-figure momentary-contact coding switch (0 ... 99%). External analog value definition. 2-figure momentary-contact coding switch (0 ... 99%) and external analog value definition.
Description of input	Setpoint input.
Number of inputs	2.
Configurable/programmable	Yes.
Voltage input signal	0V ... 10V.
Current input signal	0mA ... 20mA.
Max. input voltage	13V.
Max input current	100mA.
Input resistance of voltage input	200k Ω .
Input resistance of current input	50 Ω .

b) Switching Output:

Output name	Relay output.
Contact type	2 PDT contact, pick-up/drop-out (can be switched).
Contact material	Silver cadmium oxide (AgCdO).
Max. switching voltage	250Vac
Service life mechanical	3 x 10 ⁷ cycles.
Setting range of the response delay	8ms ... 4s (adjustable)
Status display	LED

c) Power Supply:

Range of supply voltages	20Vdc ... 30Vdc.
Max. current consumption	<100mA.

d) Connection Data:

Type of connection	Pluggable screw connection.
Conductor cross section solid min.	0.2mm ² .
Conductor cross section solid max.	2.5mm ² .
Conductor cross section stranded min.	0.2mm ² .
Conductor cross section stranded max	2.5mm ² .
Conductor cross section AWG/kcmil min.	24.
Conductor cross section AWG/kcmil max	14.
Stripping length	8mm.
Screw thread	M3.

e) General Data:

No. of channels	2
Length	75mm.
Width	45mm.
Height	108mm.
Max. temperature coefficient	≤0.01%/K.
Step response (10-90%)	8ms.
Ambient temperature (operation)	-20°C ... 65°C.
Color	Green.
Housing material	ABS.
Mounting position	Any.
Conformity	CE compliant.
UL, USA/Canada	cULus.

B. Wood Poles:

1. Provide poles designed for wind loading determined in accordance with AASHTO LTS while supporting all appurtenances indicated. The effective projected areas of appurtenances used in calculations shall be specific for the actual products provided on each pole.
2. ATIS O5.1 and RUS Bull 345-67 of Southern Yellow Pine or Douglas Fir. Poles shall be gained, bored, and roofed before treatment. Poles shall be treated full length with chromated copper arsenate (CCA) or ammoniacal copper arsenate (ACA) according to AWPA C1 and AWPA C4 as referenced in RUS Bull 345-67. Poles shall be branded by manufacturer with manufacturer's mark and date of treatment, height and class of pole, wood species, preservation code, and retention. Place the brand so that

the bottom of the brand or disc is 10 feet from the pole butt for poles up to 50 feet long.

PART 3 - EXECUTION

3.01 **INSTALLATION:** Construction shall conform to IEEE C2, NFPA 70, applicable instructions and recommendations of manufacturers of equipment and material supplied for this project, and to requirements specified herein. Plans indicating equipment locations are conceptual only and not for construction. Contractor shall visit site and locate and orient system in logical manner in conformance with manufacturer's recommendations and requirements to optimize performance in all applications.

A. Solar Array:

1. Solar array shall be installed in a location where they will receive maximum sunlight throughout the year. Avoid trees, buildings, structures, or obstructions which can cast shadows on the solar modules, especially during the winter months when the arc of the sun is lowest over the horizon.
2. Solar array shall be installed at a tilt angle, orientation, and elevation as recommended by the system manufacturer.

B. Wood Poles:

1. Set poles plumb.
2. Pole holes shall be at least as large at the top as at the bottom and shall be large enough to provide 4 inches of clearance between the pole and the side of the hole.
 - a. Soil Setting: "Setting in Soil" depths shall apply where pole holes are in soil, sand, or gravel or any combination of these.
 - b. Setting on sloping ground: On sloping ground, measure the depth of the hole from the low side of the hole.
 - c. Backfill: Dig holes large enough to permit the proper use of tampers to the full depth of the hole. Place backfill in the hole in 6 inch maximum layers and thoroughly tamp. Place surplus earth around the pole in a conical shape and pack tightly to drain water away.
3. Protective Molding: Protect exposed conductors/cables which are run on surface of wood poles by PVC molding.

C. Grounding: Ground per NEC 250 and 690.

3.02 **TESTING AND INSPECTIONS:** Before installing fuses to energize the system, check the following parameters:

- A. Check solar module input wiring for proper open-circuit voltage and polarity.
- B. Check battery wiring for proper voltage and polarity.
- C. Check polarity of wiring to loads.
- D. Once battery connections have been made and its polarity has been carefully checked, energize the system by installing the fuses per manufacturer's instructions.

CAUTION: To avoid damage to the electronic components during start-up and shutdown modes, fuses must be removed and reinstalled in the proper sequence, per manufacturer's instructions.

END OF SECTION

**SCOPE OF WORK
AND
TECHNICAL SPECIFICATIONS
FOR
PUUKAPU PASTORAL LOTS
WATER SYSTEM OPERATION & MAINTENANCE SERVICES**

**PUUKAPU, SOUTH KOHALA
ISLAND OF HAWAII, HAWAII**

IFB NO.: IFB- 14-HHL-011

**PREPARED BY
AKINAKA & ASSOCIATES, LTD.**

**PREPARED FOR
STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS**

SCOPE OF SERVICES FOR THE PUUKAPU PASTORAL LOTS WATER SYSTEM OPERATION & MAINTENANCE SERVICES, IN PUUKAPU, SOUTH KOHALA, HAWAII

Background

The Puukapu Pastoral Lots (PPL) Water System is a “non-DWS standard” system which provides non-potable water service to the PPL designated 184 parcels. Copies of the Water Master Plan, approved by the County of Hawaii Department of Water Supply (DWS), and the Operation & Maintenance (O&M) Manual for the PPL water system are available for reference from the State of Hawaii Department of Hawaiian Home Lands (DHHL).

The PPL water system is connected to the County DWS’ system via a 4-inch master meter at the western end. The PPL water system has two booster pump facilities to deliver water to service storage tanks. Pump Station No. 1 is equipped with conventional electrically powered motors and pumps. Due to its remoteness to available electrical power, Pump Station No. 2 is equipped with a solar powered pump and a diesel generator powered pump.

The PPL water system is designed to provide each of the 184 parcels with the DWS standard average daily flow of 400 gallons-per-day (gpd) for a standard single-family service via a 5/8-inch sub-meter that will be issued to each lessee by DHHL. Maximum daily flow is limited to 600 gpd per parcel. Lessees will be required to sign a separate agreement for the sub-meter and signage at the time of issuance. Signage will indicate that water is non-potable and is not suitable for human consumption.

A backflow prevention device shall be installed after the sub-meter. Some parcels serviced by the PPL water system (identified in the Water Master Plan) require an “Elevation Agreement” as the water pressure delivered to the subject parcel is below the DWS standard 40 pounds per square inch (psi) due to an elevation constraint of the service tank. These parcels may require installation of individual booster pumps. Other parcels with water pressures above 150 psi, may require installation of pressure regulating valves. The Contractor will be required to purchase and install these individual facilities. The lessee will be required to maintain these individual facilities for their parcel to provide the water pressure they desire.

Fire protection for the PPL is provided by “static” fire tanks that have been located during the design of the system and reviewed/approved by the County Fire Department for strategic location and accessibility. Standpipes at each fire tank facility provides for connection to fire fighting vehicles.

The PPL water system also includes a new spigot at Tank Site #1 to provide limited potable water to homeowners. Access to obtain water from the spigot will be controlled by a lock system. A separate water meter will be installed for the spigot. DHHL plans to limit the total potable water consumption from the spigot to 600 gallons per day, to be shared amongst the lessees.

Scope of Services

The Contractor shall operate and maintain the water system facilities to assure the continuous operation of the Puukapu Pastoral Lots Water System. Such facilities shall be capable of adjustments to function from initial start-up of the system to the planned ultimate build-out of the Puukapu Pastoral Lots (184 single family services). At the start of the O&M services, the Contractor shall document that all signage pertaining to the non-potable water system has been installed at all of the water system facilities.

Rules and regulations for the Puukapu Pastoral Lots Water System, such as, but not limited to, billing rates and structure, meter purchase and distribution as they pertain to existing Administrative Rules or laws of the State of Hawaii, DHHL and other government agencies, and the Hawaiian Homes Commission Act, are still being promulgated.

Consequently, the Contractor shall provide consulting services, as part of this contract, by advising DHHL during the formulation of draft rules and regulations for the Puukapu Pastoral Lots Water System that DHHL can adopt which take into account the nature of the system; it being "non-DWS Standard", unique requirements identified by DHHL; such as input from the community deemed appropriate for implementation, and attempts to maximize the economic efficiency of its O&M and compliance with applicable state and Federal laws.

The Contractor shall perform complete operation, maintenance and repair services including inspections and emergency calls for all pumps, reservoirs, distribution water lines, telemetry systems, equipment and other appurtenances included under the contract, in accordance with the manufacturer's specifications and recommended time intervals.

If the manufacturer does not provide these Operating and Maintenance (O & M) specifications, the Contractor shall contact the Contract Administrator or its designated representative and provide recommendations regarding the maintenance and repair of the specific equipment or system. Such service shall include regularly scheduled operation and maintenance tasks and inspections and any repairs required for each listed herein.

The maintenance and repair tasks and inspection shall consist of the furnishing of all labor, equipment, parts, materials and tools necessary to perform a thorough servicing and complete repair of all integral parts, lubricating, adjusting, and touch up painting where needed to keep the units in, or return to, a continuous operating condition. Maintenance of the system shall also include all activities such as routine flushing and water leak repair to insure efficient delivery of water. Any and all posted signage pertaining to the non-potable water system shall also be included in the inspection, maintenance and repair tasks. All services performed will be subject to inspection and approval by the Department of Hawaiian Home Lands (DHHL) prior to start of work.

The Contractor shall be responsible for all tools and labor needed to perform the operation and maintenance services. DHHL will reimburse the Contractor for parts and supplies on a cost plus 10% basis. This is under normal operations and maintenance and includes all appurtenances. The Contractor shall submit invoice copies with reimbursement request. Reimbursement request will not be accepted without invoice copies.

The Contractor will not be responsible for the cost of repairs due to flagrant vandalism, fire, storm or related damages that can be attributed to causes beyond his control such as acts of God; acts of a public enemy; acts of the State and any other governmental body in its sovereign or contractual capacity as described under General Condition Section 13 item d. However, the Contractor shall be responsible for such repairs at no cost to the State, if the damages are caused by the Contractor's failure to properly maintain and service the systems and equipment.

The Contractor shall be responsible to provide and maintain a communication system to notify their maintenance personnel in the event of an emergency at the pump stations.

The Contractor shall also be responsible for all extraordinary incidents above the normal operation and maintenance including emergency call-outs and equipment breakdowns. The Contractor shall

provide the Contract Administrator or its designated representative with following:

1. Cost estimates, if repairs can be made with in-house labor and materials. The Contractor will submit cost estimates to the Contractor Administrator or its designated representative for approval prior to starting work. Labor charges will be based on the rates for the applicable time situations listed on a current Wage Rate Schedule Bulletin published by the Department of Labor and Industrial Relations. The current Wage Rate Schedule Bulletin is included in this IFB under the section titled IFB NOTIFICATION AND INFORMATION. The current wage rate bulletin will be updated in mid February and that new bulletin can be obtained at www.hawaii.gov/labor. All material and equipment required shall be on a cost plus 10% basis. The Contractor shall submit invoice copies with reimbursement request. Reimbursement request will not be accepted without invoice copies.
2. If the Contractor requires using sub-contractors, in addition to in-house labor, or is more economically feasible (reduce down-time of system or special equipment or personnel to repair) to utilize outside sub-contractors, the Contractor shall be responsible to obtain quotations from sub-contractors and submit to the Contract Administrator for review. Charges for work performed by the sub-contractor will be for only the dollar amount quoted. The Contractor shall submit invoice copies with reimbursement request. Reimbursement request will not be accepted without invoice copies.

Such services require the approval of the Contract Administrator or its designated representative prior to commencement of work.

All normal operations performed by the Contractor shall include, but not be limited to the following applicable listed items:

- a. **FAMILIARIZATION OF WATER SYSTEM STARTUP:** The purpose for this requirement is to insure that the Contractor is able to startup the system in the event of a power outage, equipment breakdown or heavy storms and flooding for which the Contractor shall be responsible and accountable.

The Contractor shall:

- 1) Operate the entire water system. A DHHL representative shall be present at times to observe the Contractor's operation of the system. The Contractor shall address any comments or concerns from the DHHL representative. The Contractor shall also provide instructions on operating the system to the DHHL representative.
- 2) Maintain a regular maintenance log for record keeping of essential equipment needed to operate the system such as operating hours of pumps, water level indicators and alarm systems. Contractor shall submit format of logbook and determination of essential equipment to DHHL for approval.

1. **OPERATIONS AND MAINTENANCE OF THE WATER SYSTEM**

A. **BACKFLOW PREVENTION ASSEMBLY**

1. Annually

- a. Inspect and test the backflow prevention assemblies, including the backflow prevention assembly installed after the Department of Water Supply (DWS) 4" master meter, the backflow prevention assembly installed after the 5/8" meter for the spigot in tank site no. 1, and the backflow prevention assemblies installed at the individual lots.
 - b. Repair the backflow prevention assembly as required per manufacturer's recommendations in accordance with DWS standards and typical industry practices, to assure that the backflow prevention assembly functions as intended to protect integrity of the DWS water system.
2. Purchase and install new backflow prevention assemblies as authorized by DHHL representative. The Contractor shall submit invoice copies for reimbursement requests. Reimbursement request will not be accepted without invoice copies.

B. PUMP SYSTEMS

1. Twice weekly
 - a. Inspect, adjust, repair and or replace if necessary, after receiving approval from DHHL, all pump systems.
 - b. Inspect, adjust, repair and or replace if necessary, after receiving approval from DHHL, flow metering and totalizer system.
 - c. Check, adjust and repair if necessary after receiving approval from DHHL, pumps for vibration, noise and proper operation.
2. Monthly
 - a. Check, adjust, repair and or replace if necessary, after receiving approval from DHHL, automatic pump control valves for proper operation.
 - b. Check seals on all pumps for leakage and adjust, repair and or replace as required.
 - c. Check for proper alignment of motor/pump coupling and adjust, repair and or replace if necessary after receiving approval from DHHL.
 - d. Check pump bearings for abnormal temperature and replace if necessary after receiving approval from DHHL.
 - e. Lubricate motor and pump bearings per manufacturer's recommendations.

- f. Check mounting bolts for tightness and tighten per manufacturer's recommendations.
 - g. Clean motor starter contacts and replace if necessary.
 - h. Test, check and maintain the alarm system that notifies maintenance personnel of an emergency at the pump stations.
 - i. Clean solar array and conduct diagnostic testing of solar inverter per manufacturer's recommendations.
- 3. Quarterly
 - a. Check and adjust automatic pump control system (tank to sequence switch assembly) for start/stop signal and repair if necessary after receiving approval from DHHL.
 - b. Check and adjust reservoir level indicator assembly for proper operation and level readings.
 - c. Inspect all sensors, gauges, monitors, control devices, and telemetry system and adjust through field calibration if necessary for proper operation.
- 4. Semi-Annually
 - a. Clean strainer.
 - b. Check all valves for proper operation, tightness and repair or replace if necessary after receiving approval from DHHL.
 - c. Thoroughly clean out all dust and dirt from inside of electrical panels and starters.
- 5. Annually
 - a. Scrape and sand bare metal and paint all rusted areas, pumps, solar array, and supporting struts for preventive maintenance.
 - b. Inspect condition of wiring and conduit from motor to starter and repair or replace if necessary, after receiving approval from DHHL.
 - c. Open, inspect, clean and test pressure regulating and automatic control valves for proper operation and pressure setting.
 - d. Inspect motor and submit report and recommendations to the DHHL in writing.
- 6. Other
 - a. Investigate feasibility of replacing pump at Tank Site #1 with variable

speed.

- b. Pump including benefit/cost analysis and cost estimate.
- c. Provide report of findings to DHHL for evaluation in pursuing funding for pump replacement if power costs (to DHHL) warrant such.
- d. Include salvage, reuse, or sale or exchange of existing pump in the analysis.

C. DISTRIBUTION SYSTEM

1. Weekly

- a. Inspect all non-potable water signs for wear and/or discoloration and repaint per original color pattern as needed or if requested by DHHL. Replace any missing signs.

2. Monthly

- a. Inspect, report and repair if necessary, after receiving approval from DHHL, surface areas above system pipelines for signs of roadway failure, soft spots, or leakage.
- b. Test and maintain Emergency-pumping equipment for proper operation.

3. Bi-Monthly

- a. Inspect conditions of water meters and meter boxes, note signs of leakage, damage or tampering; repair or replace meter meters after receiving approval by DHHL.
- b. Submit report of pump site log activities to the West Hawaii District Office, Department of Hawaiian Home Lands.
- c. Inspect pressure-reducing station for proper operation; adjust as needed to maintain downstream pressure.

4. Semi-Annually

- a. Check, exercise and adjust all valves for proper operation and tightness; repair or replace, if necessary, after receiving approval from DHHL.
- b. Flush water mainlines as required, after repair of line breaks and after major components are replaced.

- c. Flush inter-connection manifold system.
 - d. Utility poles for power or telemetry systems. Notify DHHL if repairs or replacement are warranted.
- 5. Annually
 - a. Inspect fire tanks, valves, and other exposed plumbing for preventive maintenance.
 - b. Inspect valve markers, for rust or deteriorated paint, and repaint per original color pattern as needed or if requested by DHHL.

D. WATER STORAGE SYSTEM

- 1. Daily
 - a. Check tank water levels and record tank level in log book.
 - b. Check tank and booster pump system for vandalism.
 - c. Report any vandalism to the appropriate jurisdictions.
 - d. Repair breaches or damages to perimeter fence within 24 hours.
- 2. Weekly
 - a. Check fire tank water levels and record tank level in log book.
- 3. Quarterly
 - a. Check storage system for the following, and repair if necessary, after receiving approval by DHHL:
 - i. Water storage tanks for leaks.
 - ii. Damaged vent screens
 - iii. Lock on entry port
 - iv. Safety condition of ladder
 - v. Water level mechanism
 - vi. Operating overflow check valve
 - vii. Conditions of exterior tank surface coating.

- b. Send quarterly reports to the West Hawaii District Office.
- 4. Tri-Annually
 - a. Inspect, repair and paint tanks and ladders as dictated by inspection or if requested by DHHL.

E. GENERAL SITE MAINTENANCE

- 1. Cut brush and weeds, and remove all rubbish within fence line of booster pump and storage tank sites.
- 2. Cut and remove brush and weeds within fence of fire tank sites.
- 3. Apply herbicide to access road and tank perimeter road, and a 2-foot wide strip around the solar array at Tank Site #2, every four months.
- 4. Fire Tanks Only – inspect stand pipes and stand pipe bollards, for rust or deteriorated paint, and repaint per original color as needed or if requested by DHHL
- 5. Address unforeseen equipment failures and other related water facility needs, and unforeseen operation and maintenance issues and concerns, authorized by DHHL.

F. METERS AND BILLINGS

- 1. Bi-Monthly
 - a. Read all distribution system meters and calculate customer usage using handheld meter reading computer to be provided by the Contractor. Meters shall be read every two (2) months indicating the days of service provided which may vary from 59 to 61 days.
 - b. Forward copies of reports and water billing to DHHL West Hawaii District Office or other DHHL office as directed.
- 2. Purchase and install new meters in existing boxes and de-activate existing meters as authorized by DHHL representative. The Contractor shall submit invoice copies for reimbursement requests. Reimbursement request will not be accepted without invoice copies. Clean and refurbish deactivated meters and store for reuse. Return unused meters to DHHL at the end of the contract.

G. EMERGENCY REPAIRS AND CALL-OUTS

Repair to equipment and appurtenances other than routine servicing described shall be performed as described under Scope of Services. Contractor shall respond

to an emergency or a break in service within 60 minutes of notification.

H. EMERGENCY RESPONSE PLAN

The Contractor shall prepare and submit their Emergency Response Plan (ERP) to DHHL for review and approval. The ERP shall have names and contact phone numbers of personnel responsible for the operation and maintenance of the Puukapu Pastoral Lots Water System.

I. SPECIFIED EQUIPMENT

1. 5/8" Water Meters at Individual Lots

- a. Magnetic drive, sealed register, positive displacement oscillating and nutation type. Badger M25, Hersey Model 430 Series IIs and Neptune T10 meters are approved for this contract.
- b. Size must conform to American Water Works Standard C-700 or C-701 Class I as most recently revised.
- c. Size must conform to American Water Works Standard C-700 or C-701 Class I as most recently revised. Laying length shall be 7 1/2" threaded.
- d. All meters shall have a non-corrosive Water Works bronze (minimum 75% copper content) outer case with a separate measuring chamber which can be easily removed from the case. All meters shall have a cast on them, in raised characters, the size and direction of water flow through the meter. Bronze bottoms shall be provided on the 5/8" meters. The manufacturer's serial number must be permanently affixed to read from the inlet side cover hinge on outlet side of meter side.
- e. All external bolts and washers shall be of corrosion resistant material and be easily removed from the maincase. All threaded maincase bolt holes must be covered, to aid in removal of the bolts for repair.
- f. The register must be of the straight reading type with a large red test or sweep hand and shall include a low flow indicator on the dial face. The numeral wheel assembly shall be located at the bottom of the dial face with reading obtained from left to right. Registration shall be in U.S. gallons. All reduction gearing shall be contained in a permanently hermetically sealed, tamperproof enclosure made from a stainless steel material, covered with a heat tempered glass lens. The register boxes and lid may be plastic.

The register shall be secured to the maincase by means of a locking device located in the interior of the meter so the register cannot be removed externally by non-Utility personnel or of equal security. An external register box assembly is not acceptable. The register must

be covered so as to protect the register by a lid constructed of a copper based alloy or a suitable synthetic polymer.

- g. The measuring chamber shall be of Water Works bronze (minimum 85% copper content) or a suitable synthetic polymer and shall not be Cast as part of the maincase. All assemblies shall be interchangeable in all measuring chamber assemblies of the same size. The measuring chamber shall be held in place without the use of fasteners.
- h. The motion of the measuring chamber will be transmitted to the sealed register through the use of a direct magnetic drive without any intermediate coupling.
- i. All meters must be provided with a corrosion resistant strainer which is easily removable from the meter without the meter itself being disconnected from the pipeline.
- j. Meters shall conform to current AWWA C-700 or C-701 Class I, current revision, test flows, head loss, and accuracy standards.
- k. Meters shall operate up to a working pressure of 150 pounds per square inch (psi), without leakage or damage to any parts. The accuracy shall not be affected when operating at this pressure due to possible distortion. Accuracy shall not be affected by variations in pressure up to 150 psi.
- l. In evaluating bid submittal, warranty coverage will be considered. All bidders are required to submit their most current nationally published warranty statements for water meters maincases, registers and measuring chambers.
- m. A statistically controlled sample of each meter shipment will be tested by the utility to insure each shipment meets the utility performance and materials specifications.
- n. Meter operational performance with respect to headloss, nutations, oscillation and accuracy standard shall be evaluated for meter selection. Attach manufacturer's standard flow curves with headloss and percent registered accuracy.
- o. The manufacturer's representative service to the Department of Hawaiian Home Lands Operations Manager, response to meter problems, replacement of defective registers, training or instruction as requested, etc., shall be evaluated for meter selection.

2. Backflow Prevention Assemblies

- a. At Master Meter: 2" Reduced Pressure Zone Backflow Preventer, with Ball valve shut-offs and bronze strainer, Watts Series 909QT or approved equal.

- b. Spigot at Tank Site #1 and at Individual Lots: 1" Reduced Pressure Zone Backflow Preventer, with Ball valve shut-offs and bronze strainer, Watts Series 909QT or approved equal.
- 3. Pressure Regulating Valves at Individual Lots
 - a. 1" Water Pressure Regulating Valve with integral strainer, Watts Series LF25AUB-Z3 (Lead Free)

**DEPARTMENT OF HAWAIIAN HOME LANDS
PUUKAPU PASTORAL LOTS WATER SYSTEM**

**OPERATION & MAINTENANCE
MANUAL**

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APPENDICES

I. EMERGENCY ALERT / RESPONSE

A. Emergency Response and Phone Numbers

The Water System Operator (WSO) shall designate a person who will be responsible to respond to the emergency call and represent the WSO on the site until released of that duty. DHHL will directly contract the WSO.

The WSO shall complete Emergency Conditions and Action listing noted list below.

WSO 1st Point of contact:	(WSO to provide info)	Office	
		Home	
		Pager	
		Cellular	
WSO 2nd Point-of-contact:	(WSO to provide info)	Home	
		Pager	
		Cellular	
Owners Representative:	Dept. of Hawaiian Home Lands	Office	<u>887-6053</u>
	West Hawaii District Office	Cellular	<u>938-1785</u>
	James Dupont		
Other Emergency Entities:			
Police	Waimea		<u>911</u>
Fire	Waimea		<u>911</u>
Civil Defense	Hilo		<u>935-0031</u>
Dept. of Health	Honolulu		<u>586-4444</u>
Dept. of Water Supply	Emergency		
HELCO	Emergency		

B. Emergency Situations

1. Hurricane

- a) Upon notice of hurricane alert, check system to maximize reservoir levels.
- b) Secure all facilities and grounds of objects, doors, screen, and hatches.
- c) Check emergency generator for fuel and oil levels.
- d) If hurricane is going to hit island and affect the water system, shut down system and disengage all electrical switches.
- e) After hurricane clears area, identify damage and activate system if possible. Notify DHHL of any damage found and estimated cost for repair.

2. Earthquake

- a) Review system and trouble shoot each area from reservoirs, boosters, and pipelines.
- b) If a problem is found, identify and take appropriate action. Use above procedures for review or action.
- c) Notify DHHL any damage found and estimated cost of repair.

3. Fire

- a) Notify Fire Dept. (911) of fire and location.
- b) If structural fire, terminate electrical power to structure if possible.
- c) Insure access to fire is open and clear for the fire department or other authorities.
- d) If brush fire, identify water sources for the fire department's use.
- e) Contact DHHL of fire and details. Assist fire fighters with water connections and information. Await DHHL to come to site and then assist DHHL in coordination with authorities.
- f) Once fire is extinguished, access damage and costs. Identify if system can be operated. Notify DHHL of damage, costs, and other affects on the system.

4. Volcano – Lava Flow

- a) Once Upon notice of lava flow that could endanger water system, check system to maximize reservoir levels.
- b) Secure all facilities, doors, screens, and hatches and remove all equipment, records, and tools in path of lava.
- c) Check emergency generator for fuel and oil levels.
- d) Shut down system, isolation valves, and disengage all electrical switches.

- e) After danger clears area, identify damage and activate system if possible. Notify DHHL of any damage found and estimated cost for repair.

5. Vandalism

- a) Notify police of damage and insure police have access to site.
- b) Determine vandalism effect on system and what must be done to protect the system.
- c) Notify DHHL of damage and actions.
- d) With police information, determine how access was achieved and make recommendations to deter future vandalism.

6. Power Outage

- a) Check each reservoir to determine water levels for available supplies.
- b) Contact HELCO to determine problem and possible length of time power will be out.
- c) If power is HELCO problem then and power will be down for more than 8 hours, contact DHHL and notify of known data.
- d) If power is not HELCO caused, then trouble shoot power loss through out system and locate areas affected. Contact electrical contractor to respond to problem and provide known data.
- e) Use emergency generator if needed by moving up system and pumping water from reservoir to reservoir. Notify DHHL of estimated costs to do so before activating program.

7. Water System Malfunction

- a) **Booster Pump**
 - 1) Switch to other booster pump.
 - 2) Determine system water supply capacity and determine possible length of outage. If for any duration of more than 8 hours, consider moving a generator to site and activate pump.
 - 3) Determine rationing plan for water in system and maximize system capacity. Notify DHHL of plan and get input on effect.
 - 4) If damage to equipment, shut down and make repairs.
 - 5) If equipment failing, review data and contact supplier with data for determination of cause and appropriate action.

- b) Reservoirs
 - 1) If leak, determine location if possible and propose plan for repair. If leak is at bottom of reservoir, determine schedule of repair and if alternate routing can be made. Determine rationing plan for water in system and maximize system capacity.
 - 2) Make repairs and activate system.
- c) Water Mains
 - 1) Identify leak or area of leak.
 - 2) Shut down system if leak area cannot be by-passed.
 - 3) If leak cannot be by-passed, secure valves above and below the leak.
 - 4) Contact a licensed contractor to repair the leak. Determine estimated cost for repair.
 - 5) Notify DHHL of problem and cost and notify users of rationing of water as needed.
 - 6) Insure leak repairs are made according to standards of original system. Insure water is flushed from line before putting back into service. Check turbidity in system above leak area after put into service.

II. WATER SYSTEM DESCRIPTION:

A. Storage System

1. Non-Potable Water

- a) Tank #1
 - 1) Location - TMK# 6-4-38:06
 - 2) Size capacity - 11,600 Gallons
 - 3) Make - Galvanized Steel Tank (SCAFCO Model #1204LSTP)
 - 4) Spillway Elevation = 2,841'
 - 5) Ground Elevation = 2,827'
- b) Tank #2
 - 1) Location - Located at TMK# 6-4-36:01
 - 2) Size capacity - 58,800 Gallons
 - 3) Make - Galvanized Steel Tank (SCAFCO Model #2704LSTP)
 - 4) Spillway Elevation = 3,258'
 - 5) Ground Elevation = 3,244'
- c) Tank #3
 - 1) Location - TMK# 6-4-36:24
 - 2) Size capacity - 72,600 Gallons
 - 3) Make - Galvanized Steel Tank (SCAFCO Model #3004LSTP)
 - 4) Spillway Elevation = 3,602'
 - 5) Ground Elevation 3,588'

2. Fire Protection Water

- a) Fire Tank #1
 - 1) Location - TMK# 6-4-35:99
 - 2) Size capacity - 19,400 Gallons
 - 3) Make - Galvanized Steel Tank (SCAFCO Model #1803LSTP)
 - 4) Spillway Elevation 3,048'
 - 5) Ground Elevation 3,038'
- b) Fire Tank #2
 - 1) Location - TMK# 6-4-35:66
 - 2) Size capacity - 19,400 Gallons
 - 3) Make - Galvanized Steel Tank (SCAFCO Model #1803LSTP)
 - 4) Spillway Elevation = 3,493'
 - 5) Ground Elevation 3,483'
- c) Fire Tank #3
 - 1) Location - TMK# 6-4-36:71
 - 2) Size capacity - 19,400 Gallons
 - 3) Make - Galvanized Steel Tank (SCAFCO Model #1803LSTP)
 - 4) Spillway Elevation = 3,414'
 - 5) Ground Elevation = 3,404'
- d) Fire Tank #4
 - 1) Location - TMK# 6-4-35:87
 - 2) Size capacity - 19,400 Gallons
 - 3) Make - Galvanized Steel Tank (SCAFCO Model #1803LSTP)
 - 4) Spillway Elevation = 3,192'

- 5) Ground Elevation 3,182'
- e) Existing Dip Tank
 - 1) Location – TMK: 6-4-36:01
 - 2) Size capacity - 7,200 Gallons
 - 3) Make- Open Top Steel Tank

B. Control Systems

1. Tank #1 Facility

- a) Inflow: 2 ½" Cla-Val Model #210-01 Altitude Control Valve with anti-cavitation trim
- b) Outflow: Telemetry Controlled Booster Pump System; 125gpm booster pump with 125 gpm back up pump; Pumps up to 417' of head

2. Tank #2 Facility

- a) Inflow: 6" Gate Valve
- b) Outflow: Telemetry Controlled Booster Pump System; 20gpm Solar Powered Booster Pump; 50 gpm Diesel Back-up pump

3. Tank #3 Facility

- a) Inflow/Outflow: 6" Gate Valve, Telemetry Controlled Pressure Level Indicator

4. Fire Tanks

- a) Inflow: 6" or 3" Gate Valves and 2" Backflow Preventer
- b) Outflow: 2 ½" Standpipe for fire department pump trucks

5. Existing Dip Tank

- a) Inflow: Gate Valve and 2" Backflow Preventer
- b) Outflow: Open Top for Fire Control Helicopter Bucket

6. Telemetry:

- a) Tank levels are transmitted between Tank Site Nos. 1, 2, and 3 via a wireless frequency-hopping spectrum technology. The tank level signals are used to control the respective booster pumps.

C. Tank Site Power:

1. Solar Power:

- a) Telemetry (Tank Site Nos. 2 & 3): A stand-alone 24Vdc power system designed to support wireless applications in remote locations. The batteries provide power during darkness or low light conditions.
- b) Packaged Duplex Booster Pump (Tank Site No. 2): A stand-alone solar pumping system designed to run 230Vac three phase motors directly from a solar array without the use of batteries. The speed of the motor is adjusted in proportion to the available sunlight to allow the pump to continue operating under varying sunlight conditions.

2. Utility Power (Tank Site No. 1):

An overhead 208V/120Vac three phase HELCO service drop provides power for the duplex booster pumps and the local stand-alone telemetering system.

D. Booster Pump Operation:

1. Tank Site #1

- a) Skid mounted duplex inline vertical multistage turbine booster pumps. Each pump is rated at 125 gpm @ 560 feet. Tank level transmitter at Tank Site #2 initiates primary pump start/stop. Manual override and primary-standby selector switch provided on booster pump control panel. Booster pump shall shut down on low suction tank level at Tank Site #1.

2. Tank Site #2

- a) Diesel driven horizontal regenerative turbine booster pump. Pump rated at 50 gpm @ 370 feet. Key switch allows manual start/stop control. A retrofit unit may be available to automatically start and stop the diesel pump.
- b) Photovoltaic powered inline vertical multistage turbine booster pump. Pump rated at 20 gpm @ 370 feet. Pump automatically operates when photovoltaic panels convert sunlight into power for the pump. Manual override to shut down pump when not required.

3. Individual Lots

- a) Hydro-pneumatic Tank system (Typical)
 - 1) 86 gallon pressure tank
 - 2) 1 Hp motor and pump
 - 3) System sized for 23 to 25 gpm performance at a pressure range of 40 to 60 psi
 - 4) Electrical voltage to be single phase 115v or 230v.
 - 4) Cost Allowance \$2,000.00
 - 5) Each lot that requires a hydro-pneumatic system shall be analyzed to determine if the above system fits their needs.
- b) Power
 - 1) Due to the non-availability of electrical power, the lessee shall determine how the hydro-pneumatic system shall be powered.

E. Transmission/distribution System Appurtenances

1. Mid-line Blow-off Cleanouts (5 total), located at:

- a) Waterline I – Sta. 15+71
- b) Waterline I – Sta. 28+34
- c) Waterline K – Sta. 2+60
- d) Waterline L – Sta. 49+28
- e) Waterline M – Sta. 14+00

2. 5' Diameter Drain Sump with Tideflex valve (8 total), located at:

- a) Waterline I – Sta. 15+71
- b) Waterline I – Sta. 28+34
- c) Waterline K – Sta. 2+60
- d) Waterline L – Sta. 49+28
- e) Waterline M – Sta. 14+00
- f) Tank #1 – Cleanout Line
- g) Tank #2 – Cleanout Line
- h) Tank #3 – Cleanout Line

3. Air Relief Valves (34 total), located at:

- a) Waterline A – Sta. 7+70, 15+78, 21+29, 26+06, 74+85
- b) Waterline B – Sta. 3+00, 9+50, 16+45
- c) Waterline C – Sta. 8+36, 21+11, 38+88, 170+58,
- d) Waterline D – Sta. 8+54, 21+34
- e) Waterline E – Sta. 7+59
- f) Waterline F – Sta. 14+13
- g) Waterline G – Sta. 15+38, 44+50
- h) Waterline H – Sta. 6+79, 21+76
- i) Waterline I – Sta. 4+27, 22+85, 29+85
- j) Waterline J – Sta. 8+70
- k) Waterline K – Sta. 11+69
- l) Waterline L – Sta. 7+28, 18+64, 24+70, 40+79, 47+15, 52+67
- m) Waterline M – Sta. 7+33, 23+83.30, 40+86.84

4. Caps tapped for 2 ½ I.P.T. with 2 ½" Cleanout (7 total), located at:

- i) Waterline A – Sta. 77+90
- j) Waterline D – Sta. 28+66
- k) Waterline E – Sta. 23+41
- l) Waterline F – Sta. 47+00
- m) Waterline G – Sta. 120+28
- n) Waterline H – Sta. 33+40
- o) Waterline K – Sta. 17+32

5. Spigot at Tank Site #1 for Potable Water

- a) **1" Brass threadless hose bibb**

6. Backflow Prevention Assemblies

a) At Master Meter

- (1) 2" Reduced Pressure Zone Backflow Preventer, with Ball valve shut offs and bronze strainer, Watts Series 909QT or approved equal.**

b) Spigot at Tank Site #1 and at Individual Lots

- (2) 1" Reduced Pressure Zone Backflow Preventer, with Ball valve shut offs and bronze strainer, Watts Series 909QT or approved equal.**

7. Water Meters at Individual Lots

- a) 5/8" Magnetic drive, sealed register, positive displacement, oscillating and nutation type meters. Badger M25, Hersey Model 430 Series IIS and Neptune T10 meters are approved for this contract.**

8. Pressure Regulating Valves at Individual Lots

- a) 1" Water Pressure regulating valve with integral strainer, Watts Series LF25AUB-Z3 (Lead Free)**

III. NORMAL OPERATIONS AND EMERGENCY RESPONSE

A. Plan of Operation

1. Source and point-of-connection – The Dept. of Water Supply, Waimea System serves the local community from the 4.0 Million Gallon Clearwater Reservoir in Waimea. The present sources which provide water are the Surface Water Treatment Plant, Parker Ranch Well No.1, and the Waimea Well. The Puukapu Pastoral Lots Water System (See **APPENDIX B – Water System Plans**) will be fed from the Hawaii County Department Water Supply system via a 4-inch Master Meter located at Tank #1 site.
2. Tank #1 Facility - The flow into Tank #1 will be controlled by an altitude valve set by a pressure transmitter initially set by the manufacturer's representative. Water is then transmitted from Tank #1 to Tank #2 through 20,000 linear feet of 6-inch HDPE pipe line via a 125 gpm booster pump. This pipe line serves both as transmission to Tank #2 and distribution to services along the way as well as filling Fire Tank #1. There is an additional 8,800 linear feet of 3-inch HDPE pipe connected to the main for distribution of services.
3. Tank #2 Facility - Tank #2 is located near the existing non-potable "Hui" tank and is controlled by a telemetry system located on-site that communicates with the 125 gpm booster pump at Tank #1 site.

Also located at the Tank #2 site is booster pump system to feed Tank #3. The system consists of a 20 gpm solar powered pump which is intended to utilize sun's "natural energy" to fill Tank #3 during the day. When atmospheric conditions hinder the solar powered pump performance or when demand exceeds the 20 gpm capacity, a 50 gpm diesel pump (which must be manually turned on and off) is available to boost water to Tank #3. A retrofit unit may be available to automatically start and stop the diesel pump. The 6-inch HDPE pipe from these booster pumps will provide transmission/distribution for the Tank #3 service area.

4. Tank #3 Facility – The booster pump system at Tank #2 is activated by an on-site telemetry system. The distribution system (42,000 linear feet HDPE pipe, diameters varying from 6-inch to 3-inch) from Tank #3 also feeds Fire Tanks #2, #3, and #4.

5. Fire Protection Operation - Operation of the 19,600 gallon Fire Tank Dead Storage will be managed by the County Fire Department. Upon need, a Fire Department pump truck will attach its hoses to the 2 ½" stand-pipe and prepare to drain the non-potable water. Prior to switching on the on-board pump the valve opening the tank to be filled by the Puukapu Water System will be opened. After pump truck is full, valve is to remain open until tank level indicator shows the tank is full.

The existing 7,200 gallon dip tank operation will be managed by Puukapu Water System operator on demand by the County Fire Department. Should the request for the Fire Department's Helicopter be placed with the system operator, the operator will open the valve and fill the tank using the clear acrylic standpipe as a level indicator. Maintenance of the tank will be the responsibility of the water system operator.

6. Routine Maintenance of Transmission/distribution System - Blow-off and Dead-end lines should be bled at a frequency required to keep the dead-end lines clear of any sediment build-up.

IV.PERSONNEL REQUIREMENTS

A. Technical Knowledge

1. **Minimum Requirements** - Must be familiar with water system components including pumps, motors, tanks, controls and basic repairs to these components.
 - a) Understand hydraulic dynamics and effects of hydraulics in water system.
 - b) Know pumps and repair.
 - c) Able to read and write, to complete logs and records, and respond to written correspondence.
2. **Security Requirements**
 - a) Security Clearance - Will need to have no outstanding felony charges. Personnel will have access to the system, equipment, and property. This will require issuance of keys.
 - b) Security Envelop - Gates to all system components must be closed and locked.

B. Training for System Operator

1. **Operator's Annual Training Program** - This effort is to provide training to the staff to insure they know what is expected of them, raise their confidence, and increase their knowledge. Training will be done by the supervisor, or a contracted trainer like RCAC, or video of a training course. Training is planned monthly with one of the safety and operations subjects each month as noted.
2. **Safety** - Includes CPR and Red Cross First Aid certification, Lockout-Tagout procedures, Hazardous Materials Handling, Confined Space Training and Procedures, and others as noted below.
 - Lockout - Tagout
 - Electrical Safety
 - Fire Protection
 - Disease Protection and Prevention
 - Confined Space Entry
 - Hand Tools and Proper Use
 - Federal and State Regulatory Requirements
 - Red Cross CPR and First Aid Certification
 - Emergency Preparedness and Response
 - OSHA review

3. Operations Training - Sessions will include:

Hazard Communications
Pump Controls, Types, and Maintenance
Mechanical Maintenance; air compressors and blowers
Mechanical Maintenance; bearings and lubrication
Mechanical Maintenance; valves, actuators, PRVs
Material Handling and Storage
Plant Monitoring, Signs and Responses
Motor Maintenance
Logs and Records
Distribution System, Problems and Responses

C. Proposed Operation, Maintenance, and Repair Program

- 1. Operations** – The WSO proposes to work with the operations manual provided by manufacturers. If there are any variations or changes, the WSO shall consult with the DHHL or its designated engineer to insure the planned operations are consistent with the intent of the engineer. The WSO will review the past operations and records and operate the Puukapu Pastoral Lots Water System to produce the quantity and quality of effluent water required.

The operator is prohibited from modifying the water system with out approval from the water system owner or manager. Changes that affect, or that could affect, the as-built plans and specifications and void the engineer's certification should be reviewed and concurred on by a professional engineer. Any substantial change to the system, additional source, water main, tank, etc., shall be submitted to DHHL and/or the designated Engineer, for their review, approval and records.

- 2. Maintenance** – The WSO shall prepare a new record system. These will be done in accordance with the technical manuals and O&M manuals from the manufacturers and engineers. The WSO shall utilize maintenance cards for each piece of equipment, scheduling charts and equipment maintenance records. The WSO may use the computer if software is acquired for this project by WSO. Procedures, tools, frequency and other parameters will be identified and put into the maintenance program.

Daily observation of equipment and trending of data collected will assist in determining the needed maintenance and success of the preventative maintenance program. Maintenance Cards, Scheduling Chart, and other record keeping logs are in the Logs and Schedule section of this manual.

3. Repair – The WSO shall follow a procedure to insure proper identification and notification to DHHL of repairs needed.

- a) Identify Problem.
- b) Identify Scope of Problem and take mitigative action.
- c) Determine repair priority.
- d) Initiate Emergency Repairs if necessary.
- e) Notify Owner of problem, solution, and costs if necessary.
- f) Obtain parts or services.
- g) Conduct repair.
- h) Perform operational test.
- i) Restore to service.
- j) Investigate cause of problem and make corrections.

4. Process Control Data Base – The WSO shall maintain at least the following information on process control. The process control will consist of readings by which the operator will determine if the system is operating within the design parameters. The manufacturers and vendors of the equipment supplied to the project will provide additional requirements. These will be consistent with the design engineer's process control strategy in the Operations and Maintenance manual.

- a) System pressures
- b) Water level changes
- c) Pump(s) hours, alarms, positions, on/off, filter changes, amps and volts.
- d) Generator data on hours, fuel, oil, amps, volts, coolant
- e) System flows and use, line inspections, leak testing
- f) Fuel tanks inspection, fuel levels, alarms, day tank levels

D. Personnel Responsibilities

1. Maintenance Tasks

- a) Pump operations as needed to fill tanks
- b) Readings and records
- c) Operations of the Water system, logs and records
- d) Preventative maintenance of all equipment
- e) Security of system components
- f) Clean and keep vegetation from site to reduce fire hazards.
- g) Visual inspection

- h) Cleaning of equipment
- i) Review and collection of records
- j) Up-date of O&M manual
- k) Reports of activities to owner

2. Operation & Maintenance Documentation - The following logs will be maintained:

- a) System Operations log
- b) Journal of Events
- c) Logs of water flows and tank levels

V. MAINTENANCE SCHEDULE

Preventative Maintenance will be kept on cards, with each piece of equipment having a card with the name of equipment, location, ID number, the schedule of maintenance weekly, monthly, annually, and a record of maintenance done and the date completed.

A. Routine maintenance:

1. Weekly

- a) Visual inspection of pumps, motors, valves, piping, and equipment, and related property.
- b) Check operations of all pumps.
- c) Readings of meters and gages.
- d) Inspect all signage pertaining to the non-potable water system for wear and/or discoloration. Touch-up/repaint per original color pattern as needed or if requested by DHHL. Replace any missing signs.

2. Monthly

- a) Pump packing and seal adjustments as needed.
- b) Photo-voltaic equipment per manufactures schedule
- c) Pressure adjustments as needed.
- d) Clean equipment and station interiors.
- e) Flow meter readings for records as needed.
- f) Read the solar pump controller digital display to report the number of hours the solar pump operated during the month.

3. Semi-Annually

- a) Motor and pump lubrication check. Grease bearings.
- b) Servicing of all valves, pressure regulators, relief valves, related controls.
- c) Clean strainers and regulators as needed.

4. Annually

- a) Alignment check of all pump and motor couplings.
- b) Exercise valves, and as needed, overhaul valves.
- c) Servicing and overhaul as needed of all flow meters, water level meters, and recording instruments.
- d) Touch up paint on all pumps, motors, piping and related equipment.

- e) Inspect and test the backflow prevention assemblies installed after the 4" master meter and 5/8" meter at tank site no. 1 and the backflow prevention assemblies at the individual lots.

VI. LOGS AND RECORDS

A. Operations Log (To be furnished by WSO)

1. All logs and records shall be kept with this O&M manual in a 3 ring binder, so log sheets can be added and notices and changes to the O&M manual can be made.
2. The binder shall contain sections for the O&M manual, Operators logs, Equipment Info., Correspondence, Costs, and Miscellaneous.

APPENDICES

APPENDIX A - WATER SYSTEM PLANS

APPENDIX B - MANUFACTURER'S SPEC SHEETS

APPENDIX C – CROSS CONNECTION PLAN

Cross-connection Plan for Puukapu Pastoral Lots Water System

The distribution system for the Puukapu Pastoral Lots will be protected from each lot by means of a backflow prevention assembly (BFP), approved by the WSO. The BFP will be located on the downstream side of the water sub-meter and will meet all state and local codes. Due to the size of each lot, it is determined that the potential exists for contamination from irrigation devices, which constitutes a Health Hazard potential.

A certified cross connection specialist will inspect each lot and the BFP device will be certified by a State certified tester before service is initiated.

The Contractor shall purchase and install the BFPs, including the BFPs installed after the 4" master meter and the 5/8" meter at tank site no. 1, and the BFPs at the individual lots, as authorized by the DHHL representative. The Contractor shall submit invoice copies for reimbursement requests. Reimbursement request will not be accepted without invoice copies. Each lessee is responsible for the cost of re-certification of their BFP installed at their individual lot.

Cross connection regulations and policies will be introduced to the Homeowners association for adoption and enforcement.

Yearly inspections of the system should be conducted to insure the protection for the water system remains adequate and the protection has not been compromised.

APPENDIX D – ELEVATION AGREEMENTS