


**INVITATION FOR BIDS
AND
CONSTRUCTION DOCUMENTS
FOR**

**JOB NO. 02-14
WK-08, KAPA'A HOMESTEADS 325' TANKS, TWO
0.5 MG TANKS, PACKAGE B – TANKS PACKAGE,
KAPA'A
KAUA'I, HAWAII**

February 2023

**DEPARTMENT OF WATER
COUNTY OF KAUAI
LIHU'E, KAUAI, HAWAII**

APPROVED:



Chief Procurement Officer



Date

1 ADMINISTRATION

1.1 INVITATION FOR BIDS.

DEPARTMENT OF WATER, COUNTY OF KAUA'I
**02-14 WK-08, KAPA'A HOMESTEADS 325' TANKS, TWO 0.5 MG TANKS, PACKAGE B
– TANKS PACKAGE, KAPA'A
KAUA'I, HAWAI'I**

Pursuant to Chapter 103D, HRS, SEALED TENDERS will be received up to and opened at 2:00 p.m., Hawaiian Standard Time (HST) on **Friday, April 14, 2023**, in the Administration Office of the Department of Water at 4398 Pua Loke Street, Līhu'e, Kaua'i, Hawai'i ("DOW Admin. Office"). Bids received after the date and time specified above shall be rejected. Facsimile offers will not be accepted or considered.

The schedule set out below represents the Department's best estimate of the schedule that will be followed for this competitive sealed bidding procurement process. If an activity in the schedule is delayed, the dates following the delayed activity may be adjusted by the same number of days. All prospective Offerors will be advised by addendum of any changes to the Procurement Schedule.

Activity	Scheduled Date
Invitation For Bids Issued	February 13, 2023
Pre-Bid Conference	February 24, 2023 @ 8:30am
Deadline: Receipt of Questions / Comments / Material Substitutions	March 10, 2023
Deadline: Notice of Intent	March 24, 2023
Department's Responses to Questions / Comments / Material Substitutions	March 24, 2023
Bid Opening	April 14, 2023
Selection / Award Notification	May 2023
Contract Execution Period	June 2023 – December 2025
Contract Tentative Notice to Proceed Date	June 2023

The Chief Procurement Officer also reserves the right to reject any or all bids, in whole or in part, if deemed to be in the best interest of the Department of Water.

Bids must be signed in ink by the person or persons duly authorized to sign bids in the space provided for signature on the Offer form. **Bidders shall submit their offer and all related documents as required in this solicitation through Public Purchase at www.publicpurchase.com.**

BIDDERS ARE HEREBY NOTIFIED THAT EVIDENCE OF THE AUTHORITY OF THE PERSON(S) SIGNING THE BID DOCUMENT IS REQUIRED TO BE INCLUDED WITH THE BID DOCUMENTS. FAILURE TO COMPLY WITH THIS REQUIREMENT WILL BE CAUSE FOR REJECTION OF THE BID AS BEING NON-RESPONSIVE.

SCOPE OF WORK: This contract consists of furnishing all materials, labor, tools, and equipment for the installation of the Project consisting of Package B, all in accordance with the contract drawings Job No. **02-14 WK-08, KAPA'A HOMESTEADS 325' TANKS, TWO 0.5 MG TANKS, PACKAGE B – TANKS PACKAGE, KAPA'A**

and specifications.

Package B – TANKS PACKAGE includes two 0.5 million gallon (MG) reinforced concrete storage tanks and appurtenances, approximately 800 linear feet (LF) of 16-inch diameter ductile iron pipe (DIP) and appurtenances and 860 LF of 12-inch diameter DIP and appurtenances, including site clearing and grubbing; removal of existing water lines; earthwork; chain-link fencing with barbed wire; asphaltic concrete driveway; asphaltic concrete walkway; grass cell pavement; tank access stairs and railings; tank access hatch, observation hatches, and ventilator; tank level pressure transmitter; tank water level indicator; control valve assemblies and appurtenances; control valve assembly boxes; gate valves; valve boxes; sampling taps; temporary cleanouts; retaining walls; drain inlets and manholes; HPDE drain lines; electrical system; security alarm switch system; and supervisory control and data acquisition (SCADA) system; all in accordance with the plans and specifications. The work is located at Kapahi, Kawaihau, and Ka’apuni Roads in Kapa’a, Kaua’i, Hawai’i.

PLANS AND SPECIFICATIONS: The contract documents are to be downloaded electronically. Please email the Department Contracts Officer, Christine Erorita at cerorita@kauaiwater.org for instructions. May be examined and obtained at the DOW Admin. Office. Those who download documents electronically shall be responsible for any and all costs related to printing or reproducing the items as required for offer submission. For inquires on obtaining plans and specifications and all other inquires call the project engineer at (808) 245-5433.

The contract documents may be examined at the following locations:

DOW Admin. Office, Līhu‘e, Kaua‘i, Hawai‘i

Published in: Garden Island Newspaper

Bid Service Weekly

General Contractors’ Association

State Procurement Internet website at: <https://hands.ehawaii.gov/hands/welcome>

DOW website at: www.kauaiwater.org

DOW electronic procurement system at: www.publicpurchase.com

CONTRACTORS LICENSE: All prospective Bidders must be currently licensed by the State of Hawai‘i, Department of Commerce and Consumer Affairs, Division of Professional and Vocational Licensing.

“A” general engineering contractors and “B” general building contractors are reminded that due to the Hawai‘i Supreme Court’s January 28, 2002 decision in *Okada Trucking Co., Ltd. v. Board of Water Supply, et al*, 97 Haw. 450 (2002), they are prohibited from undertaking any work, solely or as part of a larger project, which would require the general contractor to act as a specialty contractor in any area where the general contractor has no license. Although the “A” and “B” contractor may still bid on and act as the “prime” contractor on an “A” or “B” project (See, HRS § 444-7 for the definitions of an “A” or “B” project), respectively, the “A” and “B” contractor may only perform work in the areas in which they have the appropriate contractor’s license (An “A” or “B” contractor obtains “C” specialty contractor’s licenses either on its own or automatically under HAR § 16-77-32.). The remaining work must be performed by appropriately licensed entities. It is the sole

responsibility of the contractor to review the requirements of this Project and determine the appropriate licenses that are required to complete the Project.

PRE-BID CONFERENCE: The estimated contract value is more than \$500,000 and, thus, a Pre-Bid Conference shall be held. If a Pre-Bid Conference is held, all potential interested offerors, subcontractors, and union representatives are invited to attend on the date specified in the Procurement Schedule in Section 1.1 at the DOW Admin. Office. An optional visit to the site will be conducted following the meeting. The site inspection is not mandatory; however, submission of an offer shall be evidence that the Offeror understands the scope of the project and shall comply with the specifications herein, if awarded the contract and has thoroughly familiarize itself with the existing conditions, rules and regulations, and the extent and nature of work to be performed. No additional compensation, subsequent to bid opening, shall be allowed by reason of any misunderstanding or error regarding site conditions or work to be performed. All prospective Bidders must make their own transportation arrangements to and from the site. Those interested in attending the pre-bid conference should contact the Procurement Officer. Offerors are advised that anything discussed at the pre-bid conference does not change any part of this solicitation. All changes and/or clarifications to this solicitation shall be done in the form of written addenda.

NOTICE OF INTENTION TO BID: Prospective bidders shall file with the Chief Procurement Officer, a written notice of intention to bid at least ten (10) calendar days prior to the day designated for the opening of bids, as required by HRS 103D-310.

CHIEF PROCUREMENT OFFICER
DEPARTMENT OF WATER
COUNTY OF KAUA'I

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1.2 DEFINITIONS.

This section shall incorporate the definitions not listed below and contained in Hawai'i Revised Statutes (HRS) 103D; the Hawai'i Administrative Rules (HAR), Title 3, Department of Accounting & General Services, Subtitle 11, Procurement Policy Board, Chapters 120 through 131; and the General Provisions for Construction Contracts of the Department of Water, dated April 25, 2016. Terms as used in this solicitation, unless the context requires otherwise, shall have the following meaning:

“Award” means the notification of the Department’s acceptance of a bid or the presentation of a contract to the selected offeror.

“Bid sample” means a sample to be furnished by a bidder to show the characteristics of the item offered in the bid.

“Board” or “Board of Water Supply” shall mean the “Department of Water, County of Kaua’i”, as provided for in the County Charter which became effective January 2, 1969.

“Contract Administrator” means the person designated to manage the various facets of the Contract to ensure the Contractor’s total performance is in accordance with the contractual commitments and obligations to the Department are fulfilled.

“Department” or “DOW” means the Department of Water, County of Kaua’i, contracting on behalf of the Board of Water Supply. Wherever the terms “Engineer” or “Owner” are used in any document which forms a part of the Contract, the terms shall mean the Department of Water, County of Kaua’i and its authorized agents.

“Offer” means the bid, proposal, or quotation.

“Offeror” means any individual, partnership, firm, corporation, joint venture, or other legal entity submitting, directly or through a duly authorized representative or agent, an offer for the good, service, or construction contemplated.

“Opening” means the date set for opening of bids, receipt of unpriced technical offers in multistep sealed bidding, or receipt of proposals in competitive sealed proposals.

“Procurement officer” means any person with delegated authority to enter into and administer contracts and make written determination with respect thereto. The term includes an authorized representative acting within the limits of authority. The delegated authority is received from the chief procurement officer directly or through the head of a purchasing agency or designee to the procurement officer.

“Project” means work to be performed as set forth in the Contract, including furnishing all services, labor, goods, materials, supplies, equipment and other incidentals reasonably necessary for the successful completion of work contemplated under the Contract.

“Quotation” means a statement of price, terms of sale, and description of goods, services, or construction offered by a prospective seller to a prospective purchaser, usually for purchases pursuant to section 103D-305, HRS.

“Special Provisions” means the terms and conditions pertaining to the specific solicitation in which they are incorporated; including but not limited to terms and conditions describing the preparation of solicitations, evaluation of offers, determination of award, plus those applicable to performance by the Contractor.

Additions or revisions to the General Provisions, which shall be considered a part of the General Provisions, setting forth conditions or requirements applicable to the particular project or contract under consideration shall be included in the Special Provisions. Should any Special Provisions conflict with these General Provisions, said Special Provisions shall govern.

“Specifications” mean any description of the physical or functional characteristics, or of the nature of a good, service, or construction item. The term includes descriptions or any requirement for inspecting, testing, or preparing a good, service, or construction item for delivery.

“Standard commercial product” means a product or material, in the normal course of business, is customarily maintained in stock or readily available by a manufacturer, distributor, or dealer for the marketing of the product.

“Successful bidder” means the individual, partnership, firm, corporation, joint venture, or other legal entity that submitted a bid for the Project and was determined to be a responsible, responsive bidder and selected for award of the contract.

1.3 INSTRUCTIONS TO BIDDERS.

THESE INSTRUCTIONS TO BIDDERS SHALL BE CONSIDERED TO BE INCORPORATED INTO THE SPECIAL PROVISIONS.

- 1.3.1 Submission of Bids: Bidders shall read and examine the Special Provisions, Specifications, General Provisions and all other bid documents attached hereto and by reference made a part hereof. Submission of bids shall be deemed a verification of such reading and examination and shall be deemed acknowledgement and agreement to be bound by the terms and conditions, and specifications of such documents. All Bidders shall complete and submit with its bid, the Offer form found in Appendix C via www.publicpurchase.com .

All bids for the construction of this project shall be and marked “**Job 02-14 WK-08, KAPA‘A HOMESTEADS 325’ TANKS, TWO 0.5 MG TANKS, PACKAGE B – TANKS PACKAGE, KAPA‘A.**”

Bidders shall submit their offer and all related documents as required in this solicitation through Public Purchase at www.publicpurchase.com .

- 1.3.2 Bidding Instructions: In addition to these Instructions to Bidders, Bidders are directed to SECTION 2 - BIDDING / PROPOSAL INSTRUCTIONS of the “GENERAL PROVISIONS FOR CONSTRUCTION CONTRACTS OF THE DEPARTMENT OF WATER”, dated April 25, 2016 (hereafter “GENERAL PROVISIONS”), and the General Provisions in its entirety.
- 1.3.3 Offer Form: The attached form of the OFFER is furnished only for the guidance of bidders and is not to be used for actual bidding. An official copy of the Offer on which the bid shall be made will be furnished to the prospective bidder when plans and specifications are obtained.
- 1.3.4 Omission or Erasures; Conditioned Offers: Any Offer which contains any omission or erasure or alteration not properly initialed or any attempt by a bidder to condition the bid or other irregularity, and bid samples or descriptive literature, unless expressly requested, will not be examined or tested, and will not be deemed to vary any of the provisions of this solicitation and are submitted at the Bidder’s risk and may be rejected. Offerors shall not submit their organization’s terms and conditions, standard contracts, or other similar agreements or forms. General reference to such items or attempts to substitute such items for the Department’s **shall** result in the disqualification of the Offeror’s bid as conditioned.

- 1.3.5 Solicitation Review; Submission of Questions and Requests For Clarification:

Submission of Questions and Requests for Clarification: Offerors are encouraged to submit written questions pertaining to this solicitation. Questions and requests for clarification must be submitted in writing via e-mail or received by post mail to the Procurement Officer not later than the date specified in the Procurement Schedule in Section 1.1 in order to generate an official answer. All written questions will receive an official written response from the

Department and become an addenda to this solicitation. The only official position of the Department is that which is stated in writing and issued in this solicitation as an addenda thereto. All other means of communication, whether oral or written, shall not be formal or official responses/statements and may not be relied upon. **Any addendum issued must be acknowledged by downloading from Public Purchase, signed, and included with offer.**

Solicitation Review: Offerors should carefully review this solicitation for defects and/or ambiguities. Comments concerning defects and questionable or objectionable matter must be made in writing either via e-mail or post mailed and should be received by the Procurement Officer not later than the date specified in the Procurement Schedule in Section 1.1. This will allow issuance of any necessary amendments to this solicitation. It will also assist in preventing the opening of offers upon which award may not be made due to a defective solicitation package.

- 1.3.6 Standard Questionnaire and Financial Statement: When the Manager and Chief Engineer requires a prospective bidder to file a "Standard Qualification Questionnaire for Prospective Offerors on Department of Water Contracts," the prospective bidder shall return a completed Standard Questionnaire, on the form provided by the Department, at least 48 hours prior to opening of bids. If this proves satisfactory, the bidder's Offer will be received.
- 1.3.7 Bid Bond: A bid bond for the value of 5% of the bid value shall accompany the bid.
- 1.3.8 Performance and Payment Bonds: If the contract which is awarded exceeds \$25,000 and is for construction, performance and payment bonds shall each be in an amount equal to one hundred per cent of the amount of the contract price.
- 1.3.9 Responsibility of Bidders to Study Site: At the time of opening of bids, the Department shall presume that each Bidder has inspected the project site(s) and has read the Plans, Specifications, and other Contract Documents, including all Addenda and has become thoroughly familiar with them. The failure or omission of any Bidder to receive or examine any form, instrument, or document shall in no way relieve that Bidder from any obligation under the Bid or the Contract.

Each bidder must form an opinion of the character of the work and of the materials to be excavated, from an examination of the project site(s), from studies and inspection of available samples, records and reports and from any other investigations the Bidder may wish to make. Each Bidder must form an independent opinion of all the conditions affecting the work to be done and the labor and materials to be supplied, in order to make a Bid in sole reliance thereupon. Failure of a Bidder to become completely familiar with the labor and construction conditions under which the work is to be performed will not relieve that Bidder of any obligations to furnish all materials, equipment, and labor necessary to perform the work as set forth in this solicitation and to perform the Contract.

- 1.3.10 Insurance: Contractor shall procure and maintain, on a primary basis and at its sole expense, at all times during the life of the contract insurance coverages, limits, including endorsements as described Appendix "D" - Insurance, against claims for injuries to persons or damages to

property which may arise from or in connection with the performance of the work by the Contractor or the Contractor's agents, representatives, employees, or subcontractors. The requirements contained therein, as well as the Department's review or acceptance of insurance maintained by the Contractor is not intended to and shall not in any manner limit or qualify the liabilities or obligations assumed by the Contractor. Unless otherwise approved by the Manager and Chief Engineer, the policy or policies of insurance maintained by the Contractor shall provide the minimum limit(s) and coverage(s) as specified in the attached Appendix "D" - Insurance and be placed with an insurance carrier authorized to do business in this state and rated A-VII by A.M. Best.

1.3.11 Tax Clearance: See: Subsection 3.5 - RESPONSIBILITY OF OFFERORS AND TAX CLEARANCE of the GENERAL PROVISIONS in its entirety. Further, the **Bidder shall be required to submit a tax clearance with the bid Offer**. Failure to comply with this provision will be grounds for disqualifying the Bidder. The successful bidder will also be required to submit a current valid tax clearance prior to final payment for this Project.

1.3.12 Preferences: The following preferences are applicable when preceded by a checked box. Information and legal and procedural requirements pertaining to all preferences can be found within the General Provisions:

Hawai'i Products Preference (See: Appendix C). Pursuant to HRS 103D-1002, Offers should complete the Certificate of Hawai'i Products Preference for application of this preference.

Reciprocal Preferences: Pursuant to the provisions of Section 103D-1004, HRS and Subchapter 3, Chapter 124, Subtitle 11, Title 3, HAR, the Manager may impose a reciprocal preference against Bidders from those states which apply preferences.

Recycled Products Preference. Pursuant to HRS 103D-1005, Offerors should contact the Procurement Officer for application of this preference.

Tax Payer Preference (Hawai'i Excise and Use Tax Preference). Pursuant to HRS 103D-1008, any "taxpaying bidder" shall qualify for this preference.

Qualified Community Rehabilitation Programs Preference. Pursuant to HRS 103D-1009, a five per cent preference shall be given to services to be provided by nonprofit corporations or public agencies operating qualified community rehabilitation programs in conformance with criteria established by the DLIR for all competitive sealed bid and proposal procurements.

Apprenticeship Program Preference (See: Appendix G). Pursuant to HRS 103-55, applicable to public works projects with estimated values of \$250,000 or greater. Section 103-55.6, HRS, as enacted by S.B. 19, Act 17, SLH 2009, and the State of Hawai'i Comptroller's Memorandum 2011-06 as amended, provides for a Hawai'i Apprenticeship Preference for public works construction projects with

estimated values of \$250,000 or greater. The preference shall be in the form of five percent (5%) bid adjustment applied to the Bidder's Offer amount.

Safety and Health Program (See: Appendix M). Pursuant to HRS 396-18, applicable to construction projects where the offer amount is in excess of \$100,000.

1.3.13 Tax Adjustment for Out-Of-State Vendors and Tax Exempt Bidders: Pursuant to the provisions of Section 103-53.5, HRS, where the Bidder is an out-of-state vendor not doing business in the State of Hawai'i, or is a person exempted from paying the applicable general excise tax, the package bid or purchase price, for the purpose of determining the lowest price bid, shall be increased by the applicable retail rate of general excise tax and the applicable use tax. The lowest responsible bidder who satisfies all of the requirements of these bid documents, taking into consideration the above increases, shall be awarded the contract, but the contract amount of any contract awarded shall be the amount of the bid offered and shall not include the amount of the increase.

1.3.14 Worker's Compensation Act: The Contractor will be required to comply with the provisions of Chapter 97, Revised Laws of Hawai'i 1955, known as the "Worker's Compensation Laws," and all laws amendatory thereof, relating to the compensation of employees for personal injuries sustained in the course of their employment. The Contractor's surety or sureties shall be liable for any loss caused the Department by reason of the Contractor's failure to comply with the provisions of said laws.

The Contractor shall furnish to the Department one copy of certificate of said insurance prior to commencement of work. Refer to the "RESPONSIBILITY OF SUCCESSFUL BIDDER" for additional requirements.

1.3.15 Subcontractor: Under the terms of this Contract, no subcontractor will be recognized. All subcontractors shall deal directly with the general Contractor; however, each and every subcontractor shall manage and take care of its own material and waste.

1.3.16 Listing Joint Contractors or Subcontractors:

Bidder shall complete the "[Joint Contractors or Subcontractors List](#)." It is the sole responsibility of the bidder to review the requirements of this Project and determine the appropriate specialty contractor licenses that are required to complete the Project.

Bidder shall specify the name of each person or firm to be engaged by the Bidder as a joint contractor or subcontractor in the performance of the contract and the nature and scope of the work to be performed by each regardless of the percentage of the value of the work to be performed by the joint contractor or subcontractor. (HRS 103D-302(b))

Failure of the Bidder to provide the correct names and specialty contractor's nature of work to be performed may cause the bid to be rejected.

Bidder agrees the completed listing of joint contractors or subcontractors is required for the Project and that Bidder, together with the listed joint contractors and subcontractors, have all the specialty contractor licenses to complete the work.

Based on the Hawai‘i Supreme Court’s January 28, 2002 decision in Okada Trucking Co., Ltd. v. Board of Water Supply, et al., 97 Hawai‘i 450 (2002), the bidder as a general Contractor (‘A’ or ‘B’ license) is prohibited from undertaking any work solely or as part of a larger project, which would require the bidder (‘A’ or ‘B’ general Contractor) to act as a specialty (‘C’ license) Contractor in any area in which the bidder (‘A’ or ‘B’ general Contractor) has no specialty Contractor’s license. Although the ‘A’ and ‘B’ Contractor may still bid on and act as the “Prime Contractor” on an ‘A’ and ‘B’ project (See: HRS § 444-7 for the definitions of an ‘A’ and ‘B’ project.), respectively, the ‘A’ and ‘B’ Contractor may only perform work in the areas in which they have the appropriate Contractor’s license. The bidder (‘A’ or ‘B’ general Contractor) must have the appropriate ‘C’ specialty Contractor’s licenses either obtained on its own, or obtained automatically under HAR §16-77-32.

General Engineering ‘A’ Contractors automatically have these ‘C’ specialty contractor licenses: C-3, C-9, C-10, C-17, C-24, C31a, C32, C-35, C-37a, C-37b, C-38, C43, C49, C-56, C-57a, C-57b, and C61.

General Building ‘B’ Contractors automatically have these ‘C’ specialty contractor licenses: C-5, C-6, C-10, C-12, C-24, C-25, C31a, C32a, C42a, and C-42b.

Instructions to complete the Joint Contractors or Subcontractors List:

1.3.16.1.1 Describe the nature of work to be performed by the specialty contractor for this Project and provide the complete firm name of the joint contractor or subcontractor in the respective columns. If the bidder is a general contractor and providing the work of the required specialty contractor, fill in the Bidder’s (general contractor’s) name and nature of work to be performed for this Project.

1.3.16.1.2 List only one joint contractor or subcontractor per required specialty contractor classification.

1.3.16.1.3 For projects with alternate(s), fill out the respective “Joint Contractors or Subcontractors List for the Alternate(s).” Bidder shall describe the nature of work to be performed by the specialty contractor on this Project for the respective alternate. Bidders shall fill in the complete firm name and nature of work to be performed by the respective joint contractor or subcontractor. If the joint contractor or subcontractor was previously listed under base bid, listing under Alternate(s) is not required.

1.3.17 Wages and Labor Requirements: Pursuant to HRS Section 103-55, each bidder submitting an offer and list of subcontractors certifies that: WAGES: The service to be rendered shall be performed by employees paid not less than wages paid to public officers and employees for similar work; and COMPLIANCE WITH LABOR LAWS: All applicable laws of the Federal

and State governments relating to workmen's compensation, unemployment compensation, payment of wages, and safety will be fully complied with. The successful Bidder shall complete the Wage Certification in Appendix E.

In accordance with HRS Section 104-2 et seq., the Hawai'i Director of Labor and Industrial Relations determines the prevailing wages applicable to the project. The wage rates are the minimum rates to be paid and may be revised. Contractors shall pay the applicable rates, as revised, at no cost to the Department. This is not a representation that labor can be obtained at these rates. It is the responsibility of bidders to inform themselves of local labor conditions and prospective changes or adjustments of wage rates. No increase in the contract price shall be allowed or authorized on account of the payment of wage rates in excess of those listed herein. Wage rate schedules are available at the office of the Department of Labor and Industrial Relations, State of Hawai'i.

Current Wage Rate Bulletin: **503**

- 1.3.18 Asbestos Cement Pipe: For all construction contract bids involving asbestos cement pipe, the Contractor shall remove, handle, and dispose of asbestos cement pipe in conformance with all applicable OSHA, State, and Federal regulations. The asbestos cement pipes shall only be disposed of at an approved disposal site.
- 1.3.19 Chlorination Subcontractor: All construction contract bids involving any chlorination work shall have a name listed for the C-37d Water Chlorination Subcontractor. Any bid not listing this subcontractor shall be rejected and disqualified.
- 1.3.20 Substitute Materials: Bidders contemplating submission of bids based on substitute materials must obtain prior written permission from the Department. Lists of substitute materials together with qualifying data shall be submitted on the Department's Request for Substitution form by the date set in the Procurement Schedule in Section 1.1, as evidenced by the time stamp of the Department, to the Procurement Officer for approval (the Request for Substitution form may be obtained from this individual). It is not the intent of the Department to exclude or limit the products. Any substitute material determined by the Department upon evaluation to be an acceptable equal, will be listed in an addendum to this solicitation, issued prior to the bid opening date. The Department is the sole judge as to the comparable quality and suitability of any substitute material and its decision shall be final. If a Bidder offers a product without the Department's pre-approval, the substitute material shall not be considered for award.
- 1.3.21 Independent Price Determination: By submitting a bid, the bidder certifies that the price submitted was independently arrived at without collusion.
- 1.3.22 Protests: Any protest shall be submitted in writing within five (5) working days after the posting of the notice of award; provided that a protest based upon the contents of the solicitation shall be submitted in writing prior to the date set for the receipt of offers. Any and all protests pursuant to Hawai'i Procurement Code, Chapter 103D-701 HRS and Section 3-126-3 HAR shall be submitted in writing to the Procurement Officer for this solicitation.

- 1.3.23 Incorporation By Reference: Bidders hereby agree that all documents referred to in the Table of Contents are hereby incorporated by reference into this solicitation.
- 1.3.24 Severability: If any covenant, condition, or provision of this solicitation is held to be invalid by any court of competent jurisdiction, such holding shall not affect the validity of any other covenant, condition, or provision contained herein or incorporated by reference.
- 1.3.25 Remedies; Attorneys Fees, and Costs: All remedies provided in this solicitation shall be deemed cumulative and additional, and not in lieu of or exclusive of each other or of any other remedy available at law or in equity arising hereunder. Should any legal proceedings at law or in equity arise under or in connection with this solicitation, the Contractor shall be responsible for all attorneys' fees and costs (including reasonable fees and charges for the services of paralegals or other personnel who operate for and under the supervision of such attorneys and whose time is usually charged to clients) and any other expenses incurred in connection with such proceedings.
- 1.3.26 Department's Right to Audit: Books and Records: The Contractor shall, at all times during the term hereof, maintain complete and accurate books and records of its operations, including employee time records, in a form consistent with good accounting practice, including such books and records as would normally be examined by an independent certified public accountant in performing an audit or examination of the Contractor's receipts and expenses in accordance with generally accepted auditing standards. The Department has the right to designate an independent auditor to review books and records that specifically relate to this project. Subcontractors shall be bound by the same requirements. See: SECTION 6.9 - CONTROL OF THE CONTRACT of the GENERAL PROVISIONS in its entirety.
- 1.3.27 Confidential Material: All bids are subject to public inspection as set forth in 3-122-30, HAR. Bidders shall request in writing nondisclosure of designated trade secrets or other proprietary data to be confidential. Such data shall accompany the bid and shall be readily separable from the bid in order to facilitate eventual public inspection of the non-confidential portion of the bid. To facilitate the release of the information requested, the Department is prepared to sign a Non-Disclosure Agreement if necessary, however, the Department cannot guarantee that designated data will be kept confidential. The offers are subject to disclosure rules set forth in Chapter 92F, HRS and Non-Disclosure Agreements are enforceable only to the extent that they do not conflict with the provisions of Chapter 92F, HRS. The Bidder bears the burden of establishing that the designated data is exempted from the disclosure requirements set forth in Chapter 92F.
- 1.3.28 Cancellation of the Solicitation and Offer Rejection: The Department reserves the right to cancel this solicitation and to reject any and all offers in whole or in part, and waive any defects, when it is determined to be in the best interest of the Department, pursuant to HAR 3-122-96 and 3-122-97.

The Department shall not be liable for any costs, expense, loss of profit, or damages whatsoever, incurred by the Offeror in the event this solicitation is cancelled or an offer is rejected.

1.4 GENERAL PROVISIONS, SPECIFICATIONS, AND STANDARD DETAILS.

The Special Provisions, plans, General Provisions, Water Standards, County of Kaua'i Department of Public Works ("DPW") Standard Specifications and Details, as amended, contract documents, and all supplemental documents are essential parts of the contract, and a requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for the complete work. In case of conflict or discrepancy within any part of the contract, the stricter requirements, including Hawai'i State Statutory requirements, shall govern. Unless it is apparent that a different order of precedence is intended, the special provisions shall govern over plans, general provisions, and Water Standards; plans shall govern over general provisions; general provisions shall govern over Water Standards; Water Standards shall govern over DPW Standard Specifications; figured dimensions and drawings take precedence over measurements by scale, and detail drawings; instructions to proposers shall be incorporated and made a part of the special provisions.

It is the responsibility of the prospective offerors, offerors, and Contractors to review the General Provisions, Water Standards, Specifications, and Standard Details and a submission of an offer to this solicitation shall be deemed an acknowledgement of the incorporation of these into this solicitation and the resulting contract, if any.

- 1.4.1 General Provisions for Construction Contracts: The General Provisions for Construction Contracts of the Department of Water, dated April 25, 2016 ("General Provisions") are included in this solicitation. A copy may be found in Appendix "B."
- 1.4.2 Water System Standards. The "Water System Standards", 2002, as amended, as adopted by the Department of Water, County of Kaua'i; Board of Water Supply, City and County of Honolulu; Department of Water Supply, County of Maui; Department of Water Supply, County of Hawai'i ("Water Standards") is by reference incorporated herein and made a part of these specifications. The Water Standards specifications are not bound in these contract documents, but shall by reference be incorporated herein and made a part hereof.
- 1.4.3 Department of Public Works, County of Kaua'i Standard Specifications: Whenever reference is made to the DPW Standard Specifications, the specifications referred to is the "HAWAI'I STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND PUBLIC WORKS CONSTRUCTION" of the State of Hawai'i, 2005, as amended. These specifications are not bound in the Contract Documents, but shall by reference be incorporated herein and made a part hereof.
- 1.4.4 Department of Public Works, County of Kaua'i, Standard Details: Whenever reference is made within these Special Provisions or the contract plans to the DPW Standard Details, the Details referred to is the "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION", September 1984 and all subsequent amendments. These specifications are not bound in the Contract Documents, but shall by reference be incorporated herein and made a part hereof.

1.5 PROCUREMENT OFFICER AND CONTRACT ADMINISTRATOR.

The Procurement Officer is responsible for administrating/facilitating all requirements of the solicitation process and is the **sole point of contact for Offerors** from the date of release of the solicitation until the selection of the successful Bidder.

The Contract Administrator shall be responsible for the contract administration once the contract is awarded and shall be the point of contact throughout the term of the contract.

If checked, the Procurement Officer and the Contract Administrator shall be the same individual.

The Procurement Officer and Contract Administrator are:

Procurement Officer:

Jason Kagimoto, P.E.
Engineering Division
Department of Water, County of Kaua‘i
4398 Pua Loke Street
Līhu‘e, HI 96766
Phone Number: 808-245-5417
enter text.
Email: jkagimoto@kauaiwater.org

Contract Administrator:

[Click here to enter text.](#)
[Click here to enter text.](#)
Department of Water, County of Kaua‘i
4398 Pua Loke Street
Līhu‘e, HI 96766
Phone Number: 808-245-[Click here to](#)
enter text.
Email: [Click here to enter text.](#)

2 SCOPE OF WORK

2.1 SCOPE OF WORK.

This Contract consists of the following Scope of Work and includes all other necessary work, all as indicated in the contract drawings and specifications. The general location of the work is as shown on the contract plans and as described herein.

Package B – TANKS PACKAGE includes two 0.5 million gallon (MG) reinforced concrete storage tanks and appurtenances, approximately 800 linear feet (LF) of 16-inch diameter ductile iron pipe (DIP) and appurtenances and 860 LF of 12-inch diameter DIP and appurtenances, including site clearing and grubbing; removal of existing water lines; earthwork; chain-link fencing with barbed wire; asphaltic concrete driveway; asphaltic concrete walkway; grass cell pavement; tank access stairs and railings; tank access hatch, observation hatches, and ventilator; tank level pressure transmitter; tank water level indicator; control valve assemblies and appurtenances; control valve assembly boxes; gate valves; valve boxes; sampling taps; temporary cleanouts; retaining walls; drain inlets and manholes; HPDE drain lines; electrical system; security alarm switch system; and supervisory control and data acquisition (SCADA) system; all in accordance with the plans and specifications. The work is located at Kapahi, Kawaihau, and Ka‘apuni Roads in Kapa‘a, Kaua‘i, Hawai‘i.

2.2 TIME OF COMPLETION.

- 2.2.1 It is understood and agreed that the work called for under this Project must and shall be completed within **Nine Hundred (900) CALENDAR DAYS** after written notice has been given to the Contractor to commence work. No extension of time will be granted for shipping and manufacturer’s delays. The Contractor shall be subject to liquidated damages for delay or nonperformance as stated in this solicitation.
- 2.2.2 Work on the basic contract agreement is to be completed within the stipulated completion time from the date to the “Notice to Proceed.” All work shall be done in co-operation with and coordinated with any other Contractors in a manner to allow completion of the entire construction within the scheduled time.

2.3 PERMITS.

The Contractor shall obtain all necessary permits needed for this job, including, but not limited to those listed below and in the Special Provisions.

County of Kaua‘i permits include but are not limited to a grading permit, grubbing permit, stockpiling permit, building permit and road permit from the Department of Public Works prior to the commencement of work. The Contractor shall pay for all required charges and fees associated with these permits.

The Contractor shall obtain a Community Noise Permit and/or Variance with the Department of Health, State of Hawai‘i, if necessary. The Contractor shall pay for all required charges

and fees associated with these permits.

The Department of Water is covered under the National Pollutant Discharge Elimination System (NPDES) General Permit for discharges of storm water associated with construction activities (NPDES File No. HI R10F473.FNL.19 with Administrative Extension) and discharges of hydrotesting waters (NPDES File No. HI22FG640.FNL.22a). Should additional NPDES coverage and permits be required, the Contractor shall prepare the required documents and obtain additional approvals, as necessary.

Notice to proceed will be given to the Contractor prior to attaining any additional NPDES permits. No time extension will be granted for the Contractor's inability to attain additional NPDES permits and the Contractor shall pay for all required charges and fees associated with additional NPDES permits.

2.4 CONTRACTOR'S RESPONSIBILITY FOR EXISTING UTILITIES AND STRUCTURES.

The existence and location of underground utilities and structures as shown on the plans are from the best information available but are not guaranteed and other obstacles may be encountered in the course of the work. Prior to the start of excavation, the Contractor shall contact all utility companies and have them locate their respective lines affected. The Contractor shall be held responsible for any damage to and for the maintenance and protection of existing utilities and structures. See: SECTION 6 - PERFORMANCE OF CONTRACT of the GENERAL PROVISIONS in its entirety.

2.5 POWER AND WATER SUPPLIES.

The Contractor shall make all the necessary arrangements and installation work that may be required for power and water supplies for the work under this Contract. Cost for said power and water supplies shall be included in appropriate unit prices bid and no direct payment will be made therefore.

2.6 CONTRACTORS LICENSE REQUIRED.

The Department shall reject all bids received from contractors who are not licensed by the State Contractors License Board in accordance with Chapter 444, Hawai'i Revised Statutes. It is the sole responsibility of the Bidder to review the requirements of this Project and determine the appropriate licenses that are required to complete the Project.

2.7 HOURS.

No work shall be done on Saturdays, Sundays, legal State Holidays and/or in excess of eight (8) hours each day without the written consent of the Contract Administrator. Should permission be granted to work at such times, the Contractor shall pay for all inspectional and administrative costs thereof. No work shall be done at night unless authorized by the Contract Administrator. No work shall be done at night during seabird fallout season

(September 15 – December 15, annually). See: SECTION 6.9 and 6.12 of the GENERAL PROVISIONS.

2.8 QUANTITIES.

All bids will be compared on the basis of quantities of work to be done, as shown in the bid; the quantities shown in the Unit Price items are estimated, being given as a basis for comparison of bids. The Department reserves the right to increase or decrease the quantities or delete items entirely as may be required during the progress of the work. See: SECTION 7.2 and 7.3 of the GENERAL PROVISIONS.

2.9 MATERIALS FURNISHED FOR THE PROJECT.

All materials necessary for the completion of the project shall be furnished by the Contractor, unless specifically stated otherwise and full compensation thereof shall be included in the various items in the bid. All materials for this Project shall be ordered after the notice to proceed is issued and the shop drawings, if applicable, have been approved by the Department.

2.10 WORK TO BE DONE WITHOUT DIRECT PAYMENT.

Whenever it is specified in the contract that the Contractor is to do work or furnish materials of any kind for which no price is fixed in the contract, it shall be understood that such work or furnishing such materials was included in a unit price for the appropriate item, unless it is expressly specified that such work or material is to be paid for as extra work.

2.11 INTENT OF THE SPECIFICATIONS.

It is not the intent of the Department to limit Proposers to these specifications; however, the specifications designated as “requirements” contained herein are the minimum acceptable.

2.12 IMPLEMENTATION.

The Contractor will be required to:

2.12.1 Provide required permits for the construction of this Project, trained construction crew and project management necessary to ensure a complete constructed and fully functional water facilities as specified in this solicitation.

2.12.2 Provide all documentation, including all warranties and certification documents, on the construction materials being used.

2.13 GOVERNING LAW; APPLICATION OF LAW.

This solicitation and the Contract awarded based on such solicitation shall be governed by the laws of the State of Hawai‘i. The Contractor shall comply with all federal, State and local laws, regulations and ordinances, including occupational safety and health standards applicable to the performance of the services specified.

3 METHOD OF AWARD

3.1 METHOD OF AWARD.

- 3.1.1 Award, if made, shall be to the responsive, responsible Offeror submitting the lowest Total Sum Bid price.
- 3.1.2 Only those offers that meet all of the solicitation specifications, General Provisions, Special Provisions, and any other requirement contained herein will be considered for award. Any offer that proposes terms, conditions, or requirements that are contrary to those specified herein or does not meet the qualification requirements of this solicitation, as solely determined by the Department and as provided herein, may be considered nonresponsive and will be rejected as provided herein.

3.2 HAWAI'I REVISED STATUTES.

The Contractor's attention is called to the following chapters within the HRS which affect this Contract and the performance thereof:

Chapter 103, relating to expenditure of public money;
Chapter 104, relating to wages and hours of employees on public works;
Chapter 376, relating to industrial safety;
Chapter 386, relating to workmen's compensation;
Chapter 321, relating to the Health Department;
Section 507-17, relating to recovery on bond for material and labor used on public works;
and
Chapter 378, relating to fair employment practices

3.3 RESPONSIBILITY OF SUCCESSFUL BIDDER.

- 3.3.1 The successful Bidder is advised that it shall, immediately prior to award of the contract, furnish proof of compliance with the requirements of HAR §3-122-112, to wit: Chapter 237, tax clearance; Chapter 383, unemployment insurance; Chapter 386, workers' compensation; Chapter 392, temporary disability insurance; Chapter 393, prepaid health care; and one of the following: a) Be registered and incorporated or organized under the laws of the State (hereinafter referred to as a "Hawai'i business"); or b) Be registered to do business in the State (hereinafter referred to as a "compliant non-Hawai'i business."
- 3.3.2 To comply with these requirements, the successful Bidder shall produce the following documents to the Department to demonstrate compliance with this section.

HRS Chapter 237 Tax Clearance Requirement for Award and Final Payment. Instructions are as follows:

Pursuant to HRS §103D-328, successful Bidder shall be required to submit a tax clearance certificate issued by the Hawai'i State Department of Taxation ("DOTAX")

and the U.S. Internal Revenue Service (“IRS”). The certificate is valid for six (6) months from the most recent approval stamp date on the certificate and must be valid on the date it is received by the Department of Water.

The tax clearance certificate shall be obtained on the State of Hawai‘i, DOT TAX CLEARANCE APPLICATION Form A-6 (Rev. 2003) which is available at the DOTAX and IRS offices in the State of Hawai‘i or the DOTAX website and by mail or fax:

DOTAX Website (forms & Information): <http://www.state.hi.us/tax/alphalist.html#a>
DOTAX Forms by Fax/Mail: (808) 587-7572 / 1-800-222-7572

Completed tax clearance applications may be mailed, faxed or submitted in person to the Department of Taxation, Taxpayer Services Branch, to the address listed on the application.

DOTAX (fax): (808) 587-1488
IRS (fax): (808) 539-1573

The application for the clearance is the responsibility of the Bidder and must be submitted directly to the DOTAX or IRS and not to the Department of Water.

3.3.3 HRS Chapters 383 (Unemployment Insurance), 386 (Workers’ Compensation), 392 (Temporary Disability Insurance), and 393 (Prepaid Health Care) Requirements for Award. Instructions are as follows:

Pursuant to HRS §103D-310, the successful Bidder shall be required to submit an approved certificate of compliance issued by the Hawai‘i State Department of Labor and Industrial Relations (“DLIR”). The certificate is valid for six (6) months from the date of issue and must be valid on the date it is received by the Department.

The certificate of compliance shall be obtained on the State of Hawai‘i, DLIR APPLICATION FOR CERTIFICATE OF COMPLIANCE WITH SECTION 3-122-112, HAR, Form LIR#27 which is available at www.dlir.state.hi.us/LIR#27, or at the neighbor island DLIR District Offices. The DLIR will return the form to the Bidder who in turn shall submit it to the Department.

The application for the certificate is the responsibility of the Bidder and must be submitted directly to the DLIR and not to the Department of Water.

3.4 REQUIREMENT FOR AWARD.

To be eligible for award, the Bidder must comply as follows:

3.4.1 Hawai‘i Business. A business entity referred to as a “Hawai‘i business” is registered and incorporated or organized under the laws of the State of Hawai‘i. As evidence of compliance,

Bidder shall submit a CERTIFICATE OF GOOD STANDING issued by the State of Hawai‘i Department of Commerce and Consumer Affairs Business Registration Division (“BREG”). A Hawai‘i business that is a sole proprietorship, however, is not required to register with the BREG and therefore not required to submit the certificate. A Bidder’s status as sole proprietor or other business entity and its business street address indicated on the OFFER form will be used to confirm that the Bidder is a Hawai‘i business.

- 3.4.2 Compliant Non-Hawai‘i Business. A business entity referred to as a “compliant non-Hawai‘i business” is not incorporated or organized under the laws of the State of Hawai‘i but is registered to do business in the State of Hawai‘i. As evidence of compliance, Bidder shall submit a CERTIFICATE OF GOOD STANDING.

To obtain a CERTIFICATE OF GOOD STANDING go online to www.BusinessRegistrations.com and follow the prompt instructions. To register or to obtain a “Certificate of Good Standing” by phone, call (808) 586-2727 (M-F 7:45 to 4:30 HST). The “Certificate of Good Standing” is valid for six months from date of issue and must be valid on the date it is received by the Department.

- 3.4.3 Registration Costs. Bidders are advised that there are costs associated with registering and obtaining a “Certificate of Good Standing” from the DCCA.

3.5 TIMELY SUBMISSION OF ALL CERTIFICATES.

- 3.5.1 The certificates described in this section should be applied for and submitted to the Department as soon as possible after the Department notifies the successful Bidder that the Department intends to issue an award to the successful Bidder. If valid certificates are not submitted within **ten (10) calendar days** after the Department so notifies the successful bidder, the successful Bidder’s offer may be disqualified and any prospective award (or actual award if mistakenly issued), even though the successful bidder’s bid is otherwise responsive and responsible, may be canceled without any liability whatsoever to the Department. The Department, and not the successful bidder, shall determine whether all necessary certificates have been timely submitted.
- 3.5.2 If the Department cancels any prospective or actual award for failure to submit all required certificates, the Department reserves the right to make an award to the next lowest responsive and responsible Bidder who is able to submit all the required certificates.

3.6 FINAL PAYMENT REQUIREMENTS.

Contractor is also required to submit a tax clearance certificate for final payment on the contract. A tax clearance certificate, not over two months old, with an original green certified copy stamp, must accompany the invoice for final payment on the contract. In addition to a tax clearance certificate, an original “Certification of Compliance for Final Payment” (SPO Form-22), will be required for final payment. This form is attached hereto as Appendix F.

4 AWARD OF CONTRACT AND NOTICE TO PROCEED

4.1 AWARD.

The successful Bidder shall comply with SECTION 3 - AWARD AND EXECUTION OF CONTRACT of the GENERAL PROVISIONS in its entirety.

4.2 NOTICE OF AWARD.

The Procurement Officer will inform the successful Bidder of contract award selection within 48 hours of confirmation. Additionally, an official contract award notification letter will be executed by the Department and provided at the earliest date.

4.3 NOTICE TO PROCEED.

Upon contract execution, a "Notice to Proceed" letter will be provided to the Contractor specifying the "Commencement" (start work) date of the Contract. No work is to be undertaken by the Contractor prior to the commencement date specified in the Notice to Proceed letter. The Department is not liable for any work, contract, costs, expenses, loss of profits, or any damages whatsoever incurred by the Contractor prior to the official Notice to Proceed "Commencement" date.

APPENDIX A: Sample Contract

Bound Separately

**APPENDIX B: General Provisions for Construction Contracts for the Department of Water,
dated April 25, 2016**

Bound Separately

APPENDIX C: Offer

Contractor _____

OFFER

For

DEPARTMENT OF WATER, COUNTY OF KAUA‘I,
LĪHU‘E, KAUA‘I, HAWAI‘I

_____ 20 _____

Chief Procurement Officer
Department of Water
County of Kaua‘i
4398 Pua Loke Street
Līhu‘e, Hawai‘i 96766

Dear Sir:

Pursuant to and in compliance with your Invitation For Bids and other Contract Documents relating thereto, the undersigned Offeror, having familiarized itself with the terms of the contract, the local conditions affecting the performance of the contract and the cost of the work at the place where the work is done, the plans and specifications, “General Provisions for Construction Contracts of the Department of Water”, “Water System Standards, 2002”, Invitation For Bids, and other Contract Documents, hereby proposes and agrees to perform, within the time stipulated in the said documents, including all its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all utility and transportation services necessary to perform the contract, in a workmanlike manner, in place complete all of the work covered by the contract in connection with these specifications and accompanying construction plans titled:

JOB NO. 02-14 WK-08, KAPA‘A HOMESTEADS 325’ TANKS, TWO 0.5 MG TANKS, PACKAGE B – TANKS PACKAGE, KAPA‘A, KAUA‘I, HAWAI‘I

on file in the office of the Department of Water for,

TOTAL SUM OFFER _____ DOLLARS
(words)

(\$ _____) said total sums being itemized on the following pages:

Job No. 02-14 WK-08, KAPA‘A HOMESTEADS 325’ TANKS, TWO 0.5 MG TANKS, PACKAGE B – TANKS PACKAGE, KAPA‘A

OFFER SCHEDULE

**JOB NO. 02-14, WK-08, KAPA‘A HOMESTEADS 325’ TANKS, TWO 0.5 MG TANKS,
PACKAGE B – TANKS PACKAGE, KAPA‘A, KAUA‘I, HAWAI‘I**

ITEM NO.	ESTIMATED QUANTITY	U/M	DESCRIPTION	UNIT PRICE	TOTAL
1	1	LS	Mobilization & Demobilization (Not to exceed 6% of the sum of all items excluding Lump Sum Offer of this item)		\$
2	540	CY	Site excavation, including clearing and grubbing, demolition, and hauling and disposal of excess material.	\$	\$
3	1,080	SY	Grass cell pavement, including top soil and seed, in place complete.	\$	\$
4	1,080	SY	12” thick grass cell base, in place complete.	\$	\$
5	12	LF	Entry concrete header, including 6” aggregate base course, in place complete.	\$	\$
6	800	LF	6”x8” concrete header, including 6” aggregate base course, in place complete.	\$	\$
7	240	SY	AC walkway including base course, in place complete.	\$	\$
8	175	LF	Guardrail along Kawaihau Road, in place complete.	\$	\$
9	700	SY	Cold plane existing AC pavement and resurface with 2-inch thick State Mix V, including replacement of striping and pavement markers, in place complete.	\$	\$
10	730	LF	6-foot high chain-link fence topped with extension arm and three strands of barbed wire, including DWS 2500 concrete footing and all appurtenances, in place complete.	\$	\$
11	1	EA	14-foot wide, double-swing 6-foot high chain-link gate topped with extension arm and three strands of barbed wire, including DWS 2500 concrete footing, sign, and all appurtenances, in place complete.	\$	\$

ITEM NO.	ESTIMATED QUANTITY	U/M	DESCRIPTION	UNIT PRICE	TOTAL
12	1	LS	CRM Wall 1, in place complete.		\$
13	1	LS	CMU Wall 2, in place complete.		\$
14	150	LF	18" Corrugated High-Density Polyethylene Drainline, including unclassified trench excavation, backfill, and all appurtenances, in place complete.	\$	\$
15	90	LF	12" Corrugated High-Density Polyethylene Drainline, including unclassified trench excavation, backfill, and all appurtenances, in place complete.	\$	\$
16	1	EA	County DPW standard drain inlet, Type G-4, 3.00'-3.99', including unclassified trench excavation and backfill, in place complete.	\$	\$
17	1	EA	County DPW standard drain inlet, Type G-4, 4.00'-4.99', including unclassified trench excavation and backfill, in place complete.	\$	\$
18	1	EA	County DPW standard drain inlet, Type G-4, 6.00'-6.99', including unclassified trench excavation and backfill, in place complete.	\$	\$
19	1	EA	County DPW standard drain manhole detail C-24 for pavement areas with grated cover, 6.00'-6.99' deep, including unclassified trench excavation and backfill, in place complete.	\$	\$
20	1	EA	County DPW standard drain manhole detail C-24 for pavement areas with grated cover, 7.00'-7.99' deep, including unclassified trench excavation and backfill, in place complete.	\$	\$
21	800	LF	16" Ductile Iron Pipe Waterline; Cl. 52, including unclassified trench excavation, backfill, and all appurtenances, in place complete.	\$	\$
22	860	LF	12" Ductile Iron Pipe Waterline; Cl. 52, including unclassified trench excavation,	\$	\$

ITEM NO.	ESTIMATED QUANTITY	U/M	DESCRIPTION	UNIT PRICE	TOTAL
			backfill, and all appurtenances, in place complete.		
23	2	EA	1" Air/Vacuum Relief Valve including all appurtenances, in place complete.	\$	\$
24	1	LS	Control Valve Assembly 1, including 6" combination back pressure and solenoid shutoff valve, universal venturi tube with stainless steel body and flange ends, differential pressure transmitter for venturi tube with copper and stainless steel tubings, shut off valves and cocks, stainless steel U-bolt and nuts and mounting bracket, fittings, valves, all appurtenances, control valve assembly boxes with access doors and gravel, excavation and backfill, in place complete.		\$
25	1	LS	Control Valve Assembly 2, including 6" combination back pressure and solenoid shutoff valve, fittings, valves, all appurtenances, control valve assembly box with access doors and gravel, excavation and backfill, in place complete.		\$
26	1	LS	Control Valve Assembly 3, including 6" altitude valve, fittings, valves, all appurtenances, control valve assembly box with access doors and gravel layer, excavation and backfill, in place complete.		\$
27	1	LS	Temporary pressure reducing valve, including 4" pressure reducing valve, 2" bypass, fittings, valves, all appurtenances, valve box with access doors and gravel, excavation and backfill, in place complete.		\$
28	2	EA	0.5 Million Gallon reinforced concrete reservoir tank, including all appurtenances, in place complete. Concrete Caissons for two tanks, in place complete.	\$	\$
29	34	EA	Shaft Type A (43') – Interior	\$	\$

ITEM NO.	ESTIMATED QUANTITY	U/M	DESCRIPTION	UNIT PRICE	TOTAL
30	8	EA	Shaft Type B (56') – Beneath columns	\$	\$
31	36	EA	Shaft Type C (56') – Perimeter	\$	\$
32	2	EA	Load Test	\$	\$
33	2	EA	Tank stairway, including landings, handrails, doors, fencing, locks, and all appurtenances, in place complete.	\$	\$
34	2	EA	Tank level pressure transmitter, including 1-inch single service lateral connection, ball corp, joint coupling, ball stop, reducing bushing and adapters, tee with plug, other fittings, water level pressure transmitter, stainless steel post, base and anchor bolts, for a complete job.	\$	\$
35	540	LF	6-inch corrugated, perforated HDPE drain line, including unclassified trench excavation, backfill, and all appurtenances, in place complete.	\$	\$
36	1	LS	Connection of New 12" Ductile Iron Waterline to Existing 12" Asbestos-Cement Waterline at Baseline A Sta. 1+38 (o/s 41.83' RT), including all appurtenances, in place complete.		\$
37	1	LS	Connection of New 12" Ductile Iron Waterline to Existing 12" Asbestos-Cement Waterline at Baseline A Sta. 0+71.97 (o/s 22.06' RT), including all appurtenances, in place complete.		\$
38	1	LS	Connection of New 12" Ductile Iron Waterline to Existing 12" Asbestos-Cement Waterline at Baseline A Sta. 0+84.58 (o/s 43.64' RT), including all appurtenances, in place complete.		\$
39	1	LS	Connect to Existing 6" Waterline at Baseline A Sta. 2+77 (o/s 3.34' LT), including unclassified excavation, cut and plug, fittings, concrete block with structural strut, temporary cleanout, and all appurtenances, in place complete.		\$

ITEM NO.	ESTIMATED QUANTITY	U/M	DESCRIPTION	UNIT PRICE	TOTAL
40	1	LS	Connect to Existing 12" Waterline at WL A Sta. 4+50.07, including unclassified excavation, fittings, couplings, concrete block with structural strut, valves and valve boxes, temporary cleanout, and all appurtenances, in place complete.		\$
41	1	LS	Connection of New 8" Ductile Iron Waterline to Existing 8" Cast Iron Waterline at WL B Sta. (-)0+31.51 (o/s 24.17' RT), including all appurtenances, in place complete.		\$
42	1	LS	Connection of New 12" Ductile Iron Waterline to Existing 12" Asbestos-Cement Waterline at WL C Sta. (-)1+71.38, including all appurtenances, in place complete.		\$
43	1	LS	Connection of New 12" Ductile Iron Waterline C to Existing 12" Ductile Iron Waterline at WL C Sta. (-)1+12.92, including all appurtenances, in place complete.		\$
44	1	LS	Connection of New 12" Ductile Iron Waterline F to Existing 12" Asbestos-Cement Waterline at WL F Sta. 1+73.39, including all appurtenances, in place complete.		\$
45	1	LS	Chlorination and flushing of water system, including removal of temporary risers and incidental work, all in accordance with the specifications.		\$
46	1	LS	Furnish and install electrical equipment and wiring, including but not limited to trenching and backfill, pullboxes, power, control and instrumentation ducts, cables, junction boxes, connections to power, control and instrumentation devices, painting, testing, and all appurtenant electrical work in place complete and in accordance with the plans and specifications.		\$

ITEM NO.	ESTIMATED QUANTITY	U/M	DESCRIPTION	UNIT PRICE	TOTAL
47	1	LS	SCADA system, including but not limited to software programming of existing RTU; modifications to existing master SCADA; and all appurtenant SCADA work; in place complete, and in accordance with the plans and specifications, ready for operation.		\$
			TOTAL PACKAGE B SUM OFFER (Items 1 to 47 inclusive)		\$

SCHEDULE B
HAWAI'I PRODUCTS PREFERENCE

In accordance with HRS §103D-1002, the Hawai'i products preference is applicable to this solicitation. Hawai'i Products ("HP") are available for those items noted on Schedule B, below. The Hawai'i products list is available on the SPO webpage at www.spo.hawaii.gov/for-state-county-personnel/manual/procurement/solicitation/goods-services-construction/preferences/hawaii-product-preferences/ or go to the SPO Home page, click on "For Vendors" tab; click on Preferences, Hawai'i Product Preferences to view. Offeror transmitting a Hawai'i Product (HP) shall identify the HP on Schedule B-1.

Any person desiring a Hawai'i product preference shall have the product(s) certified and qualified if not currently on the Hawai'i 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 Hawai'i product list shall complete form SPO-038, Certification for Hawai'i Product Preference and submit, via email to the Procurement Officer issuing the solicitation, and provide the solicitation number and title in the subject line, and include all additional information required by the Procurement Officer. For each product, one form shall be completed and transmitted (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 'Quicklinks' menu; click on 'Forms for Vendors, Contractors, and Service Providers'.

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 Hawai'i product. In the event of any change that materially alters the Offeror's ability to supply Hawai'i products, the Offeror shall notify the Procurement Officer in writing no later than five (5) 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.

The following is a list of products that the Department anticipates will be used in this particular project; however the list is not all inclusive and additional products may be qualified.

HAWAI'I PRODUCTS LIST

HP Description	Manufacturer/Supplier	Class
Aggregates and Sand – Basalt, rock, cinder, limestone and coral		
Aggregates – Recycled asphalt and concrete		
Asphalt and paving materials		
Cement and concrete products		
Pre-cast concrete products		

HP Description

Manufacturer/Supplier Class

Signs—traffic, regulatory and construction

Soil amendments, mulch, compost

Bidders intending to use or supply a Hawai‘i Product must list the price and total cost of each item f.o.b. jobsite, unloaded, including applicable general excise tax and use tax on this form. Failure to designate a Hawai‘i product will mean that the Bidder is offering a non-Hawai‘i product and award, if made to the bidder, will be on the basis that the bidder will deliver or use a non-Hawai‘i product.

The Bidder shall list only the Manufacturers/Suppliers certified and qualified on Schedule B.

If the Department has awarded a contract under HRS, § 103D-1002, finds that in the performance of that contract there has been a failure to comply with HRS, § 103D-1002, the contract shall be voidable 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 the Department on account of the purchase or contract.

SCHEDULE B-1
SCHEDULE OF MATERIAL COST
(if Hawai'i preference requested)

HAWAI'I PRODUCT	MANUFACTURER	CLASS	APPROX. QUANTITY	UNIT	TOTAL COST OF MATERIAL
Aggregates and Sand – Basalt, rock, cinder, limestone and coral					
Aggregates – Recycled asphalt and concrete					
Asphalt and paving materials					
Cement and concrete products					
Pre-cast concrete products					
Signs–traffic, regulatory and construction					
Soil amendments, mulch, compost					

SCHEDULE C
MANDATORY LICENSING REQUIREMENT

“A” general engineering contractors and “B” general building contractors are reminded that due to the Hawai‘i Supreme Court’s January 28, 2002 decision in Okada Trucking Co., Ltd. V. Board of Water Supply, et al., 97 Haw. 450 (2002), they are prohibited from undertaking any work, solely or as part of a larger project, that would require the general contractor to act as a specialty contractor in any area in which the general contractor has no license. Although the “A” and “B” contractor may still submit an offer on and act as the “prime” contractor on an “A” and “B” project (*See, HRS § 444-7 for the definitions of an “A” and “B” project.*), respectively, the “A” and “B” contractor may only perform work in the areas in which they have the appropriate “C” specialty contractor’s license (*An “A” or “B” contractor obtains “C” specialty contractor’s licenses either on its own, or automatically under HAR § 16-77-32.*). The remaining work must be subcontracted out to appropriately licensed “C” specialty contractors. It is the sole responsibility of the contractor to review the requirements of this project and determine the appropriate licenses that are required to complete the project.

LISTING OF SUBCONTRACTORS

Sec. 103D-302, H.R.S., provides that each offer for Public Works Construction Contracts shall include the name of each person or firm to be engaged by the Offeror as a joint contractor or subcontractor in the performance of the Public Works Construction Contract. The Offer shall also indicate the nature and scope of the work to be performed by such joint contractors or subcontractors. All offers which do not comply with this requirement shall be rejected pursuant to Sec. 103D-302(b) H.R.S.

To comply with the above provisions, the offeror shall complete the schedule of the nature and scope of work by listing, where applicable, the names of the joint contractors and subcontractors to be used after the description of the nature and scope of the work.

ALL JOINT CONTRACTORS OR SUBCONTRACTORS TO BE ENGAGED ON THIS PROJECT

The Offeror certifies that the following is a complete listing of all joint contractors and/or subcontractors who will be engaged by the Offeror on this Project to perform the nature and scope of work indicated **regardless of the percentage of the value of the work to be performed by the joint contractor or subcontractor**, pursuant to Section 103D-302, Hawai‘i Revised Statutes, and understands that failure to comply with this requirement shall be just cause for rejection of the Offer.

The Offeror further understands that only those joint contractors or subcontractors listed shall be allowed to perform work on this Project. If no joint contractor or subcontractor for any subdivision of work is listed, it shall be construed that the work shall be performed by the Offeror with Offeror’s employees.

All Offerors must be sure that they possess, and that the joint contractors or subcontractors listed in the Offer possess, all the necessary specialty licenses needed to perform the work for this Project. The Offeror shall be solely responsible for assuring that all specialty licenses required to perform the work is covered in the Offer.

The Offeror 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 Contractors Licensing Board may cause rejection of the offer submitted.

It is the sole responsibility of the contractor to review the requirements of this Project and determine the appropriate licenses that are required to complete the Project.

LISTING OF ALL JOINT CONTRACTORS OR SUBCONTRACTORS

	Contractor Classification	Name of Joint Contractor or Subcontractor	License Number
C-1	Acoustical and Insulation Contractor		
C-2	Mechanical Insulation Contractor		
C-3	Asphalt Paving and Surfacing Contractor		
C-3a	Asphalt Concrete Patching, Sealing, and Striping Contractor		
C-3b	Play Court Surfacing Contractor		
C-4	Boiler, Hot-Water Heating and Steam Fitting Contractor		
C-5	Cabinet, Millwork, and Carpentry Remodeling and Repairs Contractor		
C-5a	Garage Door and Window Shutters Contractor		
C-5b	Siding Application Contractor		
C-6	Carpentry Framing Contractor		
C-7	Carpet Laying Contractor		
C-9	Cesspool Contractor		
C-10	Scaffolding Contractor		
C-12	Drywall Contractor		
C-13	Electrical Contractor		
C-14	Sign Contractor		
C-15	Electronic Systems Contractor		
C-15a	Fire and Burglar Alarm Contractor		
C-15b	Telecommunications Contractor		
C-16	Elevator Contractor		
C-16a	Conveyor Systems Contractor		
C-17	Excavating, Grading, and Trenching Contractor		
C-19	Asbestos Contractor		
C-20	Fire Protection Contractor		
C-20a	Fire Repressant Systems Contractor		

	Contractor Classification	Name of Joint Contractor or Subcontractor	License Number
C-21	Flooring Contractor		
C-22	Glazing and Tinting Contractor		
C-22a	Glass Tinting Contractor		
C-23	Gunite Contractor		
C-24	Building Moving and Wrecking Contractor		
C-25	Institutional and Commercial Equipment Contractor		
C-27	Landscaping Contractor		
C-27a	Hydro Mulching Contractor		
C-27b	Tree Trimming and Removal Contractor		
C-31	Masonry Contractor		
C-31a	Cement Concrete Contractor		
C-31b	Stone Masonry Contractor		
C-31c	Refractory Contractor		
C-31d	Tuckpointing and Caulking Contractor		
C-31e	Concrete Cutting, Drilling, Sawing, Coring, and Pressure Grouting Contractor		
C-32	Ornamental, Guardrail, and Fencing Contractor		
C-32a	Wood and Vinyl Fencing Contractor		
C-33	Painting and Decorating Contractor		
C-33a	Wall Coverings Contractor		
C-33b	Taping Contractor		
C-33c	Surface Treatment Contractor		
C-34	Soil Stabilization Contractor		
C-35	Pile Driving, Pile and Caisson Drilling, and Foundation Contractor		
C-36	Plastering Contractor		
C-36a	Lathing Contractor		

	Contractor Classification	Name of Joint Contractor or Subcontractor	License Number
C-37	Plumbing Contractor		
C-37a	Sewer and Drain Line Contractor		
C-37b	Irrigation and Lawn Sprinkler Systems Contractor		
C-37c	Vacuum and Air Systems Contractor		
C-37d	Water Chlorination and Sanitation Contractor		
C-37e	Treatment and Pumping Facilities Contractor		
C-37f	Fuel Dispensing Contractor		
C-38	Post Tensioning Contractor		
C-40	Refrigeration Contractor		
C-40a	Prefabricated Refrigerator Panels Contractor		
C-41	Reinforcing Steel Contractor		
C-42	Roofing Contractor		
C-42a	Aluminum and Other Metal Shingles Contractor		
C-42b	Wood Shingles and Wood Shakes Contractor		
C-42c	Concrete and Clay Tile Contractor		
C-42e	Urethane Foam Contractor		
C-42g	Roof coatings Contractor		
C-43	Sewer, Sewage Disposal, Drain, and Pipe Laying Contractor		
C-43a	Reconditioning and Repairing Pipeline Contractor		
C-44	Sheet Metal Contractor		
C-44a	Gutters Contractor		
C-44b	Awnings and Patio Cover Contractor		
C-48	Structural Steel Contractor		
C-48a	Steel Door Contractor		
C-49b	Hot Tub and Pool Contractor		

	Contractor Classification	Name of Joint Contractor or Subcontractor	License Number
C-51	Tile Contractor		
C-51a	Cultured Marble Contractor		
C-51b	Terrazzo Contractor		
C-52	Ventilating and Air Conditioning Contractor		
C-55	Waterproofing Contractor		
C-56	Welding Contractor		
C-57	Well Contractor		
C-57a	Pumps Installation Contractor		
C-57b	Injection Well Contractor		
C-60	Solar Power Systems Contractor		
C-61	Solar Energy Systems Contractor		
C-61a	Solar Hot Water Systems Contractor		
C-61b	Solar Heating and Cooling Systems Contractor		
C-62	Pole and Line Contractor		
C-62a	Pole Contractor		
C-63	High Voltage Electrical Contractor		
C-68	Classified Specialist		
	Licensed Surveyor		
	Licensed Geotechnical Engineer		
	Licensed Structural Engineer		
	Archaeologist		
	Cultural Monitor		
	Licensed Civil Engineer		
	Supervising Control and Data Acquisition (SCADA) Contractor		
	NACE Inspector		
*			
*			
*			

* Contractor to add licenses as required to complete the scope of work. Attach additional sheet as needed. It is understood and agreed that the Department reserves the right to reject any and/or all offers and waive any defects when, in the Department's opinion, such rejection or waiver shall be for the best interest of the Department.

For purpose of evaluating the criterion described in this solicitation, it is understood and agreed that offers will be compared on the basis of the Total Sum Offer which shall be considered to be the total sum of actual or corrected amounts proposed on each item. The offerors signed Offer shall constitute the Offeror's official offer. The Department reserves the right to designate the contract amount based on selected Offeror's Total Sum Offer depending on the funds available for this Project.

It is also understood and agreed that the work called for under this Project must and shall be completed within **Nine Hundred (900)** consecutive calendar days after written notice has been given to the successful Offeror to commence work. It is also understood and agreed that the quantities given herewith are approximate only and are subject to increase or decrease and that the undersigned will perform all quantities of work, as either increase or decrease, in accordance with the provisions of the specifications.

It is also understood and agreed that the estimated quantities shown for items for which a UNIT PRICE is listed in the Offer are only for the purpose of comparing on a uniform basis offers offered for the work under this contract, and the undersigned agrees that the undersigned is satisfied with and will not dispute said estimated quantities as a means of comparing the offers. It is understood and agreed that the Offeror will make no claims for anticipated profit or loss of profit because of a difference between quantities of the various classes of work done or the materials and equipment actually installed and the said estimated quantities. On UNIT PRICE offers, payment will be made only for the actual number of units incorporated into the finished project at the contract UNIT PRICE.

It is also understood and agreed that if the product of the UNIT PRICE offer and the number of units does not equal the total amount stated by the Offeror in the offer for any item, it will be assumed that the error was made in computing the total amount. For purpose of evaluating the criterion described in this solicitation, the stated UNIT PRICE alone will be considered as representing the Offeror's intention and the total amount offered on such item shall be considered to be the amount arrived at by multiplying the UNIT PRICE by the number of units.

It is also understood and agreed that the liquidated damages in the amount of **\$1,000.00** for each and every calendar day in excess thereof prior to completion of the contract beyond the specified and approved completion date, shall be withheld from payments due to the Contractor, pursuant to the Damages for Delay provision contained in this solicitation.

It is also understood and agreed that if this offer is accepted, the successful offeror will contract with the Board and said offeror shall furnish the required bonds to the Board within ten (10) days from the date of receiving from the Board the contract prepared and ready for execution.

It is further understood and agreed that the successful offeror will provide all necessary materials, labor, tools, equipment, and other incidental necessary to do all the work and furnish all the materials specified in the contract in the manner and time herein prescribed and according to the requirements of the Department as therein set forth.

The undersigned further understands and agrees that by submitting this Offer, 1) the Offeror is declaring that the Offer is not in violation of Chapter 84, Hawai'i Revised Statutes, and 2) Offeror is certifying that the price(s) submitted was (were) independently arrived at without collusion.

It is also understood and agreed that if this Offer is accepted and the undersigned shall fail to or neglect to contract as aforesaid, the Board may determine that the offeror has abandoned the contract and thereupon forfeiture of the security accompanying the Offer shall operate and the same shall become the property of the Board.

Enclosed herewith is a Bidder's Bond (Bid Security)	()	for the sum
Surety Bond	()	
Legal Tender	()	
Certificate of Deposit	()	
Share Certificate	()	
Cashier's Check	()	
Treasurer's Check	()	
Teller's Check	()	
Certified Check	()	

of _____ DOLLARS
(\$ _____) payable to the Department of Water, being not less than the sum required under Sub-Section 2.9 "Bid Security" of the "General Provisions for Construction Contracts of the Department of Water", dated April 25, 2016.

Evidence of the undersigned Offeror having the authority to submit this Offer and to enter a contract is herewith furnished.

Respectfully submitted,

Name of Offeror

Authorized Signature

Print/Type Name & Title of above

Address, Zip Code

Telephone

Contractor's License No.

State of Hawai'i General Excise Tax License No.

Federal Employer Identification No.

Type of Organization: (Please designate)

- Sole Proprietorship Partnership
 Corporation Joint Venture
 Other (*please specify*) _____

State of Incorporation: Hawai'i Other (*please specify*) _____

Name of Performance Bond Surety Co. _____

Address _____

Authorized to do Business in the State of Hawai'i? Yes or No

If corporation, state who will sign contract and signatory's title:

Name	Title
_____	_____
Name	Title
_____	_____

If the Offeror is a CORPORATION, the legal name of the corporation shall be set forth on the Offer, together with the signature(s) of the Officer(s) authorized to sign on behalf of the corporation and the corporate seal affixed thereto. Evidence of the authority of the Officer(s) to sign on behalf of the Corporation SHALL be attached to this page and included in the Offer. Acceptable evidence of authority to sign includes, but is not limited to, a copy of the articles of incorporation, corporate resolution, or corporate by-laws. (See HRS Ch. 415, Hawai'i Business Corporation Act).

If the Offeror is a LIMITED LIABILITY COMPANY, the legal name of the company shall be set forth on the Offer, together with the signature(s) of the member of the limited liability company or manager of the manger-managed limited liability company authorized to sign on behalf of the entity. Evidence of the authority of the Officer(s) authorized to sign on behalf of the company SHALL be attached to this page and included in the Offer.

If the Offeror is a PARTNERSHIP, the legal name of the firm shall be set forth on the Offer, together with the signature(s) of the General Partner(s) authorized to sign on behalf of the partnership. Evidence of the authority of the General Partner(s) authorized to sign on behalf of the partnership SHALL be attached to this page and included with the Offer. Acceptable evidence of authority to sign for the partnership includes, but is not limited to, a copy of the partnership registration statement or authorization signed by all of the partners. (See HRS Ch. 425, Partnerships).

If Offeror is a SOLE PROPRIETORSHIP, Offeror's signature shall be placed above.

NOTE: PLEASE DO NOT DETACH THIS SAMPLE OFFER FROM THE SPECIFICATIONS. FILL IN ALL BLANK SPACES WITH INFORMATION REQUIRED OR OFFER MAY BE REJECTED.

APPENDIX D: Insurance

Bound Separately

APPENDIX E: Wage Certificate for Service Contracts

WAGE CERTIFICATE FOR CONSTRUCTION CONTRACTS

Projects subject to HRS 104

TO: Manager and Chief Engineer

SUBJECT: Solicitation No.: _____

PROJECT: _____

Pursuant to **HRS 103-55.5 Wages and Hours of Employees on Public Works Construction Contracts**, I hereby certify that if awarded the contract in excess of \$2,000, the work to be performed will be performed under the following conditions:

1. Individuals engaged in the performance of the contract on the job site shall be paid:
 - a. Not less than the wages that the director of labor and industrial relations shall have determined to be prevailing for corresponding classes of laborers and mechanics employed on public works projects; and
 - b. Overtime compensation at one and one-half times the basic hourly rate plus fringe benefits for hours worked on Saturday, Sunday, or a legal holiday of the State or in excess of eight hours on any other day; and
2. All applicable laws of the federal and state governments relating to workers' compensation, unemployment compensation, payment of wages, and safety shall be fully complied with.

Offeror: _____

By: _____

Title: _____

Date: _____

APPENDIX F: Certification of Compliance for Final Payment

CERTIFICATION OF COMPLIANCE FOR FINAL PAYMENT
(Reference §3-122-112, HAR)

Reference: _____
(Contract Number) (IFB/RFP Number)

_____ affirms it is in
(Company Name)
compliance with all laws, as applicable, governing doing business in the State of Hawai‘i to include the following:

1. Chapter 383, HRS, Hawai‘i Employment Security Law – Unemployment Insurance;
2. Chapter 386, HRS, Worker’s Compensation Law;
3. Chapter 392, HRS, Temporary Disability Insurance;
4. Chapter 393, HRS, Prepaid Health Care Act; and

maintains a “Certificate of Good Standing” from the Department of Commerce and Consumer Affairs, Business Registration Division.

Moreover, _____
(Company Name)
acknowledges that making a false statement shall cause its suspension and may cause its debarment from future awards of contracts.

Signature: _____

Print Name: _____

Title: _____

Date: _____

APPENDIX G: Apprenticeship Program

Bidders seeking preference for this shall:

- a. Be a party to an apprenticeship program registered with the State Department of Labor and Industrial Relations (DLIR) at the time of its Offer for each apprenticeable trade the Proposer will employ to construct the public works project for which the Offer is made; and
- b. For each apprenticeable trade the proposer will employ for this project, submit with its Offer fully executed and authorized CERTIFICATION OF BIDDER'S PARTICIPATION IN APPROVED APPRENTICESHIP PROGRAM UNDER ACT 17. Schedule F attached to this solicitation verifying participation in apprenticeship program(s) registered with the DLIR.
- c. The Contractor shall certify each month that work is being conducted on the project and that it continues to be a participant in the relevant apprenticeship program for each trade it employs. Monthly certification shall be made on MONTHLY REPORT OF CONTRACTOR'S PARTICIPATION IN APPROVED APPRENTICESHIP PROGRAM UNDER ACT 17 (Schedule F-I).

SCHEDULE F - 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* (One Sponsor Per Form)	C. No. Enrolled (# of apprentices currently enrolled as of bidder's request date)	D. No. Completed (# of apprentices who completed the apprenticeship program in the 12 months prior to request date)
A. (List)			
4.1			
4.2			
4.3			
4.4			
4.5			
4.6			
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. (Rev. 08/25/2010)

SCHEDULE F-1 - 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: (choose)	B. Year: (choose)
B. Project Bid 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)			
15.1 Contractor was a party to an apprenticeship program or programs with the following sponsor: (Give sponsor's name(s).*)		15.2 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.)	
III. 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	
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 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. (Rev. 08/25/2010)

APPENDIX H: Notice of Intent to Propose

NOTICE OF INTENT

DATE

Chief Procurement Officer
Department of Water
County of Kaua‘i
4398 Pua Loke Street
Lihu‘e, HI 96766

Dear Sir:

In accordance with the Provisions of Section 103D-310, Hawai‘i Revised Statutes, you are hereby notified that it is the intent of the undersigned to offer on **JOB NO. 02-14 WK-08, KAPA‘A HOMESTEADS 325’ TANKS, TWO 0.5 MG TANKS, PACKAGE B – TANKS PACKAGE, KAPA‘A, KAUA‘I, HAWAI‘I**, for which Offers will be due on **April 14, 2023** as required.

I am informed that this Notice of Intent must be received by the Manager no later than 4:30 p.m. Hawai‘i Standard Time on **Friday, March 24, 2023** via email to cerorita@kauaiwater.org.

VERY TRULY YOURS,

SIGNATURE

PRINT OR TYPE NAME & TITLE OF SIGNER

Hawai‘i State Specialty License
Type and Classification:

NAME OF FIRM

CONTRACTORS LICENSE NO.

Hawai‘i State Business
License No.:

ADDRESS

CITY, STATE & ZIP CODE

TELEPHONE NO.

All prospective offerors must be currently licensed by the Hawai'i Department of Commerce and Consumer Affairs, Division of Professional and Vocational Licensing.

“A” general engineering contractors and “B” general building contractors are reminded that due to the Hawai'i Supreme Court's January 28, 2002 decision in Okada Trucking Co., Ltd. v. Board of Water Supply, et al., 97 Haw. 450(2002), they are prohibited from undertaking any work, solely or as part of a larger project, which would require the general contractor to act as a specialty contractor in any area where the general contractor has no license. Although the “A” and “B” contractor may still submit a Offer on and act as the “prime” contractor on an “A” or “B” project (See, HRS §444-7 for the definitions of an “A” or “B” project.), respectively, and the “A” and “B” contractor obtains “C” specialty contractor's licenses either on its own, or automatically under HAR §16-77-32.). The remaining work must be performed by appropriately licensed entities. It is the sole responsibility of the contractor to review the requirements of this project and determine the appropriate licenses that are required to complete the project.

APPENDIX I: NPDES Documents

Bound Separately

APPENDIX L: Employment of State Residents on Construction Procurement Contracts

1) Definitions

“Contract” means contracts for construction under Chapter 103D HRS.

“Contractor” has the same meaning as in section 103D-104, HRS; provided that contractor includes a subcontractor where applicable

“Construction” has the same meaning as in section 103D-104 HRS

“Procurement Officer” has the same meaning as in section 103D-104 HRS

“Resident” means a person who is physically present in the state at the time the person claims to have established the person’s domiciled in the state and shows the person’s intent is to make Hawai‘i the person’s primary residence.

“Shortage trade” means a construction trade in which there is a shortage of Hawai‘i residents qualified to work in the trade.

2) Requirements of Contractor

The contractor awarded this contract shall ensure that Hawai‘i Residents compose not less than eighty percent (80%) of the workforce employed to perform this Contract, calculated as follows:

The eighty percent (80%) requirement shall be determined by dividing the total number of hours worked on a contract by Residents by the total number of hours worked by all employees of the Contractor in the performance of the Contract. Hours worked for any subcontractor of the contractor shall count towards the calculation for purposes of this subsection. The hours worked by employees within shortage trades, as determined by the Department of Labor and Industrial Relations, shall not be included in the calculations for purposes of this subsection.

This requirement shall be applicable during the entire duration of this Contract. A notarized Certification for Employment of State Residents on Construction Procurement Contracts (Schedule I) shall be submitted on a monthly basis with your request for progress payments. If no request for progress payments are made for any month, the Contractor is still responsible to submit the certification on a monthly basis.

3) Penalties

Failure to comply with this requirement shall be subject to any of the following sanctions:

- A. Temporary suspension of work on the project until the Contractor or subcontractor complies with Act 68;
- B. Withholding of payment on the Contract or subcontract as applicable, until the Contractor or subcontractor complies with Act 68;

- C. Permanent disqualification of the Contractor or subcontractor from any further work on the project;
- D. Recovery by the Department of any moneys expended on the Contract or subcontract, as applicable; or
- E. Proceedings for debarment or suspension of the contractor or subcontractor under section 103D-702.

4) Conflict with Federal Law

Act 68 shall not apply if the application of the Act is in conflict with any federal law, or if application of Act 68 will disqualify the Department from receiving federal funds or aid.

CERTIFICATION OF COMPLIANCE
FOR
EMPLOYMENT OF STATE RESIDENTS
ACT 68, SESSION LAWS OF HAWAI'I 2010

Project Title: _____

DOW Project No.: _____

Contract No.: _____

As required by Act 68, Session Laws of Hawai'i 2010 – Employment of State Residents on Construction Procurement Contracts, I hereby certify under oath, that I am an officer of _____ (*Name of Company*) and for the month of _____, 20____, _____ (*Name of Company*) is in compliance with Act 68, SLH 2010, by employing a workforce of whom 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 the Subcontractor for this contract.

CORPORATE SEAL

(Name of Company)

(Signature)

(Print Name)

(Print Title)

NOTARY CERTIFICATION

APPENDIX M: Certification of Compliance with HRS 396-18, Safety and Health Programs for Contractor Bidding On Board Construction Jobs

PROJECT NAME: _____

SOLICITATION NO.: _____

This is to certify that the undersigned will comply with the requirements of HRS 396-18, as follows:

(A) Pursuant to HRS 396-18, all bids and proposals in excess of \$100,000 shall include a signed certification from the bidder that a written safety and health plan for the job will be available and implemented by the notice to proceed dates of the project. The written safety and health plan shall include:

- (1) A safety and health policy statement reflecting management commitment;
- (2) A description of the safety and health responsibilities of all levels of management and supervisors on the job, and a statement of accountability appropriate to each;
- (3) The details of:
 - (a) The mechanism for employee involvement in job hazard analysis;
 - (b) Hazard identification, including periodic inspections and hazard correction and control;
 - (c) Accident and “near-miss” investigations; and
 - (d) Evaluations of employee training programs.
- (4) A plan to encourage employees to report hazards to management as soon as possible and to require management to address these hazards promptly; and
- (5) A certification by a senior corporate or company manager that the plan is true and correct.

(B) Failure to submit the required certification may be grounds for disqualification of the bid.

(C) Failure to have available on site or failure to implement the written safety and health plan by the project’s Notice to Proceed Dates shall be considered willful noncompliance and be sufficient grounds to disqualify the award and terminate the contract.

Name of Contractor: _____

Signature and Title: _____

Date: _____

APPENDIX N: Schematic Piping Plans

Bound Separately

APPENDIX O: Geotechnical Engineering Exploration

Bound Separately

APPENDIX P: Special Provisions

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SPECIAL PROVISIONS

SECTION SP-1 – GENERAL REQUIREMENTS

1.1 The following shall supplement the applicable subsections of Division 300 - Construction of the “Water System Standards”, 2002.

1.1.01

SECTION 302 – WATER MAINS AND APPURTENANCES

The following shall supplement the applicable subsections of Division 300 – Construction of the “Water System Standards”, 2002.

Make the following amendments to said section:

SECTION 302.02 – TRENCH EXCAVATION

Add the following paragraph to the “A. General” subsection:

Because construction will occur within residential neighborhoods, the Contractor shall secure all areas under construction with due regard for the safety of all persons and property at all times.

Amend the first paragraph of the “B. Payment” subsection to read:

Payment for trench excavation (without classification), backfill, select borrow, pipe cushion, and cost to safely secure all areas under construction will not be paid for separately but shall be included in the Unit Price for the furnishing and installation of the various items in the Offer.

SECTION 302.03 – TRENCH BACKFILL

Add the following paragraph to the “A. General” subsection:

If backfilling ground is continuously wet, pipe cushion and backfill material shall consist of coarse aggregate, ASTM C 33, Size Number 67, and shall be completely encapsulated with non-woven geotextile filter fabric unless approval for other material is granted.

Amend the first paragraph of the “G. Payment” subsection to read:

Payment for aggregate and sand pipe cushion surrounding the pipe, pipe bedding, non-woven geotextile filter fabric pipe cushion encasement, trench backfill, select borrow, warning tape, and backfill at valve boxes, meter boxes, manholes, and handholes will not be paid for separately but shall be included in the Unit Price for the furnishing and installation of the various items in the Offer.

SECTION 302.04 – SHEATHING

Add the following paragraph to the “A. General” subsection:

Contractor shall provide and maintain sheathing and bracing as necessary to support excavation and trenching and shall comply with Occupational Safety & Health Administration (OSHA) requirements. The contractor shall deem a competent person for trench excavation and that person shall be on-site during all trench excavation and backfill.

Amend the entire “B. Payment” subsection to read:

Payment for installation and removal of sheathing and bracing, and for additional excavation (without classification), additional aggregate and sand cushion to surround the pipe, additional non-woven geotextile filter fabric to surround the cushion, additional bedding, and additional backfill required because of sheathing or bracing work will not be paid for separately but shall be included in the Unit Price for the furnishing and installation of the various items in the Offer.

SECTION 302.05 – DEWATERING

Amend the first paragraph of the “A. General” subsection to read:

In locations where water is present in the trench, the Contractor must dewater by pumping or other means to keep the trench free of water during the installation of pipe cushion, the pipe itself, the testing, connection, relocation, lowering of the water mains, and until backfilling is completed to a point 12 inches above the top of the pipe. The Contractor shall provide proper facilities for delivering all pump water to its intended outfall location and attain all necessary permits required for discharge.

If the Contractor elects to discharge dewatering effluent into State Waters or existing drainage systems, the Contractor shall obtain NPDES General Permit Coverage authorizing discharges associated with construction activity dewatering from the Department of Health, Clean Water Branch (DOW-CWB). The Contractor shall prepare and submit permit application (CWB-NOI Form G) to DOH-CWB and shall not begin dewatering activities until DOH-CWB has issued Notice of General Permit Coverage (NGPC) and shall conduct dewatering operations in accordance with the conditions in NGPC. Contractor shall submit a copy of NPDES dewatering Application and Permit to the Manager.

Amend the entire “B. Payment” subsection to read:

Payment for dewatering activities, including but not limited to the preparation and implementation of NPDES General Permit Coverage authorizing discharges associated with construction activity dewatering, and the installation, maintenance, monitoring, and removal of Best Management Practices (BMPs), will not be paid for separately but shall be included in the Unit Price for the furnishing and installation of the various items in the Offer.

For all fines received by the Department for non-compliance with the Notice of General Permit Coverage (NGPC), the Contractor shall reimburse the Department within 30 days for the full amount of the outstanding cost the Department has incurred, or the Department will deduct the cost from the Contractor’s progress payment.

SECTION 302.06 – “ADOBE” OR CLAY

Amend the entire “B. Payment” subsection to read:

Exclusive of the payments due for work defined in Section 302.07 – MUD REMOVAL AND CRUSHED ROCK TRENCH STABILIZATION, no separate payment for excavation (without classification) and removal of adobe, clay or other unsuitable material from the pipe trench or for necessary backfill material approved by the Manager to replace those materials will be made; the compensation for such work shall be deemed to be included in the Unit Price for the furnishing and installation of the various items in the Offer.

SECTION 302.07 – MUD REMOVAL AND CRUSHED ROCK TRENCH STABILIZATION

Amend the first paragraph of the “B. Payment” subsection to read:

Payment for excavation (without classification) to remove and dispose of mud or undesirable materials from the pipe trench whether native or caused by contractor means and methods will not be paid for separately but shall be included in the Unit Price for the furnishing and installation of the various items in the Offer.

SECTION 302.08 – BLASTING

Amend the entire “A. General” and “B. Payment” subsections to read:

No blasting shall be allowed on this project.

SECTION 302.09 – EXCAVATION FOR MANHOLES

Amend the second paragraph of the “B. Payment” subsection to read:

Payment for excavation (without classification) for manholes will not be paid for separately but shall be deemed to be included in the Unit Price for the furnishing and installation of Manholes.

SECTION 302.10 – EXCAVATION FOR THRUST BLOCKS, BEAMS, AND TEST BLOCKS

Amend the entire “B. Payment” subsection to read:

Payment for excavation (without classification) and backfill of concrete thrust blocks, thrust beams, reaction blocks, and test blocks will not be paid for separately but shall be included in the Unit Price for installation of Concrete Thrust Blocks, Thrust Beams, Reaction Blocks, and Test Blocks or Waterline installation line items.

SECTION 302.11 – SURPLUS EXCAVATION

Amend the entire “B. Payment” subsection to read:

Payment for the removal and disposal of surplus excavation material will not be paid for separately but shall be included in the Unit Price for the furnishing and installation of the various items in the Offer.

SECTION 302.12 – DUCTILE IRON PIPE

Add the following paragraph to the “A. General” subsection:

Transition couplings shall be Romac Style “501”, Style “RC501”, or approved equal. D.I. to A.C. transition couplings shall be 14" in length.

Add the following paragraphs to the “E. Payment” subsection:

The Unit Price for furnishing and installation of the various sizes of Ductile Iron Pipe shall be inclusive of trench excavation (without classification), trench backfill, pipe cushion, warning tape, sheathing and dewatering of trench, removal and disposal of adobe, clay, mud, and other unsuitable material from the trench, and removal and disposal of surplus excavation material, and all associated cost for licensed Geotechnical Engineer monitoring, analysis, and testing.

Payment for furnishing and installation of transition couplings shall not be made directly, costs for furnishing and installation of transition couplings shall be included in the Lump Sum for the various Connections to Existing Water Mains in the Offer.

SECTION 302.14 – PLASTIC PIPE

Add the following paragraphs to the “A. General” subsection:

The contractor shall furnish and install Polyvinyl Chloride (PVC) pipe for this project if required. All types and sizes of PVC pipes shall be AWWA C900, Pressure Class 200, DR14 pipe for pipes larger than 2 ½” or schedule 80 PVC pipe for sizes 2 1/2” and smaller.

Pipe cushion material as called for on the plans shall adhere to the requirements of “Water System Standards” Section 209.02, Pipe Cushion. When ground water is encountered or when required by the Engineer, the pipe cushion shall be wrapped in non-woven geotextile fabric in accordance with the “Water System Standards” Section 212.05, Geotextile Fabrics. The contractor shall retain the services of a licensed Geotechnical Engineer to monitor the quality of pipe cushion material, installation, and compaction of the pipe cushion, geotextile encasement, and trench backfill. The Department of Water will require periodic sieve testing of the pipe cushion material during the course of construction.

If PVC installation will be within State Highways Right-of-Way, installation, work, and materials used for this project shall comply with the requirements in Section 624 – Water System, Section 703.21 – Trench Backfill Material, Section 716 – Geotextiles, and Section 716.03 – Geotextiles for Underdrain Applications of the “Specifications for Road and Bridge Construction”, State of Hawai‘i, dated 2005, unless otherwise approved by the authoritative agency.

Transition couplings shall be Romac Style “501”, Style “RC501”, or approved equal. C-900 PVC to A.C. transition couplings shall be 14" in length.

Amend the first paragraph of the “B. Payment” subsection to read:

Payment for furnishing and installation of various sizes of PVC Pipe including all necessary joints accessories and fusion process and accompanying ground restraints, will be made at the respective Unit Price per linear foot based on the actual linear feet of PVC pipe installed (exclusive of valves, fittings, bends, and adapters), cleaned or pigged and successfully hydrotested in the field.

Add the following paragraphs to the “B. Payment” subsection:

The Unit Price for furnishing and installation of the various sizes of PVC Pipe shall be inclusive of trench excavation (without classification), trench backfill, pipe cushion, geotextile filter fabric encasement, conducting cable, warning tape, sheathing, removal and disposal of adobe, clay, mud, and other unsuitable material from the trench, removal and disposal of surplus excavation material, and all associated cost for licensed Geotechnical Engineer monitoring, analysis, and testing.

Payment for furnishing and installation of transition couplings shall not be made directly, costs for furnishing and installation of transition couplings shall be included in the Lump Sum for the various Connections to Existing Water Mains in the Offer.

SECTION 302.15 – FITTINGS AND SPECIALS (DUCTILE IRON, CONCRETE CYLINDER, PLASTIC PVC PIPE)

Add the following paragraph to the “A. General” subsection:

The contractor shall furnish and install EBAA Iron Series 2000PV MEGALUG Mechanical Joint Restraint for plain end PVC pipe at all mechanical joint fittings and EBAA Iron Series 2100 MEGAFLANGE Restrained Flange Adapter for plain end PVC pipe at all flange joints. Both shall be installed in accordance with the manufacturer’s guidelines.

Amend the first paragraph of the “B. Payment” subsection to read:

Payment for furnishing and installing Cast Iron and Ductile Iron Fittings will be made at the Lump Sum Price, complete in place. The Contractor shall be responsible for the actual number of cast iron and ductile iron fittings furnished, installed and tested in the field. If a line item for Cast Iron and Ductile Iron fittings is not specifically provided, the contractor shall include the cost in the furnishing and installation of the waterline unit price.

Amend the fourth paragraph of the “B. Payment” subsection to read:

Payment for furnishing and installing PVC Fittings, including copper toning wire will not be paid for separately but shall be included in the Unit Price for furnishing and installation of the various sized PVC Pipes in the Offer.

Amend the fifth paragraph of the “B. Payment” subsection to read:

Payment for furnishing and installing Flanged by Bell Adapters, Flanged Dismantling Joints, MEGALUG Mechanical Joint Restraint, and MEGAFLANGE Restrained Flange Adapters

will not be paid for separately but shall be included in the Lump Sum Price for Cast Iron and Ductile Iron Fittings, in place complete.

SECTION 302.16 – GATE VALVES AND BUTTERFLY VALVES

Amend the first paragraph of the “A. General” subsection to read:

The contractor shall furnish and install all permanent and temporary gate valves and butterfly valves at locations shown on the plans or as directed by the Engineer. Unless otherwise specified, the installation shall be in accordance with the Standard Details. Specifications for furnishing and installing Temporary Gate Valves will comply with this section of the specification.

Amend the fourth paragraph of the “A. General” subsection to read:

Concrete anchor block with non-corrosive straps will not be required for this project.

Add the following paragraph to the “B. Payment” subsection:

The Unit Price for furnishing and installing Gate Valves and Butterfly Valves and furnishing and installing Temporary Gate Valves shall be inclusive of trench excavation (without classification), cast iron valve box, trench backfill, pipe cushion, warning tape, sheathing and dewatering of trench, removal and disposal of adobe, clay, mud, and other unsuitable material from the trench, and removal and disposal of surplus excavation material.

SECTION 302.17 – AIR RELIEF VALVES

Add the following paragraph to the “A. General” subsection:

Air relief valves shall be One-Inch Val-Matic Valve & Manufacturing Corp. Combination Air Valve 201C.2 with screened hood, or approved equal.

Amend the second paragraph of the “B. Payment” subsection to read:

The Unit Price for furnishing and installation of Air Relief Valve shall be full compensation for all labor, materials, tools and equipment for excavation (without classification) and backfill, sheathing and dewatering of trench, installation of copper pipes, fittings, various types of valves, ARV, cinder or crush rock cushion, brick saddle, ARV pipe stand, concrete footing, roofing felt, stainless steel straps, screened hood, paint, testing, and all other incidentals to complete this work.

SECTION 302.18 – SERVICE LATERALS, CONNECTIONS AND PIPES

Add the following paragraphs under “A. General” subsection:

New service laterals shall be terminated with an angle valve in the existing meter boxes to facilitate the reconnection to the water meter.

Where existing meters are located within private properties, the new service lateral will be terminated within the public right-of-way and include a new Type “B” or Type “X” meter box with cast iron cover.

When a new lateral is being installed for an existing Department of Water consumer, the contractor shall furnish and install lateral piping including all fittings and appurtenances between the new meter and the existing consumer piping and perform reconnection work, and include a new meter box and cover.

When an existing lateral is being abandoned, the contractor shall cut and plug the existing lateral at the main. The existing meter box and cover shall be cleaned and transported to the Department’s Baseyard in Līhu‘e, unless otherwise directed by the Engineer.

Amend the entire “D. Payment” subsection to read:

Payment covered under service laterals and connections and appurtenances shall be as follows: Payment for furnishing and installing various sizes of new service laterals and service connections, regardless of the lengths of the laterals or connections, will be made at the Unit Price per each unit based on the actual number installed and tested.

The Unit Price for furnishing and installing various sizes of new service laterals, service connections, and appurtenances shall be full compensation for all labor, materials, tools, and equipment for all handling, hauling, unloading, placing, testing, and all other incidentals necessary to complete the work.

No separate payment for the furnishing and installation of taps into mains, reconnections to existing consumer piping, temporary connections, cut and plug and removal of existing laterals, transferal of meters, pipes, fittings, ball corps, ball stops, angle valves, globe valves, double hub fittings, tapping tees, service saddles, meter boxes and covers, meter splices, brass pipes, caps, PVC conduits, warning tape, polyethylene wrap, plastic lateral for isolation, nor any other appurtenances will be made. Additionally, no separate payment will be made for trench excavation (without classification) and backfill, sheathing and dewatering of trench, pipe cushion, nor transporting existing meter boxes and covers to the Department’s Baseyard in Līhu‘e. The compensation for this work and items shall be deemed to be included in the Unit Price for New Service Laterals.

SECTION 302.19 – METER BOXES

Amend the entire “B. Payment” subsection to read:

Payment for the furnishing and installation of meter boxes including frames and covers will not be paid for separately but shall be included in the Unit Price for Service Laterals or Air Relief Valve Assemblies.

Payment for the furnishing and installation of Meter Boxes shall be full compensation for all labor, materials, tools and equipment for all handling, hauling, unloading, placing, bricks, concrete, cast iron covers, painting, concrete slabs and all other incidentals necessary to complete the work.

No separate payment for excavation (without classification) and backfill of Meter Boxes will be made; the compensation for such work shall be deemed to be included in the Unit Price for Service Laterals or Air Relief Valve Assemblies.

SECTION 302.20 – FIRE HYDRANTS

Amend the third paragraph of the “B. Payment” subsection into the following paragraphs:

Payment for excavation (without classification), backfill, sheathing and dewatering of trench, and fire hydrant markers will not be paid for separately but shall be included in the Unit Price for the furnishing and installation of Fire Hydrants.

No separate payment for the furnishing and installation of hydrant elbow, hydrant extension, pipe cushion, flat brick support, and all other appurtenances will be made; the compensation for such work shall be deemed to be included in the Unit Price for Fire Hydrants.

SECTION 302.21 – FIRE HYDRANT MARKERS

Amend the first paragraph of the “B. Payment” subsection to read:

Payment for hydrant markers will not be paid for separately but shall be included in the Unit Price for the furnishing and installation of Fire Hydrants.

SECTION 302.22 – CONCRETE BLOCKS, JACKETS, BEAMS, CURB GUARDS FOR FIRE HYDRANTS AND METER BOXES, MANHOLE AND VALVE BOX COLLAR

Amend the entire “B. Payment” subsection to read:

Payment for concrete reaction blocks, thrust beams, thrust blocks and test blocks will be made at the Unit Price per each either by specific Offer line item or as a portion within the furnishing and installation of waterline line item. The Unit Price for concrete reaction blocks, thrust beams, thrust blocks and test blocks shall be full compensation for all labor, materials, tools and equipment for all excavation (without classification), backfill, sheathing, dewatering, concrete, forms, tie wire and chairs, bracings, straps, structural struts, surface finishing, curing, mixing, hauling, furnishing and placing reinforcing steel, and all other incidental materials and work necessary to construct the concrete reaction block, thrust block or thrust beam, in place complete.

Payment for concrete jackets will be made at the Unit Price per linear feet of concrete jacket installed for the various sizes of pipe, regardless of pipe size either by specific Offer line item or as a portion within the furnishing and installation of waterline line item. The Unit Price for concrete jackets shall be full compensation for all labor, materials, tools and equipment for all excavation (without classification), backfill, sheathing, dewatering, concrete, forms, tie wire and chairs, bracings, straps, surface finishing, curing, mixing, hauling, furnishing and placing reinforcing steel, and all other incidental materials and work necessary to construct the concrete jackets in place complete.

Payment for concrete jackets for smaller utility conduits crossing the project’s waterlines shall not be made separately. Costs for furnishing and installation of concrete jackets, including

miscellaneous items such as warning tapes, shall be deemed to be included in the Unit Price for furnishing and installation of the various sizes and types of pipes in the Offer.

SECTION 302.24 – VALVE BOXES

Amend the first paragraph of the “A. General” subsection to read:

Valve boxes for air relief valves, butterfly valves and cleanouts shall be installed in accordance with the Standard Details. Valve boxes for temporary and permanent gate valves shall be furnished and installed in conformance with Standard Detail V11 of the WATER SYSTEM STANDARDS or as defined on the construction drawing for this project. Valve boxes shall be installed 3 feet minimum clear from gutter, curbs, utilities and any structures. For this section, Valve Box specifications for Temporary and Permanent Gate Valves are identical.

Amend the entire “B. Payment” subsection to read:

Payment for the furnishing and installing of valve boxes including cast iron frames and covers and adjusting valve boxes to the required grade will not be paid for separately but shall be included in the Unit Price for Gate Valves or Temporary Gate Valves or Tapping Valves or Cleanout assemblies.

Payment shall be full compensation for all labor, materials, tools and equipment for all excavation (without classification) and backfill, cast iron frames and covers, concrete settlement slab, reinforced concrete collar and leveling slab, standpipe (concrete, cast iron, ductile iron, or welded steel pipe), brick leveling course, crushed rock fill, pipe cushion, painting, general area clean up, and all other incidentals necessary to complete the work.

No separate payment for backfilling around valve boxes with black sand, sand or coral chips and for temporary backfill and additional excavation (without classification) to expose the risers after chlorination will be made; the compensation for such work shall be deemed to be included in the Unit Price for Gate Valves, Temporary Gate Valves, Tapping Valves, or Cleanout assemblies.

SECTION 302.30 – CONNECTIONS, RELOCATIONS & LOWERING OF WATER MAINS AND LATERALS

Amend the first paragraph of the “A. General” subsection to read:

Whenever connections to, disconnections from, relocations to, or lowering of existing mains, service laterals, or hydrant laterals are required, the Contractor shall perform all work necessary for the installation of the new or temporary water facility or abandonment of the existing water facility, as shown on the plans, under the coordination of the Manager or his authorized representative.

Add the following paragraph under “A. General” subsection:

The contractor shall utilize temporary waterlines to provide continuous water service and fire protection to existing consumers, as needed.

For this project, Connections to Existing Water Main involve connecting to various types of pipe. The Contractor shall not saw or cut or damage existing asbestos cement pipe. Asbestos cement pipes, fittings, and appurtenances shall be removed at the nearest coupling. The Contractor shall remove and dispose of asbestos cement pipes, fittings, and appurtenances in accordance with Section 302.31.

Amend the entire “B. Payment” subsection to read:

Payment for Connection to Existing Water Main, Connection to Existing Service Lateral, or Connection to Existing Hydrant Lateral which may include the furnishing and installing of pipes, fittings, fire hydrants, gate valves, tapping sleeves and valves, service saddles, hub clamps and other appurtenant materials, will be included in the Lump Sum Price for Connection to Existing Water Main or in the Unit Price for Connection to Existing Service Lateral, Connection to Existing Hydrant Lateral, or temporary bypasses and disconnects.

The Lump Sum Price or Unit Price shall represent full compensation for furnishing all materials, labor, tools, equipment, and incidentals required for excavation (without classification), backfill, sheathing and dewatering of trench, relocating existing gate valves, connections, relocations, disconnections, removal, or lowering of the existing mains as called for on the plans and in accordance with these specifications and inclusive of all incidentals required to complete the work.

No separate payment for cutting, plugging, relocating existing main, lowering of existing mains, providing temporary water service (if necessary), providing temporary fire protection (if necessary), or abandoning of existing mains will be made; the compensation for such work shall be deemed to be included in the Lump Sum for Connections to Existing Water Main or in the Unit Price for Connection to Existing Service Lateral or Connection to Existing Hydrant Lateral.

No separate payment for installation of bypass lines including cutting, plugging and abandoning existing bypass lines will be made; the compensation for such work shall be deemed to be included in the Lump Sum for Connections to Existing Water Main or in the Unit Price for Service Lateral Connections or Connection to Existing Hydrant Lateral.

SECTION 302.31 – REMOVING OR DEMOLISHING, REINSTALLING OR RETURNING EXISTING PIPES AND APPURTENANCES

Add the following paragraphs under “A. General” subsection:

The contractor shall be responsible for removal and disposal of existing pipes and appurtenances abandoned within the State and County Right-of-Way. Removal and disposal of pipes shall follow all applicable OSHA, HIOSH, State of Hawai‘i and Federal Regulations. Abatement personnel shall oversee removal and disposal, when required. Unless otherwise directed by the Manager, pipes and appurtenances shall become the property of the Contractor and shall be expeditiously removed from the construction site.

Care shall be exercised when removing and disposing of asbestos cement pipe and appurtenances. If the contractor causes the asbestos cement pipe or appurtenance to become friable, he will not be reimbursed for extra costs incurred to handle, containerize, transport, and dispose of the waste. Disposal of asbestos cement pipe and appurtenances shall be at an

approved asbestos disposal site and all disposal related costs shall be borne by the contractor. Disposal of all hazardous materials shall be completed within 24 hours of removal from the water system and shall not be stored within the project site beyond the 24 hour period.

Temporary pipes, fittings, valves, cleanouts, valve boxes with frames and covers, and appurtenances that were installed to provide temporary water service and fire protection shall be salvaged, cleaned, and transported to the Department's Baseyard in Līhu'e.

Amend the first paragraph of the "B. Payment" subsection to read:

Payment for removing, cleaning, and transporting existing fire hydrants, standpipes, cleanouts, and air relief valves will be made at the Unit Price per each unit, based on the actual number removed and accepted by the Manager. If a specific Offer line item is not provided, the contractor shall incorporate the costs into the unit price of the furnishing and installation of the applicable waterline. The Unit Price includes full compensation for all labor, materials, tools, and equipment for removing, cleaning, plugging existing water mains, providing temporary water service, restoring disturbed area, and transporting salvaged fire hydrants, standpipes, air relief valves, and appurtenances to the Department's Baseyard in Līhu'e.

Add the following paragraphs to the "B. Payment" subsection:

Payment for removal of existing gate and tapping valves will be made at the Unit Price per each unit, based on the actual number removed and accepted by the Manager. If a specific Offer line item is not provided, the contractor shall incorporate the costs into the unit price of the furnishing and installation of the applicable waterline. The Unit Price includes full compensation for all labor, materials, tools, and equipment for removing existing valve box components, removing concrete settlement slab, plugging of existing water mains, installing concrete and dirt backfilling, restoration of disturbed area, and cleaning and transporting the salvaged cast iron frames and covers to the Department's Baseyard in Līhu'e.

Payment for removal of temporary gate valves and valve box components will be made at the Unit Price per each unit, based on the actual number removed and accepted by the Manager. If a specific Offer line item is not provided, the contractor shall incorporate the costs into the unit price of the furnishing and installation of the applicable waterline. The Unit Price includes full compensation for all labor, materials, tools, and equipment for removing the temporary gate valves and valve box components, removing concrete settlement slab, installing concrete and dirt backfill, restoration of disturbed area, and cleaning and transporting salvaged gate valves and cast iron frames and covers to the Department's Baseyard in Līhu'e.

Payment for the removal of temporary pipes and fittings will be made at the Lump Sum or Unit Price for Removal Temporary Water Main. The Lump Sum or Unit Price includes full compensation for all labor, materials, tools, and equipment for excavating (without classification), sheathing, dewatering, disconnecting and removing the temporary pipe and fittings, backfill and restoration of disturbed area, and cleaning and transporting salvaged pipes and fittings to the Department's Baseyard in Līhu'e.

Payment for the removal and disposal of existing pipes, fittings, and appurtenances within the State and County Right-of-Way will be made at the Lump Sum or Unit Price for Removal of Water Main. The Lump Sum or Unit Price shall be full compensation for all labor, materials, tools and equipment for excavating (without classification), sheathing, dewatering,

disconnecting, removing, processing, storing, hauling, and disposing of abandoned pipes and fittings, backfill and restoration of disturbed area, abatement personnel, disposal and inspection fees, cutting and plugging of existing water mains and laterals, and all other incidental materials and work necessary for the complete removal of abandoned pipes, fittings, and appurtenances.

Payment for the removal and disposal of existing pipes and appurtenances not specified above shall be considered incidental and shall not be paid for separately but shall be included in the Unit Price or Lump Sum for the various items in the Offer. Payment shall be full compensation for all labor, materials, tools and equipment for excavating (without classification), sheathing, dewatering, disconnecting, removing, hauling, storing, and disposing of abandoned pipes and fittings, backfilling and restoring disturbed area, disposal and inspection fees, cutting and plugging of existing water mains and laterals, and all other incidental materials and work necessary for the complete removal of abandoned pipes and appurtenances.

SECTION 302.35 – VALVE MARKERS

Amend the entire “B. Payment” subsection to read:

Payment for the furnishing and installation of Valve Markers will not be paid for separately, but shall be included in the Unit Price for the installation of various sizes of gate or tapping valves. Payment shall be full compensation for all labor, materials, tools and equipment for all excavation (without classification), backfill, concrete, painting, and all other incidental materials and work necessary to complete the work.

SECTION 302.36 – SLOW CURING ASPHALT PAVEMENT (COLD MIX)

Amend “B. Payment”, replace the first paragraph with the following:

Payment for furnishing, placement, maintenance and removal of SLOW CURING ASPHALT (Cold Mix) shall be deemed to be included in the Unit Price for furnishing and installation of the various sizes and types of pipes in the Offer.

SECTION 302.37 – RESTORING PAVEMENTS, DRIVEWAYS, SIDEWALKS, CURBS, GUTTERS, FENCES, WALLS, AND MISCELLANEOUS

Add the following paragraphs under “A. General” subsection:

Asphalt concrete (A.C.) pavement resurfacing work shall include cold planing a 2-inch thick layer of existing A.C. pavement and resurfacing with a minimum 2-inch thick layer of new A.C. pavement (State Mix IV or V). Cold planing and resurfacing of A.C. pavement shall be in accordance with the Hawai‘i Standard Specifications for Road and Bridge Construction, 2005. The contractor shall construct the project per the approved construction drawings details and notes and verify potential AC thicknesses that could be encountered prior to submitting an Offer.

Existing pavement striping disturbed by this project shall be restored using thermoplastic extrusion. Painting is not acceptable. Installation of thermoplastic extrusion shall be in accordance with the Hawai‘i Standard Specifications for Road and Bridge Construction, 2005.

Existing reinforced concrete sidewalks, curbs, gutters, ramps, driveways, and swales disturbed by this project shall be restored to State Highways Standards in accordance with the Hawai'i Standard Specifications for Road and Bridge Construction, 2005 and the Highway's Division, Design Branch, Standard Plans, 2008.

Amend the entire "C. Payment" subsection to read:

Unless otherwise specified, payment for restoring fences, mail boxes, walls, landscaping, highway signs, highway markers and reflectors, and thermoplastic pavement striping shall not be measured nor paid for directly but shall be considered incidental to the construction work.

Payment for Restoring A.C. Pavement, inclusive of base and subbase courses, will be made at the Unit Price per square yard based on the minimum quantity required to be replaced on the approved plans, measured on the basis of the area of trenches specified for excavation plus an additional twelve inches on each side of the trench for restoration within the State Right-of-Way or six inches on each side of the trench for restoration within the County Right-of-Way. The Unit Price shall be full compensation for all labor materials, tools, and equipment, for all handling, removing, placing, maintaining and all other incidental materials and work necessary to complete the Restoring A.C. Pavement work.

Payment for Cold Planing Existing A.C. Pavement and A.C. Pavement Resurfacing will each be made at the Unit Price per square yard based on the minimum quantities required as noted on the approved plans. Each Unit Price shall be full compensation for all labor materials, tools, and equipment, for all handling, removing, placing, maintaining and all other incidental materials and work necessary to complete the Cold Planing of Existing A.C. Pavement and A.C. Pavement Resurfacing work.

Payment for A.C. Pavement resurfacing, will be made at the Unit Price per square yard based on the minimum quantity required to be replaced on the approved plans, measured on the basis of the area of roadway required to be resurfaced within the State Right-of-Way or County Right-of-Way. The Unit Price shall be full compensation for all labor materials, tools, and equipment, for all handling, removing, placing, maintaining and all other incidental materials and work necessary to complete the A.C. Pavement resurfacing work.

Unless otherwise specified, payment for restoration of Reinforced Concrete Sidewalk, Curbs, and Ramps, Reinforced Concrete Driveway, AC Driveways and Reinforced Concrete Swale shall not be measured nor paid for directly but shall be considered incidental to the construction work. If specified as a Unit Price, the Unit Price shall be full compensation for all labor materials, tools, and equipment, for all handling, removing, placing, finishing, maintaining, installation of forms, steel or weld wire fabric reinforcement, base course, and all other incidental materials and work necessary to complete the restoration of Reinforced Concrete Sidewalk, Curbs, and Ramps, Reinforced Concrete Driveway, AC Driveway and Reinforced Concrete Swale work.

Add the Following Section:

SECTION 302.40 – BRACING OF UTILITY POLES

When excavating close to utility poles, when specified on the plans, or when directed by the Manager, the Contractor shall brace the utility pole if the utility pole is owned by Hawaiian

Telcom or pay for bracing if the utility pole is owned by Kaua'i Island Utility Cooperative (KIUC). In addition to "Bracing of Utility Poles", the utility agency(s) may require the contractor to stabilize the ground adjacent to the pole(s). "Bracing of Utility Poles" and stabilizing the ground adjacent to the utility pole(s) includes all labor, materials, tools, and equipment necessary to install braces for existing utility poles, stabilize the ground adjacent to the utility poles, and for their removal when bracing and/or stabilizing are no longer necessary. Payment for bracing of utility poles or reimbursement for utility poles braced by KIUC or stabilizing the ground adjacent to the utility poles will not be made directly but shall be included in the Unit Price for the various items in the Offer.

Add the Following Section:

SECTION 302.41 – TRAFFIC CONTROL

Unless provided a specific line item in the Offer, Payment for traffic control work will not be made directly but shall be included in the Unit Price for the various items in the Offer.

SECTION 302.42 – REMOVING AND SALVAGING/DISPOSING OF MATERIALS

Payment for removal and salvage or disposal of materials (fire hydrants, standpipes, valve boxes, etc.) and for the restoration of the area shall not be made directly; costs for these items of work shall be included in the unit price offer for the various items in the Offer.

Add the Following Section:

SECTION 302.43 – EROSION CONTROL / BMP

Payment for all erosion control / BMP measures shown on the drawings will not be made directly but shall be included in the Unit Price for waterline installation.

- 1.2 PRECONSTRUCTION CONFERENCE: The Contractor shall arrange a preconstruction conference with the Project Manager, along with other affected agencies, firms and individuals within seven (7) days after issuance of "Notice to Proceed".

The Contractor shall submit a construction schedule to the Department of Water at the conference. This construction schedule shall be closely adhered to throughout the period of the contract.

At the preconstruction conference, the Contractor shall submit to the Department, the name of its authorized superintendent of the job.

The Contractor shall notify the Department at least three (3) working days prior to the start of construction.

- 1.3 CONTRACTOR'S RESPONSES BY HARDCOPY OR ELECTRONIC MAIL: The Contractor may respond in writing by submitting a hardcopy or by electronic mail only to the following Department's requests:

A. Notice of Intention to Propose.

B. Request for Clarification.

C. Pre-Proposal Due Date Modification or Withdrawal of Offers.

The hardcopy or electronic mail shall be submitted as specified in the applicable subsection and shall include the following information:

To: Chief Procurement Officer
Department of Water, County of Kaua'i

Attention: Chief Procurement Officer

From:

Date:

Subject: (Subject)
Job No. / Job Name

- 1.4 FAILURE TO COMPLETE ON TIME AND LIQUIDATED DAMAGES: The Contractor shall complete the work within the number of calendar days specified in the contract. The specified number of calendar days shall commence from the date designated in the Notice to Proceed.

Completion of the work within the required time is important since delay in the prosecution of the work will inconvenience the public, obstruct traffic and interfere with business.

If the Contractor fails to complete the work on or before the final completion date specified in the contract, damages will be sustained by the Department of Water, County of Kaua'i. Since the amount of damage, exclusive of the actual cost of engineering, inspection and superintendence, including necessary traveling expenses, is difficult, if not impossible to definitely ascertain and prove, the amount of such damages are fixed in advance at the sum of One Thousand Dollars (\$1,000.00) for each and every calendar day which the Contractor has delayed in the completion of the contract; and the Contractor shall pay that amount as liquidated damages and not by way of penalty, and in case the same are not paid, the Department may deduct the amount thereof from any monies due or that may become due to the Contractor under the contract.

- 1.5 MEASUREMENTS: Figured dimensions and drawings take precedence over measurements by scale. The Contractor must verify all measurements at the site and be responsible for the accuracy of the same.

1.6 PROJECT RECORD DOCUMENTS:

1.6.01 SECTION INCLUDES: Overview of maintenance of documents, recording requirements, and submittal of Project Record Documents.

1.6.02 MAINTENANCE OF DOCUMENTS:

- A. Maintain a record copy of the following Project Record Documents on-site and record actual revisions to the work:

- (1) Contract Drawings.
 - (2) Specifications.
 - (3) Amendments.
 - (4) Change orders and other modifications to the Contract.
 - (5) Reviewed submittals.
 - (6) Permits. (Road, Building, Noise, NPDES, etc.)
 - (7) Specified installer/tradesman certificates.
 - (8) Update Revisions to BMP plans as required by NPDES permit(s).
 - (9) Other Project Record Documents as indicated in specific Specification sections.
- B. Store Project Record Documents apart from other documents. Provide separate files, racks, and secure storage for Project Record Documents.
- C. Record information concurrent with construction progress.
- D. Label and file Project Record Documents in accordance with these Specifications. Label each document "PROJECT RECORD" in neat, large, printed letters.
- E. Maintain Project Record Documents in a clean, dry and legible condition.
- F. Keep Project Record Documents available for inspection.

1.6.03 RECORDING REQUIREMENTS:

- A. Use an erasable red pencil (not ink or indelible pencil) to clearly record information or changes on the Drawings by graphic line and note as required. Use an erasable yellow pencil to clearly mark for verification all major components shown as constructed.
- B. Use different colors for overlapping changes if required for clarification.
- C. Record information concurrently with construction progress. Do not conceal any work until required information is recorded. Date all entries reflecting change.
- D. Legibly mark each item on the Drawings to record actual construction, including:
- (1) Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - (2) Field changes of dimension and detail.
 - (3) Changes made by Contract amendments and modifications.
 - (4) Details not on original Drawings.
 - (5) References to related shop drawings.
- E. Specifications: Legibly mark each item to record actual construction, including the following:

- (1) Manufacturer's name and product model and number.
 - (2) Product substitutions or alternates utilized, as approved by DOW.
 - (3) Changes made by amendment and contract modifications.
- F. As-Built Drawings: The contractor shall provide and keep up-to-date a complete set of as-built prints for this project which shall be corrected regularly, showing every change from the original contract drawing set, including all addenda, change orders, job decisions, etc. The as-built prints shall be used only as a record set and shall be kept on the job site available for the Department's review.

At the time of the final inspection, the contractor shall furnish the Department with one hard copy set of the as built drawings for review. After DOW provides review comments to the contract, the contractor shall provide one hard copy Mylar set with all original signatures and redline changes (**also CADD format and PDF format on CD**) showing all of the changes from the original contract set drawings including addenda, change orders, job decisions, etc. The "As-Built Drawings" will be required to include the information stated in the General Provisions and prior to final acceptance as stated in the General Provisions. The "RECORD TRACINGS" block shall be utilized and signature blocks for the contractor, engineer and DOW Manager shall be provided on all sheets.

1.6.04 SUBMITTALS:

- A. At the completion of construction, deliver Project Record Documents.
- B. Transmit the Project Record Documents with a cover letter listing.
 - (1) Date.
 - (2) Project title and number.
 - (3) Contractor's name, address, and telephone number.
 - (4) Number and title of each Project Record Document.
 - (5) Signature of Contractor or authorized representative.

1.7 SUBSTITUTIONS

- A. The materials or products specified herein by trade name shall be provided as specified. Notwithstanding any reference in the specifications to any article, device, product, material, fixture, form or type of construction by name, make or catalog number, such references shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition. Brand names where used on the plans or in the specifications shall be presumed to be followed by the words "or approved equal." Such approval will be granted only under the following conditions: Substitution of a brand other than specifically name in the contract documents will be approved by the Department of Water if it meets the following conditions:

- 1. That it is equal or superior to the brand name in the specifications in construction, efficiency and utility.

2. That it is equal or less in cost to the Owner.
3. That during the construction period, the material or product specified cannot be delivered to the job in time to complete the work in proper sequence due to conditions beyond the control of the Contractor.

- B. To receive consideration, request for substitutions must be accompanied by documentary proof of the quality, difference in price and delivery, if any, in the form of certified quotations from suppliers of both specified and proposed materials or products. In case of a difference in price, the County shall receive all-benefit of the difference in cost involved by change order or credit the County with any savings so obtained.
- C. If substitution of any brand other than the one specifically named requires changes to work detailed or specified under other headings, then the Contractor assumes all responsibility for this work.
- D. Substitution request must be received by said date in Section 1.9 “Substitute Materials” (Section 1-Administration, Page 20).

1.8 STORAGE, WORK ZONE, CONSTRUCTION ACCESS: Department of Water shall not assume the responsibility to approve proposed storage areas, work zones, construction traffic pattern in and out of the project site. The Contractor shall be responsible for all additional NPDES permits, as well as, all updates to approved BMPs per NPDES permit approval requirements.

1.9 PRESERVATION OF PROPERTY: Due care shall be exercised to avoid injury to existing roadway improvements or facilities, utility facilities, adjacent property and roadside trees, shrubs and other plants that are not to be removed.

Roadside trees, shrubs and other plants that are not to be removed, and pole lines, fences, walls, signs, markers and monuments, buildings and structures, manholes and handholes, conduits, pipelines under or above ground, drain and sewer and water lines, all roadway facilities and any other improvements or facilities within or adjacent to the project shall be protected from injury or damage and if ordered by the Department of Water, the Contractor shall provide and install suitable safeguards, approved by the Department of Water, to protect such objects from injury or damage. If such objects are injured or damaged by reason of the Contractor’s operations, they shall be replaced or restored at the Contractor’s expense. The facilities shall be replaced or restored to a condition as good as when the Contractor entered upon the work, or as good as required by specifications accompanying the contract. The Department of Water may require the Contractor to make or cause to be made such temporary repairs borne by the Contractor and may be deducted from any moneys due or to become due to the Contractor under this contract. The fact that any underground facility is not shown upon the plans shall not relieve the Contractor of his or her responsibility. It shall be the Contractor’s responsibility to ascertain the existence of any underground improvements or facilities which may be subject to damage by reason of this operation.

Full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in protecting or repairing property shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed.

1.10 EXTRA WORK: No work of any kind in connection with the work covered by these specifications and plans shall be considered as extra work, or entitles the Contractor to extra compensation, except

Job No. 02-14 WK-08, KAPA‘A HOMESTEADS 325’ TANKS, TWO 0.5 MG TANKS, PACKAGE B – TANKS PACKAGE, KAPA‘A

when the work has been ordered in writing by the Department of Water prior to the performance of such work, and specifically referred to as EXTRA WORK and the amount of compensation stated in the change order.

- 1.11 **BUILDING LAWS:** The Contractor shall comply with the local laws, ordinances, rules and regulations bearing on the work and he must obtain and pay for all permits, licenses, certificates and give all notices required thereby.
- 1.12 **DELIVERY OF MATERIALS AT SITE:** Have all materials delivered at the site in such quantities as will ensure the uninterrupted progress of the work and the least obstruction of the premises and the adjoining property.
- 1.13 **DEFECTIVE MATERIALS:** When requested, furnish, without charge, samples of all materials entering into the work. All materials not conforming to the requirements of these specifications shall be considered as defective and all such materials, whether in place or not, shall be rejected.
- 1.14 **CLEAN UP:** On the completion of each day's work during this construction project, the Contractor shall remove from the site all debris, tools and excess material resulting from Contractor or the subcontractor's work and leave the work and any affected surroundings area broom clean.
- 1.15 **ENVIRONMENTAL PROTECTION:** The Contractor shall comply with the requirements for pollution control in performing all construction activities as set forth in the General Provisions.
- 1.16 **PROJECT SIGN:** The Contractor shall furnish, erect, maintain and remove one (1) project sign. The project signboard shall be 3/4 inch thick "AC" exterior grade fir plywood, 4 feet in height and 8 feet long. Sign shall be painted with one prime coat and two finish coats. The sign layout detail and sign and post details shall be submitted to the Department for approval. The project sign shall be erected at the site designated by the Department of Water within seven (7) calendar days after approval of the sign layout. The Contractor shall apply and pay for all permits and fees required for the placement of the sign. The sign layout shall include the Department of Water's logo (graphic to be provided by the Department of Water) and the following information:

**JOB NO. 02-14, PROJECT NO. WK-08, KAPA'A HOMESTEADS 325' TANKS, TWO 0.5 MG
TANKS, PACKAGE B – TANKS PACKAGE, KAPA'A
KAUA'I, HAWAII
DEPARTMENT OF WATER**

- 1.17 **SUBMITTALS:**
 - 1.17.01 **SECTION INCLUDES:** Overview of transmittal of submittals, submittal requirements, definition of submittal for review and definition of submittal for closeout.
 - 1.17.02 **RELATED SECTIONS:** Section 1.6 Project Record Documents.
 - 1.17.03 **TRANSMITTAL OF SUBMITTALS:**
 - A. General: Transmit submittals, number of copies as indicated in subsequent articles, to the following address:

Kaua'i Department of Water
Attn: Procurement Officer
4398 Pua Loke Street
Lihu'e, Kaua'i, Hawai'i 96766

- B. Submittals for Review: Transmit one (1) copy to the Department of Water for review. The Department will retain electronic set and return one (1) reviewed set. Should the contractor require more returned, he shall provide the additional sets at his or her cost. Where more copies are called for in any section of these Special Provisions, the Contractor shall be required to submit said number of prints for approval.

Whenever possible, submittals/transmittals shall also be submitted electronically.

- C. Submittals for Closeout:

- (1) Operations and Maintenance Manuals:

- a. Preliminary Submittal: Transmit one (1) copy of manual to the Department of Water two (2) weeks prior to final inspection. These copies will be returned after final inspection, with comments.
- b. Final Submittal: Revise manuals and submit two (2) copies to the Department of Water two (2) weeks after receipt of comments to Preliminary Submittal.

- (2) Project Record Documents: Submit Project Record Documents at the time of final inspection.

1.17.04 SUBMITTAL REQUIREMENTS:

- A. Required submittals shall include:

- 1) Shop drawings.
- 2) Piping layout.
- 3) Manufacturer's Data.
- 4) Certificates of Warranty.
- 5) Any others as called for in the plans, specifications, or by the Engineer.

- B. The Contractor's stamp and verification of drawings shall consist of the following information:

CONTRACTOR NAME

PROJECT: _____

JOB NO.: _____

THIS SUBMITTAL HAS BEEN CHECKED BY THIS GENERAL CONTRACTOR. IT IS CERTIFIED CORRECT, AND IN COMPLIANCE WITH CONTRACT DRAWINGS AND

SPECIFICATIONS. ALL AFFECTED CONTRACTORS AND SUPPLIERS ARE AWARE OF, AND WILL INTEGRATE THIS SUBMITTAL INTO THEIR OWN WORK.

DATE RECEIVED: _____
SUBMITTAL NUMBER: _____
SPECIFICATION SECTION: _____
SPECIFICATION PARAGRAPH: _____
DRAWING NUMBER: _____
SUBCONTRACTOR NAME: _____
SUPPLIER NAME: _____
MANUFACTURER NAME: _____
CERTIFIED BY: _____

- C. This stamp, "filled in", should appear on the title sheet of each shop drawing, on a cover sheet of submittals in an 8½"x11" format, or on one face of a cardstock tag (min. 3"x6") tied to each sample. The tag on samples should state what the sample is, so that, if the tag is accidentally separated from the sample, it can be matched up again.
- D. The person signing the Contractor's submittal stamp shall be the person with authority to act for the Contractor in connection with the contract during the performance of the contract. The signature shall be in original ink. Stamped signature will not be acceptable.
- E. Prepare submittals to show that the material, equipment, or work shown is in accordance with contract requirements and has been checked for dimensions and relationship with work of all other trades involved. All deviations from the plans and specifications shall be noted.
- F. Approval shall extend only to general conformance and shall not relieve the Contractor from his or her responsibility for coordinating his or her work with other trades and complying with the provisions of the contract documents for lengths, fits, quality of materials, quantities, applicable code requirements and other details. Approval does not authorize changes from the contract requirements unless stated in a separate letter or change order.
- G. Submittals shall be made in sufficient time to allow the Engineer not less than twenty regular working days for examining the drawings. The Contractor shall make submittals at the earliest possible date after the Notice to Proceed date to meet the construction schedule. The Engineer will not consider delays caused by the Contractor's failure to make submittals on time as justifiable reasons for contract time extensions.
- H. When the submittals have been reviewed by the Engineer, one set of the submittals will be returned to the Contractor appropriately stamped. If major changes or corrections are necessary, the submittal may be rejected and one set will be returned to the Contractor with such changes or corrections indicated, and the Contractor shall correct and resubmit one copy of the drawings, unless otherwise directed by the Engineer. No changes shall be made by the Contractor to the resubmitted shop

drawings other than those changes indicated by the Engineer. The resubmittal shall be so indicated on the shop drawing.

- I. Prior to approval of such drawings, any work which the Contractor may do on fabrications covered by the same is at his or her own risk, as the County will not be responsible for any expense incurred by the Contractor for changes to make the same conform to the drawings as finally approved.
- J. Upon approval of the above drawings, lists, prints and other data, a copy of the same shall be kept with the job site plans, and the fabrications furnished shall be in conformance with the same. However, approval of above drawings, lists, prints, specifications and other data shall in no way release the Contractor from his or her responsibility for the proper fulfillment of the requirements of this contract nor for fulfilling the purpose of the installation nor from his or her liability to replace the same should it prove defective or fail to meet the specified requirements.
- K. Submittal Clarity:
 - (1) Drawings:
 - a. Prepare finished drawings so that prints, reproducables, and reductions to half size will be clear and legible.
 - b. Make free-hand lettering no less than 5/32 inch high and typewritten notes no less than 1/8 inch high to allow for reduction. Do not crowd lettering.
 - (2) Manufacturer's Literature:
 - a. Submit a minimum of one original of manufacturer's printed material. Remaining number of submittals may be reproductions. Ensure reproductions of original materials are clear and legible.
 - b. Clearly mark the item(s) and/or information applicable to this project with arrows, bubbles, etc. Do not use high-lighted markings.
 - c. Provide the name and phone number of the manufacturer's sales and service representative for each device submitted.

1.17.05 DEFINITION OF "SUBMITTALS FOR REVIEW":

- A. Catalog Data: Manufacturer's standard printed information on materials, products and systems, which shows performance characteristics, dimensions, material of fabrication, and other characteristics necessary to assure conformity with the design requirements. Where other items or information not related to the work of this project are included in the literature submitted, the item(s) and/or information applicable to this project shall be clearly marked.
- B. Shop Drawings: Drawings necessary to show fabrication details to ensure compliance with contract documents.

- C. Block Diagrams: Block Diagrams necessary to show system connections and details to ensure compliance with contract documents.
- D. Wiring Diagrams: Drawings showing the point-to-point or schematic wiring of a piece of equipment or between pieces of equipment in a system.
- E. Calculations: The methods and results of calculations in documented form where specified.
- F. Material / Parts List: A list of system components or material components.
- G. Samples / Colors: Samples, including colors, of proposed materials.
- H. Certifications: A written statement, signed by a qualified party, attesting that items or services are in accordance with specified requirements. Typically, this written statement is accompanied by additional information to substantiate the statement.
- I. Installation Instructions / Test Procedures: Manufacturer's instructions, step-by-step if necessary, showing the field installation and testing of parts, components, equipment, and other similar items.
- J. Test Reports: Results of specified test requirements.
- K. Meetings: Schedule, agenda, attendees, and location for required meetings and meeting notes.
- L. Other: Other submittal information as described in individual specification sections.

1.17.06 DEFINITION OF "SUBMITTALS FOR CLOSEOUT":

- A. Operations and Maintenance (O&M) Manuals:
 - (1) Format:
 - a. Hardcopy: Three (3) full sets
 - 1) Size: 8½"x11". Fold 11"x17" drawings to 8½"x11" size. Reduce drawings larger than 11"x17" format to 11"x17" format.
 - 2) Binders: Use commercial quality expandable post binders meeting the following requirements:
 - (a) Binder Covers: 1/8" thick construction (minimum).
 - (b) Hinges: Continuous, metal piano hinge.
 - (c) Binder Expandability: 3½" – 5½".
 - (d) Sheet Size: 8½"x11".
 - (e) Binder Cover Material: Heavy vinyl.

- (f) Binder Printing: Provide custom printed spine and front imprinted with the following information:

County of Kaua'i
Department of Water
(Print O&M manual titles and project title)

- (g) Manufacturer's Reference: Specialty Loose Leaf, Inc.

- 3) Fill: Do not fill binders more than 75% full.
- 4) Indexed Tabs: Internally subdivide the binder contents with permanent page dividers, logically organized, with tab titling clearly printed under reinforced laminated plastic tabs.

- b. Adobe PDF Electronic Copy: Provide a copy of the O&M Manual in Adobe PDF Electronic Format on compact disk(s).

- c. Electronic Data: Provide electronic files on compact disk(s) or jump drive of any material created electronically by Integrator, in file format in which document was created, that is, Microsoft Word, AutoCAD, etc., including but not limited to:

- 1) Drawing Files.
- 2) Installation Instructions.
- 3) Software Documentation.
- 4) Operating and Maintenance Instructions.

- d. Odd Sized Material: Where O&M information does not lend itself to incorporation into 8½"x11" format, such as the material listed, below, provide it separate from the O&M Manuals. However, clearly label each item, and provide reference in the O&M Manual to the material that is provided separate from the O&M Manuals.

- 1) Edge-glued books or manuals without 3-hole punched binding.
- 2) Material of a size other than 8½"x11".
- 3) Compact disks in jewel cases.

(2) Contents:

- a. Table of Contents: Prepare a Table of Contents, for each volume, with each product or system description identified, and include with each volume of manual. Type on 24-pound white paper.
- b. Directory: Provide names, addresses, and telephone numbers of the Prime Contractor, Integrator, Installation Contractor, other

subcontractors, and major equipment suppliers. Clearly identify contact for warranty support.

- c. General: Provide operations and maintenance data for equipment described in the individual sections of the Specification. Prepare and include additional data when the need for such data becomes apparent during training.
- d. Description of System and Component Parts:
 - 1) System block and interconnection diagrams.
 - 2) Control diagrams by controls vendor and as-installed control drawing by Contractor.
 - 3) As-installed wiring diagrams, that is, ladder diagrams, point to point diagrams, loop diagrams, circuit directories of panel boards, and similar items.
 - 4) Manufacturer's printed installation, operating, and maintenance instructions for the exact item of equipment supplied.
 - 5) Catalog data containing information required for service, future additions or substitutions.
 - 6) Function, normal operating characteristics, and limiting conditions.
 - 7) Performance curves, engineering data and tests.
 - 8) Complete nomenclature and commercial number of replaceable parts.
- e. System Operating Procedures:
 - 1) Description of sequence of operation by control manufacturer.
 - 2) Routine and normal operating instructions.
 - 3) Sequences required.
 - 4) Special operating instructions.
- f. System and Equipment Maintenance Procedures:
 - 1) Routine operations.
 - 2) Guide to "trouble-shooting"
 - 3) Disassembly, repair and reassembly.
 - 4) Alignment, adjusting and checking.
- g. Maintenance instructions for special finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.

- h. Spare Parts List: List of manufacturer's spare parts provided with the job, manufacturer's current prices for spare parts, and recommended quantities to be maintained in storage.
- B. Project Record Documents: Provide Project Record Documents as required.
- C. Spare Parts / Maintenance Materials:
 - (1) Provide products, spare parts, maintenance and extra materials in quantities specified in individual specification sections prior to Final Acceptance.
 - (2) Deliver to Project site and place in location as directed by the Department of Water. Contractor shall obtain receipt.
- D. Test Reports: Results of specified test requirements. Provide Table of Contents of test results and incorporate into Operation and Maintenance Manuals described above.
- E. Warranty Certificates:
 - (1) For each item required by specific sections of this specification, provide a notarized warranty certificate.
 - (2) Execute and assemble documents from subcontractors, suppliers, and manufacturer.
 - (3) For each item of copyrighted software provided under this contract, provide a software license certificate naming the Department of Water as the licensee and stating the number of licenses provided.
 - (4) Provide Table of Contents of software licenses and incorporate into Operation and Maintenance Manuals described above.

1.18 **CONTRACTOR'S OPERATIONS:** The Contractor must employ, insofar as possible, such methods and means of carrying out his work so as not to cause any interruption or interference to the Department of Water's or the landowner's operations. Where the Contractor's operations would result in interruptions which would hamper the operations, the Contractor shall coordinate his schedule of work with the Department of Water or the landowner, accordingly.

In the event that the Contractor obtains permission from the landowner for use of any area or resources outside of the designated lot(s), County Right-of-Way, State Highway's Right-of-Way, and/or designated easement(s), the Contractor shall meet the requirements of Division 300, Section 301.15 – USE AND/OR DAMAGE TO PRIVATE PROPERTY (PROPERTY OWNED OTHER THAN BY THE CONTRACTOR) of the Water System Standards, 2002.

END OF SECTION

SECTION SP-2 – WATER SYSTEM STANDARDS – OTHER ADDENDUMS AND AMENDMENTS

2.1 SECTION 211 BRASS PRODUCTS:

All waterworks brass fittings shall be in compliance with the amended Section 1417 of Safe Drinking Water Act (SDWA) which takes on January 4, 2014. The amendment includes a change to the definition of “Lead-Free” by reducing lead content from 8% to a weighted average of not more than 0.25% in the wetted surface material. All waterworks brass fittings install for potable water service on January 4, 2014 and beyond shall conform to the amended definition of “Lead-Free”.

As indicated in Section 211 of “Water System Standards,” dated 2002 – Brass Products, all brass fittings shall conform to the NSF standard 61 and Section 1417 of the Safe Drinking Water Act (SDWA). In addition, all brass fittings shall conform to NSF standard 372.

***All service saddles used on the project shall be stainless steel. This specification shall supersede the approved construction drawing detail callouts. The following will be allowed on the project:**

Ford Meter Box Company, Inc (Stainless Steel Saddle-Double Band FS323)

Powerseal (3417AS – Double Strap)

Romac Industries (Style 306 Double Bolt)

2.2 SECTION 303 – STRUCTURES

The following shall supplement the applicable subsections of Division 300 – Construction of the “Water System Standards,” dated 2002.

Make the following amendments to said section:

SECTION 303.03 – CONCRETE WORK:

Amend the entire paragraph “1. Cement” of the “B. Materials” subsection to read:

Cement shall conform to “Standard Specifications for Portland Cement” (ASTM C150) for Type II cement. Only one brand of cement from one manufacturing plant may be used.

The Contractor shall submit a certificate of a test with each lot of cement proposed for use on the project. The Manager may require additional test of the cement as required.

Add the following paragraphs to paragraph “3. Concrete Aggregates” of the “B. Materials” subsection:

- A. Aggregate shall not contain elongated particles in quantities considered deleterious. A thin, flat or elongated particle is defined as a particle having a maximum dimension in excess of five times its minimum dimension.

- B. When crushed stone is used, the crusher shall be equipped with a screening system which will entirely separate dust from the stone and convey dust to a separate bin.

Add the following paragraphs to paragraph “4. Admixture” of the “B. Materials” subsection:

Use integral waterproofing admixture to concrete for bottom slab, walls and columns of Reservoir(s). The admixture shall be added at the plant and shall conform to ASTM C94 and be approved for use with potable water by the NSF. Admixture shall be “KIM” as manufactured by Kryton or other approved manufacturer. Dosage rate shall be as recommended by the manufacturer.

Add shrinkage reducing admixture to concrete for walls and floor slab of reservoir. Shrinkage dosage shall be such that it compensates for total shrinkage anticipated of concrete. Total shrinkage shall be based on historical or test data by ready mix concrete producer. Dosage shall be as determined by ready mix concrete producer to compensate for total shrinkage anticipated.

Amend the entire “Table 300-9 – CONCRETE CLASSES AND USES” of the “C. Proportioning Concrete Mix” subsection to read:

Class of Concrete	Min. 28-Day Compressive Strength (psi)	Min. Sacks per Cu. Yd. of Concrete	Max. Water, Gals per Sack of Concrete	Max. Size of Aggregate (in.)	Slump Range (in.)	Location Required In Project
DWS4000	4,000	7.0	--	3/4	3-5	Reservoir walls, columns, floor slabs (including jackets), roof slabs, and footings. Retaining Wall footing, keys, and walls. Equipment Bldg., floor slab, thickened edge footings and roof slabs. Pump Pads
DWS4000M	4,000	7.0*	--	--	3-5	First 4-1/2 inch pour above construction joints of all reservoir walls. *One half the amount of coarse aggregate used in DWS4000 mix.
DWS2500	2,500	--	--	--	2-4	Manholes, catch basins, pipe jackets (not under reservoir), duct lines, pipe reaction blocks, curbs, gutters, drainage ditches, sidewalks, and head walls.

Amend the “P. Conveying, Placing and Handling” subsection such that wherever “DWS 3000M” is stated, it is replaced with “DWS4000M.”

Amend the “Q. Construction and Expansion Joints” subsection as follows:

Delete paragraphs “3. Roof Sliding Joint” and “4. Waterstops.”

SECTION 303.06 - REINFORCED CONCRETE RESERVOIR

Add the following paragraphs under paragraph “1. Construction and Expansion Joints” of the “C. Concrete Work” subsection:

Waterstops

- A. Waterstops shall be of an approved type, supplied by an approved manufacturer and shall be plastic made of virgin polyvinylchloride compound, shall be ribbed, uniform in dimensions, dense, homogeneous, free from porosity, and as detailed on Drawings.
- B. No reclaimed PVC shall be used in the compound.
- C. Waterstop shall be held in place in the forms by use of split forms or other approved method that will positively hold the waterstop in the correct position and to the correct alignment. All horizontal and vertical waterstops, which are not accessible during the pouring, shall be tied off in two directions every 12 inches in such a manner that bending over one way or another is prevented. All waterstops shall be properly spliced and joints shall be checked for strength and pinholes after splicing. Splices shall be strong enough to develop a pulling force of 75 percent of the strength of the waterstop and shall be watertight. Connect the ends of the radial waterstop in the wall footing joints to the circumferential waterstop in the wall to wall footing joint and to the circumferential waterstops in the floor to wall footing joints if they should exist.
- D. The finished waterstop material shall meet the following minimum requirements:

1. Tensile strength	2,000 psi	ASTM D-412
2. Ultimate elongation	350%	ASTM D-412
3. Shore Hardness	70-80	ASTM D-2240
4. Specific Gravity	1.3	ASTM D-792
5. Stiffness in Flexure	600 psi	ASTM D-747
6. Cold Brittleness	-35 degrees F	ASTM D-746
7. Water Absorption	48 hours 0.32% max	ASTM D-570
8. Tear Resistance	290 lb./in.	ASTM D-624
- E. OMEGA PLASTICS, 2636 Byington-Solway Rd., Knoxville, TN 37921 (Phone 865-344-0929) and SIKA GREENSTREAK, 3400 Tree Court Industrial Blvd., St. Louis, MO 63122 (Phone 800-325-9504) are two of several suppliers who can furnish waterstops meeting these requirements. Approved equal material may also be used.

The top surface reveal of construction joints in the floor of the reservoir shall be sealed with SIKAFLEX 2C POLYURETHANE ELASTOMERIC SEALANT, as manufactured by SIKA CORPORATION, 201 Polito Ave., Lyndhurst, NJ 07071 (Phone: 800-933-SIKA); PSI-270

RESERVOIR SEALANT, as manufactured by POLYMERIC SYSTEM INC., Phoenixville, PA (Phone: 610-935-1170); SELECT SEAL U-227 RESERVOIR GRADE, as manufactured by SPC, Upland, CA (Phone: 714-985-5571); or approved equal.

The interior surface of horizontal construction joint in the wall of the reservoir shall be sealed with CIM 1000 Trowel Grade, by C.I.M. Industries Inc., 23 Elm St., Peterborough, NH 03458 (Phone 800-543-3458) (Website www.cimindustries.com). The surface of the concrete shall be prepared, and the compound applied per manufacturer's recommendation.

Add the following paragraph to paragraph "4. Interior Perimeter Seal" of the "C. Concrete Work" subsection:

The sealing compound shall be CIM 1000, by C.I.M. Industries Inc., 23 Elm St., Peterborough, NH 03458 (Phone 800-543-3458) (Website www.cimindustries.com). The surface of the concrete shall be prepared, and the compound applied per manufacturer's recommendation.

Amend the entire paragraph "5. Roof Sliding Joint" of the "C. Concrete Work" subsection to read:

The roof sliding joint at the top of the reservoir wall shall be constructed as detailed on the plans. The Neoprene Bearing Pad shall be of the dimension and hardness shown on the Drawings and shall be made by an approved manufacturer. The material for 40 durometer neoprene pads shall conform to ASTM D-2000 M2BC414A14C12F17 and the material for 30 durometer pads shall conform to ASTM D-2000 M2BC310A14C12F17. Unless otherwise specified on the Drawings, neoprene pads shall be of 40 durometer. KIRKHILL RUBBER CO., 12023 Woodruff Ave., Downey CA 90241 (Phone: 562-803-1117) and WEST AMERICAN RUBBER COMPANY, LLC, 750 N. Main St., Orange, CA 92868 (Phone 877-229-2726) are two of several suppliers who can furnish neoprene pads meeting these requirements. Approved equal materials may be used.

Closed Cell Neoprene Pads shall be used as a filler material in flexible joints, in areas not taken up by the solid neoprene bearing pads. The material shall be medium grade closed cell neoprene conforming to 2A3 of ASTM D 1056-85 and as further specified herein and on the Drawings.

1. Compressive Deflection	9 – 13 psi
2. Shore 00 Durometer	60 – 80 PCF
3. Density	12 – 28 PCF
4. Water Absorption by Weight	5%
5. Temperature Range:	
Low (Flex without cracking)	-30 degrees F
High Continuous	150 degrees F
High Intermittent	200 degrees F
6. Heat Aging (7 days at 150°F)	
Lineal Shrinkage (max.)	5%
7. Tensile Strength	115 psi min.
8. Elongation	180% min.
9. Resilience (bayshore % rebound average ½" thickness @ 72 degrees F)	20 – 40%

RUBATEX R413N or R423N, CYPRESS SPONGE 431N or 432N, or approved equal are acceptable material.

All Neoprene Bearing Pads and Closed Cell Neoprene Pads shall be glued to the concrete with an approved rubber cement material to prevent uplift of the pads during concrete pour.

Amend the entire paragraph “6. Surface Finish” of the “C. Concrete Work” subsection to read:

The exterior and interior wall and column surfaces shall be finished to show no unsightly defects, fins, and irregularities. All form tie holes shall be repaired flush with surface. On all interior surfaces shall be made smooth by applying Sikaguard 75 to cover and patch air holes and other imperfections. All exterior surfaces shall have an architectural finish.

Revise the title of the “G. Payment” subsection to “I. Payment.”

Add subsection “G. Earthquake Cables” as follows:

Earthquake cables used to connect the wall to wall footing/grade beam shall consist of 7 wire galvanized strands, meeting the minimum ultimate strength for 3/8-inch and 1/2-inch strands (as required on the Drawings) of 21,000 pounds and 38,200 pounds respectively. The strands shall be hot-dipped galvanized before stranding with a minimum zinc coating of 0.85 oz./square foot (sf).

The Closed Cell Neoprene sleeves for the seismic cables shall conform to the minimum dimensions shown on the Drawings to permit unrestrained flexing of the strands inside the sleeves under the maximum projected radial wall movement. The Closed Cell Neoprene sleeves shall have the following properties:

1. Material shall be medium grade conforming to 2A3 of ASTM D 1056-85.
2. Compressive Deflection: 9 – 13 psi
3. Shore 00 Durometer: 60 – 80 PCF
4. Density: 12 – 28 PCF
5. Water Absorption by Weight: 5%
6. Temperature Range:
 - Low (flex without cracking): -30 degrees F
 - High continuous: 150 degrees F
 - High intermittent: 200 degrees F
7. Heat aging (7 days at 150°F)
 - Lineal Shrinkage (max.): 5%
8. Tensile Strength: 115 psi min.
9. Elongation: 180% min.
10. Resilience (bayshore % rebound average 1/2” thickness @ 72 degrees F): 20 – 40%
11. “MONARCH” by ARMACELL, CYPRESS SPONGE 431N or 432N, or approved equal are acceptable material.

Add subsection “H. Lateral Restraints, Roof to Wall” as follows:

Extra Strong pipe shall conform to ASTM A53 Grade B or ASTM A500 Grade A. Rod shall conform to ASTM A307. Hot-dipped galvanizing shall conform to ASTM A123-78.

SECTION 303.22 – MISCELLANEOUS IRON AND METAL WORK

Add the following to E. Aluminum:

Aluminum frame and insect screen shall be custom designed and fabricated by contractor. The insect screen shall be SWG (standard wire gage) 32 with mesh spacing at 14x14.

SECTION 303.33 – CHAIN LINK FENCE AND GATE

Amend the last paragraph of “C. Installation” to read:

For Kaua'i Only: The contractor shall furnish padlocks for all gates, hatches, ladder guards and hasps. Locks shall be CyberLock Model PL-02 Electronic Padlock. CyberLock is a Wilson Bohannon padlock with 2" x 3/8" shackle and CyberLock weather-resistant 6-pin Schlage format cylinder. The Contractor shall turn over the locks to the Department of Water for programming. No substitutes will be accepted.

2.3 LOCK QUANTITIES:

Location	Number of Padlocks
Package B	12 padlocks

END OF SECTION

SECTION SP-3 – SECTION SP-3 – DUCTILE IRON PIPE AND PVC (C-900) PIPE

DUCTILE IRON:

3.01 GENERAL: The Contractor shall furnish and install Ductile Iron (DI) pipe in accordance with “Water System Standards, State of Hawai‘i, dated 2002”. DI pipe shall meet the requirements of Section 202.01. Fittings for DI pipe shall be ductile iron mechanical joint fittings meeting the requirements of Section 202.01.A – Fittings, unless specifically stated otherwise in the plans. Installation shall be in accordance with the Water System Standards.

3.02 SUBMITTALS: The Contractor shall submit manufacturer’s data on DI pipe, joints, fittings and geotextile fabric certifying that the product provided meets the specified item.

Prior to excavation the Contractor shall provide submittal that certifies that the pipe cushion material meets requirements below. Onsite sand must be tested by a licensed geotechnical engineer and test results submitted to the Department of Water Engineer for approval.

3.03 TRENCH EXCAVATION AND BACKFILL: Trench excavation and backfill shall meet the requirements of “Water System Standards” Sections 302 Water Mains and Appurtenances; Section 302.02 – Trench Excavation; Section 302.03 Trench Backfill; Section 302.04 Sheathing; Section 302.05 Dewatering; Section 302.06 Adobe or Clay; Section 302.07 Mud Removal and Crushed Rock Stabilization; Section 302.09 Excavation for Manholes; Section 302.10 Excavation for Thrust Blocks, Beams and Test Blocks; Section 302.11 Surplus Excavation; and Section 302.14 Plastic Pipe.

Pipe Cushion Material shall meet the requirements of “Water System Standards” Section 209.02 Pipe Cushion. Pipe cushion material shall be free from hard lumps, debris, salt, hazardous substances above its corresponding regulatory action level, and other deleterious substances.

When groundwater is encountered, pipe cushion material shall be wrapped in a non-woven geotextile fabric as specified in Section 212.05 – Geotextile Fabrics. However if groundwater is encountered within the State Highway’s Right-of-Way, pipe cushion material shall conform to ASTM C 33, size number 67, and shall be completely encapsulated with geotextile conforming to Subsection 716.03 – Geotextiles for Underdrain Applications as stated in the “Standard Specifications for Road and Bridge Construction, State of Hawai‘i, dated 2005”.

3.04 INSTALLATION: Ductile iron pipe installation shall meet the requirements of Water System Standards Section 302 – Water Mains and Appurtenances, additionally for pipe installation within the State Highway’s Right-of-Way, pipe installation shall also adhere to the requirements of “Standard Specifications for Road and Bridge Construction, State of Hawai‘i, dated 2005”, Section 624 – Water System and Section 703.21 – Trench Backfill Material.

Contractor shall retain the services of a licensed Geotechnical engineer to monitor the quality of pipe cushion material, installation and compaction of the pipe cushion and trench backfill. Department of Water will require periodic sieve testing of the pipe cushion material during the course of construction. Results of the Geotechnical engineer’s tests shall be provided to the Department of Water within seven (7) calendar days of sampling. Contractor shall be responsible for all associated costs for the licensed Geotechnical engineer, sieve analysis and testing.

All exposed DI pipe, valves, and fittings shall be coated as specified in “Water System Standards,”

dated 2002, unless otherwise indicated in the Special Provision, or as directed by the Department of Water Engineer. Color shall be Kaua'i Green.

PVC (C-900) PIPE:

3.05 GENERAL: The Contractor shall furnish and install Plastic pipe in accordance with "Water System Standards, State of Hawai'i, dated 2002". PVC pipe shall meet the requirements of Section 204.01. Fittings for PVC pipe shall be mechanical joint fittings meeting the requirements of Section 204.01.D – Fittings, unless specifically stated otherwise in the plans. Installation shall be in accordance with the Water System Standards.

3.06 SUBMITTALS: The Contractor shall submit manufacturer's data on PVC pipe, joints, fittings and geotextile fabric certifying that the product provided meets the specified item.

Prior to excavation the Contractor shall provide submittal that certifies that the pipe cushion material meets requirements below. Onsite sand must be tested by a licensed geotechnical engineer and test results submitted to the Department of Water Engineer for approval.

3.07 TRENCH EXCAVATION AND BACKFILL: Trench excavation and backfill shall meet the requirements of "Water System Standards" Sections 302 Water Mains and Appurtenances; Section 302.02 – Trench Excavation; Section 302.03 Trench Backfill; Section 302.04 Sheathing; Section 302.05 Dewatering; Section 302.06 Adobe or Clay; Section 302.07 Mud Removal and Crushed Rock Stabilization; Section 302.09 Excavation for Manholes; Section 302.10 Excavation for Thrust Blocks, Beams and Test Blocks; Section 302.11 Surplus Excavation; and Section 302.14 Plastic Pipe.

Pipe Cushion Material shall meet the requirements of "Water System Standards" Section 209.02 Pipe Cushion. Pipe cushion material shall be free from hard lumps, debris, salt, hazardous substances above its corresponding regulatory action level, and other deleterious substances.

When groundwater is encountered, pipe cushion material shall be wrapped in a non-woven geotextile fabric as specified in Section 212.05 – Geotextile Fabrics. However if groundwater is encountered within the State Highway's Right-of-Way, pipe cushion material shall conform to ASTM C 33, size number 67, and shall be completely encapsulated with geotextile conforming to Subsection 716.03 – Geotextiles for Underdrain Applications as stated in the "Standard Specifications for Road and Bridge Construction, State of Hawai'i, dated 2005".

3.08 INSTALLATION: Plastic pipe installation shall meet the requirements of Water System Standards Section 302 – Water Mains and Appurtenances, additionally for pipe installation within the State Highway's Right-of-Way, pipe installation shall also adhere to the requirements of "Standard Specifications for Road and Bridge Construction, State of Hawai'i, dated 2005", Section 624 – Water System and Section 703.21 – Trench Backfill Material.

Contractor shall retain the services of a licensed Geotechnical engineer to monitor the quality of pipe cushion material, installation and compaction of the pipe cushion and trench backfill. Department of Water will require periodic sieve testing of the pipe cushion material during the course of construction. Results of the Geotechnical engineer's tests shall be provided to the Department of Water within seven (7) calendar days of sampling. Contractor shall be responsible for all associated costs for the licensed Geotechnical engineer, sieve analysis and testing.

*****END OF SECTION*****

SECTION SP-4 – PIPING AND FITTINGS

4.1 DUAL WALL HIGH DENSITY POLYETHYLENE PIPE AND FITTINGS FOR DRAINAGE SYSTEM:

- 4.1.01 GENERAL: The Contractor shall furnish and install dual wall high density polyethylene (HDPE) drainage pipe as shown on the plans and specified herein. Diameter shall be as indicated on the plans.

Pipe shall have smooth wall interior and annular exterior corrugations. Pipe shall conform to AASHTO M252, Type C or AASHTO M294, Type C. Corrugated, perforated pipe shall conform to AASHTO M252, Class II. Fittings shall conform to AASHTO M252 or AASHTO M294.

Subsoil or perimeter drains shall be as specified in “Water System Standards” Section 301.31 – Drainage System.

- 4.1.02 SUBMITTALS: The Contractor shall submit shop drawings and manufacturer’s data on HDPE pipe, couplings, fittings, and geotextile fabric certifying that the product provided meets the specified item.

Prior to excavation, the Contractor shall provide a submittal that certifies that the pipe cushion material meets the requirements below. On-site sand must be tested by a licensed geotechnical engineer and test results submitted to the Department of Water Engineer for approval.

- 4.1.03 MATERIAL: Pipe and fittings shall be made of virgin polyethylene compounds that comply with the cell classification 424420C or 435400C, as defined and described in ASTM D3350, except that carbon black content shall not exceed 4%.

- 4.1.04 JOINTS: Joints shall be made with couplings. Connection shall meet the soil-tightness requirements of AASHTO M252 or M294. Gasketed connections shall incorporate a closed-cell synthetic expanded rubber gasket meeting the requirements of ASTM D1056 Grade 2A2. Gaskets shall be installed by the pipe manufacturer.

- 4.1.05 MANUFACTURER: Manufacturer of HDPE pipe and fittings shall be ADS, Inc. or approved equal.

- 4.1.06 INSTALLATION: HDPE pipe installation shall be in accordance with ASTM D2321 and pipe manufacturer’s recommended installation guidelines. Minimum cover in trafficked areas shall be one foot or as indicated on the plans, whichever is greater. Additionally, for pipe installation within State Highways right-of-way, pipe installation shall also adhere to the requirements of “Hawai‘i Standard Specifications for Road and Bridge Construction,” State of Hawai‘i, dated 2005, Section 624 – Water System and Section 703.21 – Trench Backfill Material.

The Contractor shall retain the services of a licensed geotechnical engineer to monitor the quality of pipe cushion material and installation and compaction of the pipe cushion and trench backfill. The Department of Water will require periodic sieve testing of the pipe cushion material during the course of construction. Results of the geotechnical engineer’s

tests shall be provided to the Department of Water within seven (7) calendar days of sampling. The Contractor shall be responsible for all associated costs for the licensed geotechnical engineer, sieve analysis, and testing.

4.1.07 PAYMENT: Payment for the furnishing and installation of the various sizes of HDPE pipe will be made at the respective Unit Price Offer per linear foot based on the actual linear feet of HDPE pipe installed, cleaned or pigged.

4.2 FLANGED COUPLING ADAPTERS:

4.2.01 GENERAL: The Contractor shall furnish and install flanged coupling adapters as shown on the plans and specified herein.

4.2.02 SUBMITTALS: The Contractor shall submit shop drawings and manufacturer's data on flanged coupling adapters certifying that the product provided meets the specified item.

4.2.03 MATERIALS: Followers and middle rings shall be ductile iron conforming to ASTM A536. Coating shall be fusion-bonded powder epoxy conforming to NSF International Standard 61; color shall be Kaua'i Green.

4.2.04 MANUFACTURER: Flanged coupling adapters shall be Dresser or approved equal. Model number and size shall be as indicated on the plans.

4.2.05 INSTALLATION: Flanged coupling adapters shall be installed in accordance with the manufacturer's recommendations, applicable code requirements, and "Water System Standards", dated 2002.

4.2.06 PAYMENT: Payment for FLANGED COUPLING ADAPTERS will no be made directly, but shall be a part of the Unit Price Offer for the item of which the FLANGED COUPLING ADAPTERS is a part of.

4.3 CURB BOXES:

4.3.01 GENERAL: The Contractor shall furnish and install curb boxes as shown on the plans and specified herein. Curb boxes shall be Arch pattern with steel stationary rod and plug style lid with standard pentagon bolt.

4.3.02 SUBMITTALS: The Contractor shall submit shop drawings and manufacturer's data on curb boxes certifying that the product provided meets the specified item.

4.3.03 MATERIALS: Lid and base shall be cast iron conforming to ASTM A48, Class 25. Brass plug shall conform to AWWA C800. Curb boxes shall be painted with black shop coat.

4.3.04 MANUFACTURER: Curb boxes shall be manufactured by The Ford Meter Box Company, Inc. or approved equal. Curb box model number(s) shall be as shown on the construction drawings.

- 4.3.05 INSTALLATION: Curb boxes shall be installed in accordance with the manufacturer's recommendations, applicable code requirements, and the "Water System Standards", dated 2002.
- 4.3.06 SPARE KEYS: The Contractor shall provide three (3) spare curb box pentagon keys per curb box installed at no additional cost to the Department of Water. The keys shall be cast steel with zinc plating for corrosion resistance.
- 4.3.07 PAYMENT: Payment for CURB BOXES will no be made directly, but shall be a part of the Unit Price Offer for the item of which the CURB BOX is a part of.

END OF SECTION

SECTION SP-5 – OTHER REQUIREMENTS

The following shall also be made part of the project.

MOBILIZATION – DEMOBILIATION: Mobilization shall consist of the transporting, assembling, constructing, installing and making ready for use at the site, all equipment, machinery, structures, utilities and incidentals necessary to do the work covered by this contract. Demobilization shall consist of the dismantling and removal from the project site all of the above-mentioned equipment, machinery, structures, utilities, and incidentals not incorporated in or a necessary part for the completed work and the cleanup of the site to the satisfaction of the Engineer.

The Contractor shall be completely mobilized at the site and shall begin his operations within thirty (30) calendar days after he has been notified, in writing, to proceed under this contract. Any provisions in the Standard Specifications to the contrary are hereby deleted.

When the project is completed, the Contractor shall clean up the site and shall be responsible for all grading work required leaving the site in a neat and orderly condition to the satisfaction of the Engineer. Payment for cleanup work will not be paid for separately but shall be included in the Lump Sum Bid for Mobilization and Demobilization as listed in the Offer, subject, however, to all provisions specified herein above. Also, demobilization shall include planting grass seed or hydro-mulching all disturbed areas if so ordered by the Engineer.

Payment for mobilization shall be made at the Lump Sum Bid for Mobilization and Demobilization as listed in the Offer and shall not exceed 6% of the total bid. The cost of demobilization shall be considered incidental to cost of mobilization.

END OF SECTION

SECTION SP-6 – ALUMINUM HORIZONTAL ACCESS DOORS

6.01 GENERAL: Work includes furnishing and installing factory-fabricated vault access doors.

6.02 REFERENCES:

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In case of conflict between the requirements of this specification and those of the listed documents, the requirements of this specification shall prevail.

Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Invitation for Bids (IFB). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued, or replaced.

1. ASTM A 36-93a: Standard Specification for Structural Steel.

6.03 SUBMITTALS: The Contractor shall submit manufacturer's product data for all materials in this specification. Shop drawings must show profiles, accessories, location and dimensions. Manufacturer to provide samples upon request; sized to represent material adequately. Vault access door manufacturer shall provide Manufacturer's Warranty.

6.04 PRODUCT HANDLING: All materials shall be delivered in manufacturer's original packaging. Materials must be stored in a dry, protected, well-vented area. The Contractor shall thoroughly inspect product upon receipt and report damaged material immediately to the delivery carrier and note such damage on the carrier's freight bill of lading.

6.05 JOB CONDITIONS: The Contractor shall verify that other trades with related work are complete before installing vault access door(s). Mounting surfaces shall be straight and secure; substrates shall be of proper width. Refer to construction documents, shop drawings, and manufacturer's installation instructions. Contractor shall observe all appropriate OSHA safety guidelines for this work.

6.06 WARRANTY / GUARANTEE: Manufacturer's standard warranty: Materials shall be free of defects in material and workmanship for a period of twenty-five (25) years from the date of purchase. Should a part fail to function in normal use within this period, manufacturer shall furnish a new part at no charge. Electric motors, special finishes, and other special equipment shall be warranted separately by the manufacturers of those products.

6.07 MANUFACTURER: Aluminum horizontal access doors shall be as manufactured by The Bilco Company or approved equal.

6.08 ACCESS DOOR:

- A. The Contractor shall furnish and install where indicated on the plans, vault access doors. Type, size, and hinge side shall be as indicated on the plans.
- B. Performance characteristics:
 - (1) Covers: Shall be reinforced to support AASHTO H-20 wheel load with a maximum deflection of 1/150th of the span. Manufacturer to provide structural calculations stamped by a registered professional engineer licensed in the State of Hawai‘i.
 - (2) Operation of the covers shall be smooth and easy with controlled operation throughout the entire arc of opening and closing.
 - (3) Operation of the covers shall not be affected by temperature.
 - (4) Entire door, including all hardware components, shall be highly corrosion resistant.
- C. Covers: Shall be ¼” (6.3 mm) aluminum diamond pattern.
- D. Frame: Channel frame shall be ¼” (6.3 mm) extruded aluminum with bend down anchor tabs around the perimeter. A continuous EPDM gasket shall be mechanically attached to the aluminum frame to create a barrier around the entire perimeter of the cover and significantly reduce the amount of dirt and debris that may enter the channel frame.
- E. Hinges: Shall be specifically designed for horizontal installation and shall be through bolted to the cover with tamperproof Type 316 stainless steel lock bolts and shall be through bolted to the frame with Type 316 stainless steel bolts and locknuts.
- F. Drain Coupling: Provide a 1-1/2” (38 mm) drain coupling located in the right front corner of the channel frame, unless otherwise indicated on the plans.

Lifting Mechanisms: Manufacturer shall provide the required number and size of compression spring operators enclosed in telescopic tubes to provide, smooth, easy, and controlled cover operation throughout the entire arc of opening and to act as a check in retarding downward motion of the cover when closing. The upper tube shall be the outer tube to prevent accumulation of moisture, grit, and debris inside the lower tube assembly. The lower tube shall interlock with a flanged support shoe fastened to a formed ¼” gusset support plate.

- G. Turn/Lift Handle: A removable exterior turn/lift handle with a spring-loaded ball detent shall be provided to open the covers and the latch release shall be protected by a flush, gasketed, removable screw plug.
- H. Hardware:
 - (1) Hinges: Heavy forged aluminum hinges, each having a minimum ¼” (6.3 mm) diameter Type 316 stainless steel pin, shall be provided and shall pivot so the cover does not protrude into the channel frame.
 - (2) Covers shall be equipped with a hold open arm that automatically locks the covers in the open position.

- (3) Covers shall be fitted with a required number and size of compression spring operators. Springs shall have an electrocoated acrylic finish. Spring tubes shall be constructed of a reinforced nylon 6/6-based engineered composite material.
- (4) A Type 316 stainless steel snap lock with fixed handle shall be mounted on the underside of the cover.
- (5) Hardware: Shall be Type 316 stainless steel.
- I. Finishes: Factory finish shall be mill finish aluminum with bituminous coating applied to the exterior of the frame.
- J. Spare Keys: Contractor shall furnish three (3) door keys for each door to the Department of Water at the completion of the project.

6.09 INSPECTION: Verify that the vault access door installation will not disrupt other trades. Verify that the substrate is dry, clean, and free of foreign matter. Report and correct defects prior to any installation.

6.10 INSTALLATION:

- A. Submit shop drawing for review and approval before fabrication.
- B. The Contractor shall check as-built conditions and verify the manufacturer's vault access door details for accuracy to fit the application prior to fabrication. The Contractor shall comply with the vault access door manufacturer's installation instructions.
- C. The Contractor shall furnish mechanical fasteners consistent with the vault access door manufacturer's instructions.

6.11 PAYMENT: Payment for ALUMINUM HORIZONTAL ACCESS DOORS shall not be made separately; the compensation shall be considered incidental to the various items of the Offer for which it is a part of.

END OF SECTION

SECTION SP-7– PROTECTIVE COATINGS

7.01 GENERAL: Work includes the furnishing of all labor, tools, materials, and equipment required to complete the finish protective coating on the interior concrete surfaces and internal piping of the reservoir. The exterior of the internal piping shall be coated with the protective coating specified herein. This specification modifies and supplements the painting of the interior concrete surfaces and internal piping of the reservoir as specified in “Water System Standards,” State of Hawai‘i, dated 2002, as amended.

7.02 REFERENCES: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In case of conflict between the requirements of this specification and those of the listed documents, the requirements of this specification shall prevail.

Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Invitation for Bids (IFB). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued, or replaced.

1. ASTM D543 – Standard Practices for the Resistance of Plastics to Chemical Reagents.
2. ASTM D638 – Standard Test Method for Tensile Properties of Plastics.
3. ASTM D695 – Standard Test Method for Compressive Properties of Rigid Plastics.
4. ASTM D790 – Standard Test Methods Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
5. ASTM D2240 – Standard Test Method for Rubber Property – Durometer Hardness.
6. ASTM D2584 – Standard Test Method for Ignition Loss of Cured Reinforced Resins.
7. ASTM D4414 – Standard Practice for Measurement of Wet Film Thickness by Notched Gages
8. ASTM D4541 – Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers.
9. ASTM D7234 – Standard Test Method for Pull-Off Adhesion Strength of Coatings on Concrete Using Portable Pull-Off Adhesion Testers.
10. ICRI Technical Guideline No. 310.2 – Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays (formerly No. 03732)

11. NACE No. 3/SSPC-SP6 – Joint Surface Preparation Standard: Commercial Blast Cleaning
12. NACE No. 5/SSPC-SP12 – Joint Surface Preparation Standard: Surface Preparation and Cleaning of Metals by Waterjetting Prior to Recoating.
13. NACE No. 6/SSPC-SP13 – Joint Surface Preparation Standard: Surface Preparation of Concrete.
14. NACE SPO188 – Discontinuity (Holiday) Testing of New Protective Coatings on Conductive Substrates.
15. NSF International Standard 61 – Drinking Water System Components
16. SSPC-SP1 – Solvent Cleaning
17. SSPC-SP3 – Power Tool Cleaning

Whenever the Drawings or these Specifications require a higher degree of workmanship or better quality of material indicated by the above standards, then these Drawings and Specifications shall prevail.

7.03 SUBMITTALS: The Contractor shall submit the following items:

- A. Technical Data Sheet on each product used, including ASTM test results indicating the product conforms to and is suitable for its intended use per these specifications.
- B. Material Safety Data Sheets (MSDS) for each product used.
- C. Guidelines and recommendations for each product used including surface preparation, mixing, application, handling, storage, and cleanup. This shall include minimum time requirements for coating, recoating, and surface patches.
- D. Copies of independent testing performed on the protective coating materials indicating that the protective coating materials meet the requirements as specified herein.
- E. Test results and measurements.
- F. Applicator Qualifications:
 - (1) Manufacturer certification that Applicator has been trained and approved in the handling, mixing, and application of the products to be used.
 - (2) Certification that the equipment to be used for applying the products has been approved by the protective coating manufacturer and Applicator personnel have been trained and certified for proper use of the equipment.
 - (3) Written documentation providing three (3) years of experience and five (5) recent references of Applicator indicating successful application of a 100% solids high-build solvent-free coating by spray application.

- (4) Applicator must provide written documentation of having installed a minimum of 50,000 square feet (sf) of plural component spray applied protective coating the same or similar to that specified herein within the last five (5) years.
- (5) Proof of any necessary federal, state, or local permits or licenses necessary for the project.

7.04 QUALITY ASSURANCE:

- A. The Applicator shall initiate and enforce quality control procedures consistent with applicable ASTM, NACE, and SSPC standards and the protective coating manufacturer's recommendations.
- B. A NACE Certified Coating Inspector shall be provided by the Contractor. The Inspector will observe daily operations, procedures, and final product to ensure adherence to the specifications by Applicator. Inspection shall be provided for all surfaces coated including the interior, exterior, and roof topping.
- C. The Contractor shall provide a list of three (3) potential NACE inspectors in their Offer with qualifications for DOW to select one (1) to provide quality assurance on the project. All costs associated with the inspector chosen shall be borne by the Contractor.
- D. The protective coating manufacturer shall provide at least two (2) days of on-site observation and site-specific recommendations relative to surface preparation, handling, application, and curing of the manufacturer's products.

7.05 DELIVERY, STORAGE, AND HANDLING:

- A. Materials shall be kept dry, protected from weather, and stored under cover.
- B. Protective coating materials shall be stored between 50 and 90 degrees Fahrenheit (°F). The Contractor will not store protective coating materials near flame, heat, or strong oxidants.
- C. Protective coating materials shall be handled according to their material safety data sheets.

7.06 WARRANTY: The Applicator shall warrant all work against defects in materials and workmanship for a period of one (1) year, unless otherwise specified, from the date of final acceptance of the project. The Applicator shall, within a reasonable time after receipt of written notice thereof, repair defects in materials or workmanship which may develop during said one (1) year period and any damage to other work caused by such defects or the repairing of same at his own expense and without cost to the Department.

7.07 EXISTING PRODUCTS:

- A. Standard Portland cement or new concrete (not quick setting high strength cement) must be well cured (minimum 28 days) prior to application of the protective coating.
- B. Cementitious patching and repair materials must be approved prior to use as compatible with the protective coating. The manufacturer of the cementitious material shall provide information as to its suitability for topcoating with the specified protective coating. Project-

specific submittals and procedures shall be provided, including application, cure time, and surface preparation procedures which permit optimum bond strength with the protective coating.

- C. Remove existing coatings prior to application of the new protective coating. The Applicator shall maintain strict adherence to applicable NACE and SSPC recommendations with regard to proper surface preparation and compatibility with existing coatings.

7.08 MANUFACTURERS: Raven Lining Systems, Broken Arrow, Oklahoma 800-324-2810 or 918- 615-0020 or FAX 918-615-0140 or approved equal.

7.09 REPAIR MATERIALS: Repair materials shall be used to fill voids, fill bugholes, structurally reinforce and/or rebuild surfaces, and/or smooth transitions between components as determined necessary to produce a relatively smooth surface prior to the application of the protective coating. Repair materials must be compatible with the specified protective coating and shall be applied in accordance with the manufacturer’s recommendations.

7.10 PROTECTIVE COATING MATERIAL: One of the following 100 percent solids coating systems, NSF 61 certified, or an approved equal, shall be used to coat the interior surfaces of the tank:

Product:	AquataPoxy A-6	Novaguard 840
Type:	100% solids, amine cured epoxy	Two-component, solvent-free, amine rapid-cured novolac phenolic epoxy coating
Manufacturer:	Raven Lining Systems (800) 324-2810	PPG Protective & Marine Coatings (888) 9PP-GPMC
Surface Filler:	Per Manufacturer’s recommendation	Per Manufacturer’s recommendation
Primer:	Per Manufacturer’s recommendation	Per Manufacturer’s recommendation
Topcoat:	AquataPoxy A-6, @ 40 mils DFT	Novaguard 840 50-60 mils DFT
Joint Sealant:	Per Manufacturer’s recommendation	Per Manufacturer’s recommendation
Total Systems DFT:	90 mils DFT	50-60 mils DFT

The thickness of the protective coating shall be as shown below.

- A. For interior concrete surfaces of the reservoir, except for the ceiling, the minimum thickness shall be 60 mils wet film thickness (WFT).
- B. For the exterior surfaces of the internal reservoir piping, the minimum thickness shall be 60 mils WFT.

7.11 PROTECTIVE COATING APPLICANT EQUIPMENT: The protective coating application equipment shall be heated plural component spray equipment specifically approved by the protective coating manufacturer in the application of the specified protective coating.

A. Electrical and Air Systems

- (1) Portable or mounted generator capable of providing adequate electrical power to air compressor, heaters, controllers, heat trace, etc.
- (2) Portable or mounted air compressor capable of powering pumps and ancillary equipment.

B. Material Heating and Supply Systems.

- (1) A minimum of two double-acting positive displacement pumps for accurately metering, transferring, and feeding material.
- (2) In-line heaters capable of heating the material to the protective coating manufacturer's recommendations prior to spraying.

C. Proportioning and Dispensing Systems.

- (1) Variable or fixed ratio plural component proportioning pump with automatic shut-off when or if the pump becomes off-ratio.
- (2) Plural component heated hose.
- (3) Mix manifold and chambers.
- (4) Airless spray gun with manufacturer's specified tip.

7.12 EXAMINATION:

- A. Concrete Surfaces: Installation of the protective coating shall not commence until the concrete substrate has properly cured and been prepared in accordance with this specification.
- B. Metal Surfaces: Installation of the protective coating shall not commence until the metal substrate has been prepared in accordance with this specification.
- C. Temperature of the surface to be coated shall be maintained between 50 and 120 °F during application. Prior to and during application, the Applicator shall exercise care to avoid exposure of direct sunlight or other intense heat source to the structure or pipe being coated. Specified surfaces shall be shielded to protect the surfaces from direct sunlight or other intense heat source during application. Where varying surface temperatures do exist, coating application shall be scheduled when the surface temperature is falling versus rising.
- D. The Applicator shall inspect all surfaces specified to receive a protective coating prior to surface preparation. The Applicator shall notify the Contractor of any noticeable disparity in the surfaces which may interfere with the proper application of the protective coating. The Contractor shall notify the Engineer in writing of these disparities which may interfere with

the work, use of materials, or procedures as specified herein.

7.13 SURFACE PREPARATION:

- A. Where conflicts occur between “Water System Standards,” the protective coating manufacturer’s recommendation, and this specification, the most stringent requirement shall prevail.
- B. Concrete Surfaces:
 - (1) Reservoir concrete surfaces shall be cleaned and finished as specified in “Water System Standards,” as recommended by the protective coating manufacturer, and as specified herein.
 - (2) All contaminants including: oils, grease, unsound or incompatible existing coatings, waxes, form release, curing compounds, efflorescence, sealers, salts, or other contaminants shall be removed.
 - (3) All concrete that is not sound or has been damaged by chemical exposure shall be removed to a sound concrete surface or replaced.
 - (4) Concrete surfaces to receive protective coating shall be cleaned and abraded in accordance with NACE Standard No. 6/SSPC-SP13 to produce a sound concrete surface with adequate profile and porosity to provide a strong bond between the protective coating and the substrate. Other methods such as high-pressure water jetting (refer to NACE Standard No. 5/SSPC-SP12), abrasive blasting, or grinding may also be used. Whichever method(s) are used, they shall be performed in a manner that provides a uniform, sound, clean, neutralized surface that is not excessively damaged. The resulting surface profile shall be at least a CSP-4 in accordance with ICRI Technical Guideline No. 310.2.
 - (5) All concrete surfaces shall be inspected during surface preparation and before the repair material is applied.
- C. Metal Surfaces:
 - (1) Metal surfaces shall be cleaned as specified in “Water System Standards,” as recommended by the protective coating manufacturer, and as specified herein.
 - (2) All contaminants including: oils, grease, unsound or incompatible existing coatings, or other contaminants shall be removed.
 - (3) Clean all surfaces to be coated according to SSPC-SP1 to remove all contaminants.
 - (4) Clean and abrade the substrate according to SSPC-SP3 or NACE No. 3/SSPC-SP6 to achieve a clean and profiled surface to promote adhesion of the coating.

7.14 REPAIR OF CONCRETE:

- A. All voids in the concrete shall be filled with an approved repair material as described in

Job No. **02-14 WK-08, KAPA‘A HOMESTEADS 325’ TANKS, TWO 0.5 MG TANKS, PACKAGE B – TANKS PACKAGE, KAPA‘A**

paragraph 7.09 above to produce a relatively smooth concrete surface prior to the application of the protective coating. Manufacturer recommendations for the mix, application and cure of the repair materials shall be followed.

- B. Additional surface preparation shall be performed on repaired surfaces as required by the manufacturer of the repair material and the manufacturer of the protective coating materials.

7.15 APPLICATION OF PROTECTIVE COATING:

- A. Application procedures shall conform to the recommendations of the protective coating manufacturer, including material handling, mixing, environmental controls during application, safety, and spray equipment.
- B. Before spraying surfaces with the protective coating, grooves, rough areas, difficult-to-spray areas, and repair areas as specified shall be striped with the specified protective coating to a nominal 10-mil thickness or greater as necessary to provide proper topcoating and protective coverage. Striping can be accomplished by spray application in accessible areas; and, hand-mixing product or spray followed by scrub-striping with a good-quality bristle brush in difficult-to-spray areas.
- C. The spray equipment shall be specifically designed to accurately ratio and apply the specified protective coating materials in accordance with coating manufacturer's requirements and shall be regularly maintained and in proper working order. The equipment shall be used only by trained applicators who are Certified Applicators of the protective coating manufacturer.
- D. The protective coating material shall be spray applied only by Certified Applicators of the protective coating manufacturer.
- E. Specified surfaces shall be coated to achieve a minimum wet film thickness as specified herein. Only airless spray application will be permitted when more than one coat of the protective coating is being applied, to avoid any potential contamination from compressed air oil which may encourage intercoat delamination. Air-assisted spray application equipment must be preapproved by the protective coating manufacturer prior to use.
- F. Each coat of the protective coating shall occur as soon as the basecoat becomes tack free, but no later than the recoat window for the specified product as recommended by the protective coating manufacturer. The protective coating manufacturer shall be consulted for any additional coat surface preparation requirements.
- G. Surfaces of the floor and roof shall be made non-skid by broadcasting aluminum oxide or silica sand into the surface prior to gelation.
- H. Disinfect water contact surfaces in accordance with "Water System Standards" or as directed by the Engineer after the coating has cured for three (3) days and field inspection and testing has been completed.

7.16 TESTING AND INSPECTION OF PROTECTIVE COATING:

- A. During application, a wet film thickness gage, such as those available through Paul N. Gardner Company, Inc. (GARDCO) meeting ASTM D4414, shall be used to ensure a monolithic

coating and uniform thickness during application. Measurements shall be recorded and submitted to the Engineer.

- B. After the protective coating has set hard to the touch, the protective coating shall be inspected with high-voltage holiday detection equipment. An induced holiday shall be made onto the coated surface and shall serve to determine the minimum and maximum voltage to be used to test the coating for holidays at that particular area. The spark tester shall be initially set at 100 volts per 1 mil (25 microns) of minimum specified (not average) film thickness applied but may be adjusted as necessary to detect the induced holiday in accordance with NACE SPO188. All detected holidays shall be marked and repaired by abrading the coating surface with abrasive paper or brush blast. After abrading, additional protective coating material shall be applied to the repair area as recommended by the protective coating manufacturer. All touch-up and repair procedures shall follow the protective coating manufacturer's recommendations.
- C. Concrete Surfaces: After the protective coating has set hard to the touch, two equally spaced measurements of bond strength of the protective coating to the substrate shall be made at the reservoir's floor and lower and upper interior walls. Bond strength shall be measured in accordance with ASTM D7234 for concrete surfaces. Any areas detected to have inadequate bond strength shall be evaluated by the Engineer. Further bond tests shall be performed in that area to determine the extent of the potentially deficient bonded area, and repairs shall be made by the Applicator in strict accordance with the protective coating manufacturer's recommendations.
- D. Metal Surfaces: After the protective coating has set hard to the touch, two equally spaced measurements of bond strength of the protective coating to the substrate shall be made on the internal tank piping. Bond strength shall be measured in accordance with ASTM D4541 for metal surfaces. Any areas detected to have inadequate bond strength shall be evaluated by the Engineer. Further bond tests shall be performed in that area to determine the extent of the potentially deficient bonded area, and repairs shall be made by the Applicator in strict accordance with the protective coating manufacturer's recommendations.
- E. A final visual inspection shall be made by the protective coating manufacturer's representative, the Contractor, the Applicator, and the Department. Any deficiencies in the finished coating shall be marked and repaired by the Applicator in accordance with the procedures of the protective coating manufacturer and as specified in this specification.

7.17 **PAYMENT:** Payment for PROTECTIVE COATINGS shall be made at the respective Unit Price Bid and shall be full compensation for furnishing and applying the material, including surface preparation, testing, inspection, touch-up, repairs, and cleanup and for all labor, tools, equipment, and incidentals to complete the work in place complete.

Payment quantity shall be determined from computation based on the reservoir dimensions as shown on the drawings or as directed by the Manager.

END OF SECTION

SECTION SP-8 – NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

8.01 HYDROTESTING EFFLUENT DISCHARGE:

- A. General Provisions: This item of work shall include the furnishing of all labor, materials, tools, and equipment necessary for construction water disposal.
- B. Regulations:
- (1) The Contractor shall be familiar with and meet the latest requirements of all applicable National Pollutant Discharge Elimination System (NPDES), State Department of Health (DOH), State Department of Transportation (DOT) laws, ordinances, rules, regulations and permits. Effluent discharge into State receiving waters shall not be made without approved permits. Discharge activities shall include, but shall not be limited to, effluent associated with pipeline hydro testing/chlorination operations.
 - (2) 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 in the contract documents.
- C. Procedures:
- (1) The Department of Water has obtained coverage under the National Pollutant Discharge Elimination System General Permit for discharges of hydrotesting waters (NPDES File No. HI 22FG640.FNL.22a). The Contractor shall review the Permit and file all necessary information, including but not limited to: Operator or General Contractor information and Drainage System Owner's Approval to Discharge with the State DOH at least 30 calendar days prior to the start of any construction activities. The Contractor shall submit a copy of the information filed with the State DOH to the Department of Water at least 30 calendar days prior to the start of any construction activities. Should additional NPDES coverage and permits be required, the Contractor shall prepare the required documents and obtain additional approvals, as necessary.
 - (2) The Contractor shall notify DOH of the construction start date at least 7 calendar days prior to the start of any construction activities.
 - (3) The Contractor is expected to comply with the conditions set forth in the permit. Any modifications or amendments to the permit by the Contractor shall be done at the Contractor's expense and no time extension will be granted. The Contractor shall submit all modifications or amendments to the Department of Water for review and approval.
 - (4) The Contractor shall make no claims for compensation due to delays or requirements imposed in obtaining an approved NPDES permit. Notice to Proceed will not be delayed due to Contractor's inability to attain an approved NPDES permit.
 - (5) As required for the discharge of effluent, the Contractor shall also secure all other applicable State and County discharge and connection permits and pay all applicable fees. The Contractor shall fulfill all conditions of the NPDES Permit and all other

permits when issued. A copy of all approved permits, when issued, shall be provided to the Department of Water for information only.

- (6) The Contractor shall be responsible for monitoring, collecting samples, and having samples analyzed by a qualified laboratory and shall submit a monthly discharge monitoring report to DOH. All costs shall be borne by the Contractor.
 - (7) If the DOH is not completely satisfied with the Contractor's BMP plan or the discharge quality, the Contractor shall perform corrective work at his own expense.
 - (8) Upon completion of the project, the Contractor shall submit the Notice of Cessation (CWB-NOC) form within 14 calendar days to the DOH and a copy of the submitted form to the Department of Water for information only.
- D. Completion of Discharge Activities: At the conclusion of the discharge operations, the Contractor shall furnish the DOW with a signed affidavit indicating the date, location, volume, and treatment, if any, of all discharges. The location of storm drains, bodies of water, sewer manholes, and dry gulches shall be shown in relation to the discharge location.
- E. Violations: Violation citations for non-compliance shall be the responsibility of the Contractor. The Contractor shall pay all fines and hold harmless the Department of Water.
- F. Payment: Payment for the work described herein shall not be made directly but shall be considered incidental to the various items of the Offer and no additional compensation shall be made.

8.02 STORM WATER DISCHARGE:

- A. General Description: This item of work shall include the furnishing of all labor, materials, tools, and equipment necessary for compliance with State of Hawai'i Department of Health regulations for discharges composed of storm water runoff associated with construction activity.
- B. Regulations:
- (1) The Contractor shall be familiar with and meet the latest requirements of all applicable National Pollutant Discharge Elimination System (NPDES), State Department of Health (DOH), State Department of Transportation (DOT), and the Kaua'i County Department of Public Works (DPW) law, ordinances, rules, regulations and permits.
 - (2) 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 in the contract documents.
- C. Procedures:
- (1) The Department of Water has obtained coverage under the National Pollutant Discharge Elimination System General Permit for discharges of storm water associated with construction activities (NPDES File No. HI R10F473.FNL.19). The Contractor shall review the Permit and file all necessary information, including but not limited to:

Operator or General Contractor information, Drainage System Owner's Approval to Discharge, County-Approved Erosion Control Plan and/or Grading Permit, and updated SWPPP with the State DOH at least calendar 30 days prior to the start of any construction activities. The Contractor shall submit a copy of the information filed with the State DOH to the Department of Water at least 30 calendar days prior to the start of any construction activities. Should additional NPDES coverage and permits be required, the Contractor shall prepare the required documents and obtain additional approvals, as necessary.

- (2) The Contractor shall notify DOH of the construction start date at least 7 calendar days prior to the start of any construction activities.
 - (3) The Contractor is expected to comply with the conditions set forth in the permit. Any modifications or amendments to the permit by the Contractor shall be done at the Contractor's expense and no time extension will be granted. The Department of Water shall approve all modifications or amendments.
 - (4) The Contractor shall make no claims for compensation due to delays or requirements imposed in obtaining an approved NPDES permit. Notice to Proceed will not be delayed due to Contractor's inability to attain an approved NPDES permit.
 - (5) As required for the discharge of effluent, the Contractor shall also secure all other applicable State and County discharge and connection permits and pay all applicable fees. The Contractor shall fulfill all conditions of the Notice of General Permit Coverage and all other permits when issued. A copy of all approved permits, when issued, shall be provided to the Department of Water for information only.
 - (6) The Contractor shall be responsible for monitoring, collecting samples, and having samples analyzed by a qualified laboratory and submit the analysis report to DOH. All costs shall be borne by the Contractor.
 - (7) If the DOH is not completely satisfied with the Contractor's BMP plan or the discharge quality, the Contractor shall perform corrective work at their own expense.
 - (8) Upon completion of the project, the Contractor shall submit the Notice of Cessation (CWB-NOC) form to the DOH and a copy of the submitted form to the DOW for information only.
- D. Violations: Violation citations for non-compliance shall be the responsibility of the Contractor. The Contractor shall pay all fines and hold harmless the Department of Water.
- E. Payment: Payment for the work described herein shall not be made directly but shall be considered incidental to the various items of the Offer and no additional compensation shall be made.

END OF SECTION

SECTION SP-9 – REMOVAL AND DISPOSAL OF EXISTING ASBESTOS-CEMENT WATERLINE

- 9.1 GENERAL: The Contractor shall be responsible for the handling, removing and disposing of asbestos-cement waterlines and other hazardous materials as shown on the plans. The Contractor shall be responsible for notifying the State Department of Health Indoor and Radiological Health Branch Asbestos Abatement Office when removing and disposing of any hazardous material and shall follow all applicable OSHA, HIOSH, and Federal Regulations in handling. If the Contractor causes asbestos-cement pipe to become friable, he will not be reimbursed for extra costs incurred to handle, containerize, transport, and dispose of the waste.
- 9.2 HANDLING AND TRANSPORT: The Contractor shall obtain the services of a licensed hazardous materials contractor to handle and transport the materials to the disposal site.
- 9.3 DISPOSAL: Disposal of hazardous materials is not permitted at Kekaha Landfill.
- 9.4 WATERLINE CONNECTIONS: All connections to existing asbestos-cement pipe shall be made at nearest collar.
- 9.5 PAYMENT: Payment for REMOVAL AND DISPOSAL OF HAZARDOUS MATERIALS will not be made separately; the compensation for such work shall be deemed to be included in the Unit Price Offer for SITE EXCAVATION.

END OF SECTION

SECTION SP-10 – MECHANICAL

The following shall supplement the applicable mechanical subsections of Division 300 - Construction of the “Water System Standards,” State of Hawai‘i, dated 2002, as amended.

10.01 Description: This work shall consist of furnishing and installing the combination back pressure and solenoid shutoff valve, altitude valve, venturi tube or meter, above ground piping, valves, and appurtenances in accordance with the Special Provision, “Water System Standards,” State of Hawai‘i, dated 2002, as amended, and the details shown on the construction drawings.

Submittals: Shop drawings and technical data sheet(s) on each product listed in the following subsection 10.02, Materials shall be submitted to indicate that the product conforms to and is suitable for its intended use per these specifications.

10.02 Materials:

- A. Six-Inch (6”), Eight-Inch (8”), and Twelve-Inch (12”) Diameter Piping and Fittings. The pipe flange shall have bolt circles and bolt holes which match those of Class 125 flange as shown in ANSI B16.1 and shall conform to ANSI/AWWA C115/a21.15. Fittings shall be cast iron with a minimum working water pressure 250 psi. Flanges for fittings shall conform to ANSI/AWWA C110/A21.10 and ANSI B16.1. Flange gaskets shall be “full-face” 1/8-inch thick rubber conforming to ANSI/AWWA C111/A2.11.
- B. Six-inch (6”) gate valves shall be iron body, resilient wedge type, with outside screw and yoke with handwheel. Valves shall have bolt circles and bolt holes which match those of Class 125 flanges shown in ANSI B16.6 and shall have a minimum working water pressure of 250 psi.
- C. Six-inch (6”) Combination Back Pressure and Solenoid Shutoff Valve. This valve shall be a Cla-Val Co. Model 6” 658-01 BDSV Combination Back Pressure and Solenoid Shutoff Valve as manufactured by Cla-Val Co., Newport Beach, California 92659-0325.

Function: The Back Pressure and Solenoid Shut-off Valve shall modulate to maintain upstream pressure above a preset minimum when activated by a solenoid control. The solenoid shall also close the valve tight.

Main Valve: The valve shall be hydraulically operated, single diaphragm- actuated, and globe pattern. The valve shall consist of three major components: the body with seat installed, the cover with bearing installed and the diaphragm assembly. The diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure. Packing glands and/or stuffing boxes are not permitted and there shall be no pistons operating the main valve or pilot controls.

Main Valve Body: No separate chambers shall be allowed between the main valve cover and body. Valve body and cover shall be of cast material. Ductile Iron is standard and other materials shall be available. No fabrication or welding shall be used in the manufacturing process. Total shipping weight shall be equal or greater in all respects to the Hytrol 100-01/100-20 body.

The valve shall contain a resilient, synthetic rubber disc, with a rectangular cross-section contained on three and one-half sides by a disc retainer and forming a tight seal against a single removable seat insert. No O-ring type discs (circular, square, or quad type) shall be permitted as the seating surface. The disc guide shall be of the contoured type to permit smooth transition of flow and shall hold the disc firmly in place. The disc retainer shall be of a sturdy one-piece design capable of withstanding opening and closing shocks. It must have straight edge sides and a radius at the top edge to prevent excessive diaphragm wear as the diaphragm flexes across this surface. No hourglass-shaped disc retainers shall be permitted and no V-type or slotted type disc guides shall be used.

The diaphragm assembly containing a non-magnetic 303 stainless steel stem of sufficient diameter to withstand high hydraulic pressures shall be fully guided at both ends by a bearing in the valve cover and an integral bearing in the valve seat. The seat shall be a solid, one-piece design and shall have a minimum of a five-degree taper on the seating surface for a positive, drip-tight shut off. No center guides shall be permitted. The stem shall be drilled and tapped in the cover end to receive and affix such accessories as may be deemed necessary. The diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure.

The flexible, non-wicking, FDA approved diaphragm shall consist of nylon fabric bonded with synthetic rubber compatible with the operating fluid. The center hole for the main valve stem must be sealed by the vulcanized process or a rubber grommet sealing the center stem hole from the operating pressure. The diaphragm must withstand a Mullins Burst Test of a minimum of 600 psi per layer of nylon fabric and shall be cycle tested 100,000 times to ensure longevity. The diaphragm shall not be used as the seating surface. The diaphragm shall be fully supported in the valve body and cover by machined surfaces which support no less than one-half of the total surface area of the diaphragm in either the fully open or fully closed position.

The main valve seat and the stem bearing in the valve cover shall be removable. The cover bearing and seat in 6" and smaller size valves shall be threaded into the cover and body. Valve seat in 8" and larger size valves shall be retained by flat head machine screws for ease of maintenance. The lower bearing of the valve stem shall be contained concentrically within the seat and shall be exposed to the flow on all sides to avoid deposits. To ensure proper alignment of the valve stem, the valve body and cover shall be machined with a locating lip. No "pinned" covers to the valve body shall be permitted. Cover bearing, disc retainer, and seat shall be made of the same material. All necessary repairs and/or modifications other than replacement of the main valve body shall be possible without removing the valve from the pipeline. Packing glands and/or stuffing boxes shall not be permitted and components including cast material shall be of North American manufacture.

The valve manufacturer shall warrant the valve to be free of defects in material and workmanship for a period of three years from date of shipment provided the valve is installed and used in accordance with all applicable instructions. Electrical components shall have a one-year warranty.

The valve manufacturer shall be able to supply a complete line of equipment from 1 1/4" through 24" sizes and a complete selection of complementary equipment. The valve manufacturer shall also provide a computerized cavitation chart which shows flow rate, differential pressure, percentage of valve opening, Cv factor, system velocity and if there will be cavitation damage.

Material Specification:

Valve Size:	6 inch
Main Valve Body and Cover:	Ductile Iron
Main Valve Trim:	Bronze
End Detail:	150# Flange
Pressure Rating:	250 PSI
Temperature Range:	180 degrees F
Rubber Material:	Buna N
Coating:	Epoxy, Internal & External
Desired Options:	B, D, S, V

Pilot Control System: The pressure relief pilot shall be a direct-acting, adjustable and spring-loaded diaphragm valve designed to permit flow when controlling pressure exceeds the adjustable spring setting. Pilot control sensing shall be upstream of the pilot system strainer so accurate control may be maintained if the strainer is partially blocked. A full range of spring settings shall be available in ranges from 0-450 psi.

A direct factory representative shall be made available for start-up service, inspection and necessary adjustments.

Material Specification for Pilot Control:

Pressure Rating:	300 PSI
Trim:	St. St., Monel
Rubber Material:	Buna N
Tubing and Fittings:	Brass, Copper
Adjustment Range:	5-40'
Operating Fluids:	Water
Back Pressure Adjustment Range:	20 – 200 psi
Solenoid Voltage:	120V
Solenoid Enclosure Type:	NEMA Type 4
Desired Options:	None

The valve shall be a Cla-Val Co. Model No. 658-01 Combination Back Pressure & Solenoid Shut-off Valve as manufactured by Cla-Val Co., Newport Beach, CA 92659-0325.

- D. Six-inch (6") Altitude Valve. This valve shall be a Cla-Val Co. Model 6" 210-01 Altitude Valve as manufactured by Cla-Val Co., Costa Mesa, CA 92627.

The valve shall control the high water level in reservoirs without the need for floats or other devices. It shall be a non-throttling type valve (either fully open or fully closed). The valve remains fully open; allowing normal flow to fill the reservoir until the maximum level shut-off point is reached and then closes drip tight at the set point. The valve automatically opens

to refill the reservoir once the level drops a fixed distance below the high water level. This valve is designed for one-way flow only.

Main Valve:

The valve shall be hydraulically operated, single diaphragm-actuated, and globe pattern. The valve shall consist of three major components: the body with seat installed, the cover with bearing installed and the diaphragm assembly. The diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure. Packing glands and/or stuffing boxes are not permitted and there shall be no pistons operating the main valve or pilot controls. No fabrication or welding shall be used in the manufacturing process. Y-pattern valves shall not be permitted. Main valve shall comply with NSF/ANSI Standard 61 and certified lead free to NSF/ANSI 372 as a safe drinking water system component.

Main Valve End Connections:

End Connections for control valve shall be flanged per ASME/ANSI B16.42, Class 150 or Class 300 (2" thru 36") or Threaded End Connections (2", 2-1/2" and 3") or Grooved End Connections (2" thru 8").

Main Valve Body:

No separate chambers shall be allowed between the main valve cover and body. Valve body and cover shall be of cast material. Ductile Iron is standard and other materials shall be available. No fabrication or welding shall be used in the manufacturing process. Total shipping weight shall be equal or greater in all respects to the Hytrol 100-01/100-20 body.

The valve shall contain a resilient, synthetic rubber disc, with a rectangular cross-section contained on three and one-half sides by a disc retainer and forming a tight seal against a single removable seat insert. No O-ring type discs (circular, square, or quad type) shall be permitted as the seating surface. The disc guide shall be of the contoured type to permit smooth transition of flow and shall hold the disc firmly in place. The disc retainer shall be of a sturdy one-piece design capable of withstanding opening and closing shocks. It must have straight edge sides and a radius at the top edge to prevent excessive diaphragm wear as the diaphragm flexes across this surface. No hourglass-shaped disc retainers shall be permitted and no V-type or slotted type disc guides shall be used.

The diaphragm assembly containing a non-magnetic stainless steel stem of sufficient diameter to withstand high hydraulic pressures shall be fully guided at both ends by a bearing in the valve cover and an integral bearing in the valve seat. The seat shall be a solid, one-piece design and shall have a minimum of a five-degree taper on the seating surface for a positive, drip-tight shut off. No center guides shall be permitted. The stem shall be drilled and tapped in the cover end to receive and affix such accessories as may be deemed necessary. The diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure. No bolts or cap screws shall be

permitted for use in the construction of the diaphragm assembly.

The flexible, non-wicking, FDA approved diaphragm shall consist of nylon fabric bonded with synthetic rubber compatible with the operating fluid. The center hole for the main valve stem must be sealed by the vulcanized process or a rubber grommet sealing the center stem hole from the operating pressure. The diaphragm must withstand a Mullins Burst Test of a minimum of 600 psi per layer of nylon fabric and shall be cycle tested 100,000 times to ensure longevity. The diaphragm shall not be used as the seating surface. The diaphragm shall be fully supported in the valve body and cover by machined surfaces which support no less than one-half of the total surface area of the diaphragm in either the fully open or fully closed position. Bellofram type rolling diaphragms shall not be permitted.

The main valve seat and the stem bearing in the valve cover shall be removable. The cover bearing and seat in 6" and smaller size valves shall be threaded into the cover and body. Valve seat in 8" and larger size valves shall be retained by flat head machine screws for ease of maintenance. The lower bearing of the valve stem shall be contained concentrically within the seat and shall be exposed to the flow on all sides to avoid deposits. To ensure proper alignment of the valve stem, the valve body and cover shall be machined with a locating lip. No "pinned" covers to the valve body shall be permitted. Cover bearing, disc retainer, and seat shall be made of the same material. All necessary repairs and/or modifications other than replacement of the main valve body shall be possible without removing the valve from the pipeline. Packing glands and/or stuffing boxes shall not be permitted and components including cast material shall be of North American manufacture. The valve shall be designed such that both the cover assembly and internal diaphragm assembly can be disassembled and lifted vertically straight up from the top of a narrow opening/vault. Y-pattern valves shall not be permitted. The seat shall be of the solid one piece design. Two piece seats or seat inserts shall not be permitted.

The valve manufacturer shall warrant the valve to be free of defects in material and workmanship for a period of three years from date of shipment provided the valve is installed and used in accordance with all applicable instructions. Electrical components shall have a one-year warranty.

The valve manufacturer shall be able to supply a complete line of equipment from 1 1/4" through 24" sizes and a complete selection of complementary equipment. The valve manufacturer shall also provide a computerized cavitation chart which shows flow rate, differential pressure, percentage of valve opening, Cv factor, system velocity and if there will be cavitation damage.

Material Specification:

Component	Material
Body & Cover	Ductile Iron-ASTM A536 Cast Steel
Main Valve Trim	Stainless Steel
Seat	Stainless Steel
Stem, Nut and Spring	Stainless Steel Seal
Disc	Buna-N® Rubber

Diaphragm	Nylon Reinforced Buna-N®
Internal Trim Parts	Stainless Steel, Bronze, Brass
End Detail	Flanged
Pressure Rating	Class 150 lb. (250psi Max.)
Temperature Range	Water to 180°F
Any other wetted metallic parts	Stainless Steel; Bronze; Brass
Coating	Fusion Bonded Epoxy Coating (Interior and Exterior); ANSI / NSF 61 Approved / AWWA coating specifications C116-03

Pilot Control System:

1. The pilot control shall be of a diaphragm-actuated, three-way type that operates on the differential force between the height of the water in the reservoir and an adjustable springload. The spring-load shall be an arrangement of smaller springs on a plate within the control. When actuated, the pilot control shall vent the cover of the main valve to atmosphere through the internal working of the pilot control to open the valve wide. When the desired level in the reservoir is reached, the static height of the tank shall head through a customer supplied sensing line connected directly to the reservoir. When the control shifts at high water level supply pressure shall be directed into the valve cover through the internal workings of the pilot control to close the valve. The pilot control senses the reservoir head by means of a sensing line connected between the pilot control and the reservoir. The pilot control shall be bracket mounted to the main valve.
2. A valve position indicator shall be installed on the main valve cover and shall consist of a brass indicator rod fastened to the main valve stem which moves up and down inside a clear Pyrex tube contained in a bar brass housing open on two sides to permit clear vision of the brass indicator rod.
3. The pilot control system shall include a strainer, closing speed needle valve and all required control accessories, equipment, control tubing and fittings. The pilot system shall include isolation ball valves on sizes 4” and larger as standard equipment. Five different adjustment spring settings shall be available, in ranges of 5 to 200 feet. Pilot to be manufactured by control valve manufacturer.
4. Material Specification for Pilot Control System:

Component	Material
<u>Altitude Pilot Control</u>	
Pilots Body & Cover	Bronze, Low Lead CuZn21Si3P or UNS C87850
Pilot Trim	Brass & Stainless Steel
Seals & Diaphragm	Nitrile
Connections	FNPT
Pressure rating	150 psi Max.
Temperature Range	Water to 180°F Max.
Control Tubing	Copper
Control Fittings	Brass

Factory Assembly:

1. Each control valve shall be factory assembled.
2. The Quality Management System of the factory shall be certified in accordance with ISO 9001: 2008.
3. For all control valves, the factory assembly shall include the complete main valve, pilot valve(s), and all associated accessories and control equipment. d. During factory assembly the control valve manufacture shall make all necessary adjustments and correct any defects.

Nameplates:

1. Each Control Valve and associated pilot(s) shall be provided with an identifying nameplate. Nameplates, depending on type and size of control valve, shall be mounted in the most practical position possible, typically on the inlet side of the valve body
2. Each Control Valve and associated pilot(s) shall be provided with an identifying nameplate.
3. Nameplates shall be brass and a minimum of 3/32" thick, 3/4" high and 2-3/4" long. d. Pertinent control valve data shall be etched or stamped into the nameplate. Data shall include control valve Catalog number, function, size, material, pressure rating, end connection details, type of pilot controls used and control adjustment range.

Factory Testing:

1. Each control valve shall be factory tested.
2. The Quality Management System of the factory shall be certified in accordance with ISO 9001: 2008
3. Tests shall conform to approved test procedures.
4. The standard factory tests shall include a valve body and cover leakage test, seat leakage test and a stroke test. Control valves and pilot valves, in the partially open position, with both ends closed off with blind flanges (valves) and pipe plugs (pilots), shall be subject to an air test. The applied air pressure shall be 90 psi minimum. All air pressure tests shall be applied for a minimum of 15 minutes. No visible leakage is permitted through the valve seat, the pressure boundary walls of the valve body, valve cover, pilot body, pilot cover or the body-cover joint.
5. Control valve manufacturer shall, upon request, offer additional testing, such as high pressure hydrostatic testing, positive material inspection testing, ferrite testing, liquid penetration inspection testing, magnetic particle examination testing and radiographic examination testing.

- E. Six-inch Venturi Tube or Meter. The venturi tube shall be BIF Model 20181 Universal Venturi Tube, static tap, size 6B: 6X3.6, 6" PFS Halmi Venturi Meter, Model HVT-FV or

approved equivalent. The venturi tube shall be stainless steel type 316 with 150 pound flanges, and shall have stainless steel type 316 throat lines and pressure tap bushings. Throat diameter shall be 3.6 inches.

- F. Pressure Transmitters. Pressure transmitter for venturi flow meter shall be Rosemount 3051T Gage Pressure Transmitter, Model No. 3051TG2A2A21 JB4Q4-T1, or an approved equivalent. Transmitter shall be differential pressure type, with a maximum span of 0 to 100 psi H₂O, factory set to 0 to 100 psi H₂O. The input supply voltage shall be 24 VDC, and the output shall be 4 to 20 mA.

Pressure transmitter and reservoir level indication shall be Rosemount 3051T Gage Pressure Transmitter, Model No. 3051TG2A2A21 JB4Q4-T1, or an approved equivalent. Transmitter shall be differential pressure type, with a maximum span of 0 to 400" H₂O, factory set to 0 to 400" H₂O. The input supply voltage shall be 24 VDC, and the output shall be 4 to 20 mA.

Both transmitters shall be provided with:

- 1/4" NPT connections
- Monel side vents and drains
- RFI protection
- Voltage protection
- Voltage surge (lightning) protection
- Monel barrier diaphragms and process head
- Teflon head gasket
- SS meter body bolts and mounting bracket
- Silicone fluid filled
- Epoxy finish
- 3000 psi body rating
- NEMA 4X housing

- G. Gauges. Gauges shall be manufactured by Marsh, or an approved equal. Gauges shall be 3-1/2 inches in diameter of the Bourdon type with polished stainless steel, shall be liquid filled, and shall be equipped with snubbers. The dials shall be white coated lithographed with black figures and graduations. Range shall be from zero to 200 psi with figure intervals of 20 psi and minor graduations of 2 psi. Gauges shall be in accordance with ANSI B40.1-1974 and shall be accurate to within 0.5 percent of full span. Gauge connections shall be 1/4 inch NPT. Gauges shall be furnished with 1/4 inch NPT brass pet cock and all necessary fittings to provide installation in place complete, as shown on the plans. Gauges shall be installed with stem vertical.

- H. Pipe Straps. Pipe straps shall be stainless steel, type 316. Straps shall be of rigid construction, standard with the trade. Straps shall be located as shown on the drawings. Steel for straps shall conform to ASTM Standard Specifications for Stainless and Heat-Resisting Steel Bars and Shapes for use in Boilers and other Pressure Vessels, Designation A479.

10.03 Installation:

The combination back pressure and solenoid shut-off valve and universal venturi tube shall be installed in accordance with the manufacturer's recommendations and instructions. A direct factory representative shall be present at the site for start up service, inspection and necessary adjustments. The Contractor shall be responsible for the additional costs for the services of the factory representative.

10.04 Protective Coating and Painting:

Ductile Iron Pipe, Valves and Fittings. All exposed ductile iron pipe, valves and fittings shall be coated as specified in Water System Standards or the Special Provisions.

10.05 Testing of Equipment:

After installation of all equipment, a complete operating test of all valves, differential pressure transmitters, flow tube and chart recorder shall be performed, and each item of equipment shall be demonstrated to be in proper operating condition.

The manufacturer's representative shall commission all equipment on-site and provide training to DOW personnel.

10.06 Warranty:

Written manufacturer's warranties which guarantee against faulty parts and operation shall be provided for all equipment and materials covered in these specifications. All warranties shall extend for a period of 12 months after final acceptance of this work or for a period of 18 months after date of delivery, whichever occurs first.

10.07 Equipment Manuals and Spare Parts:

Equipment manuals shall be submitted for applicable items to the Engineer for approval.

Contractor shall provide spare parts as normally recommended by the equipment manufacturer.

10.08 Payment:

Payment shall be made at the Lump Sum Bid for Control Valve Assemblies as listed in the Offer.

END OF SECTION

SECTION SP-11 – ELECTRICAL WORK

The following shall modify and supplement Section 304.03 – “Electrical Work”, in the “Water System Standards,” dated 2002 and amendments.

11.01 SCOPE OF WORK. The following shall be ADDED to and be made a part of this subsection.

- A. Provide all articles, materials, equipment, operations, and services herein or on Drawings, including all labor, materials, taxes, fees, insurance, and incidentals required to ensure completion.
- B. TEST COMPLETE INSTALLATION. Installation shall be complete in every detail as specified and ready for use. Any item supplied by Contractor developing defects within one (1) year of final acceptance by the Department of Water shall be replaced by such materials, apparatus, or parts to make such defective portion of complete system conform to true intent and meaning of these Drawings and Specifications, at no cost to the Department of Water. Exceptions are fluorescent ballasts and fluorescent and incandescent lamps which will be guaranteed for 100 operating hours after date of final certificate of payment.
- C. WORK SHALL INCLUDE:
 - a. Complete instrumentation conduit, wiring and connection system at new tanks, including all appurtenances for a complete system.
 - b. Complete new gate and hatch security alarm switch system, including underground ducts, conduits and cables.
 - c. Complete instrumentation and controls conduit, wiring and connection system at new control valve assemblies, including all appurtenances for a complete system.
 - d. Final adjustment and testing of various instruments and controls.
- D. During bidding and construction, Contractor shall coordinate his work with utilities and other trades to avoid omissions and overlapping responsibilities. Electrical Contractor shall notify other trades and suppliers of project voltages and of existing equipment when new work must be compatible with existing conditions.

11.02 WORK BY OTHERS. The following shall be ADDED to and be made a part of this subsection.

- A. Concrete, forming, excavation, backfilling and painting provided by respective sections of this contract.
- B. Equipment utilizing electricity shall be provided by respective sections of this contract. Installation of equipment complete with power wiring and electric controls and interlock wiring shall be part of Electrical Work.
- C. During bidding and construction, Contractor shall coordinate his work with utilities and other trades to avoid omissions and overlapping responsibilities. Electrical Contractor shall notify other trades and suppliers of project voltages and of existing equipment when new work must be compatible with existing conditions.

11.03 MATERIALS AND WORKMANSHIP. The following shall be ADDED to and be made a part of this subsection.

A. DRAWINGS:

- a. These specifications are accompanied by architectural plans of buildings, site plans and diagrammatic electrical plans showing locations of outlets, switches, service runs, feeder runs, devices, and other electrical equipment. Locations are approximate. Before installing, Contractor shall study adjacent construction details and make installation in most logical manner.
- b. Any device may be relocated within 10 feet before installation at direction of the Department of Water without additional cost to the Department of Water.
- c. Before installing, verify all dimensions and sizes of equipment at job site. Circuit and conduit routing is typical and may be altered in any logical manner; however, all changes shall be approved by the Department of Water and shown on “as-built” drawings.

B. DEPARTURES FROM DRAWINGS AND SPECIFICATIONS:

- a. Departures resulting from substitution of materials or system shall be accompanied by appropriate changes in all affected work of every trade. Such changes shall be at no increase in the contract amount and shall be the responsibility of the subcontractor or supplier responsible for the departures. Changes proposed by the Contractor shall be based on a system approach and shall be allowed if implemented without decrease in quality in performance or operations, increase in utility space to install the equipment. Such departures shall be submitted and noted in shop drawings for approval by the Department of Water. Departures initiated by other trades, requiring changes in the electrical system as well as other systems, shall be accompanied by appropriate changes to all affected work of every trade, at no increase in contract amount, by the trade responsible for the departures.
- b. The General Contractor shall be responsible to coordinate, approve, and select systems that do not impose unaccounted for impact on the electrical work. It shall be understood that after the award of contract, all departures having electrical impact, shall make appropriate changes to the electrical system required to accommodate the departures and shall be at no additional cost to the Department of Water.

C. CONSTRUCTION METHODS:

- a. Construction shall conform to construction practices as recommended by the American Electricians Handbook by Croft (latest edition), Edison Electrical Institute, National Electric Safety Code and Applicable Instructions of manufacturers of equipment and material supplied for this project.
- b. Grounding:

- (1) All services, motors, metallic enclosures, raceways, and electrical equipment

shall be grounded according to requirements of National Electric Code. At buildings, 5/8" x 10' copperweld ground rods, Copperweld Steel Company, shall be driven with top 12" below finished grade and shall be connected together with bare copper wire buried 12" below finished grade to obtain a ground of 25 ohms or less as measured by three point potential method with an electric ground megger. At each building, connect ground to nearest cold water pipe and to building entrance equipment, raceways, motors, ground type receptacles, and other metallic parts directly exposed to ungrounded electric conductors. Connection shall be made by continuous metal raceways or with conductors.

- (2) All grounding wire runs withing buildings shall be copper conductors. Where applicable, all ground wires shall be run together with circuit conductors.

c. Testing:

- (1) All wiring shall be tested to insure proper operation according to functions specified herein on drawings and other sections of these specifications.
- (2) Insulation resistance of wires shall be according to requirements of the National Electric Code. All feeder cables, #4 or larger, shall have insulation resistance of 1.5 megohms or higher. Insulation resistance shall be measured by a 500 volts megger, Biddle Company or equal. Resistance of feeder cables shall be recorded and turned over in 4 copies to Engineer during final inspection. Proper operation of all electrical devices shall be demonstrated at request of the Department of Water during final inspection.

d. Conduits:

- (1) All conduits within building line shall be hot dipped galvanized, rigid steel. Conduits below floor slab encased in concrete jacket, minimum 2" thick. Conduits in or under floor slabs shall be painted with asphaltic corrosion resistance base paint or compound after installation in place. Provide galvanized steel pull-wire in all empty conduits as noted on the drawings.
- (2) Conduits cut square and inner edges reamed. Butt together evenly in couplings.
- (3) Bends and offsets made with hickey or conduit-bending machine. Do not use vice or pipe tee. Bends made so that interior cross-sectional area will not be reduced. Radius of curve of inner edge of field bend shall not be less than ten times the internal diameter of conduit.
- (4) Use of running threads not permitted. Where conduits cannot be jointed by standard threaded couplings, approved watertight conduit unions shall be used.
- (5) Cap conduits during construction with plastic or metal-capped bushings to prevent entrance of dirt or moisture. All conduits shall be swabbed out and dried before wires or cables are pulled in.
- (6) Conduit shall be free from other piping, valves, or mechanical equipment.

- (7) Fish wires, cords, strings, chains, or the like shall not be placed or inserted in the conduit system during installation.
 - (8) Insulating bushings and two locknuts installed on each end of every run of conduit at enclosures and boxes. Provide grounding bushings as required for grounding receptacles and to connect conduits to switchboard with #10 bare copper.
 - (9) Securely fastened in place to all outlet boxes and to structure or support. Project adequate number of conduit threads through box for bushings. Anchorage for 1-1/2 inches and smaller conduit shall be made with one-hole galvanized conduit straps or clamps; 2 inches or larger conduit shall be anchored with galvanized wrought iron "U" clamps or equal fittings.
 - (10) Exposed conduit parallel with or at right angles to structural or architectural elements. Securely fastened in place with one-hole galvanized pipe strands with screws or bolts and spaced not more than 5 feet apart; or with approved beam clamps or approved single or gang pipe hangers spaced not more than 5 feet apart as the conditions require. Vertical runs supported at intervals not exceeding 5 feet by approved clamp hangers.
 - (11) Conduit runs with one 90° bend or equivalent, 150 feet maximum without pull box.
 - (12) Conduit runs with two 90° bends or equivalent, 100 feet maximum without pull box.
- e. Boxes and Enclosures:
- (1) Provide outlet boxes in hollow tiles or concealed in other spaces with extensions or raised rings of such depth that metal will be flush with surrounding surfaces of opening.
 - (2) Use gang boxes wherever 3 or more switches are installed at one location. Concealed boxes installed with edges flush with surrounding wall surface.
 - (3) Boxes plumb and exactly flush.
- f. Conductors:
- (1) Mechanical means for pulling shall be torque-limiting type and not used for #2 AWG and smaller wires.
 - (2) Pulling tensions shall not exceed wire manufacturer's recommendation.
 - (3) Where necessary, powdered soapstone used as lubricant for drawing wires through conduit. No other means of lubricating allowed. Conduit fittings shall not be used with conductors larger than #2 AWG.
- g. Splicing:

- (1) Wires shall be formed neatly in enclosures and boxes.
 - (2) Splices made according to NEC. Conductors #10 and smaller twisted and secured with twist on wire connectors. Conductors #8 through #4/0 spliced with solderless clamp or compression (indent) connectors.
 - (3) Splices reinsulated according to wire manufacturer's instructions. Splice insulation shall be 150% in thickness of original wire insulation and of the same electrical and mechanical characteristics. Insulating type (600V use) shall be neoprene, Okoprene by Okonite Company or approved equal. Jacketing and insulating tape shall be high density cold setting polyethylene adhesive tape, Scotch No. 33 by Minnesota Mining and Manufacturing Company or approved equal.
- h. Installation of Lighting Fixtures: Fixtures securely and safely supported by means of fixture studs in the outlet boxes or other approved means. Ceiling fixtures arranged to hang vertically unless noted otherwise. Provide accessories such as straps, mounting plates, nipples, or brackets for proper installation. Provide additional suspension wires and channels for mounting on suspended ceilings as recommended by fixture manufacturer.
- i. Finishing
- (1) Structural and architectural elements cut or drilled for installation of electrical system then patched, repaired, and restored. Drilling, cutting, patching, repairing, and restoring subject to approval of the Department of Water.
 - (2) Attachment of electrical equipment to wood by wood screws. Attachment to concrete by embedded or expansion inserts and bolts. Powder charge driven with approval only. Close unused knockouts on boxes or expansion with metal cap.
 - (3) Wipe clean all exposed raceways and enclosures with rag and solvent. Unfinished raceways and enclosures prime painted and finished by Painting Section. Factory finished enclosures shall be painted. Panelboards identified by stenciling with paint on back of doors the voltage and designation. Voltage ratings stenciled on the front of disconnect switches and junction boxes where wires are terminated for connection to equipment that are not part of this contract.
- D. EXTERIOR WORK: Materials, equipment, and construction methods specified in other paragraphs of the specifications for Electrical Work shall apply to the exterior work.
- a. Exterior underground cables and wires shall be NEC type THW or THWN insulated. Insulation and sheath conforming respectively to ASTM 0 1352-60 and ASTM 9 752-60. Splices shall be made with half lapped layers of insulation-jacketing neoprene tape, Minnesota Mining and Manufacturing Scotch No. 23 or equal and jacketed with high density polyethylene plastic tape, Minnesota Mining and Manufacturing Company Scotch No. 33 or equal. Thickness of insulation and jacketing shall be equal to 200% of original cable. Splicing of conductors shall be made with sleeve compression type fittings. Entire splice, after reinsulating, shall be painted with black tape compound. Minnesota Mining and Manufacturing Company "Scotchcast" may be used.

- b. Ductlines and Handholes:
 - (1) Ductlines shall consist of polyvinyl chloride (PVC) Schedule 40 duct in concrete jacket unless noted otherwise.
 - (2) Ducts and fittings shall be round bore, for use with tapered fittings and manufactured from polyvinyl chloride (PVC). Kraloy/Chemtrol Co. PVC, Johns-Manville and Orangeburg Manufacturing Co., Schedule 40.
 - (3) Concrete for ductlines shall be according to the "Concrete Section". Concrete for ductline jackets shall be 2500 psi compressive strength in 28 days with aggregates of #3 fine size.
- c. Trenching and backfilling for ductlines and handholes shall be according to the "Trenching and Backfilling Section". Depths of trenches on slope shall be measured from finished grade of lower edge.
 - (1) Backfill Material, Type A: Backfill material shall consist of earth and gravel mix with gravel content consisting of 1 inch diameter maximum and not exceeding fifty percent (50%) by volume of the mix.
 - (2) Backfill Material, Type B: Backfill material shall consist of earth and gravel mix with gravel content consisting of 1/2-inch diameter maximum and not exceeding twenty percent (20%) by volume of the mix.
 - (3) Any existing underground piping or conduit that is encountered shall be properly shored and protected from damage. Any damage to existing utilities resulting from the Contractor's operations shall be repaired by him at his own expense.
- d. Identification Tags: Each set of cables in handholes shall be identified by a noncorrosive metal tag. Letters shall be minimum 1/4-inch high identifying the cable as to use and/or voltage. Tags shall be wrapped around the cables and taped. Power tags shall be red.
- e. Ductlines:
 - (1) Ducts and/or conduits shall be laid in the trenches on plastic treated against termite or concrete spacers. Spacing between ducts shall be as follows:
 - a. Control/Instrumentation and control/instrumentation ducts - 1-1/2 inches of concrete.
 - b. Electric power and electric power ducts - 1-1/2 inches of concrete
 - c. Electric power and control/instrumentation ducts - 3 inches of concrete
 - (2) After all ducts are installed, duct bank shall be securely bound with #12 steel tie wire and anchored to prevent movement during concrete pouring. Tapered ends of ducts or conduits shall be coated with sealing compound before coupling is applied to ensure a water-tight joint. Reinforcing steel, shoring and forming,

where required, shall be installed according to Concrete Section of this Specification. Concrete shall be poured on ducts without the use of mechanical vibrators. Concrete shall be tampered manually with wooden rods.

- (3) Ducts shall be completely encased in concrete. The thickness of the concrete encasement specified within the plans and specifications is the minimum and may be increased to fit the actual shape of the trench. Changes in direction of runs exceeding 5 degrees shall be accomplished by using special couplings or bends manufactured for this purpose. Where conduit lines enter handholes, the conduits shall terminate in end bells. Conduit shall be thoroughly cleaned before laying. When it is necessary to cut a tapered end on a piece of conduit at the site, the cut shall be made with saw and tapered with a lathe designed to match the original taper.
- (4) After the conduit line has been completed, a mandrel not less than 12 inches long having a diameter 1/4 inch less than the inside diameter of the conduit, shall be pulled through each conduit after which a brush with stiff bristles shall be pulled through to make certain that no particles of earth and/or gravel have been left in the line.

f. Cables shall be thoroughly lubricated with soapstone before drawn into ducts.

E. DEVICES AND EQUIPMENT: All devices, materials, and equipment specified herein shall be manufactured and installed in accordance with the appropriate articles in the NEC except as noted.

a. Wiring Materials:

- (1) Conduits: Hot dip galvanized, rigid steel, round bore electrical conduit and for use with threaded fittings. 3/4" minimum diameter unless otherwise specified on the drawings. Aluminum conduits shall not be used.
- (2) Flexible Conduit: Liquid-tight flexible steel, zinc-coated, jacketed with high density polyethylene and with factory approved fittings. Liquid-tight with factory fittings for wet or moist areas.
- (3) Stainless Steel Materials: All stainless-steel materials shall be Type 316 Stainless Steel.
- (4) Enclosures and Cabinets: Enclosures and cabinets for panelboards, breakers, and switches shall be NEMA type, fabricated from galvanized steel, prime painted and enamel finished according to NEMA specifications.
- (5) Large Junction Boxes: For dry interior location, the box shall be fabricated from NEC gauge galvanized steel with matching screw-on type cover, field punched knockouts. For exterior and wet locations, the box shall be NEMA 4X stainless steel, with matching gasketed cover and threaded Myers type hubs for conduit connection. Screws shall be stainless steel.
- (6) Outlet and Small Junction Boxes: Concealed boxes shall be pressed from NEC

code gauge steel, galvanized 4" square x 1-1/2" deep minimum or as specified on drawings.

- (a) Exposed boxes and weather exposed recessed boxes shall be galvanized cast iron or NEMA 4X stainless steel, prime painted, enamel finished, threaded Myers type hubs for conduit connection.
 - (b) Extension or raised rings for pressed boxes pressed from NEC code gauge steel and galvanized. Use as required at device outlets and make box opening flush with finished surface.
- (7) Wires and Cables: Conductors shall be copper No. 12 AWG minimum. Conductors No. 10 and smaller, solid and round **except for control type conductors which shall be stranded.** Conductors No. 8 and larger, 7 or 19 strands, concentric. All conductors No. 6 and smaller shall be NEC type THW insulated. All conductors No. 4 and larger shall be NEC type THWN insulated. Wiring in lighting fixtures shall be NEC Type AF, TF, and TFF insulated. Manufacture and install according to NEC Articles 310 and 402. Wiring for all controls shall be extra flexible machine tool, color coded, THWN, #12 AWG machine wire.
- (a) Provide color coding for all service, feeder, branch, control, and signaling circuit conductors. Color shall be green for grounding conductors, and white for neutrals, except where neutrals of more than one system are installed in same raceway or box, the other neutral shall be white with a colored (not green) stripe. The color of the ungrounded conductors in different voltage systems shall be as follows:
 - 1) 120/208 volt, 3-phase:
 - (a) Phase A – black
 - (b) Phase B – red
 - (c) Phase C – blue
 - 2) 277/480 volt, 3-phase:
 - (a) Phase A – brown
 - (b) Phase B – orange
 - (c) Phase C – yellow
 - 3) 120/240 volt, single phase:
 - (a) red and black
 - (b) Color coding shall be maintained throughout entire system. Use other colors when more wires than above are contained in one raceway. Engineer shall determine whether deviation from color coding will be permitted.

- (c) Wire Markers: All wires shall be tagged with circuit identifying markers at both ends of termination. Markers shall be cloth with plastic letters covered with mylar film. Markers shall have high strength adhesive bond, be able to withstand abrasion, shall be oil and water resistant, and shall be taped around cable near termination.
- b. Devices:
 - (1) Device and Cover Plates:
 - (a) Plates for interior flush construction shall be satin finished 302 high nickel stainless steel, 18% chrome, 8% nickel with suitable holes for device.
 - (b) Plates for exposed and weather exposed boxes (indicate WP on drawings) shall be cast metal with neoprene gasket for sealing against entry of water or moisture into box. Switch plates shall be provided with neoprene cover over handle or raintight level mechanism. Receptacle plates shall be provided with weatherproof lid as indicated on drawings.
 - (2) Hardware, Supports, Backings, etc.: All hardware, supports, backings, and other equipment shall be provided. Wood materials shall be “wolmanize” treated against termite; iron or steel materials shall be galvanized for corrosion protection; and nonferrous materials shall be brass or bronze.
- c. Protective Equipment:
 - (1) 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. Breakers shall have 10,000 ampere minimum interrupting capacity unless indicated otherwise.
 - (2) Equipment disconnect switch: Heavy-duty horsepower rated, lever-operated contacts, spring-loaded.
- d. Security Alarm System:
 - (1) Security Alarm Switch: Wide gap magnetic contact type switch consisting of switch component with normally closed contacts when the enclosure door to which it is mounted is closed. Unit shall be completely sealed housing and for application adjacent to metal doors or as shown on the drawings.
 - (a) Magnetic switch contacts shall have 2” to 3” gap distance and normally open. Switch shall be Sentrol 1045T series, AMSECO AMS-37, or approved equal.

11.04 EQUIPMENT SHOP DRAWINGS. The following shall be ADDED to and made a part of this subsection.

Security Alarm Switches

Job No. **02-14 WK-08, KAPA‘A HOMESTEADS 325’ TANKS, TWO 0.5 MG TANKS, PACKAGE B – TANKS PACKAGE, KAPA‘A**

Control Equipment
Equipment Cabinets
Pullboxes

- A. Shop Drawings: Prior to fabrication, the Contractor shall submit for written approval of the Department of Water four (4) copies of complete installation drawings and manufacturer's wiring diagrams for the control and connection diagrams, connection diagrams, installation details, and any built-to-order equipment.
- B. As-Built Drawings: Upon completion of the final inspection and testing, the Contractor shall provide, for the use of the Department of Water, two (2) copies and one (1) electronic copy of as-built installation drawings and manufacturer's wiring diagrams and any built-to-order equipment.
- C. Training for all electrical and electronic equipment SHALL BE CONDUCTED BY ITS RESPECTIVE FACTORY PERSONNEL; A FACTORY CERTIFIED REPRESENTATIVE IS NOT ACCEPTABLE AND WILL NOT BE APPROVED.

The following subsection shall be ADDED to and be made a part of subsection 304.03.

11.05 PAYMENT

- A. General: No separate payments will be made for the work covered by the separate sections of the 304.03 series of these specifications. All costs in connection with furnishing and installing of the various items in accordance with standard practice, the details shown on the drawings and in accordance with these specifications, shall be included in the lump sum price of which the item is a part.
- B. Compensation: Payment of 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 accordance therewith, complete and finished in accordance with the drawings and specifications.

END OF SECTION

SECTION SP-12 – SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) SYSTEM

The following subsection shall be ADDED to and be made a part of Section 304 “MECHANICAL AND ELECTRICAL”, in “Water System Standards,” dated 2002 and amendments.

12.01 GENERAL:

- A. General Conditions: This section covers the supervisory control and data acquisition (SCADA) system including equipment, wiring, adjustment and testing as indicated on the plans and specified herein.
 - a. As specified in Section 304.03 – Electrical Work. The provisions of these related sections apply to this section and work described in this section shall comply with them.

- B. Scope of Work: Provide all articles, materials, equipment, operations, and services herein or on Drawings, including all labor, materials, taxes, fees, insurance, and incidentals required to insure completion.
 - a. Test Complete Installation: Installation shall be complete in every detail as specified and ready for use. Any item supplied by Contractor developing defects within one (1) year of final acceptance by the Department of Water shall be replaced by such materials, apparatus, or parts to make such defective portion of complete system conform to true intent and meaning of these Drawings and Specifications, at no cost to the Department of Water.
 - b. System Overview: These specifications are for modifications to the distributed supervisory control and data acquisition (SCADA) system for a water system, including an existing Intelligent Remote Terminal Unit (RTU). This system shall require the furnishing and installation of RTU hardware as specified herein and software modifications at the existing Kapa‘a Homesteads Storage Tanks site.
 - (1) The Contractor shall furnish all RTU, hardware and software as required at the Kapa‘a Homesteads Storage Tanks site with all appurtenances, whether specifically referenced herein or not, but which may be required for operation.
 - c. This system shall be an integrated system of hardware and firmware totally engineered, programmed, assembled and tested. System shall be complete with all appurtenances, whether specifically referenced herein or not, but which may be required for operation.
 - d. During bidding and construction, Contractor shall coordinate his work with other trades to avoid omissions and overlapping responsibilities. Electrical contractor shall notify other trades and suppliers of project voltages, including control voltages.
 - e. Work by Others: Instrument transmitters shall be provided by respective sections of this contract. Installation of equipment complete with power wiring and electric controls and interlock wiring shall be part of Electrical Work.

- C. Submittals: Submittals shall be made for approval and resubmitted until approval is received

for the following:

- a. Catalog Cuts: Submit for approval four (4) copies of catalog cuts of the following equipment:
 - (1) SCADA system components and equipment.
 - (2) Conductors and Wiring.
 - (3) Wiring and functional or block diagrams.
 - (4) Manufacturer's recommendations for installation.
 - (5) Logic diagrams and ladder diagrams.
 - (6) Manufacturer's recommended list of spare parts for a one-year period of operation.
- b. Electrical Installation Drawings: At least 10 days prior to any testing the Contractor shall submit three (3) sets of approved complete electrical installation drawings. The installation drawings shall include the manufacturer's wiring diagrams for the SCADA system and any built-to-order equipment.
- c. As-Built Drawings: Upon completion of the final inspection and testing, the Contractor shall provide six (6) copies of as-built installation drawings and manufacturer's wiring diagrams for the SCADA system and any built-to-order equipment.
- D. Local Support: The manufacturer of the SCADA system supplied shall be represented by a company with offices in the State of Hawai'i. This local office shall be capable of responding to requests for maintenance and repair to the system by having a technician skilled in the repair, maintenance and operation of the system at the job site within 24 hours of being notified. This local representative shall carry all spare parts which are recommended by the manufacturer.

12.02 PRODUCTS:

- A. General: Unless otherwise indicated, provide all first quality, new materials, free from any defects, in first class condition, and suitable for the space provided. Provide materials approved by UL wherever standards have been established by that agency. Where two or more units of the same class of material or equipment are required, provide products of a single manufacturer. Component parts of materials or equipment need not be products of the same manufacturer.
- B. Standard Products: Unless otherwise indicated, provide materials and equipment which are the standard products of manufacturers regularly engaged in the production of such materials and equipment. Provide the manufacturer's latest standard design which conforms with these specifications.
- C. Equipment Finish: Electrical equipment may be installed with manufacturer's standard finish and color, except where specific color, finish, or choice is indicated. If the manufacturer has no standard color, equipment shall be painted ANSI G1, Light Gray.
- D. Instrumentation System Transmitter Power Supply: The power supply shall be mounted in the SCADA cabinet and deliver regulated 24-36 volts DC power at a maximum current

recommended by the analog transmitter supplier. The unit shall operate on 117 volts AC at 50-70 Hz. Load regulation shall be 150 mV maximum from no-load to full-load current. Line regulation shall be 150 mV from 105 to 135 volts AC.

12.03 EXECUTION:

- A. Construction Methods:
 - a. Flush mount gauges, indicators, selector switches, pushbutton switches, and pilot lights in a logical arrangement.
 - b. Mount devices listed, shown, or required for a complete and operable system in accordance with device manufacturer's instructions, these specifications, and as recommended in NEMA PB1.1.
 - c. Ground control panel to safety ground of power source.
- B. Programming. The RTU supplier and Contractor shall provide the complete programming and documentation for the RTU to comply with the requirements set forth herein.
- C. Commissioning. Instruments are to be commissioned under the direct supervision of a qualified representative of the instrument manufacturer. The Engineer and/or the Engineer's representative shall have the right to witness any test, inspection, or calibration or start-up activity.
 - a. Test and exercise each device to demonstrate correct operation, first individually, then collectively as a functional network. Apply continuously variable analog inputs to verify proper operation and setting of analog devices and discrete devices (i.e. switches, etc.). Make provisional settings on relays and pressure switches.
 - b. Unless otherwise specified, tests shall be made to cover at least five points: approximately 0 percent, 25 percent, 50 percent, 75 percent, and 100 percent of range. Individual device accuracy requirements shall be as specified by contract requirements or by published manufacturer accuracy specifications whenever contract requirements are not specified.
 - c. If test results conflict with calibration, the Contractor shall recalibrate and repeat test until test results prove calibration to be correct.
- D. Additional Start-Up Services: The Contractor shall include an additional two (2) days of programming time and the cost for the RTUs programmer to visit the site for one (1) of the day in the Offer. This time may be used at the discretion of the Engineer for additional programming, changes, and/or training. This time is over and above the work necessary to provide a complete and operable system.
- E. Guarantee: The SCADA system, terminal points, equipment, materials, and associated items shall be guaranteed against defective parts and operation due to faulty material or workmanship during the period of one (1) year following acceptance and final payment by the Engineer. The Contractor shall make all

repairs or replacements necessary to accomplish the required performance within the time specified by the Engineer and agreed to by the Contractor.

F. Payment for Section 304.05

- a. General: All costs in connection with furnishing and installing of the various items in accordance with standard practice, the details shown on the drawings and in accordance with these specifications, shall be included in the lump sum price of which the item is a part.
- b. Compensation: Payment of the furnishing and installing of equipment will be made at the Lump Sum Offer of which the item is a part and shall be full compensation for all work in accordance therewith, complete and finished in accordance with the drawings and specifications.
- c. Payment to the Contractor will be made in two (2) parts once all work is in place, complete, and the SCADA System is operational.
 - (1) The first part will be fifty percent (50%) of the contract Offer Item No. 2 under Electrical Work Lump Sum Offer, when all original manufacturer's software and licenses, all programming software, all operational manuals, written procedures, and all other related documents for the operation of the SCADA system are submitted to the Department of Water.
 - (2) The second part will be fifty percent (50%) of the same Lump Sum Offer when the SCADA System is operating satisfactorily for 60 days continuously after the project is officially accepted by the Department of Water at final inspection.

END OF SECTION

SECTION SP-13 – DRILLED CONCRETE SHAFT

13.01 GENERAL:

The Contractor shall furnish and install drilled concrete shafts in accordance with the “Water System Standards, State of Hawai‘i, dated 2002, as amended, and the recommendations within the report “Geotechnical Engineering Exploration, Kapahi 1.0 MG Storage Tanks”, dated September 30, 2011, by Geolabs and as shown the drawings.

13.02 SUBMITTALS:

The Contractor shall submit concrete mix design data for concrete to be used for testing and installation. The Contractor shall submit test reports for concrete compressive strength and slump.

The Contractor shall submit shop drawings for steel reinforcement.

Submit Qualifications for qualified professional to perform load testing.

13.03 TESTING:

The Contractor shall perform a Trial Shaft Program which includes an instrumental Load Test as described within the report “Geotechnical Engineering Exploration, Kapahi 1.0 MG Storage Tanks”, dated September 30, 2011 and in accordance with the Water System Standards and ACI 336.1.

Testing shall be performed by a qualified professional with at least five (5) years experience in load testing procedures similar in material, design and the extent to that indicated for this project.

A Geolabs geotechnical engineer shall be present during all load testing for drilled shafts.

13.04 PRODUCTS:

Steel Reinforcement shall conform to ASTM A615, grade 60 ksi, and ACI 318.

Ready-Mix concrete and mix design conforming to ACI 117, ACI 301 and ACI 304R, minimum compressive strength of 5,500 psi at 28 days. Slump to be between 5 to 6 inches, according to ASTM C143/C143 M.

Measure, batch, mix and deliver concrete according to ASTM C94/C94 M and furnish batch ticket information.

13.05 CONSTRUCTION:

Provide and install monolithically cast-in-place concrete drilled shaft foundation to the sizes indicated.

Tolerances:

- A. Maximum variation of the center of any shaft foundation from the required location: 3 inches, measured at the ground surface.

- B. Bottom Diameter: Minus zero, plus 6 inches, measured in any direction.
- C. Maximum variation from plumb: 1:40.
- D. Maximum bottom level: Plus or minus 2 inches.

13.06 INSPECTION:

Provide equipment for checking the dimensions and alignment of each shaft excavation. Determine dimensions and alignment jointly with the contractor and engineer. Measure final shaft depths with appropriate weighted tape measure or other approved method after cleaning.

A minimum of 50 percent of the base for each shaft is to be less than 1/2 inch of sediment at the time of concrete placement. Maximum depth of sediment or debris at any place on the base of the shaft is not to exceed 1-1/2 inches. Shaft cleanliness is to be determined by the engineer by visual inspection.

A Geolabs geotechnical engineer shall be present for observation during installation operations of drilled shafts.

13.07 EXECUTION:

Excavation

Protect existing structures, utilities, sidewalk pavements and other facilities from damage caused by settlement, lateral movement, vibration, and other hazards created by drilled shaft foundation operations.

Excavation of shaft foundations to be accomplished by standard excavation methods including, but limited to, conventional augers fitted with soil and/or rock teeth, or under-reaming tools attached to drilling equipment of adequate size, power, torque, and down thrust necessary for the work.

Excavation is to be performed through whatever materials that are encountered to the dimensions, depths and applicable ACI 336.1 tolerances.

Protect excavated walls with temporary watertight steel casings of sufficient length to prevent water intrusion, cave-ins, displacement of surrounding earth, and injury to personnel and damage to construction operations.

Excavate shafts for drilled foundations to indicated elevations. Remove loose debris, materials and/or muck to make bottom surfaces level within ACI 336.1 tolerances.

Remove water from excavated shaft prior to concrete placement.

Steel Reinforcement:

Comply with recommendations in the Concrete Reinforcing Steel Institute "Manual of Standard Practice" (CRSI MSP) for fabricating, placing and supporting reinforcement. Shop fabricate steel reinforcement in accordance with ACI SP-66.

When practicable to deliver the reinforcement cage assembly to the jobsite as a complete unit ready for installation, should it not be possible make remaining connections and/or

splices, as indicated on the approved shop drawings, at-grade level prior to lowering the complete assembly into the hole.

Clean reinforcement of loose rust, mill scale, earth and other foreign materials. Do not tack weld crossing reinforcing bars. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

Lower reinforcement steel into the hole in such a manner as to prevent damage to the walls of the excavation; place, tie and/or clip cage symmetrically about the axis of the shaft. Use centering devices securely attached to the cage; to clear the shaft walls and to maintain the cage in place throughout the concrete placement operations.

Concrete Placement:

Keep all equipment, including but not limited to, mixers, pumps, hoses, tools and screeds clean and free or set concrete throughout the placement operation.

Convey concrete from the mixer to place of deposit by best industry methods that will prevent segregation and loss of material. Size and design the equipment for conveying concrete to ensure uniform, continuous placement of concrete.

Place concrete in accordance with ACI 318.

13.08 PAYMENT:

Payment for mobilization shall be made at the Unit Price for Concrete Caissons as listed in the Offer.

END OF SECTION

SECTION SP-14 – LANDSCAPING AND IRRIGATION

14.01 GENERAL:

The Contractor shall furnish and install landscaping and irrigation in accordance with the “Water System Standards,” State of Hawai‘i, dated 2002, as amended, and as shown the drawings. Hydromulch shall be applied at all exposed soil surfaces following the completion of grading operations. See Section 307 – Landscaping and Irrigation of the Water System Standards.

14.02 MATERIALS:

Hydromulch grassing shall contain the following:

- A. Wood Cellulose Fiber Mulch – 23 pounds per 1,000 square feet
- B. Common Bermuda (cynodon dactylon) Grass Seed – 10 pounds per 1,000 square feet
- C. Fertilizer – granular controlled release

Trees and shrubs shall be provided per the plant schedule included in the plans.

14.03 MAINTENANCE: Landscaping shall be maintained a minimum of 90 days after installation until the landscaping is established to the satisfaction of the Manager. The longer maintenance period shall be at the contractor’s expense. Contractor is responsible for protection of all plants and planting area throughout the maintenance period. During the last week of the maintenance period, contractor is to fertilize the entire planting area. Daily watering throughout the maintenance period is the responsibility of the contractor.

14.04 FINAL INSPECTION AND ACCEPTANCE: Grass coverage shall exceed 90% to be considered acceptable.

14.05 PAYMENT: Payment for LANDSCAPING AND IRRIGATION shall not be made directly; compensation shall be considered incidental to the total project Offer price.

END OF SECTION

SECTION SP-15 – FIELD OFFICE

15.01 GENERAL:

A field office is required for this project. It shall be furnished per section 6.3 of the General Provisions for Construction Contracts with the Department of Water. Contractor shall be responsible for all associated costs for the field office.

15.02 PAYMENT:

Payment for FIELD OFFICE shall not be measured nor paid for directly, but shall be considered incidental to the total Offer price.

END OF SECTION

SP-16- GEOTECHNICAL REQUIREMENTS AND MONITORING

16.01 GENERAL:

This section covers requirements for geotechnical monitoring work to be performed during construction of any earthwork required to construct the Project. This item of work consists of furnishing of labor, tools, equipment, and materials necessary to complete the geotechnical monitoring. Contractor shall be responsible for coordinating all phases of the project with the DOW Engineer.

16.02 GEOTECHNICAL ENGINEERING:

Foundation design is based on the geotechnical engineering report prepared by Geolabs, Inc., titled "Geotechnical Engineering Exploration, Kapahi 1.0 MG Storage Tanks Waialua-Kapa'a Water System, Kapa'a, Kaua'i, Hawai'i" dated September 30, 2011. A copy of the report is included in Appendix O. The Contractor shall retain the services of a licensed geotechnical engineer to certify that the ground soil conditions, including the compaction of the subgrade material, are acceptable and have met the requirements of the geotechnical report. A written confirmation of the above shall be submitted by the geotechnical engineer retained by the Contractor prior to any installation of reinforcement steel. A representative of the Geotechnical Engineer shall be present at the site to observe and inspect the reservoir grading, retaining walls, pipelines along roadway, probing work, and foundation preparation and to take density tests.

16.03 OBSERVATION AND TESTING:

The earthwork shall be observed by a licensed geotechnical engineer in the State of Hawai'i during construction to determine whether anticipated materials are encountered. Field density tests in backfills shall be taken and analyzed by the Geotechnical Engineer to determine whether the specified levels of compaction are consistently obtained.

The foundation excavation for the walls shall be observed by the Geotechnical Engineer during construction to determine whether anticipated materials are encountered.

The Geotechnical Engineer's representative shall be on-site at **ALL** times where and when backfill occurs within the project site to assure quality of backfill, proper compaction, and appurtenances as required by the various sections of the associated Invitation for Bids documents.

16.04 PAYMENT:

Payment for GEOTECHNICAL REQUIREMENTS AND MONITORING shall not be made directly; compensation shall be considered incidental to the various items of the Offer for which it is a part of.

END OF SECTION

SP-17 – SPECIAL INSPECTION

17.01 GENERAL:

Special inspections are required for this project. Special inspection, as delineated in the 2006 International Building Code Chapter 17, is required for the following:

- A. Drilled Shaft Geotechnical (by geotechnical special inspector as noted in the Foundation Notes in the construction drawings).
- B. Concrete (by special inspector).
- C. Reinforcing Steel (by special inspector).

The contractor shall hire an independent qualified person who is approved by the Kaua'i Department of Water for the two types of special inspectors. The geotechnical special inspector shall be a geotechnical engineer licensed in the State of Hawai'i to do special inspections for the geotechnical items as stated in the Foundation Notes (located in the construction drawings). The regular inspector shall do inspections of concrete and reinforcing.

The contractor shall coordinate and be responsible for contacting the special inspector(s) in a timely manner such that all special inspections are executed.

17.02 PAYMENT:

Payment for SPECIAL INSPECTION shall not be measured nor paid for directly, but shall be considered incidental to the total Offer price.

END OF SECTION

SECTION SP-18 – NACE INSPECTOR FOR COATINGS

18.01 GENERAL:

The Contractor shall provide a NACE Certified Coating Inspector. The Inspector shall have a minimum of 5 years of experience in the application of the specified coatings. The contractor shall provide a list of three (3) potential NACE inspectors for DOW to select one (1) for the project.

18.02 PAYMENT:

Payment for NACE INSPECTOR FOR COATINGS shall not be measured nor paid for directly, but shall be considered incidental to the total Offer price.

END OF SECTION

SECTION SP-19 – EXTERIOR COATINGS

19.1 GENERAL:

- 19.1.01 GENERAL: This section covers furnishing of labor, tools, equipment, materials and applying paint to the exterior reservoir wall, roof slab vertical edge and other elements of the reservoir specified to have a paint finish in place complete, as shown on the plans and as specified in DIVISION 300 - CONSTRUCTION, Section 303.27 PAINTING of the “Water System Standards,” dated 2002, and as amended hereinafter as they apply to this project.
- 19.1.02 PROTECTION OF MATERIALS: All material shall be delivered to the jobsite in their original unopened containers bearing the manufacturer's name, brand and batch number. All coatings and paints shall be stored in enclosed structures to protect them from weather and excessive heat and cold. Flammable coatings or paints must be stored in conformance with city, county and state safety codes for flammable coating or paint materials.
- 19.1.03 SUBSTITUTIONS: Requests for material substitutions must be made and approved in writing by Department of Water.

19.2 SUBMITTALS:

- 19.2.01 PRODUCT DATA: Submit product data in accordance with these Specifications. Unless otherwise specified here-in, submit manufacturer's data sheets showing the following information:
1. Percent solids by volume.
 2. Minimum recommended dry-film thickness per coat for prime, intermediate and finish coats.
 3. Recommended surface preparation.
 4. Recommended thinners.
 5. Statement verifying that the specified prime coat is recommended by the manufacturer for use with the specified intermediate and finish coats.
 6. Application instructions including recommended equipment and temperature limitations.
 7. Verification from the manufacturer that the product meets current California VOC requirements.
 8. Color chips for alkyd enamel and exterior tank coatings.
- 19.2.02 PAINTING CONTRACTOR: Painting Contractor experience documentation as described in Section 19.3 below.

- 19.3 PAINTING CONTRACTOR QUALIFICATIONS: The Painting Contractor must be capable of performing the various items of work as specified. If required by the Manager, the Painting Contractor shall furnish a statement covering experience on similar work, a list of machinery and other equipment available for the proposed work, and a financial statement, including a complete statement of the Paint Contractor's financial ability and experience in performing similar painting and coating work.

The Painting Contractor shall have a minimum of five (5) years practical experience and a successful history in the application of the specified products to concrete surfaces.

Upon request, the Painting Contractor shall substantiate this requirement by furnishing a list of references, which shall include jobs of similar nature, listing name of project, year completed, owner, name and contact telephone number for reference for each project listed.

19.4 MATERIALS:

19.4.01 ABOVEGROUND EXTERIOR WALL AND ROOF EDGE AREAS:

- A. Prime Coat – (1) coat, ICI Devoe Coatings 4030 TRU-GLAZE-WB Waterborne Epoxy Primer at 4.0 - 8.0 mils wet; 2.0 - 4.0 mils DFT. (200-270 sf/gal.) or approved equal.
- B. Finish Coat- (2) coats, Glidden Fortis 350 (formerly ICI Devoe Coatings 2406 Dulux Professional) Waterborne Acrylic Latex Semi-Gloss at 4.0–4.6 mils wet; 1.4-1.6 mils DFT. (350-400 sf/gal) or approved equal.
- C. The finish coat color shall be of a moderate to dark earth tone color.

19.4.02 BELOW GRADE WATERPROOFING: Two-component liquid-applied urethane coating that forms an elastomeric waterproof membrane after curing, such as “CIM 1000” by C.I.M. Industries, Inc. (www.cimindustries.com) or approved equal.

19.5 EXECUTION:

19.5.01 EQUIPMENT: The Contractor’s coating and painting equipment shall be designed for application of materials specified and shall be maintained in first class working condition. Compressors shall have suitable traps and filters to remove water and oils from the air. Contractor's equipment shall be subject to approval of the Engineer.

19.5.02 SURFACE PREPARATION:

- A. All concrete surfaces shall be prepared in accordance with the recommendations of the coating manufacturer.
- B. The surfaces shall be thoroughly cleaned, if they are not free of grease, curing compounds or other deleterious matter, as recommended by the coating manufacturer.

19.5.03 APPLICATION:

- A. Contractor shall comply with manufacturer’s recommended application rates, methods, and instructions.
- B. Each coat shall be free of runs, skips or "holidays".
- C. All work shall be done in accordance with the manufacturer’s safety recommendations, adequate ventilation shall be provided within the tank by the

contractor during the course of interior painting work.

19.5.04 SURFACES NOT TO BE COATED:

The following surfaces shall not be painted and shall be protected during the surface preparation and painting of adjacent areas:

1. Mortar-coated pipe and fittings.
2. Stainless-steel, aluminum, brass or copper.
3. Metal letters.
4. Nameplates.
5. Grease fittings.
6. Buried pipe, unless specifically required in the piping specifications.

- 19.6 PROTECTION OF SURFACES NOT TO BE PAINTED: Remove, mask, or otherwise protect hardware, lighting fixtures, switchplates, aluminum surfaces, machined surfaces, couplings, shafts, bearings, nameplates on machinery, and other surfaces not intended to be painted.

Provide drop cloths to prevent paint materials from falling on or marring adjacent surfaces.

Protect working parts of mechanical and electrical equipment from damage during surface preparation and painting process.

Mask openings in motors to prevent paint and other materials from entering the motors.

- 19.7 THINNING: The Contractor shall not add thinner to any paint product without prior approval of the Engineer and the paint manufacturer. Only thinner manufactured by the paint manufacturer will be allowed if thinning is approved.

- 19.8 WEATHER CONDITIONS: No painting shall be done under unfavorable weather conditions unless the work is well-protected from such conditions, and then only with the specific approval of the Engineer.

No painting shall be done when the air temperature is less than 50 degrees Fahrenheit (F), when the relative humidity is greater than 70 percent, or when the surface temperature is less than 5 degrees F above the dew-point, unless otherwise approved by the Engineer. If dew or moisture condensation should be anticipated and if such conditions are prevalent, painting should be delayed until surfaces are dry. Further, the day's painting should be completed in advance of the problem time when condensation will occur, in order to permit the film sufficient drying time prior to the formation of moisture.

No painting shall be applied on any surface whose temperature is less than 50 degrees F or more than 120 degrees F or in conflict with the manufacturer's recommendations, unless otherwise approved by the Engineer.

19.9 SAFETY:

- 19.9.01 PERSONAL PROTECTIVE LIFE-SAVING EQUIPMENT: In accordance with requirements of the latest revision of the OSHA Regulations for Construction, the Contractor shall provide and require use of personal protective life-saving equipment for

persons working in or about the project site.

- 19.9.02 HEAD AND FACE PROTECTION AND RESPIRATORY DEVICES: Equipment shall include protective helmets conforming to the requirements of ANSI Standard Z89.2, and shall be worn by all persons while in the vicinity of the work. In addition, workers engaged in or near the work during sandblasting shall wear eye and face protection devices meeting the requirements of ANSI Standard Z87.1 and OSHA Regulations for Sandblasting Operations, and air-purifying half-mask or mouthpiece respirator with appropriate filter.
- 19.9.03 VENTILATION: Where ventilation is used to control potential exposure as set forth in section 1910.924 of the OSHA Regulations for Construction, ventilation shall reduce the concentration of air contaminant to the degree a hazard does not exist.
- 19.9.04 SOUND LEVELS: Whenever the occupational noise exposure exceeds the maximum allowable sound levels as set forth in Table D-2 of Subpart C, Section 1926.52 of the OSHA Regulations for Construction, the Contractor shall provide and require the use of approved ear protection devices.
- 19.9.05 ILLUMINATION: Adequate illumination shall be provided while work is in progress. Whenever required by the Engineer, the Contractor shall provide additional illumination and necessary supports to cover all areas to be inspected. The level of illumination for inspection purposes shall be determined by the Engineer.
- 19.9.06 TEMPORARY LADDERS AND SCAFFOLDING: All temporary ladders and scaffolding shall conform to the applicable requirements of Subpart L, Sections 1926.45 and 1926.451 of the OSHA Regulations for Construction. They shall be erected where requested by the Engineer to facilitate inspection and be removed by the Contractor to locations requested by the Engineer.
- 19.10 INSPECTION AND TESTING: The Contractor shall give the Department of Water and Inspector 3 days' advance notice of the start of any field surface preparation work or coating application work.

The Contractor shall provide a full time NACE Certified Coating Inspector at the work site anytime work is being done on this section of the project. The Inspector shall have the authority to coordinate work and make decisions pertaining to the fulfillment of this phase of the contract. The Inspector shall have a minimum of 5 years of experience in the application of the specified coatings. The contractor shall provide a list of three (3) potential NACE inspectors for DOW to select one (1) for the project.

All work relative to preparation for the application of coatings shall be conducted under the full time Inspector. The Inspector's services shall be provided and paid for by the Contractor. The Inspector shall have the authority to act on behalf of the Department of Water to reject any coating work that does not comply with these specifications or the manufacturer's written specifications.

Prior to the start of any work, the Contractor shall establish with the Inspector, schedules and notification procedures to ensure all surface preparation work has been inspected prior to the application of any coating. These procedures shall remain in effect for the duration of the coating project. Under no circumstances shall any surfaces be coated without prior approval of the inspector. Coatings applied without the Inspector's authorization shall be removed and reapplied at

the sole expense of the Contractor.

The Contractor shall make the following equipment available to the Inspector upon request:

1. Holiday testers
2. Film thickness testers
3. Surface preparation concrete comparators
4. Adhesion testers

19.11 PAYMENT: Payment for EXTERIOR COATINGS shall not be made separately; the compensation shall be considered incidental to the various items of the Offer for which it is a part of.

Such payment shall represent full compensation for furnishing all materials, labor, tools, equipment and incidentals to complete the work.

END OF SECTION

SECTION SP-20 – ROOF SLAB WATERPROOFING

This section covers furnishing of labor, tools, equipment, materials to install the roof slab waterproofing, include surface preparation, flashing in place complete, as shown on the plans. The reservoir roofing defined in “Water System Standards,” dated 2002, Section 303.06 REINFORCED CONCRETE RESERVOIR shall be deleted and replaced with the following:

- 20.1 PACKAGES AND LABELS: Deliver materials in original containers, manufacturer’s labels thereon. Do not open container or remove labels until Engineer has approved material.
- 20.2 STORAGE: Store coating materials out of direct sunlight and as recommended by the manufacturer. Do not store containers exposed to weather. Storage place shall be a location agreed upon by the Contractor and Manager.
- 20.3 FIRE PROTECTION: Contractor shall exercise extraordinary care to prevent fire.
- 20.4 PROTECTION AND CLEANING: Protect adjacent work with drop cloths. Clean material splatters and stains from completed surfaces.
 - A. Begin waterproof coating process only after coating manufacturer’s representative has approved the substrate surface for coating. The work shall be performed in strict conformance with the manufacturer’s direction.
- 20.5 SUBMITTALS:
 - A. MATERIALS: Submit complete and detailed list of materials proposed for use, their MSDS sheets and certification that the proposed products meet the project requirements.
 - B. INSTALLATION INSTRUCTIONS: Submit installation instructions from coating manufacturer, including recommended coverage for all system components.
 - C. LETTER FROM COATING MANUFACTURER: Stating that proposed materials are the best of their respective kinds and suitable for the intended purpose and project conditions.
 - D. INSTALLER CERTIFICATES: Installer certificates signed by roof waterproofing system manufacturer certifying that contractor is authorized to install the waterproofing system.
 - E. SAMPLES: Submit sample of proposed color and texture of the coating system assembly for approval by DOW before ordering materials. Submit as many samples as required to secure approval from the Department of Water. The finish color shall be selected from the standard color choices offered by the manufacturer.
 - F. SAMPLE WARRANTY: Copy of special waterproofing manufacturer’s warranty stating obligations, remedies, limitations, and exclusions before starting installation.
- 20.6 QUALITY ASSURANCE: The Applicator proposing on this Work must submit to DOW a currently dated applicator’s license certificate issued by the manufacturer for the specific coating system to be installed as part of this project.

The waterproof coating contractor shall coordinate the presence of the manufacturer's representative and shall provide the manufacturer's representative with a schedule of his work. The schedule shall be designed in such a way as to meet project requirements.

Waterproofing coating manufacturer's representative is required to be on-site as often as the representative deems necessary to assure the coated surfaces and the coating are in accordance with the manufacturer's directions and does not negate the manufacturer's warranty.

Coating shall not contain any materials determined hazardous, such as lead.

All coating components shall be from the same manufacturer or the primary coating components manufacturer shall provide a written statement indicating the proposed materials are compatible and acceptable for the system to be guaranteed.

All materials shall be delivered to the job site in the original factory containers. Containers shall be clearly labeled with the coating type and batch number. Damaged containers shall be rejected or noted by receiver at the time of delivery.

The coating manufacturer shall have 5 years minimum experience in the manufacture of fluid-applied waterproof coatings.

All work shall be done in a manner that produces a good workmanlike finish. The applicator shall adhere to the manufacturer's instructions for use, handling, storage, application and clean-up.

Non-compliance with any portion of this RFP without prior written approval of DOW and, if necessary, confirmation by the coating manufacturer, may cause for rejection of the entire job or portion thereof.

20.7 PROJECT CONDITIONS:

20.7.01 EXAMINATION OF SURFACES: The Contractor and manufacturer's representative shall examine the surfaces before commencement of work. The roof areas shall be in proper condition to receive the coating system. If the contractor considers any surface unsuitable for the proper finish of the work, he shall not apply any material until the unsuitable surface(s) has been adequately addressed.

20.7.02 WEATHER CONDITIONS: Do not apply waterproof coating materials in rain, fog or mist, or when such weather conditions are predicted in the next 8 hours. Take adequate precautions to ensure that materials, applied coating are protected from possible moisture damage or contamination.

20.7.03 PROTECTION: Before applying waterproof coating, system remove or provide ample protection for hardware, plates, light fixtures, and similar items. Replace upon completion. Employ skilled craftsmen for removing and reinstalling above items. Protect surfaces not to be coated and remove any unintended primer or coating immediately from the surface.

20.7.04 SIGNS: Post "No Smoking" signs in area during and for a minimum of 8 hours after the application.

20.8 PROTECTION REQUIREMENTS:

- A. Membrane Protection: Provide protection against staining and mechanical damage for newly applied waterproof coating and adjacent surfaces throughout this project.
- B. Debris Removal: Remove all debris daily from the project site and take to a legal dumping area authorized to receive such materials.

20.9 CONTRACTOR’S ACCEPTANCE: Application of the primer constitutes the Contractor’s acceptance of the surfaces and the responsibility for it, including the removal of hazardous materials.

20.10 GUARANTEE: Contractor shall furnish a five (5) year guarantee as described in Water System Standards, Section 303.16.C.

The guarantee shall be without deductibles or limitations on coverage amount, and shall be issued at no cost to the Department of Water. The guarantee shall not exclude random areas of ponding from coverage.

20.11 MATERIALS:

20.11.01 SYSTEM DESCRIPTION: A fluid-applied, single component, moisture-cured, polyurethane deck elastomeric waterproof coating in compliance with ASTM C957, such as Elasto-deck 5000X2 by Pacific Polymers International, Sikalastic 710/715 Traffic System by Sika, or approved equal.

20.11.02 COMPONENTS: Components shall be products of a single manufacturer, or shall be certified by the manufacturer as compatible with components produced by manufacturer.

20.11.03 PRIMER: Primer shall be a fast-drying, two component, water based epoxy primer with low odor and non-flammable. Primer is designed to be used with polyurethane based coatings and joint sealants, such as Elasto-poxy Primer W.B. by Pacific Polymers International; Sikafloor FTP by Sika or approved equal.

20.11.04 BASE COAT: Base coat shall be a liquid-applied, single component, aromatic moisture-cured polyurethane waterproof membrane that is non-gassing, non-blistering, such as Elasto-Deck 5001 Non-Gassing by Pacific Polymers International; Sikalastic 710 by Sika or approved equal.

A. Properties:

(1)	Ultimate Tensile Strength (ASTM D412)	800 psi
(2)	Adhesive Peel Strength on Primed Concrete (ASTM D903)	90 pli
(3)	Moisture Vapor Transmission (ASTM E96)	3.7 perms
(4)	Tear Resistance (ASTM D1004)	170 pli
(5)	Ultimate Elongation (ASTM D412)	500% min.

20.11.05 TOP COAT: Top coat shall be liquid-applied, moisture cured polyurethane based on aliphatic Isocyanates in combination with additives and pigments to produce a wear-

resistant, protective coating, such as Elasto-Glaze 6001 AL by Pacific Polymers International; Sikalastic 715 by Sika or approved equal.

A. Properties:

(1) Percent Solids	70% Min.
(2) Adhesive Peel Strength on Primed Concrete (ASTM D903)	200 pli
(3) Moisture Vapor Transmission (ASTM E96)	1.0 perms
(4) Tear Resistance (ASTM D1004)	185 pli
(5) Ultimate Elongation (ASTM D412)	180% min.
(6) Tensile Strength (ASTM D412)	2,500 psi.

20.11.06 FINISH AGGREGATE: 20 mesh sand as provided by coating system manufacturer as part of the roofing system materials.

20.11.07 ROOFING ACCESSORIES:

A. Discontinuity Cant Joint Material: Two-part, gun grade polyurethane joint sealant product that cures to a firm, flexible tear-resistant rubber with excellent recovery characteristics, such as Elasto-Thane 227/227R by Pacific Polymers, Garden Grove, CA (714-898-0025)(www.pacpoly.com) or Sikaflex 2c NS Sealant by Sika, Lyndhurst, NJ (800-933-7452) (www.usa.sika.com) or approved equal.

B. Sealant: Single-component, gun-grade/non-sag, polyurethane joint sealant which cures at ambient temperature to a firm, flexible, tear-resistant rubber, such as, Elasto-Thane 230, Elasto-Thane 920 by Pacific Polymers or Sikaflex 1a Sealant by Sika or approved equal.

C. Backing Rod: Expanded polyethylene rod equal to “Ethafoam” by DOW Chemical.

D. Flashing Tape: Fiberglass tape, commercial grade.

20.12 SURFACE PREPARATION: All surfaces must conform to manufacturer’s recommendations and to the satisfaction of the Manager. All surfaces of different material are to be considered separately and are to be treated as recommended by the manufacturer.

Properly cure surfacing material and concrete repairs shall be cleaned by water pressure washing with 5,000 psi pressure. All surfaces must be free of dirt, debris, organic growth, chalk, loose laitance, and other loose materials and be clean and dry.

Caulk all substrate seams, vertical/horizontal surface intersections and protrusions with continuous bead of sealant. Caulk all expansion, control and construction joints in concrete substrate to be over coated with base coating with sealant.

Sawcut all cracks exceeding 1/16-inch wide and fill with sealant. Install a strip of base coating material, 25 mils thick over all caulked saw cut cracks.

Protect adjacent surfaces not to be coated with drop clothes or masking as required.

20.13 APPLICATION:

Job No. **02-14 WK-08, KAPA‘A HOMESTEADS 325’ TANKS, TWO 0.5 MG TANKS, PACKAGE B – TANKS PACKAGE, KAPA‘A**

- 20.13.01 WORKMANSHIP: Highest quality, by skilled workers, in accordance with best trade practices. Apply materials evenly, without runs or sags. Cut sharp lines against other materials. Allow ample time between coats for thorough drying. Rate of application shall be in strict conformance with manufacturer's direction.
- 20.13.02 DEFECTIVE WORK: Contractor responsible whatever the cause; refinishing work will be at Contractor's expense. Repair work that is damaged during construction. Leave coated surfaces in first class condition at time of final acceptance.
- 20.13.03 PRIMER: Apply primer in accordance with roofing system manufacturer's instructions. Primer shall be applied in a solid coat at the rate recommended by the manufacturer.
- 20.13.04 BASE COATING: After primer has been allowed to cure as recommended by manufacturer, apply two coats of base coating at the rate and dry film thickness recommended by the coating manufacturer. Application must be made uniformly to avoid thin spots, care must be taken to avoid pinholes and repair them as they occur. Allow time between coats as recommended by manufacturer.
- 20.13.05 TOP COAT: Apply the top coat at the recommended rate to achieve the recommended dry film thickness. Broadcast aggregate into the wet top coat until refusal.
- 20.13.06 ADDITIONAL TOP COAT: After a minimum of 16 hours, sweep or blow off all loose aggregate and apply another coating of top coat over the aggregate at the recommended rate.
- 20.13.07 ALLOWANCE FOR FOOT TRAFFIC: Allow at least 96 hours (4 full days) before allowing foot traffic on installed coating system.

20.14 FIELD QUALITY CONTROL:

- 20.14.01 FINAL INSPECTION: Contractor to notify coating system manufacturer in writing of the completion of installation in order to schedule a final inspection by manufacturer's representative.
- 20.14.02 VISUAL CHECK: All surfaces coated shall be visually checked to insure areas have not been missed and all holidays in the coating are repaired.
- 20.14.03 FIELD INSPECTION: The Contractor and the manufacturer's representative shall compile a punch list of items required for completion.
- 20.14.04 ISSUANCE OF GUARANTEE: Contractor will be responsible for completing post-installation procedure and meet the manufacturer's final endorsement for issuance of the specified guarantee.

- 20.15 CLEAN-UP: Clean off all misplaced primer and coating and remove all excess materials and equipment from the job site upon completion.

Leave premises neat and clean in a manner acceptable to the Manager. Remove all temporary protection and barriers from the work.

20.16 PAYMENT: Payment for ROOF SLAB WATERPROOFING shall not be made separately; the compensation shall be considered incidental to the various items of the Offer for which it is a part of.

END OF SECTION

SECTION SP-21 – PERMITS

21.1 GENERAL: This item of work shall include the furnishing of all labor, materials, tools, and equipment necessary for obtaining and compliance with required permits.

The Contractor shall pay all charges, fees, and taxes; give all notices; and comply with all laws, ordinances, rules and regulations related to the permits. All fees provided in this Section are estimates and are not meant to identify all of the permits needed for this project. Contractor is responsible to pay permit fees.

The Contractor must comply with and fulfill the conditions set forth in the permits. Any modifications or amendments to permits by the Contractor shall be done at the Contractor's expense.

The Contractor shall make no claims for compensation due to delays or requirements imposed in obtaining permits and complying with permits. Notice to Proceed will not be delayed due to Contractor's inability to attain permits.

Violation citations for noncompliance shall be the responsibility of the Contractor. The Contractor shall pay all fines and hold harmless the Department of Water.

21.2 BUILDING PERMIT:

21.2.01 GENERAL: The Contractor is responsible to obtain the Building Permits and payment of applicable fees. The Contractor shall develop the project schedule and include the processing of Building Permits.

The Department of Water has obtained approval for the Building Permits listed below. Should any permit lapse or expire, the Contractor is responsible to have the permit re-processed.

21.2.02 PROCEDURES:

- A. Applications for Building Permits require a Review Fee. The Review Fee is based on 15% of the Building Permit Fee. The application will be reviewed by the appropriate departments and agencies. Once the comments have been addressed, the approved permit will be approved.
- B. Once the Building Permit is ready to be issued, the applicant has one year to have the permit issued.
 1. Once permit is issued, the first inspection must occur within 180 days. Otherwise, the permit will lapse. If the permit lapses, the Renewal Fee must be paid, and the drawings will be re-processed for approval.
 2. If permit is not issued, approval for the building permit expires. The Review Fee must be paid again, and the application is re-processed for approval.
 3. One Department of Public Works inspector will be assigned to each parcel. The same inspector will conduct the inspections for all the building permits for that

parcel. The initial inspection will satisfy the initial inspection requirement for all the building permits applicable to that parcel.

C. Summary of Building Permit procedures:

Building Permit (BP) Requirements			
Fees			
Building Permit Fee	Based on Valuation		
Review Fee	15% of BP Fee		
Renew Permit Fee	50% of BP Fee		
Timeline	Requirement	For Non-compliance	Action Required
During BP Review Process	180 days to respond to comments	BP becomes dormant	Pay Review Fee to reactivate process
BP Approved	One year to issue permit	BP not issued, Approval Expires	Pay Review Fee to reactivate BP review
BP Issued	180 days to request inspection	Permit Expires	Pay Renew Permit Fee

21.2.03 **FEES:** A summary of the Building Permit information and estimated Building Permit Fees and Fire Fees are shown below. Please see 21.3 for discussion of Fire Fees.

Fees									
Building Permit (BP) Number	Desc.	App. Date	Building Permit			Fire Fees		Other Fees	
			Permit Fee	Review Fee (15% of BP Fee)	Renewal Fee (50% of BP Fee)	Fire Fee	Fire Fee Review/Renewal Fee	Fee	Review/Renewal Fee
BP19-00000091	Tank A	1/16/19	\$9,204	\$1,381	\$4,602	\$1,105	\$133	\$37	\$6
BP19-00000052	Tank B	1/9/19	\$9,204	\$1,381	\$4,602	\$1,105	\$133	-	-

21.2.04 **PAYMENT:** Payment for Building Permits and Fire Fees shall not be made separately; the compensation shall be considered incidental to the Total Sum Offer of which it is a part.

21.3 **FIRE FEES AND OTHER BUILDING PERMIT-RELATED FEES**

21.3.1 **GENERAL:** The Contractor is responsible to pay for Fire Fees and Other Building Permit-Related Fees required for this project. Fire fees and other building permit-related fees are assessed during the building permit process. No additional application is required.

21.3.2 **FEES:** The estimated Fire Fees and Other Building Permit-Related Fees are shown in

21.2.3 with the Building Permit fees.

21.3.3 PAYMENT: Payment for Fire Fees and Other Building Permit-Related Fees shall not be made separately; the compensation shall be considered incidental to the Total Sum Offer of which it is a part.

21.4 GRADING PERMIT

21.4.01 GENERAL: The Contractor is responsible for obtaining Grading Permits, providing surety bonds, and payment of applicable fees.

21.4.02 REGULATIONS

- A. The Contractor shall be familiar with and meet the latest requirements of County of Kaua'i Ordinance No. 808.
- B. Grading Permits expire and become void one year after the date of issuance.
- C. Grading Permits expire and become void unless work is started within six months after the date of issuance or if the work is suspended or abandoned at any time after the work is commenced for a period of ninety days.

21.4.03 PROCEDURES:

- A. The Contractor shall apply for Grading Permits and comply with Grading Permit application requirements.
- B. If the County Engineer is not completely satisfied with the work, the Contractor shall perform corrective measures at his own expense.

21.4.04 FEES: Estimated fees and bond amounts are as follows:

Project Package	Estimated Grading Permit Fee	Estimated Bond Amount
Kapahi Homesteads Two 0.5 MG Storage Tanks	\$400	\$36,000

21.4.05 PAYMENT: Payment for Grading Permits shall not be made separately; the compensation shall be considered incidental to the Total Sum Offer of which it is a part.

21.5 STOCKPILING PERMITS/GRUBBING PERMITS:

21.5.01 GENERAL: The Contractor is responsible for obtaining Stockpiling Permits and Grubbing Permits, as necessary.

21.5.02 REGULATIONS:

- A. The Contractor shall be familiar with and meet the latest requirements of County of Kaua‘i Ordinance No. 808.
- B. A Stockpiling Permit is required for storage of material in excess of 500 cubic yards.
- C. Stockpiling Permits expire and become void one year after date of issuance and all stockpiled material temporarily stored on the premises shall be removed from the premises or used on the premises as fill material under a grading permit.
- D. Separate Grubbing Permits are not required when grubbing activities are performed in conjunction with and as part of activities conducted pursuant to a validly issued Grading Permit.
- E. Grubbing Permits expire and become void one year after the date of issuance.
- F. Grubbing Permits expire and become void unless work is started within six months after the date of issuance or if the work is suspended or abandoned at any time after the work is commenced for a period of ninety days.

21.5.03 PROCEDURES: The Contractor shall apply for Stockpiling Permits, as necessary, and comply with Stockpiling Permit application requirements. The Contractor shall apply for Grubbing Permits, as necessary, and comply with Grubbing Permit application requirements.

21.5.04 FEES: The estimated fees for Stockpiling Permits and Grubbing Permits are one-half of one percent of the estimated construction cost as determined by the County Engineer.

21.5.05 PAYMENT: Payment for Stockpiling Permits and Grubbing Permits shall not be made separately; the compensation shall be considered incidental to the Total Sum Offer of which it is a part.

21.6 ROAD PERMIT:

21.6.01 GENERAL: The Contractor is responsible for obtaining Road Permits.

21.6.02 PROCEDURES: The Contractor shall apply for Road Permits and comply with Road Permit application requirements. Submit approved drawings with the applications.

21.6.03 FEES: There are no fees for Road Permits.

21.6.04 PAYMENT: Payment for Road Permits shall not be made separately; the compensation shall be considered incidental to the Total Sum Offer of which it is a part.

21.7 NOISE PERMIT:

21.7.01 GENERAL: The Contractor is responsible for obtaining Noise Permit and Variance, as necessary, and payment of applicable fees.

21.7.02 REGULATIONS: The Contractor shall be familiar with and meet the latest requirements of Title 11, Chapter 46, Community Noise Control, Hawai‘i

Administrative Rules.

21.7.03 PROCEDURES:

- A. If necessary, the Contractor shall apply for Noise Permits and comply with Noise Permit application requirements.
- B. If necessary, the Contractor shall apply for Noise Variances and comply with Noise Variance application requirements.

21.7.04 FEES:

- A. Each Noise Permit is subject to a \$50 annual fee. Extensions and Renewals are subject to applicable annual fees.
- B. The fee for a variance or renewal of a variance is \$100 per year and all costs associated with public participation requirements. Public participation may include, but is not limited to, public notices, circulation of public notices, and public hearing. The Director may establish other fees.

21.7.05 PAYMENT: Payment for Noise Permits and Variance shall not be made separately; the compensation shall be considered incidental to the Total Sum Offer of which it is a part.

END OF SECTION