

**INVITATION FOR BIDS
AND
CONSTRUCTION DOCUMENTS
FOR**

**JOB NO. 24-14
LĪHU'E BASEYARD ELECTRICAL RELOCATION
KAUA'I, HAWAI'I**

December 2024

**DEPARTMENT OF WATER
COUNTY OF KAUA'I
LĪHU'E, KAUA'I, HAWAI'I**

APPROVED:



Chief Procurement Officer

12/02/24

Date

1 **ADMINISTRATION**

1.1 **INVITATION FOR BIDS.**

DEPARTMENT OF WATER, COUNTY OF KAUA‘I
24-14 LĪHU‘E BASEYARD ELECTRICAL RELOCATION
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, February 07, 2025**, 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	December 2, 2024
Pre-Bid Conference	December 17, 2024 at 9:00am HST
Deadline: Receipt of Questions / Comments / Material Substitutions	January 10, 2025
Deadline: Notice of Intent	N/A
Department’s Responses to Questions / Comments / Material Substitutions	January 17, 2025
Bid Opening	February 7, 2025 at 2:00pm HST
Selection / Award Notification	March 2025
Contract Execution Period	April 2025
Contract Tentative Notice to Proceed Date	May 2025

The Manager and Chief Engineer 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 to construct electrical improvements at the Department of Water’s Līhu'e Baseyard, consisting of relocating the existing electrical feeder from the Former Administration Building to the Operations Job No. 24-14 LĪHU‘E BASEYARD ELECTRICAL RELOCATION

Building; constructing a new electrical ductline from the existing service switchboard to the new electrical feeder; and replacing the existing electrical manual transfer switch with an automatic transfer switch at the Microlab building entrance, as indicated in the contract drawings and specifications.

PLANS AND SPECIFICATIONS: The contract documents are to be downloaded electronically. Please email the Department of Water 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) 245-5411.

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: A non-mandatory Pre-Bid Conference will be held at the DOW Admin Office. 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. A 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: Bidders are not required to submit a Notice of Intent to Bid.

CHIEF PROCUREMENT OFFICER
DEPARTMENT OF WATER
COUNTY OF KAUAI

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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 No. 24-14 LĪHU‘E BASEYARD ELECTRICAL RELOCATION.**”

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:
- 1.3.5.1 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.**

1.3.5.2 **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 I). 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.

1.3.16.1 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.

1.3.17.1 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: **507**

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

Contract Administrator:

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

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.

This contract consists of furnishing all materials, labor, tools, and equipment to construct electrical improvements at the Department of Water's Līhu'e Baseyard, consisting of relocating the existing electrical feeder from the Former Administration Building to the Operations Building; constructing a new electrical ductline from the existing service switchboard to the new electrical feeder; and replacing the existing electrical manual transfer switch with an automatic transfer switch at the Microlab building entrance

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 **ONE HUNDRED EIGHTY (180) 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.

Per Approved Plans Water Construction Note: all materials, shop drawings, chlorination plan, hazardous material and health related submittals, etc. shall be approved by the Department before a preconstruction meeting can be scheduled. In order for the contractor to meet this requirement, as well as any other requirements related to permitting for the project, including but not limited to building, grading, road, noise, demolition, NPDES for staging areas, NPDES duly authorized person designation, etc., the Department has included 90 calendar days for the contractor to complete the process within the total time of completion calendar day amount. Notice to proceed will be given before the contractor begins the project submittal approval process and it is expected that the contractor will complete the submittal and permit process within the 90 calendar day timeframe. No additional days will be granted if the contractor does not complete the process to attain a preconstruction meeting within 90 calendar days.

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, an electrical 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.

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.

3.3.2.1 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.

(See attached)

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. 24-14 LĪHU‘E BASEYARD ELECTRICAL RELOCATION, 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:

OFFER SCHEDULE

JOB NO. 24-14 LĪHU‘E BASEYARD ELECTRICAL RELOCATION, KAUA‘I, HAWAI‘I

ITEM NO.	ESTIMATED QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
1	1 LS	Erosion Control		\$
2	25 SY	AC Pavement Restoration	\$	\$
3	10 SY	Concrete Restoration	\$	\$
4	10 SY	Landscape Restoration	\$	\$
5	1 LS	Electrical Improvements		\$
TOTAL SUM OFFER (Items 1 to 5 inclusive)				\$

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		
*			
*			
*			
*			

	Contractor Classification	Name of Joint Contractor or Subcontractor	License Number
*			
*			

* 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 **ONE HUNDRED EIGHTY (180)** 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 **FIVE HUNDRED (\$500.00)** 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.

(See attached)

APPENDIX E: Wage Certificate for Service Contracts

WAGE CERTIFICATE FOR CONSTRUCTION CONTRACTS

Projects subject to HRS 104

TO: Chief Procurement Officer

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: _____

(submit with offer)

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: _____

(submit for final payment)

APPENDIX G: Apprenticeship Program.

Bidders seeking preference for this shall:

1. 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
2. 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.
3. **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)			
1.			
2.			
3.			
4.			
5.			
6.			
III. Bidder's Certification			
I certify that the above information is accurate to the best of my knowledge, I understand that my willful misstatement of facts may cause forfeiture of the preference under Act 17 and may result in criminal action. I give permission for outside sources to be contacted and for them to disclose any information necessary to verify the bidder's preference.			
_____		_____	
A. Name (Type)		B. Title	
_____		_____	
C. Signature (original signature required)		D. Date	
IV. Apprenticeship Sponsor's Contact Information			
A. Training Coordinator's Name: _____			
B. Address: _____			
C. Phone No.: _____ D. E-Mail: _____ E. Fax No: _____			
V. Apprenticeship Program Sponsor's Certification			
I certify that the above information is accurate to the best of my knowledge. I understand that my willful misstatement of facts may cause forfeiture of the bidder's preference and may result in criminal action. I give permission for outside sources to be contacted and for them to disclose any information necessary to verify the bidder's preference under Act 17.			
_____		_____	
A. Name of Authorized Official		B. Title	
_____		_____	
C. Signature (original signature required)		D. Date	

* Name of Apprenticeable Trade and Apprenticeship Sponsor must be the same as recorded in the List of Construction Trades in Registered Apprenticeship Programs that is posted on the State Department of Labor and Industrial Relations website. (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)			
A. Contractor was a party to an apprenticeship program or programs with the following sponsor: (Give sponsor's name(s).*)		B. Was the contractor a party to the program during the <i>entire</i> report month?	
		1. YES <input type="checkbox"/>	
		2. NO <input type="checkbox"/> If NO, state applicable period and why (may be subject to sanctions.)	
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: Employment of State Residents on Construction Procurement Contracts.

a. 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.

b. 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.

c. 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.

d. 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 I: 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: _____

(submit with offer)

APPENDIX J: Special Provisions.

TABLE OF CONTENTS FOR SPECIAL PROVISIONS

SECTION SP-1 – GENERAL REQUIREMENTS

<u>SECTION</u>	<u>DESCRIPTION</u>
1.1	General Provisions, Specifications and Standard Details
1.2	Preconstruction Conference
1.3	Contractor’s Responses by Hardcopy or Facsimile
1.4	Failure to Complete On Time and Liquidated Damages
1.5	Measurements
1.6	Project Record Drawings
1.7	Substitutions
1.8	Storage, Work Zone, Construction Access
1.9	Preservation of Property
1.10	Extra Work
1.11	Building Laws
1.12	Delivery of Materials at Site
1.13	Defective Materials
1.14	Clean-up
1.15	Environmental Protection
1.16	Project Sign
1.17	Submittals
1.18	Construction Coordination

SECTION SP-2 – ELECTRICAL WORK

SECTION SP-3 – AUTOMATIC TRANSFER SWITCH

SPECIAL PROVISIONS

SECTION SP-1 – GENERAL REQUIREMENTS

- 1.1 GENERAL PROVISIONS, SPECIFICATIONS, AND STANDARD DETAILS: The special provisions, plans, general provisions, Water Standards, DPW Standard Specifications and Details, 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.
- 1.1.01 GENERAL PROVISIONS FOR CONSTRUCTION CONTRACTS OF THE DEPARTMENT OF WATER, COUNTY OF KAUA‘I: The “GENERAL PROVISIONS FOR CONSTRUCTION CONTRACTS OF THE DEPARTMENT OF WATER, COUNTY OF KAUA‘I”, April 25, 2016 as amended, is by reference incorporated herein and made a part of these specifications.
- 1.1.02 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 is by reference incorporated herein and made a part of these specifications. These specifications are not bound in these contract documents, but shall by reference be incorporated herein and made a part of these specifications.

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 Proposal.

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 Proposal.

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 Proposal.

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 Proposal.

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 Proposal.

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 Proposal.

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 Proposal.

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 Proposal.

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 1/2" 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 Proposal.

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 installation 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 proposal.

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

Payment for furnishing and installation 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 or Puhi, 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 incidental 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 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 or Puhi. 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 proposal 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 proposal 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 Proposal.

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 or Puhi.

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

Payment for the removal, cleaning, and transporting of 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 proposal 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 or Puhi.

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 proposal 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 or Puhi.

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 proposal 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 or Puhi.

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 or Puhi.

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 proposal. 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 sized 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 Proposal.

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 a proposal.

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 of 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 proposal.

Add the Following Section:

SECTION 302.41 – TRAFFIC CONTROL

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

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 proposal.

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.

- 1.1.03 DEPARTMENT OF PUBLIC WORKS, COUNTY OF KAUA'I STANDARD SPECIFICATIONS: Whenever reference is made within these Special Provisions or the contract plans to the DPW Standard Specifications, the specifications referred to is the

“HAWAII STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND PUBLIC WORKS CONSTRUCTION” of the State of Hawai‘i, 2005, and all subsequent amendments. These specifications are not bound in these contract documents, but shall by reference be incorporated herein and made a part of these specifications.

1.1.04 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. The DPW Standard Details are not bound in these contract documents, but shall be incorporated herein and made a part of these specifications by reference.

1.1.05 SPECIAL DEFINITIONS: The following definitions shall apply unless the context indicates otherwise. Wherever the terms “Engineer” or “Owner” are used in any document which forms a part of this contract, they shall mean the Department of Water, County of Kaua‘i and its authorized agents.

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 FACSIMILE: The Contractor may respond in writing by submitting a hardcopy or by facsimile 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 facsimile 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

Fax Number: 1-808-245-5813

Attention: Procurement Officer

From:

Date:

Subject: (Subject of Facsimile)
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 Five Hundred Dollars (\$500.00) 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:

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

That it is equal or less in cost to the Owner.

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 when the work has been ordered in writing by the Department of Water, 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 his or his subcontractor's the 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:

**LĪHU'E BASEYARD ELECTRICAL RELOCATION
JOB NO. 24-14
DEPARTMENT OF WATER**

1.17 SUBMITTALS:

1.17.01 SECTION INCLUDES: Overview of transmittal of submittals, submittals 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: Contract Administrator
4398 Pua Loke Street
Līhu'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 a 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, two sets of 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 six copies 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, reproducibles, 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 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 facsimile of the hardcopy 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 number of 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 provide 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 – ELECTRICAL WORK

PART 1 – GENERAL

- 1.1 GENERAL CONDITIONS: General Conditions and Special Provisions preceding specification shall govern this section.
- 1.2 Specification and Drawings are prepared in abbreviated form and includes incomplete sentences. Omission of words or phrases such as "the Contractor shall", "as shown on the drawings", "a", and "the" are intentional. Omitted words and phrases shall be provided by inference to form complete sentences.
 - A. Specifications and Drawings complement each other and what is specified, scheduled or mentioned by one shall be binding as if called for by both. Specifications and Drawings are intended to specify nature, quantity and quality of electrical work.
 - B. Before bidding, visit project site, carefully review such section of the Specifications and all Drawings of this Contract, and obtain and review the standards, specifications and drawings of the local utility companies.
 - C. Report any error, conflicts or omissions to the Department's representative (hereafter referred to as Engineer) according to the Procurement Schedule identified in Section 1.1 for interpretation or clarification. If errors or omissions are not reported, Contractor shall provide the necessary work at no cost to the Department to properly complete intent of Specifications and Drawings.
- 1.3 WORK INCLUDED: This section covers the work necessary for all electrical work as indicated on the drawings and/or specified herein, including but not limited to the following.
 - A. Complete underground feeder raceways from the existing switchboard to the Operations Building, including pullboxes and conductors.
 - B. Complete automatic transfer switch system, including electrical conduit and conductors at the Microlab Building.
 - C. Final adjustment and testing of the complete electrical installation.
 - D. All incidental work where not specifically shown or specified but is necessary and required to complete the work to an acceptable and operational stage.
 - E. During bidding and construction, the 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.
 - F. Preparation of "Field Posted" as-built drawings.
- 1.4 RELATED WORK SPECIFIED IN OTHER SECTIONS:
 - A. For the Automatic Transfer Switch, refer to Specification Section SP-3.

B. Materials Connected But Furnished & Installed Under Other Sections: This list is for the convenience of the Contractor, and materials connected are not necessarily limited by this list.

1. 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.

1.5 QUALITY ASSURANCE: Comply with the latest applicable rules, regulations, requirements, and specifications of the following:

- A. Local laws & ordinances
- B. State & Federal laws
- C. National Electrical Code
- D. County of Kaua'i Electrical Code
- E. State Fire Marshal
- F. Underwriter's Laboratory
- G. National Electrical Safety Code
- H. Federal Communications Commission

Any conflicts that may exist between the above items will be resolved by the Engineer. Wherever the requirements of the Specifications or Drawings exceed those of the items above, the requirements of the Specifications or Drawings shall govern.

1.6 SUBMITTALS:

- A. Departures from Drawings: Submit to the Department, in writing for review, details of any necessary proposed departures from these Contract Documents, and the reasons therefore, within the bidding period. Make no such departures without the prior written approval of the Department.
- B. Pre-Bid Equipment & Material Submittals: Manufacturer's trade names and catalog numbers stated herein are intended to indicate the type and quality of equipment or materials desired. Unless substitution is specifically forbidden, proposed alternates may be submitted for approval.
 - 1. Manufacturers not listed require approval according to the Procurement Schedule identified in Section 1.1. Provide sufficient material or data to allow determination of compliance with these Contract Documents. List any proposed deviations from these Contract Documents, including equipment dimensions.
- C. Post-Contract Award Equipment & Material Submittals: Within 30 days after the award of the Contract, provide manufacturer's complete descriptive information for the items of

material, equipment, and systems listed hereinafter. Submit all data at one time.

1. Provide shop drawings, literature, and requested samples showing item proposed for use, size, dimensions, capacity, special features required, schematic (elementary) control diagrams, equipment schedules, rough-in, etc., as required by the Engineer for complete check and for installation. Use NEMA device designations and symbols for all electric circuit diagrams submitted. Make content of schematic (elementary) connection or interconnection diagrams in accordance with the latest edition of NEMA ICS 1.
 2. The Contractor shall check submittals for number of copies, adequate identification, correctness, and compliance with the Drawings and Specifications, and initial all copies. Revise, change, and/or resubmit all submittal information until acceptable to the Engineer. Obtain Engineer's acceptance, and respective utility company approvals, before commencement of fabrication or installation of any materials or equipment.
 3. Review of submittal information by the Engineer shall not relieve the Contractor from responsibility for deviations from Drawings and Specifications, unless he has in writing at the time of submission requested and received written approval from the Engineer for specific deviations. Review of submittal information shall not relieve the Contractor from responsibility for errors and omissions in shop drawings or literature.
 4. Provide one (1) electronic copy and three (3) sets of submittal information to the Department for distribution after review. Furnish submittal information on the following items:
 - a. Conduit.
 - b. Cables.
 - c. Circuit breakers.
 - d. Junction boxes.
 - e. Disconnect switches.
 - f. Pullboxes.
 - g. Automatic transfer switch.
- D. Instruction Books: Provide one (1) electronic copy and three (3) sets of hard-backed ring binders containing:
1. Operation, maintenance, and renewal parts information for all equipment furnished under this section.
 2. Set of complete as-approved information herein required to be submitted for review following contract award.
 3. As-built electric circuit and equipment drawings.

4. List of all equipment suppliers or current names, addresses, and telephone numbers of those who should be contacted for service, information, and assistance.
5. Record Drawings marked with red indelible pencil to show all departures from the original Drawings, underground cable, conduit, or duct runs dimensioned from established building lines, and all electrical work revisions.
6. All test results.
7. All material to be clean and filed under dividers with heading in accordance with specification item title.
8. Submit material to Engineer for approval prior to delivery. Make additions or changes as required by the Engineer.

1.7 PRODUCT HANDLING:

- A. Provide protection for materials and equipment against loss or damage. Protect everything from the effects of weather. Prior to installation, store items to be installed in indoor locations, items subject to corrosion under damp conditions, in indoor, dry locations.
- B. Following installation, protect materials and equipment from corrosion, physical damage, and the effects of moisture on insulation. Cap conduit runs during construction with manufactured seals. Keep openings in boxes or equipment closed during construction.
- C. In the event of damage, immediately make all repairs and replacements necessary at no additional cost to the Department.

1.8 SITE INSPECTION: Prior to submitting a bid, visit the project, ascertain conditions affecting the proposed work, and make allowance as to the cost thereof.

1.9 RESPONSIBILITY: Be responsible for:

- A. Complete systems in accordance with the intent of these Contract Documents.
- B. Referring to all the Drawings and Specifications, and shop drawings for other trades for details of facility equipment and construction which affect the work covered under this section.
- C. Coordinating electrical work with the Engineer and work of other trades to avoid conflicts, errors delays, and unnecessary interference during construction.
- D. Checking the approximate locations of equipment and other electrical system components shown on the plans for conflicts with openings, structural members, and components of other systems and equipment having fixed locations. In the event of conflicts, consult the Engineer. The Engineer's decision shall govern. Make necessary changes at no additional cost to the Department.
- E. Installing materials and equipment in a workmanlike manner.

- F. Installing materials and equipment in strict accordance with the manufacturer's recommendations, unless otherwise specified or directed by the Engineer.
- G. Furnishing and installing all incidental items not specifically shown or specified which are required by good practice to provide the complete systems specified herein.

1. 10 INTENT OF DRAWINGS:

- A. Drawings are partly diagrammatic and are intended to show circuiting details which shall be exactly as shown.
- B. Exact conduit locations are not shown unless so indicated or specifically dimensioned.
- C. Diagrams are schematic and do not show physical arrangement of equipment.

1. 11 PERMITS AND INSPECTION:

- A. All materials and workmanship are subject to inspection at any time by the Engineer or his representatives. Correct any work or materials not in accordance with these Contract Documents or found to be deficient or defective in a manner satisfactory to the Engineer at no additional cost to the Department.
- B. Obtain and pay for electrical permits and arrange for all necessary electrical inspections by the County and all other agencies having jurisdiction.

PART 2 – PRODUCTS

- 2.1 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. All electrical equipment enclosures and equipment mounting hardware for outdoor installations shall be Type 316 Stainless Steel, unless otherwise noted.
- 2.2 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.
- 2.3 ENCLOSURES: For outdoor weather exposed locations, enclosures shall be NEMA 4X Grade 316 Stainless Steel (SS) type. Exterior junction boxes shall be NEMA 4X Grade 316 SS, gasketed type, unless otherwise noted.
- 2.4 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.
- 2.5 CONDUIT: Conduit, Rigid Steel, Zinc-Coated: Rigid steel conduit, including couplings, elbows, and nipples shall be galvanized by hot-dipping, electroplating, sherardizing, or metallizing process, and

shall meet the requirements of ANSI C80.1, UL, and the NEC.

- A. Conduit, Rigid PVC: Rigid polyvinyl chloride (PVC) conduit shall be Schedule 40 UL listed for concrete encased use. Rigid PVC conduit, including couplings, elbows, and nipples, shall conform with the requirements of the latest edition of NEMA TC-2, NEC, UL, and shall meet applicable ASTM test requirements for the intended use.
- B. Conduit, Rigid PVC: Rigid polyvinyl chloride (PVC) conduit shall be Schedule 80 UL listed for concrete encased, direct burial underground, and exposed use. Rigid PVC conduit, including couplings, elbows, and nipples, shall conform with the requirements of the latest edition of NEMA TC-2, NEC, UL, and shall meet applicable ASTM test requirements for the intended use.
- C. Conduit, Flexible: All flexible conduit shall be moisture proof flexible steel, polyvinyl chloride jacketed type, UL approved, with continuous copper ground path in the flexible steel tube, and shall be American Brass Sealite Flexible Conduit, or as approved.
- D. Conduit Fittings, Metallic: Metallic conduit fittings shall be of the type indicated or required for the anticipated purpose and shall meet applicable requirements of ANSI C80.4, UL, NEC, and NEMA FB 1.
- E. Conduit Fittings, PVC: PVC conduit fittings shall be of the type indicated or required for the anticipated purpose and shall meet the requirements of NEMA TC-3, UL, and NEC.

2.6 CONDUCTORS:

- A. Conductors 600 Volts and Less: Conductors in raceways, ducts, and cables shall be copper with the type of insulation specified. Conductors, including insulation, cabling, jacket, filler, shielding, covering, and testing, shall meet all applicable requirements of ICEA S-95-658, the NEC, and UL. Conductor sizes shall not be less than those shown.
- B. All conductors and cables for underground use shall carry the UL labeling "Type USE", and shall have RHW insulation and heavy-duty, black, neoprene sheath meeting the physical requirements and minimum thickness requirements of ICEA S-95-658.
- C. Equipment Grounding Conductors: Conductors for equipment grounding shall be stranded copper. Conductors shall have green Type TW insulation with a minimum thickness of 2/64-inch.
- D. 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.
 - 1. 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 the 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:

- a. 120/208 volt, 3-phase:
 - 1) Phase A – black
 - 2) Phase B – red
 - 3) Phase C – blue

- b. 277/480 volt, 3-phase:
 - 1) Phase A – brown
 - 2) Phase B – orange
 - 3) Phase C – yellow

- c. 120/240 volt, single phase:
 - 1) red and black

- 2. Color coding shall be maintained throughout the 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.

- 3. 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.

2.7 **CONDUIT SEALING COMPOUND:** Compounds for sealing ducts and conduit shall have a putty-like consistency workable with the hands at temperatures as low as 35°F, shall neither slump at a temperature of 300°F, nor harden materially when exposed to the air. Compounds shall adhere to clean surfaces or fiber or plastic ducts; metallic conduits or conduit coatings; concrete, masonry, or lead; any cable sheaths, jackets, covers, or insulation materials; and the common metals. Compounds shall form a seal without dissolving, noticeably changing characteristics, or removing any of the ingredients. Compounds shall have no injurious effect upon the hands of workmen or upon materials.

2.8 **OUTLET AND SMALL JUNCTION BOXES:** Pressed, zinc-coated steel, minimum nominal size 4", minimum depth 1-1/2", with raised cover- ring for devices in concrete masonry units. Exposed boxes and weather exposed boxes shall be ferrous alloy, prime painted and enamel finished, with threaded hubs for conduit connection.

2.9 **JUNCTION BOXES:** Junction boxes of the required type and size shall be provided where indicated. The junction boxes shall be provided with terminal strips or terminal blocks with a separate connection point for each conductor entering or leaving the box. These terminal strips or blocks shall have a minimum of 25 percent spare terminal points. Weatherproof boxes shall be gasketed Type 316 Stainless Steel with conduit hubs.

2.10 **ENCLOSURES AND CABINETS:** Enclosures and cabinets for panelboards, breakers, and switches shall be NEMA type, fabricated from galvanized steel, or as indicated, prime painted and enamel finished according to NEMA specifications. For dry interior locations, enclosures shall be NEMA 1.

For areas exposed to the elements, damp and wet locations, enclosures shall be NEMA 4X stainless steel (316) with stainless steel (316) fasteners and hardware. For breakers and switches located in damp, wet or high humidity areas provide NEMA 4X stainless steel (316) enclosures. Provided field painting shall be as specified hereinafter.

2.11 DEVICES AND COVER PLATES:

- A. Plates for interior flush construction shall be smooth reinforced plastic, with suitable hole, and color to match device.
- B. Plates for areas exposed to the elements, damp, or wet installations shall be weatherproof with lockable U.V. stabilized covers. Covers shall permit plugs to be connected without compromising the integrity of the protective nature of the cover.
- C. Light switch plates for areas exposed to the elements, damp, or wet installations shall be neoprene gasketed cast aluminum, gray powder coat finish, with spring loaded neoprene gasketed flip-open lids.

2.12 TUMBLER SWITCHES:

- A. Single or double pole, 3 or 4 way, as required, non-mercury, quiet, 20 amperes, 120-277 volt, UL labeled AC type, silvered contacts, ivory, tumbler switch with endurance of 10,000 make-breaks. Enclose in outlet box and device plate. Hubbell No. 1200 series, Bryant No. 4900 series, Arrow Hart No. 1990 series or pre-approved equal.
- B. When two or more switches are installed at a single location, mount in gang box under single device plate. Interchangeable line of switches may be used only when use of gang box conflicts with other work.

2.13 CONVENIENCE SINGLE AND DUPLEX RECEPTACLES:

- A. Single and Duplex shall be specification grade, 20 ampere, 125-volt, back and side wired, 3 wires, grounding type in ivory plastic body with parallel and ground U-shaped slots. Enclose in outlet box and device plate. Hubbell No. 5262, Leviton No. 5362 or pre-approved equal. All receptacles shall be UL listed.
- B. Ground Fault Interrupting receptacles shall be similar to above except have test and reset switches and maximum allowable leakage current shall be 5 milli-amperes. Receptacles for use in damp or wet locations shall be UL Listed for wet locations.

2.14 PROTECTIVE EQUIPMENT:

- A. Panelboard: Copper busses with bolted molded plastic case circuit breaker complement. Assembly shall be mounted in a NEMA 1 surface mount enclosure. Provide circuit directory in metal frame. Manufacture and install according to NEC Articles 240 and 384.
- B. 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.

- C. Equipment disconnect switch: Heavy-duty horsepower rated, lever-operated contacts, spring-loaded. When installed in damp or wet locations, enclosure shall be NEMA 4X Grade 316 Stainless Steel. General Electric Co. Type TH, Cutler-Hammer, Square D, or approved equal.
- 2.15 HARDWARE, SUPPORTS, BACKING, ETC: All hardware, supports, backing and other accessories necessary to install electrical equipment shall be provided. Wood materials shall be "wolmanized" treated against termites, iron or steel materials shall be galvanized for corrosion protection, and non-ferrous materials shall be brass or bronze.
- 2.16 PANELBOARDS: Panelboards shall be circuit breaker type as indicated, copper bussed with bolted molded plastic case circuit breaker complement, and shall meet the standards established by UL, NEMA PB 1, and the NEC. Assembly shall be flush mounted in motor control center, or surface mounted type, as indicated.

PART 3 – EXECUTION

- 3.1 GENERAL: Work shall be performed in a workmanlike manner by craftsmen skilled in the particular trade. All work shall present a neat and finished appearance.
- 3.2 MATERIAL & EQUIPMENT INSTALLATION: Follow manufacturer's installation instructions explicitly unless otherwise indicated. Follow Department's decision, at no additional cost to the Department, wherever any conflict arises between manufacturer's instructions, codes and regulations, and these Contract Documents. Keep a copy of the manufacturer's installation instructions on the job site available for review at all times.
- 3.3 HOUSEKEEPING: Electrical equipment shall be protected from dust, water, and damage. Before final acceptance, the Contractor shall touch up any scratches on the equipment. Electrical equipment temporarily exposed to weather, debris, liquids, or damage during construction shall be protected.
- 3.4 CUTTING & PATCHING: Lay out work carefully in advance. Do not cut or notch any structural member or building surface without specific approval of the Engineer. Carefully carry out any cutting, channeling, chasing, or drilling of floors, walls, partitions, ceilings, paving, or other surfaces required for the installation, support, or anchorage of conduit, raceways, or other electrical materials and equipment. Following such work, restore surfaces neatly to original condition using skilled craftsmen of the trades involved at no additional cost to the Department.
- 3.5 LOAD BALANCE: Balance electrical load between phases as nearly as possible on panelboards, motor control centers, etc.
- 3.6 CLEANING & TOUCH-UP PAINTING: Keep the premises free of accumulation of waste material or rubbish. Upon completion of work, remove materials, scraps, and debris from premises and from interior and exterior of all devices and equipment. Touch-up scratches, scrapes, or chips in interior and exterior surfaces of devices and equipment with finishes matching as nearly as possible the type, color, consistency, and type of surface of the original finish.
- 3.7 WIRING METHODS: Generally, and unless otherwise specified or indicated, wiring shall consist of insulated conductors installed in raceways of types indicated.

3.8 CONDUIT: Minimum size conduit shall be 3/4 inch, unless otherwise indicated. Use the following types of conduit for the locations listed.

A. Exterior, Exposed:

1. Rigid PVC Schedule 80 heavy wall conduit.
2. Rigid steel, galvanized.

B. Exterior, Underground:

1. Direct buried: Rigid PVC Schedule 80 heavy wall conduit.
2. Concrete encased: Rigid PVC Schedule 40 heavy wall conduit.

C. Interior, Exposed:

1. Rigid steel, galvanized.

3.9 INSTALLATION:

A. Conduit system installations shall meet or exceed the requirements of the NEC.

B. Provide all necessary foundations, supports, and backing for enclosures, conduit, and equipment.

C. Raceways shall be concealed or exposed as indicated. Group raceways in same area together. Raceways shall be supported at intervals required by the NEC, and shall have exposed runs installed parallel or perpendicular to walls, structural members, or intersections of vertical planes.

D. Avoid field-made bends and offsets where possible, but where necessary, make them with an approved hickey or conduit bending machine. Heating of conduit to facilitate bending will not be acceptable. Changes in direction of runs shall be made with symmetrical bends or cast metal fittings.

E. Do not install crushed or deformed raceways.

F. Avoid trapped raceways where possible.

G. Take care to prevent the lodgement of plaster, dirt, or trash in raceways, boxes, fittings, and equipment during the course of construction.

H. Raceways shall be entirely free of obstructions or shall be replaced.

I. All conduit shall be reamed, burrs removed, and cleaned for proper introduction of wires and cables. Immediately after installation, plug or cap all conduit ends with watertight and dust-tight conduit seals until the time for pulling wires.

J. Install insulated grounding bushings on the ends of all rigid conduits, except where conduits

terminate in threaded hubs on cast boxes or cabinets, in which case insert manufacturer's standard insulating sleeves.

- K. Provide suitable expansion fittings for raceways crossing expansion joints in concrete slabs, or provide other suitable means to compensate for the building expansion and contraction.
- L. Wooden plugs inserted in concrete or masonry are not acceptable as a base for raceway fastenings, nor shall raceways or pipe straps be welded to steel structures.
- M. Support individual raceways by wall brackets or strap hangers, fastened by wood screw on wood, toggle bolts on hollow masonry units, expansion shields on concrete or brick, and machine screws or welded threaded studs on steel work.
- N. Threaded studs driven in by a powder charge and provided with lock washers and nuts are acceptable in lieu of expansion shields.
- O. PVC conduit installed underground shall have a minimum cover of two feet.
- P. Use rigid steel, factory-made ells for all bends 30 degrees or larger.
- Q. Use approved heating methods for forming smaller bends.
- R. Provide expansion joints as required or as recommended by the manufacturer.
- S. Duct lines shall have a continuous slope downward toward underground structures and away from buildings with a pitch of not less than 3 inches in 100 feet.
- T. When joining PVC conduit to metallic fittings, use approved PVC terminal adapter. When joining PVC conduit to rigid steel conduit, use an approved PVC female adapter. All PVC conduit joints shall be solvent welded with solvent recommended by the conduit manufacturer.
- U. Separate parallel runs of two or more conduits in a single trench with spacers designed for the purpose.
- V. Install spacers at intervals not greater than that specified in the NEC for support of the type conduit used.
- W. Support conduits installed in fill areas suitably to prevent accidental bending until backfilling is complete.
- X. Do not backfill underground conduit until it has been inspected and approved by the Engineer or his representative.
- Y. Final connection to motor equipment where flexible connection is desired shall be made with 18-inch minimum lengths of liquid-tight, polyvinyl chloride jacketed, flexible steel conduit where the required conduit size is three inches or less.
- Z. Pullstrings shall be placed in all empty conduits ten feet in length or longer.

3.10 CONDUCTORS: Conductors 600 Volts & Below: All wire shall be continuous from outlet to outlet.

Splices, where required, may be made in outlet and pull boxes only. Use wire connectors of insulating material or solderless pressure connectors properly taped for all splices. Soldered mechanical joints insulated with tape will not be acceptable. Vinyl plastic tape of suitable quality is acceptable in lieu of rubber and friction tapes. Conductor sizes shall not be less than those shown. Conductors shall not be smaller than No. 12 AWG for power circuits, or No. 14 AWG for control circuits, unless otherwise indicated.

A. Arrange wiring in cabinets and panels neatly cut to proper lengths and remove surplus wire. Apply Stak-On or similar terminals to control wiring for connection to terminals, and bridle and secure in an approved manner. List all circuits emanating from power, distribution, and lighting panelboards by function on the directory card. Identify all circuits entering motor control centers or other control cabinets by directory card listing terminal block number and function or by means of tags securely fastened to the conductors.

3.11 OUTLETS: Provide each outlet in the wiring or raceway systems with an outlet box to suit the conditions encountered. Each box shall have sufficient volume to accommodate the number of conductors entering the box in accordance with the requirements of the NEC. Provide flush or recessed fixtures with separate junction boxes when required by the fixture terminal temperature requirements. Set boxes installed in concealed locations flush with the finished surfaces and provide with proper type extension rings or plaster covers where required. Install boxes in a rigid and satisfactory manner and support independently of conduit by bar hangers in frame construction or fasten directly with wood screws on wood, bolts and expansion shields on concrete or brick, toggle bolts on hollow masonry units, and machine screws or welded threaded studs on steelwork. Threaded studs driven in by a power charge and provided with lock washers and nuts are acceptable in lieu of expansion shields. Where boxes are concealed in walls, if not embedded in concrete, the hole shall be no larger than required to receive the box. Locations of outlets indicated are approximate. Study the building plans in relation to the spaces and equipment surrounding each outlet, so that the lighting fixtures are symmetrically located according to the room layout. When necessary, with the approval of the Engineer, relocate outlets to avoid interference with the mechanical equipment or structural features.

3.12 JUNCTION BOXES: Construct junction boxes, where specified or required, of code-gauge galvanized sheet metal of not less than the minimum size required by the NEC. Junction boxes for exterior use shall be stainless steel, as indicated. Furnish boxes with screw-fastened covers. All boxes shall be readily accessible and shall not be installed in finished areas unless approved by the Engineer. Junction boxes not more than 150 feet apart in long runs.

3.13 PULLBOXES: Construct pull boxes, where specified or required, of code-gauge galvanized sheet metal of not less than the minimum size required by the NEC. Pull boxes for exterior use shall be cast metal or stainless steel, as indicated. Furnish boxes with screw-fastened covers. Where several feeders pass through a common pull box, tag the feeders to indicate clearly their electrical characteristics, circuit number, and panel designation. All boxes shall be readily accessible and shall not be installed in finished areas unless approved by the Engineer. Provide pull boxes not more than 150 feet apart in long runs.

3.14 GROUNDING: Except where specifically indicated otherwise, ground all exposed noncurrent-carrying metallic parts of electrical equipment, raceway systems, and the neutral of all wiring systems in strict accordance with the NEC, State, and other applicable laws and regulations. At building, 5/8" x 10' copper 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 pot. method with an electric ground megger.

Connect ground to nearest cold water pipe and to building entrance equipment with bare copper. Final connection to equipment, raceways, grounding type receptacles and other metallic parts directly exposed to ungrounded electric conductors shall be No. 8 AWG minimum, copper, NEC type TW, green insulation. Use approved bonding terminal at panels. Special requirements shall be as shown and as specified herein.

- A. Grounding Circuit Above 150 Volts to Ground: Ground all enclosing cases and mounting frames of all switches, control panels, motors, junction boxes, and other electrical or electrically operated equipment with a separate grounding conductor from the source of supply. Run the grounding conductor inside the conduit enclosing the power conductors supplying the equipment. Supply all metallic conduits with grounding bushings and connect at each end to the grounding conductor.
 - 1. Make the ground conductor connections to motors ten HP and above or circuits 20 amperes and above by solderless terminal and a 5/16-inch minimum bolt tapped to the motor frame or equipment housing. Ground connections to smaller motors or equipment may be made by fastening the terminal to a connection box. Connect junction boxes to the equipment grounding system with grounding clips mounted directly on the box or with 3/8-inch machine screws.
- B. Grounding Circuits Below 150 Volts to Ground: Ground circuits protected at 60 amperes or more, or serving motors larger than five HP in accordance with the provisions for "Grounding Circuits Above 150 Volts to Ground". On smaller circuits, the metallic conduit system may serve as the equipment ground where allowed by the NEC.
- C. All grounding wire runs within buildings shall be copper conductors. All ground wires shall be run together with circuit conductors.
- D. Grounding Connections: Make all buried grounding connections by brazing or cadweld type joint. Make all other grounding connections by brazing, cadweld, or with approved pressure terminals.

3.15 PREFUNCTIONAL CHECKOUT: Functional testing shall be performed. Prior to functional testing, all protective devices shall be adjusted and made operative. Prior to energization of equipment, the Contractor shall perform a function checkout of the control circuit. Checkout shall consist of energizing each control circuit and operating each control, alarm or malfunction device and each interlock in turn to verify that the specified action occurs. The Contractor shall submit a description of his proposed function test procedures prior to the performance of function checkout.

3.16 OUTAGES: Outages shall be scheduled to suit the schedule of the Department. The Contractor shall request for outages in writing at least one (1) week prior to desired outages and shall state desired length of outage. Request for outage shall be submitted to the Department. The Contractor shall not conduct an outage until written approval is obtained. All desired outages shall be kept to a minimum and the outage time shall be kept as short in duration as possible. At the beginning of the project, the Contractor shall submit a tentative schedule of outages to the Department. The tentative schedule shall indicate approximate date of outage, duration of outage and purpose of outage.

3.17 DEMOLITION:

- A. Verify wiring and equipment indicated to be demolished serve only abandoned areas.

- B. Demolition notes are based on casual field observation and existing record documents. Report discrepancies to the Department before disturbing existing installation.
 - C. Remove conduit, wire, boxes, or fastening devices as required to avoid any interference with new installation.
 - D. Repair adjacent construction and finishes damaged during demolition work.
 - E. The Department shall identify equipment and items to be salvaged. Remove and protect items of salvageable value and turn over to the Department if desired. Items of salvageable value may be removed as work progresses. Transport salvaged items from site as they are removed to the Department baseyard site.
 - F. Remove demolished materials as work progresses and legally dispose.
- 3.18 TESTS: After completion of all wiring, insulating resistance testing of all power and control circuits shall be performed with a 500-volt megger. The test on each circuit shall be performed for one minute in the presence of the Department or their representative, and a written test report of the results shall be submitted to the Department before acceptance can be obtained. Equipment which may be damaged during this test should be disconnected. The tests shall be performed with all other equipment connected to the circuit.
- A. After the electrical system installation is completed, and at such time as the Department may direct, the Contractor shall conduct an operating test for approval. The equipment shall be demonstrated to operate in accordance with the requirements of these specifications. The test shall be performed in the presence of the Department or their authorized representative. The Contractor shall furnish all instruments, electric power and personnel required for the tests.
- 3.19 GUARANTEE: The complete electrical system, equipment, materials, and associated items shall be guaranteed against defective parts and operation due to faulty material or workmanship during the period of one year following acceptance and final payment by the Department. The Contractor shall make all repairs or replacements necessary to accomplish the required performance within the time specified by the Department and agreed to by the Contractor.
- 3.20 RECORD DOCUMENTS: Record documents refer to those documents maintained and annotated by the Contractor during construction, and include record drawings in accordance with changes or new information for schedules, lists, and drawings. Record documents shall include the raceway wiring numbering system used by the Contractor.

END OF SECTION

SECTION SP-3 – AUTOMATIC TRANSFER SWITCH

1 GENERAL

1.1 SCOPE

1.1.1 Furnish and install the low voltage automatic transfer switches having the ratings, features/accessories and enclosures as specified herein and as shown on the contract drawings.

1.2 REFERENCES

1.2.1 The automatic transfer switches shall be designed, manufactured and tested in accordance with the latest applicable standards of UL and NEMA as follows:

1.2.1.1 UL 1008: Standard for Safety - Transfer Switch Equipment

1.2.1.2 CSA C22.2 No. 178: Automatic Transfer Switches

1.2.1.3 UL 991: Standard for Tests for Safety-Related Controls Employing Solid-State Devices

1.2.1.4 NFPA 70: National Electrical Code

1.2.1.5 NFPA 99: Essential Electrical Systems of Health Care Facilities

1.2.1.6 NFPA 110: Emergency and Standby Power Systems

1.2.1.7 NEMA ICS 10: Electromechanical AC Transfer Switch Equipment

1.2.1.8 IEEE 446: Recommended Practice for Emergency and Standby Power Systems

1.3 SUBMITTALS – FOR REVIEW/APPROVAL

1.3.1 The following information shall be submitted to the Department:

1.3.1.1 Front view and plan view of the assembly

1.3.1.2 Schematic diagram

1.3.1.3 Conduit space locations within the assembly

1.3.1.4 Assembly ratings including:

1.3.1.4.1 Voltage rating

1.3.1.4.2 Continuous current rating

1.3.1.4.3 Withstand and closing ratings

1.3.1.5 Cable terminal sizes

1.3.1.6 Product data sheets.

1.3.2 Where applicable, the following additional information shall be submitted to the Department:

1.3.2.1 Busway connection

1.3.2.2 Connection details between close-coupled assemblies

1.3.2.3 Composite front view and plan view of close-coupled assemblies

1.4 SUBMITTALS – FOR CONSTRUCTION

1.4.1 The following information shall be submitted for record purposes:

1.4.1.1 Final as-built drawings and information for items listed in Section 1.04

1.4.1.2 Wiring diagrams

1.4.1.3 Certified production test reports

1.4.1.4 Installation information

1.4.1.5 Seismic certification as specified

1.5 QUALIFICATIONS

1.5.1 The manufacturer of the assembly shall be the manufacturer of the major components within the assembly.

1.5.2 For the equipment specified herein, the manufacturer shall be ISO 9001 or 9002 certified.

1.5.3 The manufacturer of this equipment shall have produced similar electrical equipment for a minimum period of five (5) years. When requested by the Department, an acceptable list of installations with similar equipment shall be provided demonstrating compliance with this requirement.

1.6 REGULATORY REQUIREMENTS

1.6.1 Provide a UL1008 certificate of compliance for the transfer switches furnished under this section.

1.7 DELIVERY, STORAGE AND HANDLING

1.7.1 Equipment shall be handled and stored in accordance with the manufacturer's instructions. One (1) copy of these instructions shall be included with the equipment at the time of shipment.

1.7.2 Equipment being stored prior to installation shall be maintained in a clean and dry condition. If stored outdoors, indoor equipment shall be covered and heated, and outdoor equipment shall be heated.

1.8 OPERATION AND MAINTENANCE MANUALS

1.8.1 Equipment operation and maintenance manuals shall be provided with each assembly shipped and shall include instruction leaflets and instruction bulletins for the complete assembly and each major component.

2 PRODUCTS

2.1 MANUFACTURERS

2.1.1 Eaton or approved equal.

2.1.2 The listing of specific manufacturers above does not imply acceptance of their products that do not meet the specified ratings, features and functions. Manufacturers listed above are not relieved from meeting these specifications in their entirety. Products in compliance with the specification and manufactured by others not named will be considered only if pre-approved by the Department according to the Procurement Schedule identified in Section 1.1.

2.2 CONSTRUCTION

2.2.1 Transfer switches shall be UL 1008 listed for application in their intended enclosures at 100% of continuous ampere rating and shall meet or exceed UL 1008 endurance test criteria to include rate of operation and number of operation cycles.

2.2.1.1 The transfer switch shall be designed and intended for switching the load connection between two power sources.

2.2.1.2 The transfer switch shall include electrical and mechanical interlocks to prevent unintentional paralleling of the power sources.

2.2.1.3 The transfer switch shall be of double throw construction and the dual electrical operators shall be equipped with a reliable two-step stored energy mechanism to charge the closing springs. The closing springs shall be capable of being charged electrically or manually. The closing of the main contacts shall automatically charge the opening springs to ensure quick-break operation. After closing the main contacts, the closing springs shall be capable of being re-charged.

2.2.1.4 The transfer switch shall include a mechanical coupling to facilitate completion of an open in-phase transition such that any inrush current is equal to or less than normal starting current for inductive loads.

2.2.1.5 The transfer switch main contacts shall be of silver composition, electrically operated and mechanically held in position. Inspection of the main contacts shall be possible from the front of the transfer switch without major disassembly.

2.2.1.6 The transfer switch shall include removable arc chutes, housed within an arc chamber constructed of high-dielectric high-strength material, that are mounted over

each set of main contacts. Arc chutes shall be constructed of metal plates and a baffle cover designed to extinguish an electrical arc and protect the main contacts.

2.2.1.7 The transfer switch shall include pushbutton controls, mounted on the power switch device, to perform manual operation with an electrical load connected.

2.2.1.8 The transfer switch shall provide colored mechanical indication of main contact position (open, closed), mounted on the power switch device, for source 1 and source 2.

2.2.1.9 The transfer switch shall provide colored mechanical indication of closing spring charge state (charged, discharged), mounted on the power switch device, for source 1 and source 2.

2.2.2 Transfer switches shall be open transition and provide a time delay in the “neutral position” adjustable from 0 to 120 seconds that will permit a delayed transition and provide an in-phase monitor that will permit an in-phase transition between two live sources that have a phase angle difference of +/- 8 degrees or less. In the event that the sources do not synchronize to complete an in-phase transition within a time delay period adjustable from 1 to 60 minutes, the transfer switch shall be capable of defaulting to a delayed transition adjustable from 0 to 120 seconds.

2.2.3 The transfer switch shall include a means of deriving control power for electrical operation. Control power transformers shall be multi-tap for ease of voltage adjustment in the field. Control power for all transfer operations shall be derived from the line side of the source to which the load is being transferred.

2.2.4 Transfer switches requiring a switched neutral shall include a fully-rated fourth pole that is identical to the other power poles. Switched neutral poles which are add-on, overlap, or not capable of breaking full rated load current are not acceptable.

2.2.5 Transfer switches requiring a solid neutral shall include a fully rated, solid neutral plate.

2.2.6 Power conductor connections shall be provided as source 1 at the top, source 2 at the bottom, and load at the top (field adjustable as bottom).

2.2.7 For safety and serviceability, a continuous steel barrier shall be provided between the power conductor connections and the electrical control components including the automatic controller, control power transformer, relays, user controls, and indication lights. Together, the continuous steel barrier and enclosure front door shall form an isolated control compartment.

2.3 ENCLOSURE

2.3.1 Each automatic transfer switch shall be provided in a NEMA 1 enclosure suitable for use in environments indicated in the drawings.

2.3.2 NEMA 1, 12, and 3R enclosures shall be painted with the manufacturer’s standard light gray ANSI 61 paint.

2.3.3 Internal floor-mount anchors shall be provided to minimize footprint and facilitate integration into an equipment line-up.

2.4 MICROPROCESSOR CONTROLLER LOGIC

2.4.1 The transfer switch microprocessor controller logic shall be an Eaton ATC-300+ automatic controller. Operation of the transfer switch and monitoring of both sources shall be managed by the controller. The controller shall be hardened against transient voltages.

2.4.2 The automatic transfer switch controllers shall meet or exceed the following standards:

2.4.2.1 IEC 61000-4-2 - EMC Testing and Measurement Techniques - Electrostatic Discharge Immunity Test

2.4.2.2 IEC 61000-4-3 - EMC Testing and Measurement Techniques - Radio-Frequency, Electromagnetic Field Immunity Test

2.4.2.3 IEC 61000-4-4 - EMC Testing and Measurement Techniques - Electrical Fast Transient/Burst Immunity Test

2.4.2.4 IEC 61000-4-5 - EMC Testing and Measurement Techniques - Surge Immunity Test

2.4.2.5 IEC 61000-4-6 - EMC Testing and Measurement Techniques - Immunity to Conducted Disturbances, Induced by Radio-frequency Fields

2.4.2.6 IEC 61000-4-11 - EMC Testing and Measurement Techniques - Voltage Dips, Short Interrupts and Voltage Variations Immunity Tests

2.4.2.7 CISPR11, Class A - Industrial, Scientific and Medical Radio-frequency Equipment - Electromagnetic Disturbance Characteristics - Limits and Methods of Measurement

2.4.2.8 FCC Part 15, Subpart B, Class A

2.4.3 The controller shall have an operating temperature range from -20 to +70 degrees C (-4 to +158 degrees F) and a storage temperature range from -30 to +85 degrees C (-22 to +185 degrees F). The controller faceplate shall be UV resistant.

2.4.4 The controller shall be capable of accepting 120Vac supply power from two (2) different sources.

2.5 CONTROLLER DISPLAY AND KEYPAD

2.5.1 The microprocessor-based controller faceplate shall be UV resistant and include a 2-line, 16-character, backlit display. The controller shall be capable of displaying transfer switch status, parameters, setpoints, and diagnostic data. All set point parameters shall be password protected.

2.5.2 The microprocessor-based controller shall include one (1) unit status LED (3mm) and a mimic power bus consisting of four (4) LED's (3mm) for indicating the following:

- 2.5.2.1 Availability status of Source 1
- 2.5.2.2 Availability status of Source 2
- 2.5.2.3 Connection status of Load to Source 1
- 2.5.2.4 Connection status of Load to Source 2
- 2.5.3 The controller keypad shall include the following pushbutton controls:
 - 2.5.3.1 ENGINE TEST, for use with a generator source.
 - 2.5.3.2 PREVIOUS, and NEXT for ease of navigation.
 - 2.5.3.3 INCREMENT, DECREMENT, and ENTER for programming.
 - 2.5.3.4 HELP/LAMP TEST, for operator assistance and diagnostics.
 - 2.5.3.5 BYPASS TIMER, to bypass time delay countdown.
- 2.5.4 The controller shall display voltage and frequency for source 1, source 2, and the load.
- 2.5.5 The controller shall display the voltage dropout and pickup setpoints, for source 1 and source 2, in volts.
- 2.5.6 The controller shall display the frequency dropout and pickup setpoints, for source 1 and source 2, in hertz.

2.6 CONTROLLER VOLTAGE AND FREQUENCY MONITORING

- 2.6.1 The controller shall monitor voltage and frequency for source 1 and source 2.
- 2.6.2 The controller shall have a voltage range of 0-790 Vrms with an accuracy of +/- 1%. Nominal voltage shall be adjustable in 1 volt increments from 120 to 600 Vac.
- 2.6.3 The controller shall have a frequency range of 40-70 Hz with an accuracy of +/- 0.3 Hz. Nominal frequency shall be adjustable as 50 or 60Hz.
- 2.6.4 The normal and emergency sources shall include phase reversal protection. The preferred rotation is programmable as ABC or CBA.
- 2.6.5 Voltage and frequency dropout and pickup setpoints, for source 1 and source 2, shall be adjustable as a percentage of nominal per the table below. Pickup and dropout setpoints for undervoltage, overvoltage, underfrequency, overfrequency, and voltage unbalance / phase loss shall be capable of being disabled.

Setpoint	Sources	Dropout	Pickup
Undervoltage	Source 1 and 2	70 – 97%	(DO + 2%) - 99%
Overvoltage	Source 1 and 2	105 – 110%	103% - (DO – 2%)
Underfrequency	Source 1 and 2	90 – 97%	(DO + 1Hz) – 99%
Overfrequency	Source 1 and 2	103 – 105%	101% - (DO – 1Hz)
Voltage Unbalance	Source 1 and 2	5 – 20%	3% to (DO – 2%)

2.7 CONTROLLER TIME DELAYS

- 2.7.1 A time delay shall be provided for transfer from source 1 to source 2, adjustable from 0 to 1,800 seconds.
- 2.7.2 A time delay shall be provided on retransfer from source 2 to source 1, adjustable from 0 to 1,800 seconds.
- 2.7.3 A time delay shall be provided for actuation of an engine start signal, adjustable from 0 to 120 seconds, for overriding momentary power fluctuations.
- 2.7.4 A time delay shall be provided allowing the load connection to remain in the “neutral position” (disconnected from source 1 and source 2), adjustable from 0 to 120 seconds.
- 2.7.5 A time delay shall be provided that allows the generator to run unloaded, adjustable from 0 to 0-1,800 seconds, for cool-off prior to shut down.
- 2.7.6 A time delay shall be provided to postpone the generator source from being declared unavailable, fixed at 6 seconds, for overriding momentary power fluctuations.
- 2.7.7 A time delay shall be provided for actuation of a pre-transfer signal, adjustable from 0 to 120 seconds. The contact shall be a form-c contact rated for 10-Amp at 250-Vac and 10-Amp at 30-Vdc.
- 2.7.8 A time delay shall be provided to allow synchronization of sources, adjustable from 0 to 60 minutes (0 to 600 seconds), for use with in-phase transition transfer.
- 2.7.9 A time delay shall be provided for voltage unbalance, adjustable from 10 to 30 seconds.
- 2.7.10 All time delays shall be programmable, using the controller keypad, without the use of special tools.

2.8 CONTROLLER ADDITIONAL FEATURES

- 2.8.1 A setpoint shall be provided for entering a four-digit password, adjustable from 0000-9999, for controlling user access to programmable time delays, inputs, outputs, and other system settings.
- 2.8.2 A setpoint shall be provided for configuring retransfer operation mode, adjustable as [automatic, manual].
- 2.8.3 A setpoint shall be provided to change date, time, and enable daylight saving time (DST).

- 2.8.4 A setpoint shall be provided for configuring in-phase transition operation, adjustable as [disabled, enabled].
- 2.8.5 A setpoint shall be provided for configuring a frequency difference range between sources for in-phase transition, adjustable from 0 to 3 hertz nominal.
- 2.8.6 A setpoint shall be provided for configuring serial communication baud rate [9600-19200] and Modbus address [1-247].

2.9 CONTROLLER DATA LOGGING

- 2.9.1 The controller shall record, store and display a cumulative counter history of the following parameters. Each counter shall have the ability to be reset and indicate the last reset date.
 - 2.9.1.1 Source 1 Available time
 - 2.9.1.2 Source 2 Available time
 - 2.9.1.3 Source 1 Connected time
 - 2.9.1.4 Source 2 Connected time
 - 2.9.1.5 Engine Run time
 - 2.9.1.6 Load Energized Time
 - 2.9.1.7 Number of Transfers
 - 2.9.1.8 Date, Time and Reason for Last Sixteen (16) transfers

2.10 CONTROLLER PLANT EXERCISER

- 2.10.1 The controller shall provide a programmable engine plant exerciser.
- 2.10.2 Each engine plant exerciser shall provide the following user programmable setpoints that are only applicable during an engine test:
 - 2.10.2.1 Test schedule, adjustable to [disabled, daily, 7-day interval, 14-day interval, 28-day interval].
 - 2.10.2.2 Start time in hours and minutes, AM or PM.
 - 2.10.2.3 Day of the week (Sun, Mon, Tues, Wed, Thurs, Fri, Sat).
 - 2.10.2.4 Test mode, adjustable to [disabled, no load transfer, loaded transfer].
 - 2.10.2.5 Run time, adjustable from 0 to 600 minutes (0 to 6,000 seconds).
- 2.10.3 A failsafe shall initiate an automatic retransfer to source 1 if source 2 should fail during an engine test.

2.11 CONTROLLER INPUTS

- 2.11.1 The controller shall include two (2) dedicated inputs for monitoring the position of the main contacts (source 1 and source 2).
- 2.11.2 The controller shall include five (5) control inputs that provide 10mA @ 24-Vdc. Each input shall be capable of accepting an external dry contact and will be configured with the following functionality:
 - 2.11.2.1 Monitor mode – disable automatic operation of the controller while continuing to display status information and allow set point programming.
 - 2.11.2.2 Lockout – disable automatic operation of the controller and lock-out an integral overcurrent protection device (circuit breaker).
 - 2.11.2.3 Manual retransfer – remotely initiate a retransfer from source 2 to source 1.
 - 2.11.2.4 Go to emergency – initiate a transfer of the load to the emergency source (source 2). A failsafe shall initiate an automatic retransfer to source 1 if source 2 should fail.
 - 2.11.2.5 Emergency inhibit/shed – remotely inhibit transfer of the load to the emergency source (source 2) or shed the load from the emergency source (source 2) if already connected.

2.12 CONTROLLER OUTPUTS

- 2.12.1 The controller shall provide four (4) dedicated Form A relay outputs for controlling the power switch device.
- 2.12.2 The controller shall provide one (1) dedicated Form A relay output for an engine start signal, for use with a generator source. The contact shall be rated for 5A @ 250-Vac / 5A @ 30-Vdc.
- 2.12.3 The controller shall provide one (1) dedicated Form C relay output for Pre-transfer and the contacts shall be rated for 10A @ 250-Vac / 10A @ 30-Vdc.
- 2.12.4 The controller shall provide one (1) dedicated Form C relay output for General Alarm and the contacts shall be rated for 10A @ 250-Vac / 10A @ 30-Vdc.

2.13 CONTROLLER COMMUNICATION

- 2.13.1 Serial communication (RS-485) with support for Modbus RTU protocol shall be provided with an integral network termination resistance that can be switched on/off.
- 2.13.2 Ethernet communication Serial-Ethernet adapter shall be provided.

2.14 AUTOMATIC TRANSFER SWITCH ACCESSORIES

- 2.14.1 A maintenance isolation selector switch, 2-position, shall be provided that permits service personnel to electrically isolate the control compartment during maintenance, when the transfer switch is energized, to mitigate shock hazard.
- 2.14.2 A kirk-key mechanical interlock shall be provided that prevents closure of the transfer switch main contacts during maintenance of downstream equipment.
- 2.14.3 Non-automatic control (open transition ATS): Provide a 2-position selector switch, maintained contact, marked: “Automatic” and “Non-Automatic”. Provide a 2-position, maintained contact, selector switch labeled “Source 1” and “Source 2”. The transfer switch shall be electrically operated by manually actuating the 2-position selector switch labeled “Source 1” and “Source 2”. A 30mm pilot light shall be provided labeled “Not in Automatic”.
- 2.14.4 Manual retransfer control: Provide a pushbutton, momentary contact, marked: “Manual Retransfer”. The ATS shall remain connected to the emergency source (source 2) after the normal source (source 1) becomes available until a momentary pushbutton contact closure signal initiates the retransfer. Should a failure of the emergency source occur while waiting for the pushbutton contact closure, the retransfer shall occur automatically.
- 2.14.5 Manual retransfer enable: Provide a 2-position selector switch, maintained contact. The selector switch shall be wired to a controller input to enable manual retransfer control.
- 2.14.6 Emergency inhibit/shed: Provide a 2-position keyed selector switch, maintained contact. The selector switch shall be wired to a controller input to inhibit transfer of the load to the emergency source (source 2) or shed the load from the emergency source if already connected. Provide a 30mm white pilot light indicating inhibit status.
- 2.14.7 Go to emergency: Provide a 2-position selector switch, maintained contact. The selector switch shall be wired to a controller input to initiate transfer of the load to the emergency source (source 2). A failsafe shall initiate an automatic retransfer upon failure of the emergency source.
- 2.14.8 Monitor mode: Provide a 2-position selector switch, maintained contact. The selector switch shall be wired to a controller input to disable automatic operation of the controller while continuing to display status information and allow setpoint programming.
- 2.14.9 Space heater: Provide a 100W rated space heater with thermostat.

2.15 WITHSTAND AND CLOSING RATING

2.15.1 Short-circuit

2.15.1.1 The transfer switch shall be UL1008 listed and rated for use in a circuit capable of delivering the short-circuit current shown on the contract drawings.

2.15.1.2 The transfer switch shall have a short-circuit withstand and closing rating of 100KA at 600 volts when protected by a specific circuit breaker.

2.15.1.3 The transfer switch shall have a short-circuit withstand and closing rating of 100A at 600 volts for a time duration of 0.05 seconds.

2.15.1.4 The transfer switch shall have a short-circuit withstand and closing rating of 200KA at 600 volts when protected by a specific fuse.

2.15.2 Short-time

2.15.2.1 The transfer switch shall be UL1008 listed and rated for use in a circuit capable of delivering the short-time current shown on the contract drawings.

2.15.2.2 The transfer switch shall have a short-time withstand and closing rating of 85KA at 600 volts for a time duration of 0.5 seconds.

3 EXECUTION

3.1 FACTORY TESTING

3.1.1 The following standard factory tests shall be performed on the equipment provided under this section. All tests shall be in accordance with the latest version of UL and NEMA standards.

3.1.1.1 Insulation check to ensure the integrity of insulation and continuity of the entire system.

3.1.1.2 Visual inspection to ensure that the switch matches the specification requirements and to verify that the fit and finish meet quality standards.

3.1.1.3 Mechanical tests to verify that the switch's power sections are free of mechanical hindrances.

3.1.1.4 Electrical tests to verify the complete electrical operation of the switch and to set up time delays and voltage sensing settings of the logic.

3.1.2 The manufacturer shall provide a certified copy of factory test reports.

3.1.3 Transfer switch shall include a label indicating order number, catalog number and date.

3.2 INSTALLATION

3.2.1 The contractor shall install all equipment per the manufacturer's recommendations and in accordance with the contract drawings.

3.2.2 All necessary hardware to secure the assembly in place shall be provided by the Contractor.

3.3 FIELD QUALITY CONTROL

3.3.1 Provide the services of a qualified factory-trained manufacturer's representative to assist the contractor in installation and start-up of the equipment specified under this section for a

period of one (1) working days. The manufacturer's representative shall provide technical direction and assistance to the contractor in general assembly of the equipment, connections and adjustments, and testing of the assembly and components contained therein.

3.4 MANUFACTURER'S CERTIFICATION

3.4.1 A qualified factory-trained manufacturer's representative shall certify in writing that the equipment has been installed, adjusted and tested in accordance with the manufacturer's recommendations.

3.4.2 The contractor shall provide a copy of the manufacturer's representative's certification.

3.5 TRAINING

3.5.1 The manufacturer's qualified representative shall conduct a training session for up to five (5) owner's representatives for one (1) normal workday at a jobsite location determined by the owner. The training program shall consist of the instruction on the operation of the transfer switch and the major components within the assembly.

END OF SECTION