

State of Hawaii  
DEPARTMENT OF AGRICULTURE  
AGRICULTURAL RESOURCE MANAGEMENT DIVISION  
Honolulu, Hawaii

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DEPARTMENT OF AGRICULTURE

Sharon Hurd  
Chairperson

**INVITATION FOR BIDS**

Job No. DOAO-10.4  
Maintenance of Mechanical and Electrical Equipment, Phase 4  
Kahuku Agricultural Park  
Kahuku, Oahu, Hawaii

Ad Date: September 3, 2024  
Bids Due: September 20, 2024, 02:00 PM  
IFB No.: 25000427  
Bid Location: HiePro - Electronic Procurement System  
Contact: Bryce Yoshimori; email: [bryce.e.yoshimori@hawaii.gov](mailto:bryce.e.yoshimori@hawaii.gov)

State of Hawaii  
DEPARTMENT OF AGRICULTURE  
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CONTRACT SPECIFICATIONS

Job No. DOAO-10.4  
Maintenance of Mechanical and Electrical Equipment, Phase 4  
Kahuku Agricultural Park  
Kahuku, Oahu, Hawaii

Approved: \_\_\_\_\_

  
BRIAN KAU, P.E.  
Administrator and Chief Engineer  
Agricultural Resource Management Division  
Department of Agriculture

September 2024

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DEPARTMENT OF LAND AND NATURAL RESOURCES  
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(Included by reference and bound separately)

# INFORMATION AND INSTRUCTIONS TO BIDDERS

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## INFORMATION AND INSTRUCTIONS TO BIDDERS

- A. PROJECT LOCATION AND SCOPE OF WORK: The project location is the Kahuku Agricultural Park, 56-664 Kamehameha Highway, Kahuku, Hawaii 96731. The scope of work shall be as generally described in the Proposal, Special Provisions, and Technical Specifications.
- B. PROPOSAL FORM: The Bidders shall use the proposal form provided on HlePRO.
- C. GENERAL CONDITIONS: The Department of Land and Natural Resources Interim General Conditions dated October 1994, as amended, shall be made a part of these contract specifications.
- D. SEALED PROPOSALS Bidders shall submit their "Sealed Bid", including the completed proposal form, bid bond, and any other documents required by the solicitation as part of their bid, via HlePRO.
- E. OMISSIONS OR ERASURES: Any proposal which contains any omission or erasure or alteration not properly initialed, or conditional bid, or other irregularity may be rejected by the Board of Agriculture (Board).
- F. NOTICE OF INTENT TO BID AND QUESTIONNAIRE:  
A Notice of Intent to Bid is not required for this project. In compliance with HRS Section 103D-310, the lowest responsive and responsible bidder may be required to complete a questionnaire. When requested by the State, the completed questionnaire shall be submitted to the Chief Engineer for evaluation. Failure to furnish the requested information within the time allowed may be grounds for a determination of non-responsibility, in accordance with HRS Section 103D-310 and HAR Section 3-122-108.
- G. BID SECURITY: A bid security will be furnished by each bidder as provided in sub-section 2.7 of the General Conditions. The successful bidder's bid security will be retained until Contract execution and furnished a performance and payment bond in an amount equal to one hundred percent (100%) of the total Contract price, including an amount estimated to be required for extra work, is furnished.
- The Board reserves the right to hold the bid securities of the four lowest bidders until the successful bidder has entered into a contract and has furnished the required performance bond. All bid securities will be returned in accordance with sub-section 3.5 of the General Conditions.
- Should the successful bidder fail to enter into a contract and furnish a satisfactory performance bond within the time stated in the proposal, the bid security shall be forfeited as required by law. Proof of bid security shall be provided with the Proposal, via HlePRO.
- H. CONTRACTOR'S LICENSE REQUIRED: The Board will reject all bids received from contractors who have not been licensed by the State Contractors License Board in accordance

with Chapter 444, HRS; Title 16, Chapter 77, Hawaii Administrative Rules; and statutes amendatory thereto.

- I. IRREGULAR BIDS: No irregular bids or propositions for doing the work will be considered by the Board.
- J. WITHDRAWAL OF BIDS: No bidder may withdraw his bid between the time of the opening thereof and the award of contract.
- K. SUCCESSFUL BIDDER TO FILE PERFORMANCE AND PAYMENT BONDS: The successful bidder will be required to file performance and payment bonds each; in the amount equal to fifty percent (50%) of the total contract price, including amounts estimated to be required for extra work, as provided in sub-section 3.6 of the General Conditions.
- L. NUMBER OF EXECUTED ORIGINAL COUNTERPARTS OF CONTRACT DOCUMENTS: If requested by the Board, up to six copies of the Contract, performance and payment bonds shall be executed.
- M. CHANGE ORDERS: No work of any kind in connection with the work covered by these bid documents shall be considered as change order work, or entitle the Contractor to extra compensation, except when the work has been ordered in writing by the Chief Engineer (Engineer) and in accordance with sub-section 4.2 of the General Conditions.

The Contractor shall clearly identify and inform the Engineer in writing of any deviations from the contract documents at the time of submission, and shall obtain the Engineer's written approval to the specified deviation prior to proceeding with any work.

- N. WAGES AND HOURS: In accordance with sub-sections 7.3 to 7.9 of the General Conditions relative to hours of labor, minimum wages and overtime pay, the current minimum wage rates promulgated by the Department of Labor and Industrial Relations (DLIR) shall be paid to the various classes of electricians and plumbers engaged in the performance of this contract on the job site. The minimum wages shall be increased during the performance of the contract in an amount equal to the increase in the prevailing wages for those kinds of work as periodically determined by the DLIR.

The Department of Agriculture will not recognize any claim for additional compensation because of the payment by the Contractor of any wage rate in excess of the said minimum wage rates. The possibility of wage increase is one of the elements to be considered by the Contractor in determining his bid, and will not, under any circumstances, be considered as the basis of a claim against the Department under this Contract.

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 Engineer. Should permission be granted to work at such times, the Contractor shall pay for all inspection administrative costs thereof. No work shall be done at night unless authorized by the Engineer.

- O. PERMITS: The State will process permit applications whenever possible, and the Contractor shall procure the pre-processed permits and pay the required fees. If permit applications are not processed by the State, the Contractor shall process the permit applications, permits and licenses, and pay all charges and fees. In all cases, the Contractor shall give all notices

necessary and incident to the due and lawful prosecution of the work.

- P. PROPERTY DAMAGE: It shall be the responsibility of the contractor to respect State property and to prevent damage to existing improvements. The Contractor will be responsible for damages resulting from construction operations. Immediately upon discovery, the Contractor shall repair such damage to the satisfaction of the Engineer.

All trees and shrubbery outside the excavation, embankment or construction limits shall be fully protected from injury.

- Q. TIME: The time of completion is specified in the Proposal. It is the Board's intention to insist the Contractor diligently prosecute the work to completion within the specified time.

Prospective bidders are reminded that the State has the option to proceed with or abandon a project depending on whether the project can be completed for occupancy in the specified time.

It is the bidder's responsibility to check the availability of all materials before bidding. The bidder shall select sub-contractors and suppliers who can warrant availability and delivery of all specified or qualified materials to assure project completion within the specified time.

The successful bidder must assume all risks for completing the project by the specified date. There shall be no extension of time for any reason except for delays caused by acts of God, labor disputes involving unions, or actions of the State. If for any reason the project falls behind schedule, the Contractor shall at its own cost, take necessary remedial measures to get the project back on schedule, i.e., working overtime, air freighting all materials, etc. In addition, if the Contractor fails to fully complete the project by the completion date, Contractor will be required to make the facility usable at its own cost.

- R. BIDDER'S RESPONSIBILITY TO PROVIDE PROPER SUPERINTENDENCE: The successful low bidder shall designate in writing to the Engineer the name of its authorized superintendent (Superintendent), who will be present at the job site whenever any work is in progress. The Superintendent shall be responsible for all work, receiving and implementing instructions from the Engineer in a timely manner. The cost for superintendence shall be considered incidental to the project.

If the Superintendent is not present at the site of work, the Engineer shall have the right to suspend the work as described under sub-section 5.5 c. and 7.20 - Suspension of Work of the General Conditions.

- S. LIQUIDATED DAMAGES: Liquidated damages in the amount specified in the Proposal will be assessed for each and every calendar day from and after the expiration of the time period stated in the Contract for the completion of the project.

- T. HIRING OF HAWAII RESIDENTS: The Contractor shall comply with Act 68, SLH 2010, in the performance and for the duration of this contract. The Contractor shall ensure that Hawaii residents compose not less than eighty percent of the workforce employed to perform the contract work on the project. The eighty percent requirement shall be determined by dividing the total number of hours worked on the contract by Hawaii residents, by the total number of hours worked on the contract by all employees of the Contractor in the

performance of the contract. The hours worked by any Subcontractor of the Contractor shall count towards the calculation for this section. The hours worked by employees with shortage trades, as determined by the Department of Labor and Industrial Relations (DLIR), shall not be included in the calculation for this section.

The requirements shall apply to any subcontract of \$50,000 or more in connection with the Contractor, that is, such Subcontractors must also ensure that Hawaii residents compose not less than eighty percent of the Subcontractor's workforce used to perform the subcontract.

- U. WATER AND ELECTRICITY: The Contractor shall make all necessary arrangements and pay all expenses for water and electricity used in this project.
- V. PUBLIC CONVENIENCE AND SAFETY: The Contractor shall conduct construction operations with due regard to the convenience and safety of the public at all times. No materials or equipment shall be stored where it will interfere with the safe passage of public traffic. The Contractor shall provide, install, and maintain in satisfactory condition, all necessary signs, flares and other protective facilities and shall take all necessary precautions for the protection of the work and the convenience and safety of the public. The Engineer shall have the right to suspend the performance of the work in accordance with sub-section 7.20 - Suspension of Work of the General Conditions.
- W. WORK TO BE DONE WITHOUT DIRECT PAYMENT: Whenever the contract that the Contractor is to perform work or furnish materials of any kind for which no price is fixed in the contract, it shall be understood that the Contractor shall perform such work or furnish said materials without extra charge or allowance or direct payment of any sort. The cost of performing such work or furnishing said material is to be included by the Contractor 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.
- X. AS-BUILT DRAWINGS: As-built drawings, the intent of which is to record the actual in-place construction so that any future renovations or tie-ins can be anticipated accurately, shall be required. All authorizations given by the Engineer to deviate from the plans shall be drawn on the job site plans. All deviations from alignments, elevations and dimensions which are stipulated on the plans shall be recorded on the as-built drawings. Final as-built drawings shall be submitted to the Engineer by the Contractor at the end of the project in both hard copy and electronic copy in Adobe PDF format on CD ROM.
- Y. ASBESTOS CONTAINING MATERIALS: The use of asbestos containing materials or equipment is prohibited. The Contractor shall insure that all materials and equipment incorporated in the project are asbestos-free
- Z. WORKER SAFETY: The Contractor shall provide, install and maintain in satisfactory condition all necessary protective facilities and shall take all necessary precautions for the protection and safety of its workers in accordance with the Occupational Safety and Health Standards for the State of Hawaii. The Engineer shall have the right to suspend the performance of the work in accordance with sub-section 7.20 - Suspension of Work of the General Conditions.
- AA. TOILET FACILITIES: All toilet facilities constructed at the project site shall be in accordance with the Public Health Regulations of the State Department of Health (DOH).



All necessary precautions shall be observed at the project site. The use of sanitary facilities shall be strictly enforced and workers violating these provisions shall be promptly discharged.

- BB. SIGNS: Whenever the project involves closing or obstructing any public thoroughfare, the Contractor shall provide traffic signs conforming to the applicable provisions of the current edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways", published by the Federal Highway Administration as directed by the Engineer for the purpose of diverting or warning traffic prior to the construction area. All traffic signs shall bear proper wording stating thereon the necessary information as to diverting or warning traffic.

When indicated in the Proposal, the Contractor shall provide a project sign, size 4'-0" x 7'-0" to be placed as directed by the Engineer. The sign shall be constructed in accordance with Section 01581 - Project Sign of these specifications and approved by the Engineer. All wording, type and size of lettering and color selection shall be as specified in these specifications or as approved by the Engineer.

All signs shall be kept neat and clean, and properly erected at all times.

- CC. QUANTITIES: All bids will be compared on the basis of quantities of work to be done as shown in the Proposal; the quantities shown in the Unit Price items are estimated, being given as a basis for comparison of bids. The Board reserves the right to increase or decrease the quantities given under the items or delete items entirely as may be required during the progress of the work.

- DD. OTHER HEALTH MEASURES: Forms of work site exposure or conditions which may be detrimental to the health or welfare of workers or of the general public shall be eliminated or reduced to safe levels as required by the DOH codes, standards, and regulations. Suitable first aid kits and a person qualified to render first aid, as specified in the DOH regulations, shall be provided at all times when work is scheduled.

- EE. HAWAII BUSINESS OR COMPLIANT NON-HAWAII BUSINESS REQUIREMENT: Bidders (Contractors) shall be incorporated or organized under the laws of the State or be registered to do business in the State as a separate branch or division that is capable of fully performing under the contract, as stipulated in §3-122-112 HAR.

- FF. COMPLIANCE WITH §3-122-112 HAR:  
As a condition for award of the contract and as proof of compliance with the requirements of 103D-310(c) HRS, the apparent low bidder shall furnish the required documents to the Department. If the valid required certificates are not submitted on a timely basis for award of a contract, a bidder otherwise responsive and responsible may not receive the award. Bidder is responsible to apply for and submit the following documents to the Department.

A. **TAX CLEARANCE REQUIREMENTS (HRS Chapter 237)**: Bidder shall obtain a tax clearance certificate from the Hawaii State Department of Taxation (DOTAX) and the Internal Revenue Service (IRS). The certificate is valid for six months from the most recently approved stamp date on the certificate; the certificate must be valid on the date received by the Department.

B. Department of Labor (DLIR) **"Certificate of Compliance"**. (HRS Chapter 383 -

Unemployment Insurance, Chapter 386 - Workers' Compensation, Chapter 392 - Temporary Disability Insurance, and 393 – Prepaid Health Care): Bidder shall obtain a certificate of compliance from the Hawaii State Department of Labor and Industrial relations (DLIR). The certificate is valid for six months from the date of issue; certificates must be valid on the date received by the Department.

- C. Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG) “**Certificate of Good Standing**”. Bidder shall obtain a certificate of good standing issued by the Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG). The certificate of good standing is valid for six months from the date of issue; certificates must be valid on the date received by the Department.

Alternately, instead of separately applying for these certificates at the various state agencies, bidder may choose to use the Hawaii Compliance Express (HCE), which allows businesses to register online through a simple wizard interface at <http://vendors.ehawaii.gov> to acquire a “Certificate of Vendor Compliance” indicating the bidder’s status is compliant with the requirements of §103D-310(c), HRS, and shall be accepted for contracting and final payment purposes. Bidders that elect to use the new HCE services will be required to pay an annual fee of \$15.00 to the Hawaii Information Consortium, LLC (HIC). Bidders choosing not to participate in the HCE program will be required to provide the paper certificates as instructed in the previous paragraphs.

P R O P O S A L

FOR

Department of Agriculture  
Agricultural Resource Management Division  
State of Hawaii

Job No. DOAO-10.4  
Maintenance of Mechanical and Electrical Equipment, Phase 4  
Kahuku Agricultural Park  
Kahuku, Oahu, Hawaii

\_\_\_\_\_, 2024

Administrator and Chief Engineer  
Agricultural Resource Management Division  
Department of Agriculture  
State of Hawaii  
Honolulu, Hawaii

Dear Sir:

The undersigned, having carefully examined the local conditions and all available records and information covering conditions which may affect the cost of the work to be performed, and having carefully examined the Plans and Specifications, and other contract documents, hereby proposes to furnish and pay for all materials, tools, equipment, labor and other incidental work necessary to complete the work, as required or called for in this Proposal, all according to the true intent and meaning of the Information and Instructions to Bidders, Proposal, Special Provisions, Technical Specifications, Interim General Conditions, Plans, and any and all addenda for:

Job No. DOAO-10.4  
Maintenance of Mechanical and Electrical Equipment, Phase 4  
Kahuku Agricultural Park  
Kahuku, Oahu, Hawaii

on file in the office of the Engineering Division for the TOTAL BASE BID (Items 1 to 7) of:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

and will fully complete all work under this contract within 12 months from the date of written notice to proceed for Term 1, and 12 months from the date of written notice to proceed for Term 2, including date of said order, the total sum being itemized on the following pages.

Item No.	Quantity	Unit	Description	Unit Price	Total
<b><u>BASE BID</u></b>					
<b><u>Term 1</u></b>					
1.	10	Each	Year 1 Tasks - Inspections, maintenance, minor repairs, replacing, adjustments, corrections, trouble shooting, report.	\$	\$
2.	1	Each	Annual task, inspection, maintenance, reports.	\$	\$
3.	1	Allow.	Major repairs to the mechanical and electrical components or system, as approved by the State; on-call troubleshooting.		\$10,000.00
<b>Subtotal Base Bid (Items 1-3)</b>					\$
<b><u>Term 2</u></b>					
4.	10	Each	Year 2 Tasks - Inspections, maintenance, minor repairs, replacing, adjustments, corrections, trouble shooting, report.	\$	\$
5.	1	Each	Annual task, inspection, maintenance, reports.	\$	\$
6.	1	Allow.	Major repairs to the mechanical and electrical components or system, as approved by the State; on-call troubleshooting.		\$25,000.00
7.	1	Allow.	Repair of float switches in the water tank.		\$15,000.00
<b>Subtotal Base Bid (Items 4-7)</b>					\$
<b>Total Base Bid (Items 1-7)</b>					\$

This is a multi-term contract requiring supplemental contracts for term 2, and subject to the availability of funds.

The undersigned further understands and agrees that by submitting this bid, (1) they are declaring their bid is not in violation of Chapter 84, HRS, concerning prohibited State contracts, and (2) they are certifying that the bid prices submitted were independently arrived at without collusion.

The undersigned further understands and agrees that by submitting this bid, (1) they are declaring their bid is not in violation of Chapter 84, HRS, concerning prohibited State contracts, and (2) they are certifying that the bid prices submitted were independently arrived at without collusion.

#### APPRENTICESHIP AGREEMENT PREFERENCE

1. If applicable to this project, any bidder seeking the preference must be a party to an apprenticeship agreement registered with the State Department of Labor and Industrial Relations (DLIR) at the time the bid is submitted for each apprenticeable trade the bidder will employ to construct the project. "Employ" means the employment of a person in an employer-employee relationship.
  - a. The apprenticeship agreement shall be registered with the DLIR and conform to the requirements of Hawaii Revised Statutes Chapter 372.
  - b. Subcontractors do not have to be a party to an apprenticeship agreement for the bidder to obtain preference.
  - c. The bidder is not required to have apprentices in its employ at the time the bid is submitted to qualify for the preference.
2. A bidder seeking the preference must state the apprenticeable trade the bidder will employ for each trade to be employed to perform the work by submitting a completed signed original Certification Form 1 verifying participation in an apprenticeship program registered with DLIR. "Apprenticeable trade" shall have the same meaning as "apprenticeable occupation" pursuant to Hawaii Administrative Rules (HAR) §12-30-5.
  - a. The *Certification Form 1* shall be authorized by an apprenticeship sponsor listed on the DLIR list of registered apprenticeship programs. "Sponsor" means an operator of an apprenticeship program and in whose name the program is approved and registered with the DLIR pursuant to HAR §12-30-1.
  - b. The authorization shall be an original signature by an authorized official of the apprenticeship sponsor.
  - c. The completed signed original Certification Form 1 for each trade must be submitted with the bid. Previous certifications shall not apply.
  - d. When filling out the *Certification Form 1*, the 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 DLIR website. "Registered apprenticeship program" means a construction trade program approved by the DLIR pursuant to HAR §12-301 and §12-30-4.
  - e. The *Certificate Form 1* and the List of Construction Trades in Registered Apprenticeship Programs is available on the DLIR website at: <http://hawaii.gov/labor/wdd>.
3. Upon receiving the *Certification Form 1*, the Procurement Officer will verify that the apprenticeship program is on the List of Construction Trades in Registered Apprenticeship

Programs and that the form is signed by an authorized official of the Apprenticeship Program Sponsor. If the programs and signature are not confirmed by the DLIR, the bidder will not qualify for the preference.

4. If the bidder is certified to participate in an apprenticeship program for each trade which will be employed by the bidder for the project, a preference will be applied to decrease the bidder's bid amount by five percent (5%) for evaluation purposes.
5. Should the bidder qualify for other preferences (e.g. Hawaii Products), all applicable preferences shall be applied to the bid price.

#### CONTRIBUTIONS BY STATE AND COUNTY CONTRACTORS PROHIBITED

Contractors are hereby notified of the applicability of Section 11-355, HRS, which states that campaign contributions are prohibited from specified State or county government contractors during the term of the contract if the contractors are paid with funds appropriated by a legislative body.

#### CONDITION OF AWARD

It is understood that the award of the contract will be made on the basis of the lowest responsible Total Base Bid (Items 1 to 7) selected by the Board of Agriculture. Write the total of bid items 1 to 7 on page P-1.

If applicable, in the event the low bid is below the available funds certified by the appropriate fiscal officer, the head of the purchasing agency responsible for the procurement in question is authorized to award Additives to the lowest bidder. The award of Additives may be in any order or combination such that the Base Bid plus Additives do not exceed the available funds.

It is understood and agreed that the Board of Agriculture reserves the right to reject any and/or all bids and waive any defects when, in the Board's opinion, such rejection or waiver will be for the best interest of the State of Hawaii.

In the event all bids exceed available funds certified by the appropriate fiscal officer, the head of the purchasing agency responsible for the procurement in question is authorized in situations where time or economic considerations preclude resolicitation of work of a reduced scope to negotiate an adjustment of the bid price, including changes in the bid requirements, with the low responsible and responsive bidder, in order to bring the bid within the amount of available funds. It is understood and agreed upon that the head of the purchasing agency may delete a portion or all of any item(s) in the proposal at the stated unit or lump sum price as necessary to stay within the available funding. The bidder is responsible to make an earnest effort to represent the actual cost of each item, including all materials, labor, equipment, overhead and profit in their bid proposal to preclude claims of anticipated profit or loss of profit because of an unbalanced bid proposal.

It is also understood that if a mutually agreeable cost for the reduced scope of work necessitated by a lack of available funds cannot be agreed upon between the bidder and the head of the purchasing agency within 14 calendar days after the bid opening, then the bid may be rejected in the best interest of the purchasing agency, and the head of the purchasing agency may negotiate in progressive order (lowest to highest) with the next lowest responsible and responsive bidder.

It is also understood and agreed that the award of the contract shall be conditioned upon funds being made available for this project and further upon the right of the Board of Agriculture to hold all bids

received for a period of sixty (60) days from the date of the opening thereof, unless otherwise required by law, during which time no bid may be withdrawn.

It is also understood that Notice to Proceed may be delayed up to one (1) year after the bid opening date, and that no additional compensation will be provided for any claim for escalation or delay for issuance of Notice to Proceed on or before that date.

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 increased or decreased, in accordance with the provisions of the Contract Specifications.

It is also understood and agreed that the estimated quantities shown for the items for which a UNIT PRICE is asked in this Proposal are only for the purpose of comparing on a uniform basis, bids offered for the work under this contract, and the undersigned agrees that he is satisfied with and will at no time, dispute said estimated quantities as a means of claims for anticipated profit or loss of profit, because of a difference between the quantities of the various classes of work done or the materials and equipment installed, and the said estimated quantities. On UNIT PRICE bids, payment will be made only for the actual number of units incorporated into the finished project at the contract UNIT PRICE.

After the proposals are opened and read, the figures will be extended and/or totaled in accordance with the bid prices of the acceptable proposals and the totals will be compared. In the comparison of bids, words written in the proposal shall govern over figures and unit prices will govern over totals. Until the award of the contract, however, the right will be reserved to reject any and all proposals and to waive any defects or technicalities as may be deemed best for the interest of the State.

It is also understood and agreed that liquidated damages in the amount of ONE HUNDRED AND NO/100 DOLLARS (\$100.00) for each and every calendar day in excess thereof prior to completion of the contract shall be withheld from payments due to the Contractor.

It is also understood and agreed that if this bid is accepted, the successful bidder must enter into and execute a contract with the Board of Agriculture and furnish a Performance and Payment Bond, as required by law. These bonds shall conform to provisions of Section 103D-324 and 325, Hawaii Revised Statutes and any law applicable hereto.

It is also understood and agreed that the successful bidder will provide all necessary labor, materials, tools, equipment, and other incidentals 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 Engineer as therein set forth.

It is understood that by submitting this proposal, the undersigned is declaring that his firm has not been assisted or represented on this matter by an individual who has, in a State capacity, been involved in the subject matter of this contract in the past two years.

It is understood that by submitting this proposal in accordance with HAR 3-122-192, the undersigned is declaring that the price submitted is independently arrived without collusion.

It is also understood that by submitting this proposal, a Certification for Safety and Health Programs for bids in excess of \$100,000 (in accordance with HRS 396-18), the undersigned certifies that his organization will have a written safety and health plan for this project that will be available and implemented by the Notice to Proceed date of this project. Details of the requirements of this plan

may be obtained from the Department of Labor and Industrial Relations, Occupational, Safety and Health Division (HIOSH).

It is further understood and agreed that the successful bidder shall comply with paragraph 3.1.a "SUBCONTRACTING" of the General Provisions which requires that the contractor shall perform with his own organization and with the assistance of workmen under his immediate superintendence, work of a value not less than twenty percent (20%) of the value of all work embraced in the Contract, except that certain contract items of work, if specifically referred to in the special provisions, will be exempted from said twenty percent requirement.

Compliance with §103-310 HRS. As a condition of award all bidders shall comply with all laws governing entities doing business in the State, including Chapter 237 HRS (general excise tax); Chapter 383 HRS (employment security – unemployment insurance); Chapter 386 HRS (workers compensation); Chapter 392 HRS (temporary disability insurance); and Chapter 393 HRS (pre-paid health care), and shall produce all documents to the State required to demonstrate compliance with these subsections. Any bidder making a false affirmation or certification under this subsection shall be suspended and may be debarred from further offerings or awards pursuant to §103D-702 HRS.

#### JOINT CONTRACTORS OR SUBCONTRACTORS TO BE ENGAGED ON THIS PROJECT

The Bidder agrees that the following is a complete listing of all joint contractors or subcontractors covered under Chapter 444, Hawaii Revised Statutes (HRS), who will be engaged by the Bidder on this project to perform the required work indicated pursuant to Section 103D-302, HRS. 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. The Bidder certifies that the completed listing of joint contractors or subcontractors fulfills the requirements for the project and the Bidder, together with the listed subcontractors or joint contractors have all the specialty contractor's licenses to complete the work, except as provided for in HRS §103D-302(b). Failure of the Bidder to comply with this requirement may be just cause for rejection of the bid.

"A" General Engineering Contractors and "B" General Building Contractors are reminded that due to the Hawaii 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 in which 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" 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 (*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.

General Engineering "A" Contractors automatically have these "C" specialty contractor's licenses: C-3, C-9, C-10, C-17, C-24, C-31a, C-32, C-35, C-37a, C-37b, C-38, C-43, C-49, C-56, C-57a, C-57b and C-61.

General Building "B" Contractors automatically have these "C" specialty contractor's licenses: C-5, C-6, C-10, C-12, C-24, C-25, C-31a, C-32a, C-42a and C-42b.

In completing the Joint Contractors or Subcontractors List, describe the specialty contractor's nature and scope of work to be performed 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 and scope of work to be performed on this project.

List only one joint contractor or subcontractor per required specialty contractor's classification, unless within the same specialty, the work of each joint contractor or subcontractor can be described so that there is no overlap in work descriptions.

If a contractor's license is required by law for the performance of the work which is called for in this bid, the bidder and all subcontractors must have the required license before the submission of the bidder's proposal in the case of a non-federal aid project, and for federal-aid projects, the bidder must have the required license prior to the award of the project and all subcontractors prior to the start of the subcontracted work.

<b>COMPLETE FIRM NAME OF JOINT CONTRACTOR OR SUBCONTRACTOR</b>	<b>NATURE AND SCOPE OF WORK TO BE PERFORMED</b>

Enclosed herewith is a:

- 1. Surety Bond (\*1) )
- 2. Certificate of Deposit (\*2) )
- 3. Cashier's Check (\*2) )
- 4. Certified Check (\*2) ) in the
- 5. Official Check (\*2) ) amount
- 6. Share Certificate (\*2) ) of
- 7. Teller's Check (\*2) )
- 8. Treasurer's Check (\*2) )

(Cross Out Those Not Applicable)

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Dollars (\$ \_\_\_\_\_)

as required by law.

Respectfully submitted,

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Name of Company, Joint Venture  
or Partnership

---

Contractor's License No.

By \_\_\_\_\_  
Signature (\*4)

Title \_\_\_\_\_

Print Name \_\_\_\_\_

Date \_\_\_\_\_

Address \_\_\_\_\_

Telephone No. \_\_\_\_\_

E-Mail Address \_\_\_\_\_

NOTES:

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

## **Certification Regarding Debarment, Suspension, and Other Responsibility Matters**

The prospective participant certifies to the best of its knowledge and belief that it and the principals:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- (b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction: violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (c) Are not presently indicted for otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1) (b) of this certification; and
- (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated or cause or default.

I understand that a false statement on this certification may be ground for rejection of this proposal or termination of the award. In addition, under 18 U SC Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

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Typed Name of Business

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Typed Name & Title of Authorized Representative

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Signature of Authorized Representative

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Date

I am unable to certify to the above statements. My explanation is attached.

**End of Proposal**

## **SPECIAL PROVISIONS**

A. TERMS AND ACRONYMS

ARMD means Agricultural Resource Management Division, Department of Agriculture.

CA means Contract Administrator.

HRS means Hawaii Revised Statutes.

HAR means Hawaii Administrative Rules.

IGC means Interim General Conditions of the Department of Land & Natural Resources dated October, 1994.

BC means Blue Collar wage rates.

WS means Working Supervisor

Cycle means five (5) weeks

B. CONTRACT ADMINISTRATOR

For this contract, Brian K. Kau, Administrator and Chief Engineer of ARMD, shall be the CA. He can be reached at 937-9473 (Oahu).

C. TERM OF CONTRACT SUBJECT TO THE AVAILABILITY OF FUNDS

The time of performance of the contract shall be for twenty-four (24) months and be a multi-term contract. There will be two Terms at 10 consecutive cycles, each Term being 12 months long. The bidder is advised that should there be insufficient funds beyond Term 1, the State may terminate this contract without incurring penalties.

The contract start date for Term 1 shall begin on the issuance of the notice to proceed (NTP) date. The contract period for Term 2 will start on the issuance of another NTP date. Time extensions, may be allowed for delays beyond the Contractor's control. The Contractor shall submit written request for time extension(s), including justification for each.

Payment to the Contractor shall be adjusted as required under Section 103-55, HRS, as described herein. The total bid price shall be used for bid award evaluation purposes only and may not be the actual contract based on adjustment made under this section.

D. STATUTORY REQUIREMENT OF SECTION 103-55, HRS

Bidders are advised that Section 103-55, HRS, provides that services to be performed by employees shall be at wages or salaries not less than that

paid to public employees for similar work. The Contractor shall, in the event of any increase in public employee wage rates for performance of similar work during the contract period, provide wage rates no less than those wage rate increases received by public employees.

It shall be Contractor's responsibility to provide notice to its employees performing work under this contract of the provisions of Section 103-55, HRS, and the current wage rate for public employees performing similar work, which is listed below. The Contractor may meet this obligation by posting a notice to this effect on a bulletin board at the Contractor's place of business accessible to all employees, or include it with employee's paycheck or pay envelope furnished to the employees.

E. CONTRACT ADJUSTMENT WITH SECTION 103-55, HRS

At the award and issuance of notice to proceed, the Contractor may request an increase in the contract price, provided there is an increase in the public employee's wages. The requested increase shall result in a corresponding increase in wages to the Contractor's employees performing the work herein. Such increase shall include costs for fringe benefits required by law that are automatically related to any wage increase, including but not limited to social security, worker's compensation, temporary disability insurance, unemployment insurance, health insurance, etc.

The Contractor's request for an increase shall meet the following conditions:

1. At the time of request, the Contractor shall provide documentation showing compliance with provisions of Section 103-55, HRS. Such documentation may include but not be limited to payroll affidavits, notices posted, employee's job descriptions, etc. of employees on the project.
2. The Contractor shall have specified on the bid proposal the percentage of the bid price per month that represents labor costs. If the Contractor fails to specify the percentage, the request shall be denied.
3. All requests made shall be in writing and shall be made as soon as practicable after the State wage takes effect or for future State wage agreements when the date of such increase is made public. Approved requests shall be retroactive to the date of increase for the State employees. Increases for a supplemental period of the contract shall be made prior to the start of the supplement.

## SECTION 00101

### SCOPE OF WORK TASKS

#### PART 1 - GENERAL

- 1.1 General Requirements  
All receipts, new equipment catalog cuts, waybills, detailed descriptions of materials, etc. shall be attached to the reports as applicable to that cycle. Each of the attachments shall be dated and legible.
- 1.2 Electrical Safety  
All electrical work shall be performed in accordance with NFPA 70E. All workers performing work on the electrical system shall submit arc flash and electrical safety training certificates. All electrical work shall be done with the system de-energized. Submit energized work permits for approval if the work to be performed requires the system to be energized as allowed by NFPA 70E.
- 1.3 COVID-19 Requirements  
The contractor shall comply with all County, State of Hawaii, and Federal guidelines relating to COVID-19 or other diseases at all times, including all applicable Governor's Emergency Proclamations and Supplements.
- 1.4 Coordination with Other Contractors  
The contractor shall coordinate with the Engineer and potentially other contractors who may be working at the site to avoid scheduling conflicts.

#### PART 2 - PRODUCTS (NOT USED)

#### PART 3 - EXECUTION

- 3.1 Tasks for each Cycle (a Cycle is once every five (5) weeks)
  - 3.1.a. Check for excessive noise and pump/motor vibrations (should be within 1 to 3 mils peak to peak displacement at rotational cycles 1,800 rpm). If excessive, determine the cause. Inclusive of 3 booster pumps and sump pump.
  - 3.1.b. Test individual pump safeties, including low suction and motor overload.
  - 3.1.c. Test pump control including tank level switches, pump lead/lag, valve control, and pump start circuit.
  - 3.1.d. Test system safeties and alarms including incoming power faults, pump house flooding, tank overflow, tank low level, and phase failure protective circuit.
  - 3.1.e. Visually inspect all electrical contacts and clean off corrosion from contacts. Check for corrosion on grounding lugs/bolts/nuts/clamps and wire. If loose, tighten.
  - 3.1.f. Look for moisture in junction boxes/conduits, and replace light bulbs if burnt out.
  - 3.1.g. Clean any accumulation of oil, dirt, dust, and moisture from all mechanical surfaces.



- 3.1.h. **Exercise** and check all valves for proper operation, and correct as necessary. Including pressure reducing (Clayton Model 90G-01), diaphragm operated butterfly (Masoneilan Model 33-37412), check valve (Val-Matic), and butterfly valves.
  - 3.1.i. Check motor to pump coupling for alignment and secure connection to shaft. Check pump/motor shafts for usual wear and tear or nicks/cuts, and record observations.
  - 3.1.j. Lubricate motor bearings per manufacturer's recommendation, and apply lubricant or protective coating to exposed corrosive sites, especially metal to metal connections or contacts of all kinds.
  - 3.1.k. Check mounting bolts of all equipment for loose connections and tighten as required.
  - 3.1.l. Replace fuses, switches, or bulbs as needed.
  - 3.1.m. Open all electrical cabinets and check for moisture. If moisture is present, determine where moisture/leak is coming from and stop moisture/leak by performing repairs (replace torn gasket, reconnect loose conduits, re-apply or replace conduit seals, etc.) as necessary. Replace and add more desiccants.
  - 3.1.n. Clean all sensors, gauges, monitors, valves, flow meters, and other control devices, and check for correct calibration and proper operation.
  - 3.1.o. Inspect pump packing glands and mechanical seals and correct as needed.
  - 3.1.p. Check status of SCADA system and connectivity and controls of all connected elements. Troubleshoot any problems and correct as necessary.
  - 3.1.q. Check all lighting systems and replace lamps and ballasts as necessary.
  - 3.1.r. Check signal cable from pump station to reservoir. Repair as required, or re-install if fallen.
  - 3.1.s. Check the manual gage of the reservoir, to see if it is reasonably accurate.
  - 3.1.t. Take pictures of overall system, and details of pumps, motor, valves, controls, reservoir, etc..
  - 3.1.u. Clean basket strainers and/or Y-Type strainers.
  - 3.1.v. Check reduced pressure backflow preventer.
- 3.2 Annual Tasks (once every 12 months)
- 3.2.a. Clean pump control valve inlets and outlet strainers, and replace/repair appurtenances as needed.
  - 3.2.b. Remove and clean spin-clean filter.
  - 3.2.c. Check concrete pipe foundations for cracks or settling. Repair if needed and report analysis for pipe movement or settlement.
  - 3.2.d. Check condition of all wiring to mechanical equipment, including conduits, and record .
  - 3.2.e. Open and clean pressure regulating and automatic control valves.
  - 3.2.f. Check and repack suction ball bearing with lubricant as per manufacturer's recommendation.
  - 3.2.g. Remove bonnet of motors and check ratchet assemblies if torque is 150 to 160 foot pound; if not, correct to desired torque.
  - 3.2.h. Replace desiccants with new, within all the electrical cabinets.
  - 3.2.i. Take current and voltage readings with a 0-3.000 amp combination clamp-on amp/volt meter on motors and record to analyze annual changes.
  - 3.2.j. Test all motor connections to equipment with "megger" insulation tester.

- 3.2.k. Exercise each circuit breaker (with the power de-energized) as recommended by the manufacturer.
- 3.3 Reports – Sample report forms are included herein, the Contractor shall edit the forms to reflect all required tests and submit for approval of the Engineer, prior to beginning work. The Contractor shall use attachments whenever more space for the narrative is required. Each report shall be completed and submitted within two (2) weeks from on-set of the field work.

#### PART 4 – MEASUREMENT AND PAYMENT

The work shall be measured and paid at the unit bid price bid as scheduled in the Proposal and shall include all labor, equipment and tools necessary to complete the work.

**REPORT FORM**

Pump Number: \_\_\_\_\_  
Date(s): \_\_\_\_\_

For cycle No.: \_\_\_\_\_  
Name of Inspector(s): \_\_\_\_\_

COMMENTS:

**PICTURES(s) Attached:**

**CHECK PUMP:**

- Noise and Vibration \_\_\_\_\_
- Coupling and shaft alignment \_\_\_\_\_
- Operate manually, including safety devices \_\_\_\_\_
- Packing gland or seals \_\_\_\_\_
- Clean oil, dirt, dust, etc. \_\_\_\_\_
- Concrete foundation and mounting bolts \_\_\_\_\_
- ventilating screens cleaned \_\_\_\_\_
- Motor to pump coupling \_\_\_\_\_
- Lubricate motor bearing, fluid levels \_\_\_\_\_
- Protective coating \_\_\_\_\_

**CHECK ELECTRICAL:**

- Electrical contacts \_\_\_\_\_
- Ground conditions \_\_\_\_\_
- Corrosion \_\_\_\_\_
- Junction boxes and moisture \_\_\_\_\_
- conduit/fittings and moisture \_\_\_\_\_
- Light bulbs \_\_\_\_\_
- Fuses, switches, or bulbs \_\_\_\_\_
- Breakers \_\_\_\_\_

**CHECK MECHANICAL: (Exercise and inspect)**

- Pump Control Valve, strainers \_\_\_\_\_
- Check Valve \_\_\_\_\_
- Gate Valve \_\_\_\_\_
- Pressure relief \_\_\_\_\_
- Air relief \_\_\_\_\_
- Sensors, gauges, monitors \_\_\_\_\_

If Pump/Motor Found Inoperable - Was it returned to Service? Describe Cause(s) and Repair(s) Needed: \_\_\_\_\_  
\_\_\_\_\_

Describe Follow-Up Repair Work Completed from previous Inspection, Dates of these repair(s): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Adjustments and Repair Work Completed From Today's Inspection: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

List of Equipment (Model No's) and Parts (Part No's) Replaced: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Larger Repair Work, Potential Failure(s) Reported to ARMD: \_\_\_\_\_  
\_\_\_\_\_

# ANNUAL REPORT FORM

Pump Number: \_\_\_\_\_  
Date(s) of Inspection: \_\_\_\_\_

For cycle No.: \_\_\_\_\_  
Name of Inspector(s): \_\_\_\_\_

Comments:

**Voltage Readings:**

- AB
- AC
- BC
- AG
- BG
- CG

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**Running Amps:**

- AB
- AC
- BC
- AG
- BG
- CG
- A
- B
- C

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**Vibration Reading:**

- Motor
- Pump

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**Temperature Reading:**

- Motor

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**Test the Safety Switches:**

- Voltage Overload
- No Flow

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**Insulation Resistance:**

- Primary
- Secondary
- Primary to Secondary
- Megger

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**Mechanical:**

- Clean control valve/pressure regulators
- Spin-clean filter
- Pipe foundations
- Paint
- Lube bearings

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**Electrical:**

- Wiring and conduits
- Check motor ratchet assembly

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**Describe Potential Repair Work Required:**

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**Describe Follow-Up Repair Work completed, Date(s) of Repair:**

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## SECTION 00102

### MAINTENANCE MATERIALS AND LUBRICATION

#### PART 1 - GENERAL

##### 1.1 General Requirements

This section covers the requirements for the furnishing of materials for servicing of pumps, motors, electric transformers, and other appurtenances as specified.

#### PART 2 - PRODUCTS

2.1 Use lubricants as recommended by the manufacturer.

#### PART 3 - EXECUTION

3.1 Lubrication: Lubricate according to manufacturer recommendations. General steps as follows:

3.2 The contractor shall take the following steps before lubricating equipment: (1) All equipment shall be stopped and at rest; and (2) Electric controls to the equipment to be lubricated shall be locked at an open position to assure prevention of energizing while being serviced. Unless otherwise specified, servicing shall be in accordance with the manufacturer's standards if available or specified.

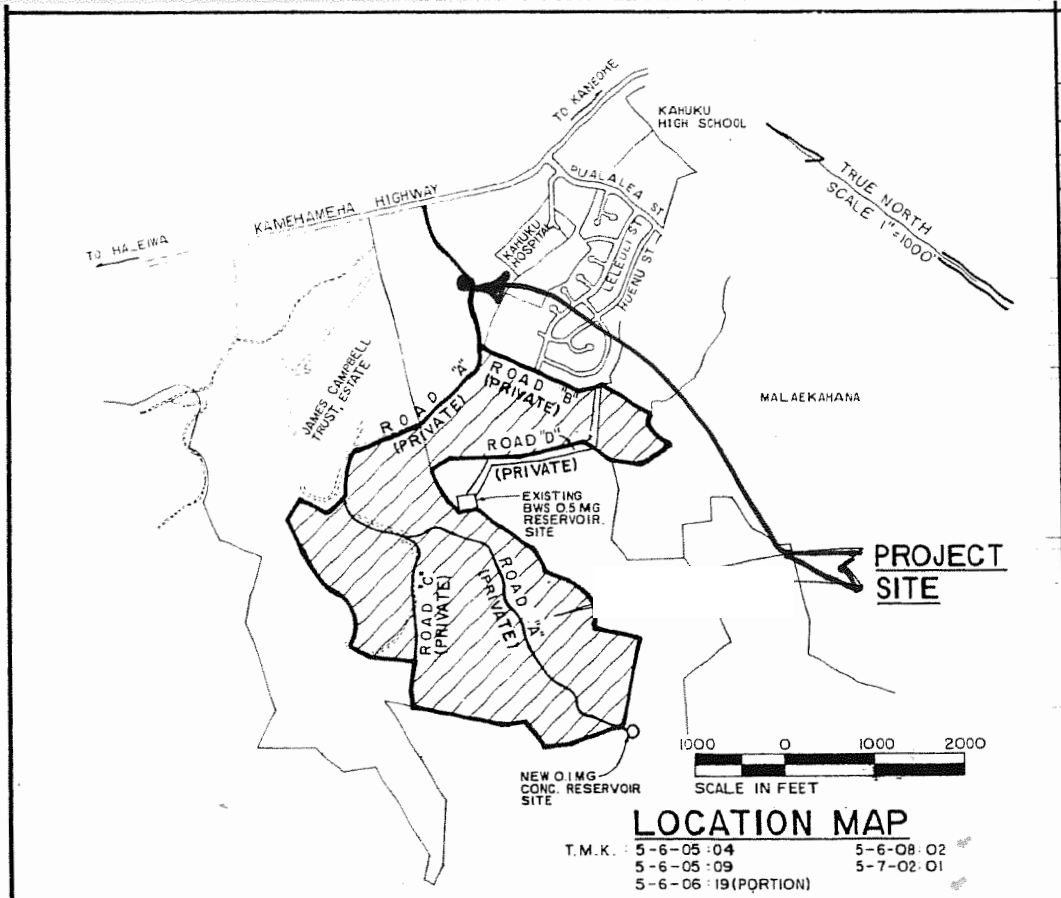
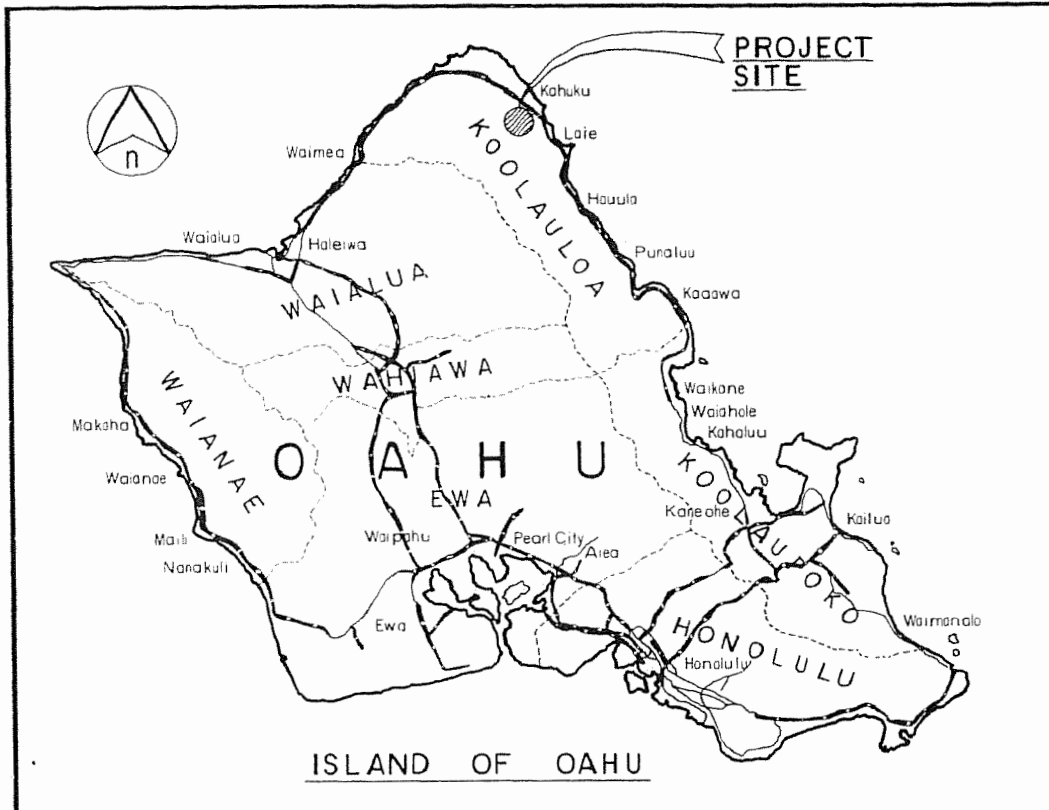
3.3 Oil lubricated bearings. All bearings shall be lubricated and oil changed annually; however, with frequent start-stop operations, damp or severe service conditions, more frequent oil changes shall be required. Check with manufacturer. Add oil into pre-set oil fill hole at each bearing housing until oil level reaches between minimum and maximum marks located on the sight gauge window.

3.4 Grease lubricated bearings. The contractor shall service the bearings with grease as recommended by manufacturer. Relubricate bearings by removing the drain plug and inserting new grease until clean grease is released at the drain. Operate motor for approximately ten (10) minutes with the drain plug removed to allow purging of excess grease before closing the drain plug. Remove and clear old or excess grease. If grease insert is blocked, use a mechanical probe or scavenger to clear and dislodge blockage (usually caked grease or foreign particles). Check the greasing cavity for purging of approximately 60% to 70% capacity. The contractor shall assure that over greasing is prevented by checking after the ten (10) minute motor run and inspecting the drain plug area for grease.

#### PART 4 – MEASUREMENT AND PAYMENT

Unless indicated otherwise, payment for valves and appurtenances shall be included in the lump sum or unit price bid for the various items of which it is a part as scheduled in the Proposal.

END OF SECTION



**EQUIPMENT SCHEDULE :**

**PUMPS**



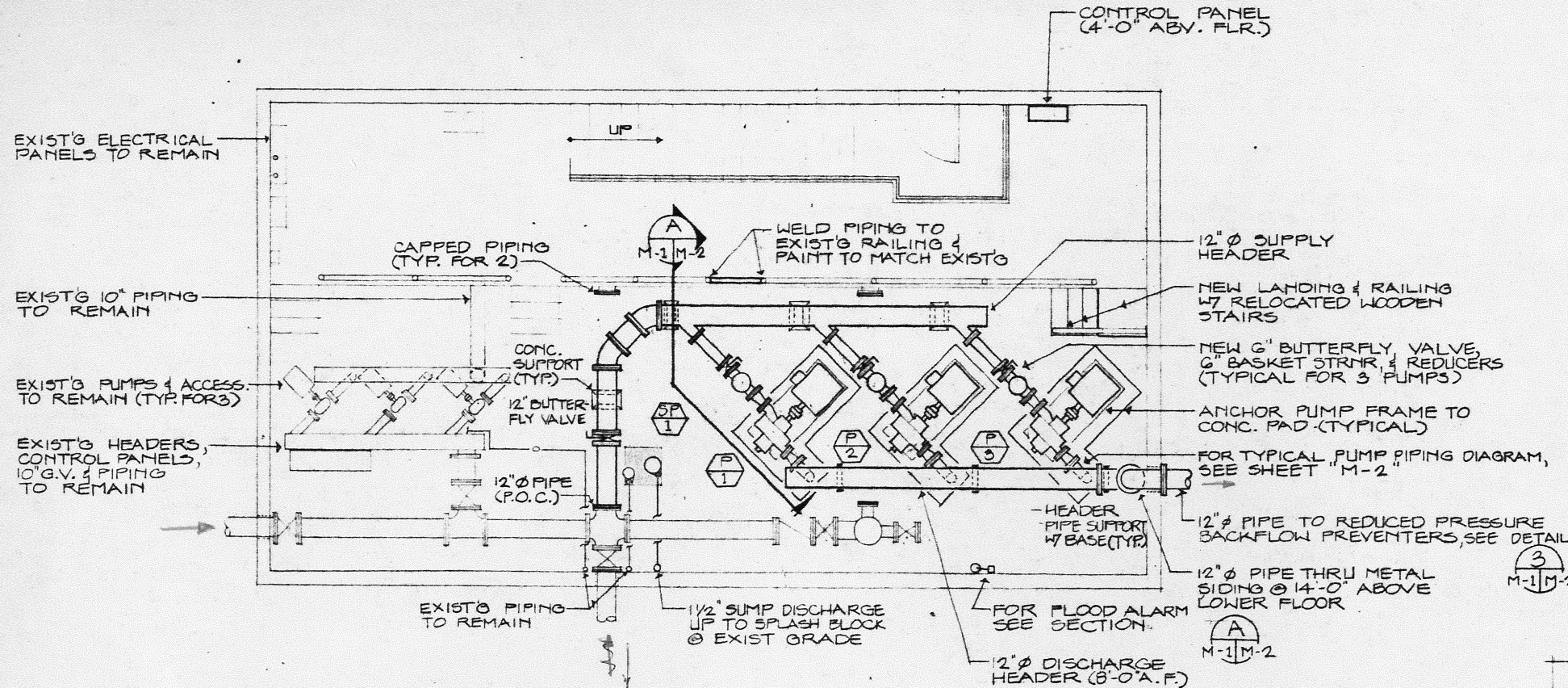
UNIT NO	GPM	TDH FT	EFF. %	RPM	HP	VOLTS	PHASE	HERTZ
1, 2, 3	600	400	71	1750	100	460	3	60

HORIZONTAL FLEXIBLE COUPLING SPLIT CASE, DOUBLE SUCTION, MULTI-STAGE, BRONZE FITTED CENTRIFUGAL TYPE W7 MECHANICAL SEALS, BRONZE IMPELLER, STEEL SHAFT, AND HIGH EFFICIENCY MOTOR W7 PUMP BASE

**SUMP PUMP**

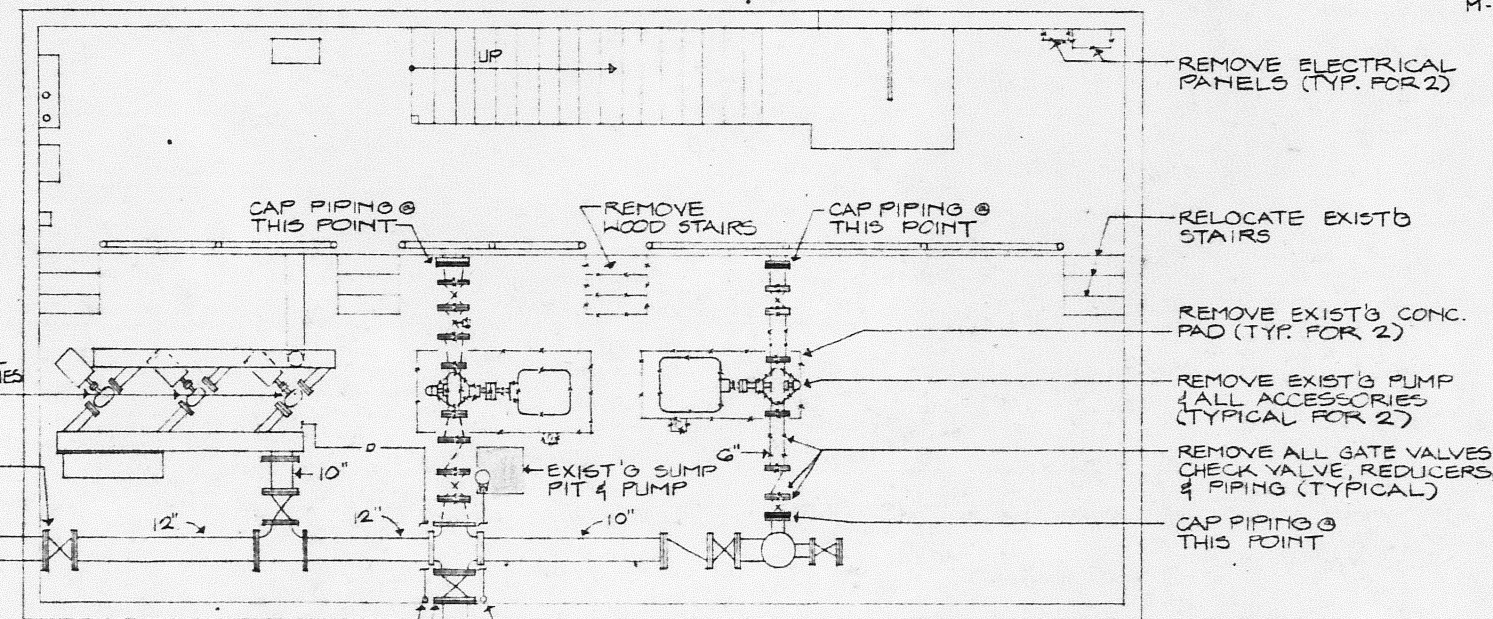


UNIT NO	GPM	TDH FT	HP	RPM	VOLTS	PHASE	HERTZ	REMARKS
1	80	20	1 1/2	3450	240	1	60	AURORA SERIES 510, #H55 2541



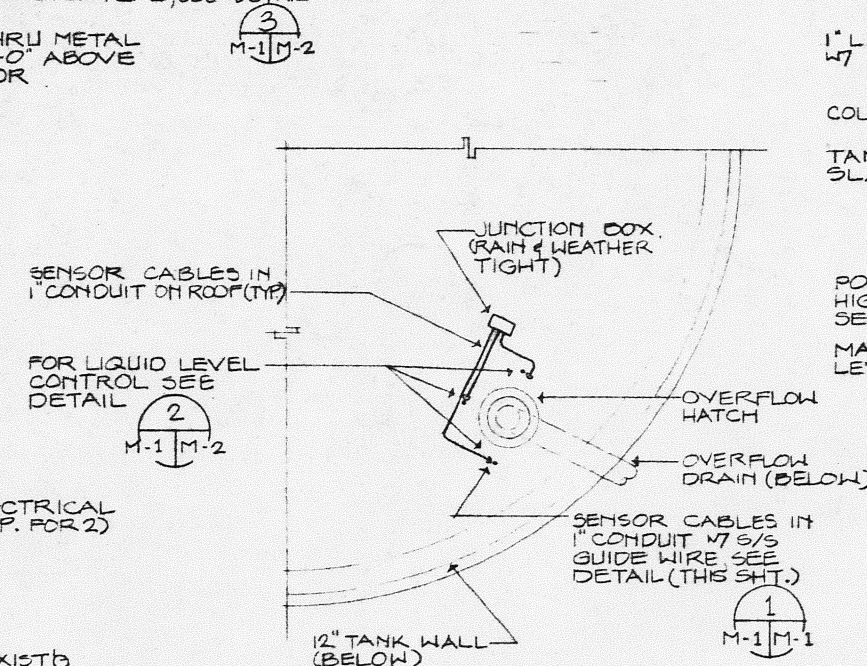
**GROUND FLOOR PLAN**

SCALE : 1/4" = 1'-0"



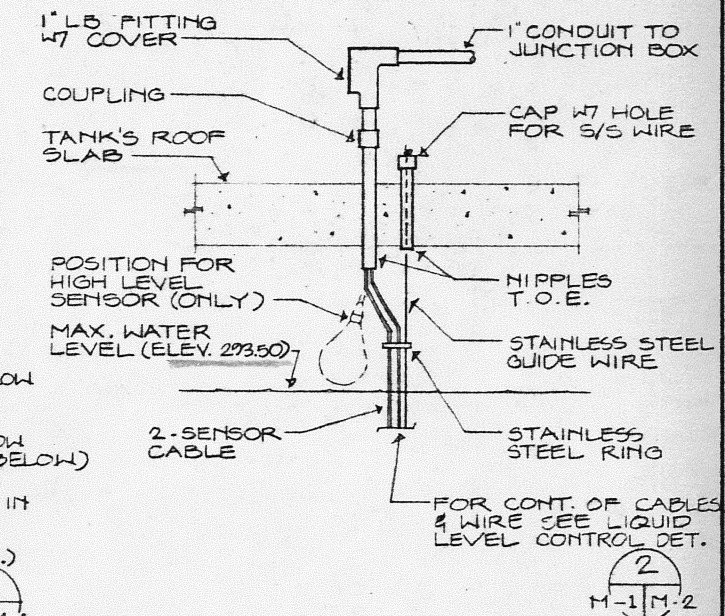
**DEMOLITION FLOOR PLAN**

SCALE : 1/4" = 1'-0"



**PARTIAL TANK ROOF PLAN**

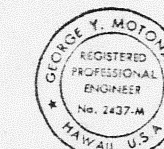
SCALE : 1/4" = 1'-0" @ CONC. RESERVOIR TANK



**TYP. PENETRATION DET.**

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

**AS-BUILT**

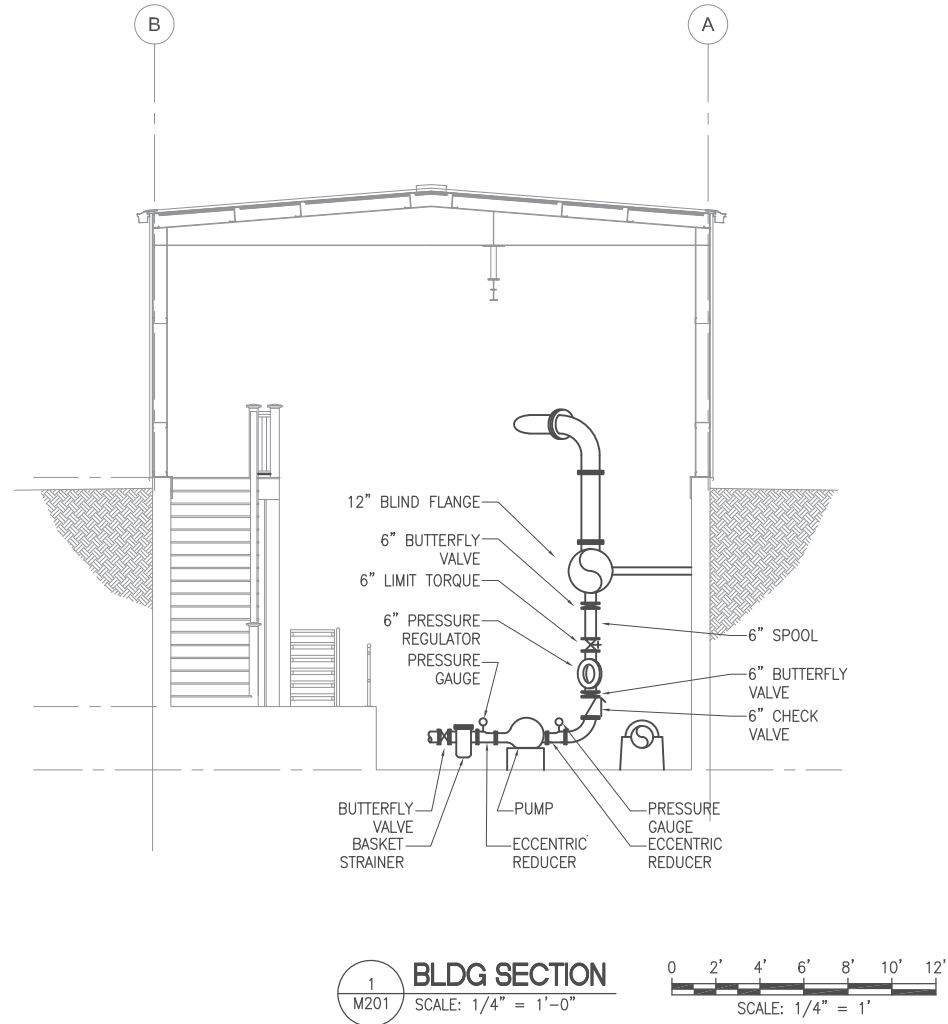


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

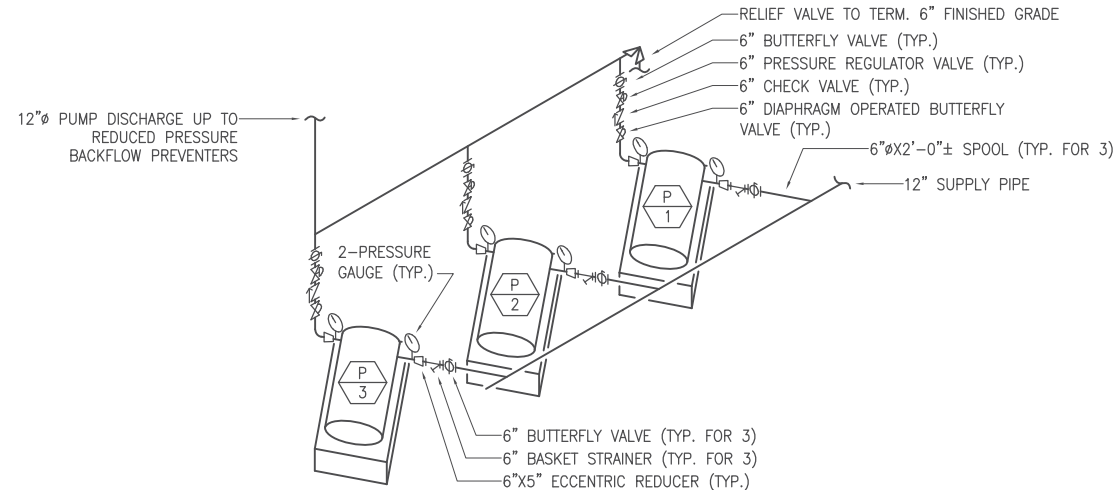
MP-2

SYM	DESCRIPTION	DATE	APP'D
REVISIONS			
STATE OF HAWAII			
DEPARTMENT OF LAND AND NATURAL RESOURCES			
DIVISION OF WATER AND LAND DEVELOPMENT			
KAHUKU AGRICULTURAL PARK			
KAHUKU, KOOLAULOA, OAHU, HAWAII			
FLOOR PLANS, PARTIAL ROOF PLAN, SCHEDULE & DETAIL			
DESIGNED: JL	SUBMITTED:		
DRAWN: FT	CHIEF DESIGN & CONSTR. ENGINEER		
CHECKED: GM	DATE:		
APPROVED:	MANAGER-CHIEF ENGINEER		FILE NO.
DATE:			





1 BLDG SECTION  
M201 SCALE: 1/4" = 1'-0"



2 TYPICAL PUMP PIPING DIAGRAM  
M201 SCALE: NOT TO SCALE

EQUIPMENT SCHEDULE:

PUMP SCHEDULE										
UNIT NO.	GPM	TDH FT	EFF. %	RPM	HP	VOLTS	PHASE	HERTZ	MANUFACTURER & MODEL OR APPROVED EQUAL	REMARKS
P1 P2 P3	600	400	90	1750	100	460	3	60	AURORA MODEL 421	HORIZONTAL FLEXIBLE COUPLING SPLIT CASE, DOUBLE SUCTION, MULTI-STAGE, BRONZE FITTED CENTRIFUGAL TYPE W/ MECHANICAL SEALS, BRONZE IMPELLER, STEEL SHAFT, AND HIGH EFFICIENCY MOTOR W/ PUMP BASE

SUMP PUMP SCHEDULE									
UNIT NO.	GPM	TDH FT	RPM	HP	VOLTS	PHASE	HERTZ	MANUFACTURER & MODEL OR APPROVED EQUAL	REMARKS
SP1	80	20	3430	1.0	240	1	60	HYDROMATIC MODEL SHEF 100	SUBMERSIBLE CENTRIFUGAL HIGH HEAD PUMP. AUTOMATIC OPERATION WITH FLOAT SWITCH.

**HiArch, LLC**  
 PO Box 25700  
 Honolulu, HI 96825-0700  
 Phone: (808) 738-7684  
 www.hiarch.com



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115, Subchapter 1 Definitions of the Hawaii Administrative Rules, Professional Engineers, Architects, Surveyors, and Landscape Architects.)

Signature: *R. Okuda* 4/30/22  
 expiration date of the license

NOTE: Contractor to check and verify conditions and dimensions at jobsite before proceeding with work.

REV NO	DESCRIPTION

DEPARTMENT OF AGRICULTURE  
 KAHUKU AGRICULTURAL PARK  
 REPLACE PUMPS  
 KAHUKU, KO'OLAULOA, OAHU, HI  
 TMK: 3-1-6-151-2

SECTION, PIPING DIAGRAM & SCHEDULE

PROJECT NO: 2017007  
 CONTRACT NO: 65312  
 DESIGNED BY: RSO  
 DRAWN BY: MEI  
 DATE: MARCH 2022  
 SHEET: M201  
 of Sheets