

State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION
Honolulu, Hawaii

BOARD OF LAND AND NATURAL RESOURCES

Dawn N.S. Chang
Chairperson

CONTRACT SPECIFICATIONS AND PLANS

JOB NO. C00TK91A
DIVISION OF AQUATIC RESOURCES
KAUAI WORK STATION SITE WORK
KAPAA, KAUAI, HAWAII

Civil Engineer:
Surveyor:
Electrical:


Bow Engineering and Development, Inc.
ControlPoint Surveying, Inc.
ECS, Inc.

April 2024


State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION
Honolulu, Hawaii

CONTRACT SPECIFICATIONS AND PLANS

JOB NO. C00TK91A
DIVISION OF AQUATIC RESOURCES
KAUAI WORK STATION SITE WORK
KAPAA, KAUAI, HAWAII

Approved: 

BRIAN J. NEILSON
Administrator
Division of Aquatic Resources

Approved: 

CARTY S. CHANG, P.E.
Chief Engineer
Engineering Division

April 2024

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PLANS (Bound Separately)

DEPARTMENT OF LAND AND NATURAL RESOURCES INTERIM GENERAL
CONDITIONS, DATED OCTOBER 1994 (Bound Separately)

NOTICE TO BIDDERS
(Chapter 103D, HRS)

COMPETITIVE BIDS for Job No. C00TK91A DAR Kaua`i Work Station Site Work, Kapa`a, Kaua`i, Hawai`i shall be submitted to the Department of Land and Natural Resources, Engineering Division on the specified date and time through the Hawaii State e-Procurement (HIePRO). HIePRO is accessible through the State Procurement Office website at www.spo.hawaii.gov.

The Department of Land and Natural Resources Interim General Condition, dated October 1994, as amended, and the General Conditions –AG008, latest revision shall be made part of the specifications.

The project is located at the Waika`ea Boat Ramp, which is to the South of Waika`ea Canal. Access to the site is via Kalaloku Road.

The work shall consist of a new water lateral and submeter, new electrical service, and a new chainlink perimeter fence and rolling gate

To be eligible to submit a bid, the Bidder must possess a valid State of Hawaii Contractor's license classification A.

The estimated cost of construction is \$290,000.

The award of the contract, if it be awarded, will be subject to the availability of funds.

Since the estimated cost of construction is \$250,000 or more, the apprenticeship agreement preference pursuant to Hawaii Revised Statutes §103-55.6 (ACT 17, SLH 2009) shall apply.

Should there be any questions, please refer to the HIePRO solicitation.

INFORMATION AND INSTRUCTIONS TO BIDDERS

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INFORMATION AND INSTRUCTIONS TO BIDDERS

- A. PROJECT LOCATION AND SCOPE OF WORK: The project location and scope of work shall be as generally described in the Notice to Bidders.
- B. PROPOSALS: Bidders shall submit their bid, including the completed proposal form, bid bond, and any other documents required by the solicitation as part of their bid through the State of Hawaii e-Procurement System (HIePRO). See Item D, PROPOSAL FORM.
- 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 and are referred to hereafter as the General Conditions.
- D. PROPOSAL FORM: **The Bidders shall fill out and upload the electronic copy of the proposal form to the HIePRO website when submitting the bid. Bid Proposals shall not be mailed, faxed or delivered to the State, unless requested to do so after the designated closing date. The successful Bidder shall fill out and print a hard copy of the proposal form, sign and submit the form with the contract award package.**
- 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 Land and Natural Resources (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.

- 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 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, 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 the plans and specifications 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 laborers and mechanics 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 Land and Natural Resources 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 the construction of 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 for review and approval. After the Engineer approves the as-built drawings, the contractor shall submit an 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. FIELD OFFICE AREA FOR DEPARTMENT: When indicated in the Proposal, the Contractor shall provide a housed working area of at least 100 square feet adjacent to the Contractor's office for the Department's use. This area will be used by the Engineer to perform tests and to store equipment. As a minimum, the field office shall include the following: standard sized office desk and chair, lighting, ventilation, window-type air conditioning rated at 5,000 BTU, door and window with locking hardware, electrical outlets, and working communications facilities (a cellular telephone is acceptable). The Department will pay for all long distance toll charges made by the Engineer.
- DD. 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.
- EE. 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.
- FF. 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.

GG. 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 LAND AND NATURAL RESOURCES
ENGINEERING DIVISION
State of Hawaii

Job No. C00TK91A
Division of Aquatic Resources
Kauai Work Station Site Work
Kapaa, Kauai, Hawaii

_____, 20__

Chief Engineer
Engineering Division
Department of Land and Natural Resources
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 construct a new water lateral, new electrical service, and a new chainlink perimeter fence and rolling gate, as required or called for in this Proposal, all according to the true intent and meaning of the Notice to Bidders, Information and Instructions to Bidders, Proposal, Detailed Specifications, Interim General Conditions, Plans, and any and all addenda for:

Job No. C00TK91A
Division of Aquatic Resources
Kauai Work Station Site Work
Kapaa, Kauai, Hawaii

on file in the office of the Engineering Division for the TOTAL BASE BID (Items 1 to 13) of:

_____ Dollars (\$ _____)

and will fully complete all work under this contract within 120 consecutive calendar days from the date of written notice to proceed, including date of said order, said total sum being itemized on the following pages.

PROPOSAL

Item No.	Quantity	Unit	Description	Unit Price	Table
<u>BASE BID</u>					
1.	1	LS	Demolition Work; to include demolition, hauling & disposal as required to construct new improvements.		\$
2.	1	LS	Best management practices and erosion control measures in accordance with the project plans, specifications, and permitting documents including a stabilized entrance, concrete wash basin, and filter socks		\$
3.	1	LS	Trenching & backfill, grassing, as required to construct new improvements		\$
4.	402	LF	6' High Chainlink Fence	\$	\$
5.	1	EA	6' High Rolling Gate	\$	\$
6.	24	SF	Concrete Strip for Rolling Gate	\$	\$
7.	1	CY	6" Base Course for Concrete Strip	\$	\$
8.	1	LS	Water System		\$
9.	1	LS	Powerline (incidental costs)		\$
10.	Allowance		Field Office		\$ 10,000.00
11.	Allowance		KIUC Service Charges		\$ 60,000.00
12.	1	LS	Project Sign		\$
Subtotal Base Bid (Items 1-12)					
13.	1	LS	Mobilization and Demobilization (not to exceed 10% of the Subtotal Base Bid)		\$
Total Base Bid (Items 1-13)					\$

Note:

- Any unused portion of the Allowance items shall remain with the State upon completion of the project.

RECYCLED PRODUCTS PREFERENCE

This project allows a 10% price preference for recycled products in accordance with HRS 103D-1005. Please indicate your selection of recycled or non-recycled product by indicating its cost FOB jobsite unloaded in the schedule below, including applicable General Excise & Use Taxes.

<u>DESCRIPTION</u>	<u>RECYCLED PRODUCT COST</u>	<u>NONRECYCLED PRODUCT COST</u>
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____

The bidder requesting a recycled product preference shall also complete and submit the form "CERTIFICATION OF RECYCLED CONTENT" as shown in the Interim General Conditions and provide all supporting information with this proposal. Additional information may be requested to qualify a product.

The following definitions are applicable to the CERTIFICATION OF RECYCLED CONTENT form:

"Post-consumer recovered material" means any product used by a consumer, including a business that purchases the material, that has served its intended end use, and that has been separated or diverted from the solid waste stream for the purpose of use, reuse, or recycling.

"Product" includes materials, manufactures, supplies, merchandise, goods, wares, and foodstuffs.

"Recovered material" means waste material and by-products that have been separated, diverted, or removed from the solid waste stream after a manufacturing process for the purpose of use, reuse, or recycling. Recovered material does not include those materials and by-products that are generated and normally reused on-site or within original manufacturing processes (such as mill broke, in the case of paper products).

"Recycled content" means the percentage of a product composed of recovered material, or post-consumer recovered material, or both.

"Recycled product" means a product containing recovered material, or post-consumer recovered material, or both.

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

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, 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 13) selected by the Board of Land and Natural Resources. Write the total of bid items 1 to 13 on page P-1.

It is understood and agreed that the Board of Land and Natural Resources 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 Land and Natural Resources to hold all bids received for a period of one hundred eighty (180) 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 eighteen (18) months 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 HIePRO bid due date and time, 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 50/100 DOLLARS (\$150.00) 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 Land and Natural Resources 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 (DLNR, Engineering Division) 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.

RECEIPT OF ADDENDA

The bidder also acknowledges receipt of any and all addenda issued by the Engineering Division, by recording the date of receipt of the respective addenda in the space provided below:

<u>Addendum</u>	<u>Date Received</u>	<u>Addendum</u>	<u>Date Received</u>
No. 1	_____	No. 5	_____
No. 2	_____	No. 6	_____
No. 3	_____	No. 7	_____
No. 4	_____	No. 8	_____

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

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

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.

COMPLETE FIRM NAME OF JOINT CONTRACTOR OR SUBCONTRACTOR	NATURE AND SCOPE OF WORK TO BE PERFORMED

Enclosed herewith is a:

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

(Cross Out Those Not Applicable)

_____ Dollars (\$ _____)

as required by law.

Respectfully submitted,

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. Legal tender; or
3. 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.
4. Please attach to this page evidence of the authority of this officer to submit bids on behalf of the Company and also the names and residence addresses of all officers of the Company.
5. Fill in all blank spaces with information asked for or bid may be invalidated. PROPOSAL MUST BE INTACT, MISSING PAGES MAY INVALIDATE YOUR BID.

End of Proposal

SPECIAL PROVISIONS

Amend INTERIM GENERAL CONDITIONS, dated October 1994, as follows:

Section 2 – Proposal Requirements and Conditions

1. **AMEND** Section 2.1 Qualification of Bidder with the following:

Written Notice of Intent to Bid or Offer: A written Notice of Intent to Bid is not required for the Solicitation.

Standard Qualification Questionnaire: Bidders may be required to complete a standard qualifications questionnaire. When requested, the information shall be furnished within two working days or longer at the discretion of the Engineer. 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.

Hawaii Business or Compliant Non-Hawaii Business Requirement: Bidders 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. A certified letter is not required prior to bid opening.

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 (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.

Hawaii Compliance Express. 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 that bidder’s status is compliant with requirements of §103D-310(c), HRS, 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.

2. **ADD** Section 2.4a, Pre-Bid Conferences

Required Pre-bid Conferences: For construction and design-build projects with an estimated value of \$500,000 or more and solicited under the competitive sealed bid method (103D-302 HRS); and for construction and design-build projects with an estimated value of \$100,000 or more and solicited under the competitive sealed proposal method (103D-303 HRS); a pre-bid conference is required.

Other Pre-Bid Conferences: The Department may require a pre-bid conference for construction or design-build projects that are below the dollar threshold listed in above or when projects have special or unusual requirements.

Other Conditions: The Department may require the prospective Bidders to make a physical inspection of the project site and make attendance at the pre-bid conference a condition for submitting an offer.

Nothing stated at the pre-bid conference shall change the solicitation unless a change is made by written addendum.

3. **DELETE** Section 2.5, Addenda and Interpretations, in its entirety and replace with the following:

“Discrepancies, omissions, or doubts as to the meaning of drawings and specifications should be communicated using the question and answer section on the HIEPRO solicitation for interpretation and must be received in the time frame set in the HIEPRO solicitation. Any interpretation, if made and any supplemental instructions will be in the form of written addenda to the plans and specifications and made available prior to the offer due date. It shall be the prospective bidder’s sole responsibility to verify and obtain any said addenda. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the contract documents.”

Section 3 – Award and Execution of Contract

1. **AMEND** Section 3.3, Award of Contract, by deleting “sixty (60)” and replacing with “one hundred eighty (180)” in the first paragraph.

2. **AMEND** Section 3.3, Award of Contract, by adding the following after the first paragraph:

“If the contract is not awarded within the one hundred eighty (180) days, the Department may request the successful Bidder to extend the time for the acceptance of its bid. The Bidder may reject such a request without penalty; and in such case, the Department may at its sole discretion make a similar offer to the next lowest responsive and responsible bidder and so on until a bid is duly accepted or until the Department elects to stop making such requests.”

3. **AMEND** Section 3.9, Notice to Proceed, by replacing the last paragraph with the following:

In the event the Notice to Proceed is not issued within three hundred and sixty-five (365) calendar days after the date of bid opening, the Contractor may submit a claim for increased labor and materials costs (but not overhead costs). The claim shall be for labor and material

costs incurred after 365 days and the full duration of the contract time allowed for the performance of the work (as specified on Page P-1 of the [Bid] PROPOSAL) have elapsed. Such claims shall be accompanied with the necessary documentation to justify the claim. No payments will be made for escalation costs that are not fully justified as determined by the State.

4. **ADD** Section 3.10, Protests:

“3.10 PROTESTS—Pursuant to Section 103D-701, Hawaii Revised Statutes, an actual or prospective offeror who is aggrieved in connection with the solicitation or award may submit a protest. Any protest shall be submitting in writing to the Chairperson, Department of Land and Natural Resources, 1151 Punchbowl Street, Honolulu, Hawaii 96813, or designee as specified in the solicitation.

A protest shall be submitted in writing within five (5) working days after the aggrieved person knows or should have known the facts giving rise thereto; provided that a protest based upon the content of the solicitation shall be submitted in writing prior to the date set for receipt of offers. Further provided that a protest of an award or proposed award shall be submitted within five (5) working days after the posting of the award of the contract.

The notice of award, if any, resulting from this solicitation shall be posted on the HIePRO website.

Section 5 – Control of Work

AMEND Section 5.8 Value Engineering Incentive by deleting “\$100,000” and replacing with “\$250,000” in the first paragraph.

Section 6 – Substitution of Materials and Equipment

ADD the following to Section 6.3 Sub-paragraph b:

4. If the substitution meets all the requirements of the specifications and plans.

Section 7 – Prosecution and Progress

1. **DELETE** Section 7.2d in its entirety and replace with the following:

“d. Proof of Insurance Coverage

A Certificate of Insurance or other documentary evidence, to the satisfaction of the Engineer, that the Contractor has in place all insurance coverage required by the contract. The Certificate of Insurance shall contain wording which identifies the Project number and Project title for which the certificate of insurance is issued. Refer to the following for insurance requirements:

1. Insurance Requirements

- (a) Obligation of Contractor** - Contractor shall not commence any work until it obtains, at its own expense, all required herein insurance. Such insurance must have the approval of the Department as to limit, form and amount and must be maintained with a company authorized by laws of the State to issue such insurance in the State of Hawaii. Coverage by a “Non-Admitted” carrier is permissible provided the carrier has a AM Best’s Rating of “A-VII” or better.

- (b) All insurance described herein will be maintained by the Contractor for the full period of the contract and in no event will be terminated or otherwise allowed to lapse prior to written certification of final acceptance of the work by the Department.
- (c) Certificate(s) of Insurance acceptable to the Department shall be filed with the Engineer prior to commencement of the work. Certificates shall identify if the insurance company is a “captive” insurance company or a “Non-Admitted” carrier to the State of Hawaii. The Best’s Rating must be stated for the “Non-Admitted” carrier. Certificates shall contain a provision that coverages afforded under the policies will not be canceled or changed until at least thirty (30) days written notice has been given to the Engineer by registered mail. The insurance policies shall name the State of Hawaii, its officers and employees as an additional insured and such coverage shall be noted on the certificate. Should any policy be canceled before final acceptance of the work by the Department, and the Contractor fails to immediately procure replacement insurance as specified, the Department, in addition to all other remedies it may have for such breach, reserves the right to procure such insurance and deduct the cost thereof from any money due to the Contractor.
- (d) Nothing contained in these insurance requirements is to be construed as limiting the extent of Contractor’s responsibility for payment of damages resulting from its operations under this contract, including the Contractor’s obligation to pay liquidated damages, nor shall it affect the Contractor’s separate and independent duty to defend, indemnify and hold the Department harmless pursuant to other provisions of this contract. In no instance will the Department’s exercise of an option to occupy and use completed portions of the work relieve the Contractor of its obligation to maintain the required insurance until the date of final acceptance of the work.
- (e) All insurance described herein shall be primary and cover the insured for all work to be performed under the contract, all work performed incidental thereto or directly or indirectly connected therewith, including traffic detour work or other work performed outside the work area, and all change order work.
- (f) The Contractor shall, from time to time, furnish the Engineer, when requested, satisfactory proof of coverage of each type of insurance required or a copy of the actual policies covering the work. Failure to comply with the Engineer’s request may result in suspension of the work, and shall be sufficient grounds to withhold future payments due the Contractor and to terminate the contract for Contractor’s default.
- (g) If the Contractor is self-insured, it shall furnish, upon the request and the satisfaction of the Engineer, any documentation to demonstrate the ability to self-insure itself. The Engineer, from time to time, can conduct an audit to determine the ability of the Contractor to be self-insured. Failure to comply with the Engineer’s request will be considered a material breach of the contract, and at the discretion of the Engineer, may be sufficient grounds to terminate the contract, suspend any work or withhold future payments.
- (h) It is the responsibility of the Contractor to notify the Department of any changes to its insurance policies or if the Contractor receives a notice of cancellation of any of its insurance policies. The Contractor will immediately provide written notice to the Department should the insurance policies evidenced on its Certificate of Insurance form be cancelled, limited in scope, or not renewed upon expiration.

2. Types of Insurance - The Contractor shall purchase and maintain insurance described below which shall provide coverage against claims arising out of the Contractor's operations under the contract, whether such operations be by the Contractor itself or by the subcontractor or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.

- (a) **Worker's Compensation.** The Contractor and all subcontractors shall obtain worker's compensation insurance for all persons whom they employ or may employ in carrying out the work under this contract. This insurance shall be in strict conformity with the requirements of the most current and applicable State of Hawaii Worker's Compensation Insurance laws in effect on the date of the execution of this contract and as modified during the duration of the contract.
- (b) **Commercial General Liability.** The Contractor shall obtain General Liability insurance with a limit of not less than \$1,000,000 per occurrence and \$2,000,000 aggregate. The insurance policy shall contain the following clauses: 1) "The State of Hawaii is added as an additional insured as respects to operations performed for the State of Hawaii."; and 2) "It is agreed that any insurance maintained by the State of Hawaii will apply in excess of, and not contributed with, insurance provided by this policy." The required limit of insurance may be provided by a single policy or with a combination of primary and excess policies."
- (c) **Comprehensive Automobile Liability.** The Contractor shall obtain Auto Liability insurance covering all owned, non-owned and hired autos with a combined single Limit of not less than \$1,000,000 per accident for bodily injury and property damage. The insurance policy shall contain the following clauses: 1) "The State of Hawaii is added as an additional insured as respects to operations performed for the State of Hawaii."; and 2) "It is agreed that any insurance maintained by the State of Hawaii will apply in excess of, and not contributed with, insurance provided by this policy." The required limit of insurance may be provided by a single policy or with a combination of primary and excess policies.

Furthermore, the Contractor's commercial general liability insurance and automobile liability insurance shall include coverage for bodily injury, sickness, disease or death of any person, arising directly or indirectly out of, or in connection with, the performance of work under this contract.

The Contractor's property damage liability insurance shall provide for all damages arising out of injury to or destruction of property of others including the Department's, arising directly or indirectly out of or in connection with the performance of the work under this contract including explosion or collapse.

The Contractor shall either:

- i. Require each of its subcontractors to procure and to maintain during the life of its subcontract, subcontractors' comprehensive general liability, automobile liability and property damage liability insurance of the type and in the same amounts specified herein; or
- ii. Insure the activities of its subcontractors in its own policy.

The Contractor will be permitted, in cooperation with insurers, to maintain a self-insured

retention for up to 25% of the per occurrence combined single limits of the commercial general liability and the automobile liability policies. The existence of the self-insured retention must be noted on the certificate of insurance coverage submitted to the Department or else it will be understood that the insurer is providing first dollar coverage for all claims. For all claims within the self-insured retention amount, the rights, duties and obligations between the Contractor and the Department shall be identical to that between a liability insurer and the Department, as an additional insured, as if there was no self-insured retention.

- (d) **Builder's Risk Insurance.** Unless included in the Specifications of this project, the Contractor shall not be required to provide builder's risk insurance. If required as noted in the Specifications, builder's risk insurance shall be provided during the progress of work and until final acceptance by the Department upon completion of the contract. It shall be "All Risk" (including but not limited to earthquake, windstorm and flood damage) completed value insurance coverage on all completed work and work in progress to the full replacement value thereof. Such insurance shall include the Department as additional name insured. The insurance policy shall contain the following clauses: 1) "The State of Hawaii is added as an additional insured as respects to operations performed for the State of Hawaii."; and 2) "It is agreed that any insurance maintained by the State of Hawaii will apply in excess of, and not contributed with, insurance provided by this policy." The required limit of insurance may be provided by a single policy or with a combination of primary and excess policies.

The Contractor shall submit to the Engineer for its approval all items deemed to be uninsurable. The policy may provide for a deductible in an amount of up to 25% of the amount insured by the policy. With respect to all losses up to any deductible amount, the relationship between the Contractor and the Department shall be that of insurer and additional insured as if no deductible existed".

2. **DELETE** Section 7.16 in its entirety and replace with the following:

"RESPONSIBILITY FOR DAMAGE CLAIMS; INDEMNITY – The Contractor shall indemnify the State and the Department against all loss of or damage to the State's or the Department's existing property and facilities arising out of any act or omission committed in the performance of the work by the Contractor, any subcontractor or their employees and agents. Contractor shall defend, hold harmless and indemnify the Department and the State, their employees, officers and agents against all losses, claims, suits, liability and expense, including but not limited to attorneys' fees, arising out of injury to or death of persons (including employees of the State and the Department, the Contractor or any subcontractor) or damage to property resulting from or in connection with performance of the work and not caused solely by the negligence of the State or the Department, their agents, officers and employees. The State or the Department may participate in the defense of any claim or suit without relieving the Contractor of any obligation hereunder. The purchase of liability insurance shall not relieve the Contractor of the obligations described herein.

The Contractor agrees that it will not attempt to hold the State and its Departments and Agencies and their officers, representatives, employees or agents, liable or responsible for any losses or damages to third parties from the action of the elements, the nature of the work to be done under these specifications or from any unforeseen obstructions, acts of God, vandalism, fires or encumbrances which may be encountered in the prosecution of the work.

The Contractor shall pay all just claims for materials, supplies, tools, labor and other just claims against the Contractor or any subcontractor in connection with this contract and the surety bond will not be released by final acceptance and payment by the Department unless all such claims are paid or released. The Department may, but is not obligated to, withhold or retain as much of the monies due or to become due the Contractor under this contract considered necessary by the Engineer to cover such just claims until satisfactory proof of payment or the establishment of a payment plan is presented.

The Contractor shall defend, indemnify and hold harmless the State and its Departments and Agencies and their officers, representatives, employees or agents from all suits, actions or claims of any character brought on account of any claims or amounts arising or recovered under the Worker's Compensation Laws or any other law, by-law, ordinance, order or decree.

Section 8 – Measurement and Payment

1. **DELETE** Section 8.7a in its entirety and replace with the following:

- a. Tax Clearances from the State of Hawaii Department of Taxation and Internal Revenue Service, subject to section 103D-328, HRS, current within two months of issuance date indicating that all delinquent taxes levied or accrued under State Statutes against the contractor have been paid.

2. **ADD** Section 8.7d, Certificate of Compliance:

- d. A Certification from the Contractor affirming that the Contractor has, as applicable, remained in compliance with all laws as required by Section 103D-310, HRS, and Section 3-122-112, HAR. A contractor making a false affirmation shall be suspended and may be debarred pursuant to section 103D-702, HRS.
 1. Certification of Compliance for Final Payment, State Procurement Office Form-22. Must be Signed Original.

3. **ADD** Section 8.7e, Hawaii Compliance Express:

- e. In lieu of submitting the tax clearances from Taxation and IRS, and SPO Form -22, the Contractor may choose to use the Hawaii Compliance Express as described on page SP-1 of this Special Provisions.

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DIVISION 1 – GENERAL REQUIREMENTS

SECTION 01019 – GENERAL SPECIFICATIONS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

Work shall consist of furnishing all labor, tools, materials and equipment necessary and required to construct in place complete all work as indicated on the drawings and as specified herein.

1.2 GENERAL

- A. Examination of Premises: The Contractor shall contact the Engineer and obtain permission before visiting the site.
- B. All lines and grades shall be established by a licensed surveyor, or licensed Civil Engineer, registered in the State of Hawaii. The Contractor shall submit evidence of current and valid registration.
- C. Notices: The Contractor shall notify the Engineer and give at least three (3) working days notice before starting any work.
- D. Disruption of Utility Services: All work related to the temporary disconnection of electrical system shall be pre-arranged with the Engineer so that any disruption of such services will be kept to a minimum. In the event temporary power hook-up is required, the Contractor shall provide the necessary services.
- E. Contractor's Operations
 - 1. The Contractor must employ, insofar as possible, such methods and means of carrying out the work so as not to cause any interruption or interference to the facility's operations. Where the Contractor's operations would result in interruptions which would hamper the operations of the facilities, the Contractor shall rearrange the schedule of work accordingly.
 - 2. The Contractor shall maintain safe passageway to and from the facility for the user agency personnel and the public at all times.

F. Lead Paint

1. When the project includes paint to be disturbed that was applied prior to 1980, it shall be assumed to contain lead. The Contractor shall inform its employees, subcontractors, and all other persons engaged in the project that lead containing paints are present in the existing buildings at the job site and to follow the requirements of the Department of Labor and Industrial Relations, Division of Occupational Safety and Health, Title 12, Subtitle 8, Chapter 148, Lead Exposure in Construction, Hawaii Administrative Rules (Chapter 12-148, HAR).

G. Parking Policy for Contractor

1. The Contractor and its employees will not be allowed to park in zones assigned to facility personnel.
2. Areas to be used by the Contractor shall be as designated by the Engineer. Any lawn damaged by the Contractor shall be restored as instructed by the Engineer at no cost to the State.

H. Toilet Accommodations: The Contractor may use the existing toilet facilities if so designated by the Engineer; however, it is the Contractor's responsibility to keep same clean and in a sanitary condition at all times.

I. Protection of Property: The Contractor shall continually maintain adequate protection of all its work from damage and shall protect all property, including but not limited to buildings, equipment, furniture, grounds, vegetation, material, utility systems located at and adjoining the job site. The Contractor shall repair, replace or pay the expense of repair of damages resulting from its operations.

J. Use of Power Driven Equipment: The Contractor is cautioned to take all necessary safety precautions to protect the facility personnel, and the public whenever power driven equipment is used.

K. Safety: The Contractor shall carefully read and strictly comply with the requirements of the Hawaii Occupational Safety and Health Law, Chapter 396, Hawaii Revised Statutes, as amended, is applicable and made a part of the Contract.

L. Clean Up Premises: The Contractor shall clean up and remove from premises all debris accumulated from operations as necessary or as directed. See also Section 7.25 of the General Conditions.

M. Responsibility

1. The State will hold the Contractor liable for all the acts of Subcontractors and shall deal only with the prime Contractor in matters pertaining to other trades employed on the job. The Contractor shall be responsible for coordinating the work of all trades on the job.
2. Should the Contractor discover any discrepancy in the plans or specifications, the Contractor shall immediately notify the Engineer before proceeding any further with the work, otherwise, the Contractor will be held responsible for any cost involved in correction of work placed due to such discrepancy.

N. Cooperation With Other Contractors: The State reserves the right at any time to contract for or otherwise perform other or additional work within the contract zone limits of this Contract. The Contractor of this project shall, to the extent ordered by the State, conduct its work so as not to interfere with or hinder the progress or completion of the work performed by other contractors.

O. Division of the Work: The Divisions and Sections into which these Specifications are divided shall not be considered an accurate or complete segregation of work by trades. This also applies to all work specified within each Section.

P. Drawings and Specifications

1. The Contractor shall not make alterations in the drawings and specifications. In the event the contractor discovers any errors or discrepancies, the Contractor shall immediately notify the Engineer in accordance with the General Conditions.
2. Where devices, or items, or parts thereof are referred to in the singular, it is intended that such reference shall apply to as many such devices, items or parts as are required to properly complete the work.
3. Specifications and drawings are prepared in abbreviated form and include incomplete sentences. Omission of words or phrases such as "the Contractor shall", "as shown on the drawings", "a", "an", and "the" are intentional. Omitted words and phrases shall be provided by inference to form complete sentences.

Q. Required Submittals

1. Required submittals as specified in the Technical Sections of these specifications include one or more of the following: Shop drawings; color samples; material samples; technical data; schedules of materials; schedules of operations; guarantees; operating and maintenance manuals; and as-built drawings.
2. The Contractor shall make a comprehensive list of the required submittals, by

Specification Section, and submit this list to the Engineer within 15 days after notice to proceed.

3. As-Built Drawings: When as-built drawings are required for submittal, the following shall apply:
 - a. 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.
 - b. All deviations from alignments, elevations and dimensions which are stipulated on the plans shall be recorded in red on the as-built drawings.
 - c. The following procedure shall be followed:
 - 1) Immediately after these changes are constructed in place, the Contractor shall record them on the field office plans.
 - 2) Within two weeks after final inspection of the project, the Contractor shall transfer the changes marked on the field office plans onto a clean copy of plans using a red pencil. Any deletions shall be so noted and redrawn as necessary. The Contractor shall stamp or mark the tracings "AS-BUILT", and also sign and date each drawing so marked.
 - 3) The Contractor shall submit the as-built drawings to the Engineer for review and approval. After the Engineer approves the as-built drawings, the Contractor shall submit an electronic copy in Adobe PDF format on CD ROM.
 - 4) Any as-built drawing which the Engineer determines does not accurately record the deviation shall be corrected by the State, and the Contractor shall be charged for the services.

END OF SECTION

SECTION 01090

STANDARD REFERENCES

PART 1 - GENERAL

Wherever used in the project, the following abbreviations will have the meanings listed:

<u>Abbreviation</u>	<u>Company</u>
AA	Aluminum Association Incorporated 818 Connecticut Avenue, N.W. Washington, D.C. 20006
AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol Street, N.W., Suite 225 Washington, D.C. 20001
ACI	American Concrete Institute P.O. Box 19150 Detroit, MI
AEIC	Association of Edison Illuminating Companies 51 East 42nd Street New York, NY 10017
AFBMA	Anti-Friction Bearing Manufacturer's Association 60 East 42nd Street New York, NY 10017
AGA	American Gas Association 8501 East Pleasant Valley Road Cleveland, OH 44131
AGMA	American Gear Manufacturer's Association 1330 Massachusetts Avenue, N.W. Washington, D.C.
AISC	American Institute of Steel Construction 101 Park Avenue New York, NY 10017

<u>Abbreviation</u>	<u>Company</u>
AISI	American Iron and Steel Institute 1000 16th Street, N.W. Washington, D.C. 20036
AITC	American Institute of Timber Construction 333 West Hampden Avenue Englewood, CO 80110
AMCA	Air Moving and Conditioning Association, Inc. 30 West University Drive Arlington Heights, IL 60004
ANSI	American National Standards Institute, Inc. 1430 Broadway New York, NY 10018
APA	American Plywood Association 1119 A Street Tacoma, WA 98401
API	American Petroleum Institute 1801 K Street N.W. Washington, DC 20006
ARI	Air-Conditioning and Refrigeration Institute 1814 North Fort Myer Drive Arlington, VA 22209
ASCE	American Society of Civil Engineers 345 East 47th Street New York, NY 10017
ASCII	American Standard Code for Information Interchange United States of America Standards Institute 1430 Broadway New York, NY 10018

<u>Abbreviation</u>	<u>Company</u>
ASE Code	American Standard Safety Code for Elevators, Dumbwaiter and Escalators American National Standards Institute 1430 Broadway New York, NY 10018
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers United Engineering Center 345 East 47th Street New York, NY 10017
ASME	American Society of Mechanical Engineers 345 East 47th Street New York, NY 10017
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103
AWPA	American Wood Preservers Association 1625 Eye Street Washington, DC 20006
AWS	American Welding Society 2501 N.W. 7th Street Miami, FL 33125
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235
CBM	Certified Ballast Manufacturers 2120 Keith Building Cleveland, OH 44115
CMAA	Crane Manufacturers Association of America, Inc. (Formerly called: Overhead Electrical Crane Institute - OECI) 1326 Freeport Road Pittsburgh, PA 15238

<u>Abbreviation</u>	<u>Company</u>
CRSI	Concrete Reinforcing Steel Institute 180 North La Salle Street Chicago, IL 60601
CSA	Canadian Standards Association 178 Rexdale Boulevard Rexdale, Ontario, M9W IR3, Canada
DEMA	Diesel Engine Manufacturer's Association 122 East 42nd Street New York, NY 10017
DIS	Division of Industrial Safety California Department of Industrial Relations 2422 Arden Way Sacramento, CA 95825
EEI	Edison Electric Institute 90 Park Avenue New York, NY 10016
EIA	Electronic Industries Association 2001 Eye Street N.W. Washington, DC 20006
EJMA	Expansion Joint Manufacturer's Association 331 Madison Avenue New York, NY 10017
ESO	Electrical Safety Orders, California Administrative Code, Title 8, Chap. 4, Subarticle 5 Office of Procurement, Publications Section P.O. Box 20191 8141 Elder Creek Road Sacramento, CA 95820

<u>Abbreviation</u>	<u>Company</u>
FEDSPEC	Federal Specifications General Services Administration Specification and Consumer Information Distribution Branch Washington Navy Yard, Bldg. 197 Washington, DC 20407
FEDSTDS	Federal Standards (see FEDSPECS)
FM	Factory Mutual Research 1151 Boston-Providence Turnpike Norwood, MA 02062
HEI	Heat Exchange Institute 122 East 42nd Street New York, NY 10017
HI	Hydraulic Institute 1230 Keith Building Cleveland, OH 44115
IAPMO	International Association of Plumbing and Mechanical Officials 5032 Alhambra Avenue Los Angeles, CA 90032
ICBO	International Conference of Building Officials 5360 South Workman Mill Road Whittier, CA 90601
ICEA	Insulated Cable Engineers Association P.O. Box P South Yarmouth, MA 02664
IEEE	Institute of Electrical and Electronics Engineers, Inc. 345 East 47th Street New York, NY 10017

<u>Abbreviation</u>	<u>Company</u>
IES	Illuminating Engineering Society C/O United Engineering Center 345 East 47th Street New York, NY 10017
ISA	Instrument Society of America 400 Stanwix Street Pittsburgh, PA 15222
JIC	Joint Industrial Council 7901 Westpark Drive McLean, VA 22101
MILSPEC	Military Specifications Naval Publications and Forms Center 5801 Tabor Avenue Philadelphia, PA 19120
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. 127 Park Street, N.E. Vienna, VA 22180
NAAMM	National Association of Architectural Metal Manufacturers 100 South Marion Street Oak Park, IL 60302
NACE	National Association of Corrosion Engineers P.O. Box 986 Katy, TX 77450
NEC	National Electric Code National Fire Protection Association 470 Atlantic Avenue Boston, MA 02210
NEMA	National Electrical Manufacturer's Association 155 East 44th Street New York, NY 10017

<u>Abbreviation</u>	<u>Company</u>
NESC	National Electric Safety Code American National Standards Institute 1430 Broadway New York, NY 10018
NFPA	National Forest Products Association (Formerly called: National Lumber Manufacturer's Association) 1619 Massachusetts Avenue, N.W. Washington, DC 20036
OSHA	Occupational Safety and Health Act U.S. Department of Labor San Francisco Regional Office 450 Golden Gate Avenue, Box 36017 San Francisco, CA 94102
PPIC	The Plumbing & Piping Industry Council, Inc. Suite 402 510 Shatto Place Los Angeles, CA 90020
SAE	Society of Automotive Engineers 2 Pennsylvania Street New York, NY 10001
SAMA	Scientific Apparatus Makers Association One Thomas Circle Washington, DC 20005
SBCC	Southern Building Code Congress 1116 Brown-Marx Building Birmingham, AL 35203
SMACNA	Sheet Metal and Air Conditioning Contractors National Association, Inc. 8224 Old Courthouse Road Tysons Corner Vienna, VA 22180
SSPWC	Standard Specifications for Public Works Construction Building News, Inc. 3055 Overland Avenue Los Angeles, CA 90034

<u>Abbreviation</u>	<u>Company</u>
TEMA	Tubular Exchanger Manufacturer's Association 331 Madison Avenue New York, NY 10017
UBC	Uniform Building Code Published by ICBO
UL	Underwriters Laboratories Inc. 207 East Ohio Street Chicago, IL 60611
UMC	Uniform Mechanical Code Published by ICBO
UPC	Uniform Plumbing Code Published by IAPMO
USBR	Bureau of Reclamation U.S. Department of Interior Engineering and Research Center Denver Federal Center, Building 67 Denver, CO 80225
WWPA	Western Wood Products Association (Formerly called: West Coast Lumberman's Association - WCLA) Yeon Building Portland, CA 97204

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01100

ARCHAEOLOGICAL PROTECTION

PART 1 - GENERAL

- 1.1 This section covers the requirements for the protection and preservation of historical sites and values.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

- 3.1 **CONSTRUCTION METHOD:** Representatives of the State will from time to time examine the area as work proceeds. If historical values are noted, the State may order a halt to the work in the vicinity of the historical values until the State can examine further. The Contractor shall notify the State if he finds anything he suspects to be of historic significance and shall discontinue further work in the vicinity of the find until the State can examine the area. In either case, further work in the vicinity of such historical or suspected historical values may proceed only upon approval by the State. Such approval can be normally expected within one week and shall in no case require more than one month.

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.1 SUBMITTALS

A. Shop drawings shall be required for:

1. Any erosion control measures called for in the plans, specifications or by the Engineer.
2. Manufacturer's Data.
3. Certificates of Warranty.

1.2 CONTRACTOR'S SPECIAL RESPONSIBILITY FOR COORDINATING CONTRACTUAL WORK AND SUBMITTALS

A. The Contractor is responsible for the coordination of all contractual work and submittals.

B. The Contractor shall have a rubber stamp made up in the following format:

CONTRACTOR NAME

PROJECT: _____

JOB NO: _____

THIS SUBMITTAL HAS BEEN CHECKED BY THIS GENERAL CONTRACTOR. IT IS CERTIFIED CORRECT, COMPLETE, 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 _____

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 8-1/2" x 11" format, or on one face of a cardstock tag (min. 3" x 6") tied to each sample. The tag on the samples should state what the sample is so that, if the tag is

accidentally separated from the sample, it can be matched up again. The back of this tag will be used by the Engineer for his receipt, review, and log stamp and for any comments that relate to the sample.

- D. All submittals for material, equipment, and shop drawings listed in the contract documents, including dimensioned plumbing shop drawings, shall be required and shall be reviewed by the Engineer, prior to any ordering of materials and equipment.
- E. Unless otherwise noted, the Contractor shall submit to the Engineer for his review eight copies of all shop drawings, and/or catalog cuts for fabricated items and manufactured items required for the construction. Drawings shall be submitted in sufficient time to allow the Engineer not less than twenty regular working days for examining the drawings.
- F. The drawing shall be accurate, distinct, and complete and shall contain all required information, including satisfactory identification of items, units and assemblies in relation to the contract drawings and specifications.
- G. Unless otherwise approved by the Engineer, shop drawings shall be submitted only by the Contractor, who shall indicate by a signed stamp on the drawings or other approved means that the Contractor has checked the shop drawings and that the work or equipment 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 listed. The practice of submitting incomplete or unchecked shop drawings for the Engineer to correct or finish will not be acceptable, and shop drawings which, in the opinion of the Engineer, clearly indicate that they have not been checked by the Contractor will be considered as not complying with the intent of the contract documents and will be returned to the Contractor for resubmission in the proper form.
- H. When the shop drawings 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 drawing 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 eight 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. The review of such drawings and catalog cuts by the Engineer shall not relieve the Contractor from responsibility for correctness of the dimensions, fabrication details, and space requirements or for deviations from the contract drawings and specifications, unless the Contractor has called attention to such deviations, in writing, by a letter accompanying the drawings and the Engineer approved the change or deviations, in writing, at the time of submission; nor shall review by the Engineer relieve the Contractor from the responsibility for errors in the shop drawings. When the Contractor does call such deviations to the attention of the Engineer, he shall state in his letter whether or not such deviations involve any deduction or extra cost adjustment.
- J. The approval of the above drawings, lists, prints, specifications, or other data shall in no way release the Contractor from his responsibility for the proper fulfillment of the requirements of

this contract nor for fulfilling the purpose of the installation nor from his liability to replace the same should it prove defective or fail to meet the specified requirements.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01505

MOBILIZATION AND DEMOBILIZATION

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

Description: This section covers the requirements for mobilization and demobilization.

1.2 MOBILIZATION

Mobilization shall consist of the transporting, assembling, constructing, installing, and making ready for use at the job site, all the equipment, machinery, structures, utilities, materials, labor, and incidentals necessary to do the work covered by this contract.

1.3 DEMOBILIZATION

Demobilization shall consist of the dismantling and removal of the above-mentioned equipment, machinery, structures, utilities, materials, and incidentals, and the cleaning up of the site.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 GUIDELINES

If the Contractor utilizes private lands other than the sites provided by the Department for mobilization purposes, the provisions of this section shall apply, and the mobilization and demobilization work on said private lands shall be in accordance with the agreement between the Contractor and the land owner.

Any and all additional mobilization or demobilization costs in excess of the maximum amounts specified in the Proposal shall be included in the appropriate unit prices bid in the Proposal. The Contractor shall not receive any compensation for mobilization and demobilization in addition to those specified in the Proposal.

All equipment, machinery, buildings, utilities and incidentals mobilized and demobilized under this section shall remain the property of the Contractor.

END OF SECTION

SECTION 01530

BARRICADES

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

Description. This work shall consist of furnishing, installing and maintaining barricades in accordance with the requirements of the contract.

Barricade application shall be provided for in the latest edition of the FHWA publication, Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), and as amended.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Lumber: Lumber for rails, frames and braces shall be dry, sound, undamaged, well-seasoned, and free from any defect which may impair their strength and durability.
- B. Hardware: Nails shall be galvanized wire nails. As many and as large a size as is practicable shall be used.
- C. Paints: Paints shall be exterior enamel paint of the best grade or first line as made by approved manufacturers.
- D. Sheet Reflecting Material: Sheet reflecting material shall conform to the applicable requirements of Subsection 712.20(C) of the "Standard Specifications for Road and Bridge Construction".
- E. Alternate Designs: Alternate barricade designs such as plastic moled barricades may be used subject to the Engineer's approval. The Contractor shall submit shop drawings or catalog cuts for approval.

PART 3 - EXECUTION

3.1 CONSTRUCTION REQUIREMENTS

- A. General: Barricades shall be constructed in a first class, workmanlike manner in accordance with details shown on the plans and as specified herein.

Barricades shall be in good condition and approved by the Engineer for use within the project limits. Barricade application and installation shall be as shown on the plans and as directed by the Engineer in accordance with the guidelines provided in the latest edition of the FHWA

publication, Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), and any amendments or revisions thereof as may be made from time to time.

Sand bags or other approved weights shall be provided where required or as directed by the Engineer. Sand bags or other approved weights shall not be placed on any striped barricade rail.

Steady burn and/or flashing lamps shall be required on selected barricades used during hours of darkness. Locations shall be as shown on the plans and as directed by the Engineer. Lamps shall be attached on the barricade ends closest to the traveled way and shall be visible to the motorist.

Barricades furnished and paid for as provided herein may be used for temporary detours, construction phasing, or other temporary traffic control work.

Barricades furnished and paid for use in temporary detours or construction phasing may be used for permanent location called for on the plans.

Upon completion of the construction work, barricades shall be left in place, relocated, or removed and disposed of as shown on the plans or as directed by the Engineer. Barricades left in place, or relocated to new permanent locations shall become the property of the State. Barricades directed to be removed and disposed of shall become the property of the Contractor.

- B. Painting: Wooden rails, frames and braces shall be given a prime coat and 2 finish coats of new white exterior enamel paint. Rail faces to be reflectorized may be left unpainted unless otherwise specified or directed.
- C. Reflectorization: Reflectorization of barricade rails shall be done in a first class, workmanlike manner and the attachment of reflective sheeting shall be as shown on the plans, specified herein, or as directed and approved by the Engineer.

Both vertical faces of each barricade rail shall be reflectorized as shown on the plans.

Wooden rails shall be reflectorized with one of the following:

1. Reflective sheeting specified in Subsection 712.20(C)(4) of the "Standard Specifications for Road and Bridge Construction" and backed with a 26 gage galvanized steel sheet, or
2. A hardened aluminum backed reflective sheeting as specified in Subsection 712.20(C)(5) of the "Standard Specifications for Road and Bridge Construction."

- D. Color: Rails, frames and braces shall be white.

The front and back faces of barricade rails shall have 6-inch wide alternative colored and white striped sloping downward toward the traveled way at an angle of 45 degrees with the vertical. The colored stripes shall be either orange or red in accordance with the following requirements:

1. Orange and white stripes shall be used in the following conditions:

- a. Construction work.
 - b. Detours.
 - c. Maintenance work.
2. Red and white stripes shall be used in the following conditions:
- a. On roadways with no outlet (i.e. dead-ends, cul-de-sacs).
 - b. Ramps or lanes closed for operational purposes.
 - c. Permanent or semi-permanent closure or termination of a roadway.
- E. Maintenance: Barricades shall be kept in good condition throughout their usage during construction until the end of the contract.
- F. The Contractor shall repair, repaint, clean or replace the barricades as required and as directed by the Engineer to maintain their effectiveness and appearance.

The Constructor shall immediately replace all lost, stolen or damaged barricades, lamps, sand bags and other approved weights.

Barricades used during construction phasing, temporary detours or other temporary traffic control work shall be cleaned and repaired as necessary, prior to being relocated to permanent location shown on the plans or as directed.

No extra payment will be made for any repair work, repainting, or cleaning of barricades. The Engineer shall determine the suitable condition of each barricade and shall determine when each barricade shall be repaired, repainted or cleaned.

END OF SECTION

SECTION 01567

POLLUTION CONTROL

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Rubbish Disposal

1. No burning of debris and/or waste materials shall be permitted on the project site.
2. No burying of debris and/or waste material except for materials which are specifically indicated elsewhere in these specifications as suitable for backfill shall be permitted on the project site.
3. All unusable debris and waste material shall be hauled away to an appropriate off-site dump area. During loading operations, debris and waste materials shall be watered down to allay dust.
4. No dry sweeping shall be permitted in cleaning rubbish and fines which can become airborne from floors or other paved areas. Vacuuming, wet mopping or wet or damp sweeping is permissible.
5. Clean-up shall include the collection of all waste paper and wrapping materials, cans, bottles, construction waste materials and other objectionable materials, and removal as required. Frequency of clean-up shall coincide with rubbish producing events.

B. Dust

1. The Contractor shall prevent dust from becoming airborne at all times including non-working hours, weekends and holidays in conformance with the State Department of Health, Administrative Rules, Title 11, Chapter 60 - Air Pollution Control.
2. The method of dust control and costs shall be the responsibility of the Contractor. Methods of dust control shall include the use of water, geotextile fabrics, or tarps over surfaces which may create airborne dust.
3. The Contractor shall be responsible for all damage claims in accordance with Section 7.16 - "Responsibility for Damage Claims" of the GENERAL CONDITIONS.

C. Noise

1. Noise shall be kept within acceptable levels at all times in conformance with the State Department of Health, Administrative Rules, Title 11, Chapter 46 - Community Noise Control for Oahu. The Contractor shall obtain and pay for the Community Noise Permit from the State Department of Health when the construction equipment or other devices emit noise at levels exceeding the allowable limits.
2. All internal combustion engine-powered equipment shall have mufflers to minimize noise and shall be properly maintained to reduce noise to acceptable levels.
3. Starting-up of construction equipment meeting allowable noise limits shall not be done prior to 6:45 a.m. without prior approval of the Engineer. Equipment exceeding allowable noise levels shall not be started-up prior to 7:00 a.m.

D. Erosion

1. During interim dredging operations, the grade shall be maintained so as to preclude any damage to adjoining property from water and eroding soil.
2. Temporary berms, cut-off ditches and other provisions which may be required because of the Contractor's method of operations shall be installed at no cost to the State.
3. Drainage outlets and silting basing shall be constructed and maintained as shown on the plans to minimize erosion and pollution of waterways during construction.

E. Others

1. Wherever trucks and/or vehicles leave the site and enter surrounding paved streets, the Contractor shall prevent any material from being carried onto the pavement. Waste water shall not be discharged into existing rivers, waterways, or drainage systems such as gutters and catch basins unless treated to comply with the State Department of Health water pollution regulations.
2. Trucks hauling debris shall be covered as required by PUC Regulation. Trucks hauling fine materials shall be covered.
3. Except in an emergency, such as a mechanical breakdown, all vehicle fueling and maintenance shall be done in a designated area. A temporary berm shall be constructed around the area when runoff can cause a problem.
4. When spray painting is allowed such spray painting shall be done by the "airless spray" process. Other types of spray painting will not be allowed.

F. Suspension of Work

1. Violations of any of the above requirements or any other pollution control requirements which may be specified in the Technical Specifications herein shall be cause for suspension of the work creating such violation. No additional compensation shall be due the Contractor for remedial measures to correct the offense. Also, no extension of time will be granted for delays caused by such suspensions.
2. If no corrective action is taken by the Contractor within 72 hours after a suspension is ordered by the Engineer, the State reserves the right to take whatever action is necessary to correct the situation and to deduct all costs incurred by the State in taking such action from monies due the Contractor.
3. The Engineer may also suspend any operations which he feels are creating pollution problems although they may not be in violation of the above-mentioned requirements. In this instance, the work shall be done by force account as described in Subsection 4.2b -"Additional Work" of the GENERAL CONDITIONS and paid for in accordance with Subsection 8.4b - "Force - Account Work" therein. The count of elapsed working days to be charged against the contract in this situation shall be computed in accordance with Subsection 7.18 - "Contract Time" of the GENERAL CONDITIONS.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01570

ENVIRONMENTAL CONTROL

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. With the exception of those measures set forth elsewhere in these specifications, environmental protection shall consist of the prevention of environmental pollution as the result of construction operations under this contract. For the purpose of this specification, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare, unfavorably alter ecological balances of importance to human life, affect other species of importance to man, or degrade the utilization of the environment for aesthetic and recreational purposes.
- B. The work under this section shall include the following:
 - 1. Ensure that all required permits are obtained and valid for the construction period.
 - 2. Provide all air and water quality testing and monitoring work required by any permits during construction.
 - 3. Provide all facilities, equipment and structural controls for minimizing adverse impacts upon the environment during the construction period.

1.2 RELATED SECTION

Section 01567 - POLLUTION CONTROL.

1.3 DESCRIPTION OF WORK

A. Applicable Regulations

In order to provide for abatement and control of environmental pollution arising from the construction activities of the Contractor and his subcontractors in the performance of this contract, the work performed shall comply with the intent of the applicable Federal, State, and local laws and regulations concerning environmental pollution control and abatement, including, but not limited to the following regulations:

- 1. State of Hawaii, Department of Health, Administrative Rules, Chapter 55, WATER POLLUTION CONTROL: Chapter 54, WATER QUALITY STANDARDS.
- 2. State of Hawaii, Department of Health, Administrative Rules, Chapter 59, AMBIENT AIR QUALITY: Chapter 60.1, AIR POLLUTION CONTROL LAW.

3. State of Hawaii, Department of Health, Administrative Rules, Chapter 46, Community Noise Control for Oahu.

PART 2 – PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 BEST MANAGEMENT PLAN (BMP)

The Contractor shall prepare his Best Management Plan (BMP) and submit it to the State of Hawaii's Department of Health (DOH) for review, comment and acceptance. The Contractor shall comply with the terms of the BMP throughout the construction period. A copy of the accepted BMP shall be submitted to the Engineer.

3.2 AIR POLLUTION CONTROL

A. Emission

The Contractor shall not be allowed to operate equipment and vehicles that show excessive emissions of exhaust gases until corrective repairs or adjustments are made to the satisfaction of the Engineer.

B. Dust

The Contractor, for the duration of the contract, shall maintain all excavations, embankments, haul roads, permanent access roads, plant sites, waste disposal areas, borrow areas, and all other work areas within or without the project limits free from dust which would cause a hazard to the work, or the operations of other contractors, or to persons or property. Industry accepted methods of stabilization suitable for the area involved, such as sprinkling or similar methods, will be permitted. Chemicals or oil treating shall not be used.

C. Burning shall not be permitted.

3.3 WATER POLLUTION CONTROL

A. Wastes

The Contractor shall not deposit at the site or in the storm drainage system any solid waste or discharge liquid waste, such as fuels, lubricants, bituminous waste, untreated sewage and other pollutants, which may contaminate the existing surface or ground water. No construction on excavated material shall be stockpiled in the marine environment.

B. Spillage

Care shall be taken to ensure that no petroleum products, bituminous materials, or other deleterious substances, including debris, are allowed to fall, flow, leach or otherwise enter existing surfaces or ground water.

3.4 NOISE CONTROL

- A. Noise shall be kept within acceptable levels at all times in conformance with Title II, Administration Rules, Chapter 46, Community Noise Control for Oahu, State Department of Health, Public Health Regulations. The Contractor shall obtain and pay for community noise permit from the State Department of Health when the construction equipment or other devices emit noise at levels exceeding the allowable limits.
- B. Construction equipment shall be equipped with suitable mufflers to maintain noise within levels complying with applicable regulations.
- C. Starting up of construction equipment meeting allowable noise limits shall not be done prior to 6:45 a.m. without prior approval of the Engineer. Equipment exceeding allowable noise limits shall not be started up prior to 7:00 a.m

3.5 SOLID WASTES

- A. Construction waste, such as crates, boxes, building materials, pipes, and other rubbish shall be reduced to a size approved by the Engineer. Large size objects shall be reduced to a size acceptable by the Engineer for disposal in their landfills. Other areas or methods proposed by the Contractor will be approved only if the Engineer determines that their effect on the environment is equal to or less than those described herein.
- B. Removal of waste shall be a continuous on-going operation. Wastes and debris shall not be allowed to accumulate in large open piles.
- C. Wind-blown wastes and debris and wastes left by workers shall be collected by the Contractor and disposed of as described above. No rubbish shall be deposited in the trench excavation for this project.
- D. Conduct the fueling and lubricating of equipment and motor vehicles to protect against spills and evaporation. Dispose of lubricants to be discarded and all excess oil in accordance with State and local regulations.
- E. Dispose of electrolyte solution from lead-acid batteries in accordance with hazardous regulations. Do not dump electrolyte onto the ground or into storm drains or sanitary sewers. Transport the electrolyte to a State approved hazardous waste disposal site. The method of transportation and equipment shall comply with applicable Federal and State regulations.

3.6 OTHERS

- A. Wherever trucks and/or vehicles leave the site and enter surrounding paved streets, the Contractor shall prevent any material from being carried, spilled and seeped onto the pavement. Mud shall be removed from the tires of all vehicles before leaving the construction site. Waste water shall not be discharged into existing rivers, waterways, or drainage systems such as gutters and catch basins unless treated to comply with Department of Health water pollution regulations.
- B. Trucks hauling debris shall be covered as required by PUC regulation. Trucks hauling fine materials shall be covered.
- C. No dumping of waste concrete will be permitted at the job site unless otherwise permitted in the Special Provisions.
- D. Except for rinsing of the hopper and delivery chute, and for wheel washing where required, concrete trucks shall not be cleaned on the job site. Wash water from concrete trucks shall be contained and shall not be permitted to enter the harbor.
- E. Except in an emergency, such as mechanical breakdown, all vehicle fueling and maintenance shall be done in a designated area. A temporary berm shall be constructed around the area where runoff can cause problems.

3.7 SUSPENSION OF WORK

- A. Violation of any of the above requirements or any other pollution control requirements which may be specified in the Specifications herein shall be cause for suspension of the work creating such violation. No additional compensation shall be due the Contractor for remedial measures to correct the offense. Also, no extension of time will be granted for delays caused by such suspensions.
- B. If no corrective action is taken by the Contractor within 72 hours after a suspension is ordered by the Engineer, the State reserves the right to take whatever action is necessary to correct the situation and to deduct all costs incurred by the State in taking such action from monies due the Contractor.
- C. The Engineer may also suspend any operations which he feels are creating pollution problems although they may not be in violation of the above mentioned requirements.

END OF SECTION

DIVISION 2 – SITEWORK

SECTION 02060 – DEMOLITION, REMOVAL AND RELOCATION

PART 1 - GENERAL

1.1 SUMMARY

Furnish all labor, materials, equipment and tools to complete all demolition, removal, and relocation related work indicated on or required by the plans, and as specified herein.

- A. Disposal of all debris and abandoned materials and miscellaneous items.
- B. Removal of concrete and other miscellaneous items as shown and specified on the contract drawings.

1.2 GENERAL REQUIREMENTS

- A. It shall be the responsibility of the Contractor to examine the project site and determine for himself the existing conditions.
- B. Obvious conditions which exist on the site shall be accepted as part of the work, even though they may not be clearly indicated on the plans and/or description herein, or may vary there from.
- C. All debris of any kind accumulated from the work of this Section shall be disposed of off the site.
- D. Permits, Notices, Etc.:
 - 1. The Contractor shall procure and pay for all necessary permits or certificates that may be required in connection with this work.
 - 2. The Contractor shall serve proper notice and consult with the Engineer regarding any temporary disconnections or disruptions of sewer or other utility lines in the area which may interfere with the removal work, and all such lines where necessary shall be properly disconnected before commencing with the work.

PART 2 - PRODUCTS: (NOT USED)

PART 3 - EXECUTION

3.1 DEMOLITION, REMOVAL, AND RELOCATION

All work shall be executed in an orderly and careful manner, with due consideration for all items to remain, and the Contractor shall be strictly responsible for any damages thereto.

3.2 BARRICADE

Erect temporary barricades as required to prevent people from entering into project area to the extent as approved by the Engineer. Safe working conditions shall be maintained at all times for all personnel. The extent of the barricade may be adjusted as necessary with the approval of the Engineer. This work shall be accomplished at no extra cost to the Owner.

3.3 PROTECTION OF EXISTING PROPERTY

Adequately protect for the duration of the work all existing and adjoining structures, utilities and trees to remain shown and specified on the contract drawings.

3.4 USE OF EXPLOSIVES

The use of explosives shall not be permitted.

3.5 DUST NUISANCE

Keep the project area free of dust nuisance at all times by watering and/or brooming.

3.6 REPAIR OF EXISTING IMPROVEMENTS

All existing improvements, including roads, sidewalks and landscaping not designated for demolition that have been damaged by construction activities, shall be repaired to the original condition and to the satisfaction of the Engineer. Damage done by heavy equipment, especially on roads not stable for such equipment shall be repaired to the original condition and to the satisfaction of the Engineer.

3.7 CLEAN-UP AND DISPOSAL

From time to time and at the completion of the demolition and removal work, remove from the site all rubbish, debris, excess excavated material accumulated from this work and leave the area neat and clean to the satisfaction of the Engineer. Debris shall be removed and transported in a manner that will prevent spillage on the street or adjacent area.

END OF SECTION

SECTION 02200

CLEARING AND GRUBBING

PART 1 – GENERAL

1.1 SUMMARY

Furnish all labor, equipment and tools to complete the clearing and grubbing indicated on or required by the contract drawings and as specified herein.

1.2 GENERAL REQUIREMENTS

- A. It shall be the responsibility of the Contractor to examine the site and determine for himself the existing conditions.
- B. Obvious conditions of the site existing on the date of the bid opening shall be accepted as part of the work, even though they may not be clearly indicated on the drawings and/or described herein or may vary therefrom.
- C. All debris of any kind accumulated from clearing shall be disposed of from the site, and the whole area left clean. The Contractor shall be required to make all necessary arrangements relative to the proposed place of disposal.

1.3 CLEARING AND GRUBBING

The Contractor shall clear off and remove the natural ground of vegetative material and obstructions interfering within the area to be improved. Vegetative materials include trees, stumps, large roots, buried logs, roots of downed trees, brush, grass and weeds. Obstructions include garbage and other unsuitable material.

1.4 REMOVAL AND DISPOSAL OF MATERIAL

The Contractor shall dispose the material removed as specified above at a suitable land disposal site acceptable to the Engineer. If the Contractor disposes the material outside the project area, the Contractor shall make arrangements and bear the costs involved in the disposal.

1.5 PROTECTION

- A. Barricade: Erect temporary construction barricades in accordance with Section 01530 - BARRICADES.
- B. Take all precautions and safety, measures as required to protect the State of Hawaii free and harmless from liability of any kind. Conduct operations with minimum interference to streets, driveways, sidewalks, passages, etc.

- C. Adequate precautions shall be taken before commencing and during the course of the work to ensure the protection of life, limb and property.
- D. The Contractor shall exercise every, precaution to preserve and protect all surrounding structures, landscaping, lawns, walkways, ties, pavements, utilities, and other improvements which are to remain or be relocated. Any damage shall be repaired or replaced by the Contractor to the satisfaction of the Engineer.

PART 2 – PRODUCTS: (NOT USED)

PART 3 - EXECUTION

3.1 CLEAN-UP AND DISPOSAL.

From time to time and at the completion of the demolition and removal work, remove from the site all rubbish, debris, excess excavated material accumulated from this work and leave the area neat and clean to the satisfaction of the Engineer. Debris shall be removed and transported in a manner that will prevent spillage on the street or adjacent area.

END OF SECTION

SECTION 02201

TRENCH EXCAVATION AND BACKFILL

PART 1 - GENERAL

1.1 SUMMARY

A. General Requirements

1. The work to be performed under this section shall consist of furnishing all labor, materials, equipment and incidentals necessary to accomplish all excavation and backfilling for the waterline as indicated on the drawings and specified herein.

B. Permits, Notice, Etc.

1. The Contractor shall procure and pay for all necessary permits or certificates that may be required in connection with this work.
2. The Contractor shall serve proper notices and consult with the Engineer regarding any temporary disconnections of electrical or other utility lines in the areas which may interfere with the removal work, and all such lines where necessary shall be properly disconnected before commencing with the work.

- ###### C. Protection: Throughout the work, protection shall be provided for all roads, etc., along the excavation. Safe working conditions shall be maintained at all times for all personnel, and temporary lights and barricades shall be provided and maintained.

1.2 REFERENCE SPECIFICATIONS

The following construction standards, with certain modifications as hereinafter specified, are hereby incorporated into and made a part of these specifications by reference and shall be applicable to all work performed by the Contractor under this section.

- ###### A. Specific sections of the Standard Specifications for Public Works Construction, Department of Public Works, County of Kauai (hereinafter referred to as "DPW Standard Specifications") September 1986, with deletion of subsections relating to measurement and payment in all sections incorporated herein and further modifications to such sections as hereinafter provided.

- | | |
|--|------------|
| 1. Trench Excavation and Backfill | Section 11 |
| 2. Crushed Rock | Section 15 |
| 3. Select Borrow | Section 30 |
| 4. Restoring Pavements and Other Utilities | Section 38 |

- ###### B. The Uniform Plumbing Code, 2018 Edition, as amended by the County of Kauai.

- C. Specific sections of the Standard Details for Public Works Construction, September 1984, as applicable to the County of Kauai; referred to as "Standard Details."

PART 2 – PRODUCTS

2.1 MATERIALS:

All materials shall be imported well-graded granular material free of organics and rocks larger than 3 inches in diameter with no more than 15 percent passing the No. 200 sieve. Select borrow conforming to Section 30 of the Standard Specification or quarry-produced crusher run waste.

PART 3 – EXECUTION

3.1 LOCATION AND ADJUSTMENT OF EXISTING UTILITY LINES

- A. The Contractor shall be responsible for precisely laying out the various exterior utility lines shown on the contract drawings as provided elsewhere in these specifications. The locations shown on the contract drawings of the various existing utility lines which the new lines are to cross over or under or connect to, were determined on the basis of the best information available; however, no assurance can be provided that the actual locations will be precisely as shown on the contract drawings. Expose all existing utility lines at crossing prior to installation and any interference encountered should be reported to the Engineer and his instructions followed.
- B. In performing all work, the Contractor shall exercise due care and caution necessary to avoid any damage to and impairment in the use of any existing utility line. Any damage inflicted on existing lines resulting from the Contractor's operations shall be immediately repaired and restored as directed by the Engineer at the Contractor's expense.

3.2 TRENCH EXCAVATION

- A. All excavation of every description and of whatever substances encountered shall be performed to the depths indicated or as otherwise specified. During excavation, material suitable for backfilling shall be piled in an orderly manner a sufficient distance from the banks of the trench to avoid overloading and to prevent slides or cave-ins. All excavated materials not required or suitable for backfill shall be removed and wasted as indicated or as directed. Grading shall be done as may be necessary to prevent surface water from flowing into trenches or other excavations, and any water accumulating therein shall be removed by pumping or by other approved methods. Unless otherwise indicated, excavation shall be by open cut.
- B. All trenching and backfilling operations shall be completed in the shortest time possible.
- C. Trenching shall be of the necessary width for proper laying of pipes. The banks of the trenches shall be as nearly vertical as practicable. Care shall be taken not to over-excavate. The bottom of the trenches shall be accurately graded to provide uniform bearing and

support. Overdepths shall be backfilled as and with materials specified for backfilling the lower portion of trenches. Whenever wet or otherwise unstable material that is incapable of properly supporting the pipe, as determined by the Engineer, is encountered in the bottom of the trench, such material shall be removed to the depth required and the trench backfilled to the proper grade with fine gravel, or other suitable approved materials.

- D. Construction materials and excavated materials shall be covered during high winds to mitigate dust problems.
- E. Asphalt concrete and concrete walkways to be removed shall be neatly saw cut.

3.3 PROTECTIVE MEASURES

- A. All excavation shall be protected and guarded against danger to life, limb, and property.
- B. Shoring, as required to safely preserve the excavations free from damage resulting from the work, shall be provided and installed by the Contractor.
- C. All excavations shall be kept free from standing water. The Contractor shall pump and drain as necessary to remove water to the extent required in carrying on work.
- D. The Contractor shall conduct operations with minimum interference to traffic. The Contractor shall confine all work equipment, materials and personnel as much as possible to the work area as indicated, so as not to interfere with the normal function of the adjacent roadway. The Contractor shall schedule all work that involves excessive noise, dust, dirt, or any other detrimental aspect of this work in order that there will be minimum disruption in normal roadway functions. When necessary and when directed by the Engineer, the Contractor shall provide and erect barriers, etc., with special attention to protection of personnel.
- E. Existing utilities are shown on the drawings in approximate locations for the convenience of the Contractor. The fact that any utility is not shown on the drawings shall not relieve the Contractor of his responsibility to ascertain the location of all existing utilities which may be subject to damage by reason of his operations.

The Contractor shall:

1. Support and protect all utilities during construction;
2. Notify the Engineer immediately of any damage to existing utilities caused by construction under this Contract; and
3. Reconstruct, at his expense, damaged portions of the utility system in accordance with the requirements and specification of the State.

3.4 LAYOUT

Should any discrepancies be discovered in the dimensions given on the drawings, the Contractor shall immediately notify the Engineer before proceeding any further with the work; otherwise he will be held responsible for any costs involved in correction of construction placed due to such discrepancies.

3.5 BACKFILLING

The trenches shall not be backfilled until approved by the Engineer. Except as otherwise specified or special conditions of overdepths, trench shall be backfilled to the ground surface with selected excavated material or other material that is suitable for the specified compaction and as hereinafter specified. Trenches improperly backfilled shall be reopened to the depth required for proper compaction, then refilled and compacted as specified, or the condition shall be otherwise corrected as permitted by the Engineer. The surface shall be restored to its original condition as near as practicable and as hereinafter specified. Pavement and base course disturbed by trenching operations shall be replaced in an acceptable manner with materials equal to the adjacent base course and pavement for a minimum distance of 6 inches on each side of the trench.

3.6 FILL TESTING

All fill shall be tested by an independent testing agency and all test results submitted to the Engineer for approval. All costs of testing shall be borne by the Contractor. Testing shall be made throughout the area for 8-inch thick loose layer compacted, at locations determined by the Engineer.

All test results must be approved before the Contractor can proceed with placing of base course.

END OF SECTION

SECTION 02243

GEOTEXTILE

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

This specification covers the furnishing and installing of geotextile fabric.

1.2 SUBMITTALS

The Contractor must furnish six (6) sets of manufacture brochures, specifications and certifications prior to delivery to the project site.

1.3 WARRANTY

The Contractor must provide the State of Hawai'i with a one (1) year warranty against manufacturing defects, in accordance with this specification.

1.4 TEST REQUIREMENTS

The geotextile fabrics must comply with all applicable American Society of Testing Materials (ASTM) Test Methods:

ASTM D4632 Grab Tensile Strength and Grab Tensile Elongation

ASTM D4533 Trapezoidal Tear Strength

ASTM D6241 CBR Puncture Strength

ASTM D4491 Permittivity and Flow Rate

ASTM D4751 Apparent Opening Size

ASTM D4355 UV Resistance (500 hours)

1.5 CERTIFICATES

Manufacturer's certificate of compliance stating that the geotextile meets the requirements of this specification. The manufacturer must certify that the geotextile has been continuously inspected using permanent on-line-full-width metal detectors and does not contain needles. The certificate must be attested by a person having legal authority to bind the geotextile manufacturer.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. The fabric must be inert to biological degradation and resists naturally encountered chemicals, alkalis, and acids; a needle-punched nonwoven geotextile composed of polypropylene fibers, which form a table network such that the fibers retain their relative position.
- B. Approved geotextile fabrics are: 1) Mifafi 1100N or Mifafi 1160N manufactured by Tencate Mirafi, 365 South Holland Drive, Pendergrass, Georgia, tel. (706) 693-2226, email: spec@tencategeo.com or approved equal.

2.2 PHYSICAL PROPERTY REQUIREMENTS

	<u>Mirafi 1100N</u>	<u>Mirafi 1160N</u>
A. Grab Strength (lb.)	250	380
B. Elongation	50	50
C. CBR Puncture Strength (lb.)	700	1025
D. Trapezoidal Tear (lb.)	100	140
E. Apparent Opening Size (AOS) U.S. Sieve (mm)	100	100
F. Permittivity (sec-1)	0.8	0.7
G. Flow Rate (gal/min/ft ²)	75	50
H. UV Resistance (at 500 hours) % strength retained	70	70
I. Roll Dimensions (width x length) (ft)	15 x 300	15x150

PART 3 - EXECUTION

3.1 EXECUTION

The geotextile fabric must be delivered in a protective wrapping which are designed to protect the fabric from ultraviolet radiation and from abrasion during shipping and handling.

Any damaged geotextile fabric that does not meet the required physical property requirements in this specification will be immediately replaced by the Contractor.

Rolls of geotextile must be protected from construction equipment, chemicals, sparks and flames, temperature exceeding 140 degrees F, ultraviolet radiation, human or animal destruction, and other environmental conditions that could damage the geotextile fabric. The geotextile fabric must be stored elevated off the ground and high enough to be above standing water.

3.2 INSTALLATION

The geotextile fabric must be installed in accordance with the manufacturer's specifications.

3.3 MEASURE AND PAYMENT

The furnishing and installing of the geotextile fabric will not be measured or paid for directly, but included in the appropriate proposal item for the new revetment repairs.

END OF SECTION

SECTION 02444
CHAIN LINK FENCES

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

Furnish all materials, labor, equipment, and tools necessary to install all chain link fences to the limits shown and as detailed on the contract drawings and as specified herein.

1.2 SUBMITTALS

A. Submit under provisions of Section 01300 – SUBMITTALS

B. Product Data:

Submit manufacturer's literature of construction details, material descriptions, dimensions of individual components and profiles, and finishes for chain-link fences including the following:

1. Fence posts, rails and fittings
2. Chain-link fabric, reinforcements, and attachments

C. Shop Drawings:

Submit shop drawings showing the locations of fences, posts, rails, tension wires, details of extended posts, extension arms, or other operation, hardware, and accessories. Indicate materials, dimensions, sizes, weights, and finishes of components. Include plans, sections, details of post anchorage, attachment, bracing, and other required installation and operational clearances.

1.3 QUALITY ASSURANCE

An experienced installer who has completed chain-link fences similar in material, design, and extent to those indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Chain Link Fence Fabric:

Fabric shall conform to ASTM A392, Class 2, zinc-coated steel wire with minimum coating weight of 2.0 ounces of zinc per square foot of coated surface or ASTM A491, Type I, aluminum-coated steel wire. Fabricate fence fabric of 9 gauge wire woven in 2 inch mesh conforming to ASTM A116. All fabric shall be free from barbs, icicles or other hazardous projections resulting from galvanizing.

B. Accessories shall conform to ASTM F626 and as follows.

1. Tie Wire shall be 12-gauge soft annealed galvanized steel wire.
2. Tension Bar shall be 3/16" thick by 3/4" wide mild steel bar for attachment of a fabric to terminal post.
3. Brace Band shall be formed from steel bands at least 12 gauge thick by 3/4" wide.
4. Tension Band shall be formed from steel bands at least 14 gauge thick by 3/4" wide.
5. Tension Rod shall be 3/8" diameter mild steel rod threaded at one end and hooked 180 degrees at the other.

C. Fittings:

1. Post Cap and Eye Top shall be of one-piece cast iron construction and shall attach securely onto their respective posts.
2. Coupling for top rails shall be outside sleeve type, at least 6 inches long and crimped at center.
3. Rail Ends shall be snug, one-piece fittings for top and brace rails with holes to receive 5/16" bolts for securing to rail end bands.
4. Double Rail End shall be similar to rail end, except for an additional 1/2" hole to receive the hooked end of a tension rod.

D. Composition and Finish of Metal Parts: All metal parts and fittings, including tracks, and frames, shall be of steel, malleable iron or wrought iron and shall be galvanized by the hot-dip process, after fabrication, in conformance with ASTM A153. The coating on all parts shall be continuous and smooth; that

is, free from barbs, icicles or other projections. Bolts and nuts shall be of galvanized steel.

- E. Posts, Rails and Braces shall be of standard weight, hot-dipped galvanized, welded and seamless steel pipes conforming to ASTM A153.
- F. Tension Wire shall be of 7-gauge coiled spring or 6-gauge plain galvanized wire.
- G. Nonshrink, Nonmetallic Grout: Premixed, factory-packaged, non-staining, non-corrosive, nongaseous grout complying with ASTM C1107. Provide grout, recommended in writing by manufacturer, for exterior applications.

PART 3 - EXECUTION

3.1 INSTALLATION AND WORKMANSHIP

- A. General: Metal fencing of the various types called for shall be erected in strict conformance with the plans and these specifications. Posts shall be plumb and in line. Welding shall be done in accordance with latest AWS standards. However, no splicing of posts, rails or braces shall be accepted. Where changes in line occur with an angle of deflection of 30 degrees or more, the change point will be considered a corner and a corner post shall be installed thereat. End and corner posts for fences with 5-foot and wider fabric shall be braced to the nearest line post with horizontal braces and tension rods. The horizontal braces shall be spaced midway between top rail and ground and securely fastened to posts as shown on plans.
- B. Fence posts, except as otherwise indicated or specified, shall be spaced not more than 10-feet apart. Line posts shall be set so that top of the eye tops shall be at the same height as the fence fabric.
- C. Top rails shall pass through and bear firmly on base of eye tops, form a continuous brace from end to end of each stretch of fence, and be securely fastened to terminal posts with rail ends and brace bands. Couplings for the top rails shall be installed at intervals of 24 feet maximum.
- D. Chain link fabric shall be fastened on the side of the posts as designated and shall be mounted on the posts so that the bottom of the fabric will be no more above the finished grade than called for on the plans. High points of the ground shall be excavated as necessary. The fabric shall be stretched taut and securely fastened to the posts. Ends of wire ties shall be bent back so as not to be a hazard. Between posts the top edge of the fabric shall be fastened to the top rail and the lower edge of the tension wire with tie wire of size and at spacing as called for on the plans. Tension wire shall be stretched tight and shall be installed in a straight line between posts. Tension bars extending the full height of the fence and tension bar bands shall be used for fastening the fabric to end, corner, pull posts. Bolted tension bar bands shall be placed at

top and bottom of tension bars and spaced at 12-inch maximum intervals. Fastenings to line posts shall be made with tie wire of size and at spacing as called for on the plans.

3.2 FINAL CLEAN-UP

All exposed surfaces shall be clean and free of cement. All debris resulting from work of this section shall be removed from the site.

END OF SECTION

SECTION 02713

WATER SYSTEM

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

General Requirements: Furnish all labor, materials, equipment, and tools to install exterior water system as indicated on the Contract Drawings and specified herein.

1.2 SUBMITTALS

A. Certificates: The Contractor shall furnish to the Engineer affidavits from the manufacturers of pipe, pipe coating, fittings, valves, etc., furnished and installed under this section certifying that such materials delivered to the project conform to the requirements of this section. Certificate of disinfection shall also be submitted to the Engineer.

B. Test Results: Submit test reports for all tests conducted.

1.3 REFERENCES

A. The "Water System Standards," and its amendments dated 2002 as applicable to the Department of Water, County of Kauai, hereinafter referred to as the "WSS." (Paragraphs concerning Measurement and Payment are not applicable to this project.)

B. The "Uniform Plumbing Code", 2018 edition, hereinafter referred to as the "Plumbing Code".

PART 2 - PRODUCTS

2.1 MATERIALS

A. Water lines 3" and smaller shall be copper (ASTM B42 or ASTM B 88, Type K) with wrought copper solder type fittings conforming to ANSI B16.22 or ANSI B16.18. Solder shall be 95-5 tin-antimony or acceptable substitute for 2" and smaller; brazed with silver alloy filler metal for pipes 2-1/2" or larger.

B. Solder and solder flux shall not contain lead. Flux shall be non-corrosive type. Self-cleaning flux shall not be used.

C. Valves:

All valves shall be suitable for the minimum working pressure indicated, and in accordance with the latest edition of ASTM and ANSI specifications as indicated.

Item	Size	Description
Gate Valves	3" and smaller	Valve shall be wedge-disc type with non-rising stem, screw ends, and brass or bronze body. Metal composition of body shall be bronze, meeting the requirements of ASTM B62 and shall be for 200 lb service.
Backflow Preventer	1 1/2"	Reduced pressure principle backflow preventer consisting of a pressure differential relief valve located between two independently operated spring-loaded center guided check valves. Valves shall be from BWS approved material list.

D. Valve boxes and cast iron covers shall be as specified on the plans and in accordance with the DOW Standard Specifications and Details. Valve covers shall be painted color blue, as approved by the Engineer.

E. Warning tape shall be in accordance with Division 200, Section 212.08 of the "Water System Standards". The warning tape shall be 4-mil thick, non-metallic, acid and alkali resistant polyethylene and 6-inches wide with minimum strength of 1,750 psi lengthwise and 1,500 psi crosswise. Tape color shall be "Safety Precaution Blue" and shall bear a continuous printed inscription "CAUTION WATER LINE BURIED BELOW". Inscription shall be 2-inches high, black text.

F. Dielectric Flanges and Compression

Provide at connections between copper and ferrous metal piping materials.

1. Dielectric unions or flanges shall be suitable for the required operating temperature and pressure. The metal parts of the dielectric unions or flanges shall be separated to prevent current flow between the dissimilar metals. Bolts/nuts/washers shall be stainless steel.

2. Compression couplings shall be cylindrical steel, middle ring with two (2) resilient gaskets and follower rings, joined with trackhead bolts or threaded rings. The coupling shall be as manufactured by "Dresser" or acceptable substitute.

PART 3 - EXECUTION

3.1 EXCAVATION AND BACKFILLING

A. Trench excavation and backfilling for the laying and installation of water pipes, to the required line and grade and structure excavation for the construction of the appurtenant structures, shall be in accordance with Section 02201 Trench Excavation and Backfill.

- B. The Contractor, in performing any work within the limits of work shown on the Contract Drawings, shall exercise due care to keep to an absolute minimum any damages to existing improvements. The Contractor shall be responsible for repairing, replacing and/or restoring all damages to existing improvements to the satisfaction of the Engineer.
- C. All trenching and backfilling operations shall be completed in the shortest time possible and such work for utility lines within or in the vicinity of buildings areas shall be completed prior to the pouring of footings.

3.2 INSTALLATION

- A. The Contractor shall be responsible for precisely laying out the various exterior utility lines shown on the Contract Drawings as provided elsewhere in these specifications. The locations shown on the Contract Drawings of the various existing utility lines which the new lines are to cross over or under or connect to were determined on the basis of the best information available; however, no assurance can be provided that the actual locations will be precisely as shown on the Contract Drawings.
- B. In performing all work, the Contractor shall exercise due care and caution necessary to avoid any damage to and impairment in the use of any existing utility lines. Any damage inflicted on existing lines resulting from the Contractor's operations shall be immediately repaired and restored as directed by the Engineer at the Contractor's expense.
- C. The installation, testing, disinfection, and acceptance of water lines shall be governed by the "Plumbing Code." The new lines shall be installed, but not connected until pressure testing and disinfecting is completed. Connecting shall be done at the discretion of the Engineer. Pressure testing, flushing of valves and mains, and disinfection of the system shall be carried out in accordance with the "Plumbing Code" by the Contractor in the presence of the Engineer.
- D. Where stiff subsoils are encountered near the invert level, a 6-inch granular pipe cushion layer shall be used.
- E. At the time of final inspection of the work performed under the contract, the utilities covered by this section shall be complete in every respect and operating as designed. All surplus materials in every character resulting from the work of this section shall have been removed. All defects discovered in the utilities subsequent to this inspection shall be corrected prior to final acceptance.

3.3 CONNECTING, TESTING, FLUSHING AND DISINFECTING

- A. The new lines shall be installed, but not connected until pressure testing and disinfecting is completed. Connecting shall be done at the discretion of the Engineer. Contractor shall perform water quality testing and obtain lab reports meeting DOH safe drinking water prior to placing in service. Pressure testing, flushing of valves and mains, disinfection of the system shall be carried out in accordance with the Water System Standards by the Contractor and he shall submit the results of such test to the Engineer for approval at the Contractor's expense.

END OF SECTION

SECTION 02920

LAWNS AND GRASS

PART 1 - GENERAL

1.1 SUMMARY

- A. Furnish all labor, materials, equipment and tools for grass planting as specified herein. Grass shall be planted in areas indicated on the plans and as listed below:
1. All existing grassed areas that are damaged by construction operations;
 2. Areas where the existing pavement is removed and will not be replaced.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Grass shall be Bermuda (Cynodon Dactylon). At the option of the Contractor, grass planting may be by seeds (plain seeding) or by sprigs.
1. Grass seeds shall be fresh, hulled, and meet the following requirements:

Pure Seed 95.0% minimum
Crop Seed 1.0% maximum
Weed 0.5% maximum
Inert Material 5.0% maximum
Germination 85.0% minimum

Grass seeds shall be delivered to the site in unopened, sealed containers, labeled with the brand name and per cent purity. Labeling shall indicate that the seeds passed a certified germination test no more than 12 months prior to use.
 2. Grass sprigs shall be healthy living runners and stolons, a minimum of 6 inches long with at least 3 nodes. After they are dug, they shall be covered and kept moist until planted.
- B. Fertilizer shall be pelleted and shall consist of the following percentages by weight of active ingredients:
1. For First Application:

Nitrogen 16%
Phosphate 16%
Potash 16%
 2. For Second Application:

Nitrogen 16%
Phosphate 16%
Potash 16%

C. Mulch Materials

1. Mulch shall be specially-processed fiber containing no growth or germination-factors. It shall be such that any addition and agitation in the hydraulic equipment with seed, fertilizer, water and other additives not be detrimental to plant growth; the fibers will form a homogeneous slurry. When hydraulically sprayed on the soil, the fibers shall form a blotter-like ground cover which readily absorbs water and allows infiltration to the underlying soil.
2. Stabilizing and water retaining agent for hydro-mulching option only shall be "Verdyol Super", "Ecology Control M-Binder" or approved equal. Rate of application of "Verdyol Super" shall be 50 lbs. /acre and that for "Ecology Control M-Binder" shall be 60 lbs. /acre.

- D. Organic Soil conditioners: Organic amendments shall be brown, gray, or black in color. It shall be free of live seeds, cuttings, fungus, spores and foul odor. It shall also not contain resins, tannin or other materials in quantities that would be detrimental to plant life.

Soil conditioner shall be one, or a combination of the following:

1. Burnt bagasse mix shall be a mixture of sugar cane ash, aged sugar cane trash and milled forest waste products.
2. Redwood shavings shall be a nitrogen-stabilized compost of redwood material passing through a 1/2" screen.
3. Peat Moss.
4. Shredded hapuu shall be finely shredded hapuu fern.
5. Composted green waste shall be stabilized compost of recycled green waste material passing through a 1/2" screen. The material shall not contain any treated or painted woods.

- E. Screened soil for repair work shall be a fertile, friable soil of loamy character, and shall contain organic matter. It shall be obtained from well-drained arable land; be free from weeds, stone and debris; and shall pass a maximum 1/2" screen. Screened soil shall be capable of sustaining healthy plant life.

- F. Water shall be potable.

PART 3 - EXECUTION

3.1 INSTALLATION AND WORKMANSHIP

- A. Site Preparation:
1. Placement of screened soil is to be as shown on plans and details. The Contractor shall accept the condition of the site prior to starting work.
- B. Planting: The Contractor shall notify the Engineer one day before planting of grass.
1. Immediately prior to planting operations, all planting areas shall be cleared of weeds, debris, rocks over 1" in diameter and clumps of earth that will not break up.
 2. Option by Grass Seeding: If grass seeds are used, the following procedure shall be used (NOTE: Contractor should exercise caution in seeding slopes where seeds may be washed away):
 - a. The grass seeds shall be broadcast uniformly by hand or by sowing equipment at the rate of 100 lbs./acre. Half the seeds shall be sown with the sower moving in one direction and the remainder shall be sown at right angles to the first direction.
 - b. The surface shall then be raked to a smooth even plane while the seeds are simultaneously worked into the soil to a depth of about 1/2".
 - c. The surface shall then be smoothed and compacted by means of a culti-packer, roller or other similar equipment weighing 60 to 90 pounds per lineal foot of roller.
 - d. The planted area shall then be watered sufficiently to provide water penetration to a depth of at least 2" and shall then be kept moist until roots are established.
 3. Option by Grass Sprigging
 - a. Furrows shall be placed perpendicular to drainage aisles and parallel to contours on slopes and shall be spaced no more than 4" apart.
 - b. Fresh sprigs shall be planted in each furrow a maximum of 6" apart and covered with soil to a approximate depth of 2".
 - c. The surface shall then be smoothed and compacted by means of a culti-packer, roller or other similar equipment weighing 60 to 90 pounds per lineal foot of roller.
 - d. The planted areas shall be watered immediately after rolling in sufficient quantity to provide water penetration to a depth of at least 2" and shall then be kept moist until roots are established.
- C. Application of Fertilizer: The Contractor shall notify the Engineer one day before application of fertilizer.
1. Fertilizer shall be distributed uniformly over the planted area.
 2. The first application of fertilizer shall be applied at the rate of 300 pounds per acre about 2 weeks after grassing and shall be followed by watering.

3. The second application of fertilizer shall be applied at the rate of 300 pounds per acre about 1 week before the end of the maintenance period and shall be followed by watering.

D. Maintenance:

1. General: The Contractor shall be responsible for the proper care of the grassed areas. Maintenance shall include watering, weeding, moving, repairing, regrassing and protection, and shall be required until the entire project is accepted, but in any event for a period not less than 45 days after planting of grass.
2. Watering: After planting of seeds or grass sprigs or mulching the ground shall be watered as deemed necessary by the Contractor to establish a healthy growth. Watering shall be done in a manner that will prevent erosion due to the application of excessive quantities of water, and the watering equipment shall be of a type that will prevent damage to the finished surface.
3. Weeding: Weeds shall be uprooted and removed completely and in no case shall they be allowed to grow and propagate more seeds. Large holes caused by weeding shall be filled with screened soil and raked level.
4. Mowing: Grass shall be mowed to a height of 1" whenever the height of grass becomes 1-1/2".
5. Repairing and Regrassing: When any portion of the surface becomes gullied or otherwise damaged and grass has failed to grow, such areas shall be repaired with screened soil and replanted with grass. Any area of one foot square or more in which grass has failed to grow after 30 days of maintenance shall be regrassed.
6. Protection: The grassed areas shall be protected against traffic so that the grass establishes a healthy growth. Grassed areas damaged by traffic shall be replanted.

3.2 ACCEPTANCE OF GRASSING

- A. At the time of acceptance, the grass shall have been well-established and shall be given a final weeding and a final mowing to a height of 1 inch.
- B. At the end of the maintenance period, should there appear areas where grass has failed to grow, such areas shall be replanted with grass, refertilized and maintained beyond the maintenance period until a healthy growth is established.

END OF SECTION

DIVISION 3 – CONCRETE

SECTION 03300 – CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

Furnish and all labor, materials and equipment necessary to construct and install the concrete work as indicated on the contract drawings and specified herein.

1.2 STANDARD SPECIFICATIONS

Work covered under this section shall follow the below listed sections of the County's STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, dated September 1986 and STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, dated September 1984 as revised, except as amended in the plans and/or specifications herewith. (Paragraphs concerning Measurement and Payment in the Sections are not applicable to this project.)

- A. Subgrade Section 29
- B. Select Borrow for Subbase Course Section 30
- C. Aggregate Base Course Section 31
- D. Portland Cement Concrete Section 39
- E. Concrete Sidewalk Section 42
- F. Reinforcing Steel Section 48

1.3 SAMPLING AND TESTING

- A. Sampling – ASTM C172: Collect samples of fresh concrete to perform tests specified. ASTM C31 for making test specimens.
- B. Slump Tests – ASTM C143: Take concrete samples during concrete placement. The maximum slump may be increased as specified with the addition of an approved admixture provided that the water-cement ratio is not exceeded. Perform tests at commencement of concrete placement, when test cylinders are made, and for each batch (minimum) or every 10 cubic yards (maximum) of concrete.
- C. Compressive Strength Tests – ASTM C39: Make four test cylinders for each set of tests in accordance with ASTM C31. Test one cylinder at 7 days, two cylinders at 28 days, and hold one cylinder in reserve. Provide concrete cylinders for compression tests not less than once a day, nor less than once for each 100 cubic yards of concrete, nor less than once for each 5,000 square feet of surface for slabs or walls. If the average strength of the 28-day test cylinders is less than f'_c and a maximum of one single cylinder is less than f'_c minus 300 psi, take three ASTM C42 core samples and test. If the average strength of the 28-day test cylinders is less than f'_c and two or more cylinders are less than f'_c minus 300 psi, take six core samples and test. Concrete represented by core tests shall be considered structurally adequate if the average of the

three cores is equal to at least 85 percent of f_c and if no single core is less than 80 percent of f_c . Locations represented by erratic core strengths shall be retested. Remove concrete not meeting strength criteria and provide new, acceptable concrete at no additional cost to the State. Repair core holes with nonshrink grout. Match color and finish of adjacent concrete.

- D. Testing: All sampling and testing shall be performed by an independent testing agency and all test results submitted to the Engineer for approval. All cost of sampling and testing shall be borne by the contractor.

PART 2 - PRODUCTS

2.1 MATERIAL

- A. Cement: Shall be Portland cement conforming to the requirements of ASTM C150, Type I.

- B. Concrete Aggregates:

1. Fine Aggregates shall be calcareous or basalt sands, or a combination thereof. They shall meet the grading requirements of ASTM C33 unless the concrete producer can provide past data that shows that a proposed non-conforming gradation will produce concrete with the required strength and suitable workability.

If manufactured sands are used in the concrete mix, the Contractor may select and use a water-reducing and/or an air-entraining admixture as specified hereinafter to provide satisfactory workability in the concrete. The cement content of a mix shall be as specified hereinafter, and the use of an admixture shall in no way result in the reduction of the cement factor.

2. Coarse Aggregates shall be crushed close-grained, blue lava rock meeting the grading requirements of sizes 57 or 67 (ASTM D448) or both. The maximum size of aggregate shall not be larger than 1/5 of the narrowest dimensions between sides of the forms of the member for which the concrete is to be used nor larger than 3/4 of the minimum clear spacing between individual reinforcing bars or bundles of bars.

- C. Water: Water used in mixing concrete shall be clean and free from injurious amounts of oils, acids, alkalis salts, organic materials or other substances that may be deleterious to concrete or reinforcement. Non-potable water shall not be used.

- D. Concrete Mixes: Concrete may be job mixed or ready mixed and shall be of the following class:

County's Class B (2,500 psi). Maximum allowable water per sack of cement shall be 7.3 gallons maximum.

- E. Reinforcing Steel: Shall be deformed bars conforming to ASTM A615/ A615M, Grade 40 or 60.

F. Curing Compound: Shall conform to ASTM C309.

PART 3 - EXECUTION

3.1 INSTALLATION AND WORKMANSHIP

A. Subgrade: The subgrade shall be graded to the required cross section, watered, and thoroughly compacted. Whenever unsuitable material is encountered, it shall be removed to a depth of 6 inches below the subgrade surface and replaced with select borrow and thoroughly compacted.

B. Forms: Shall be of metal or wood, free from warp and of sufficient strength to resist springing out of shape, and the depth shall be equal to the required thickness.

Forms shall remain in place for at least 24 hours after the concrete has been poured.

All forms shall be clean and well staked or braced with upper edges on a level with the finished work, and shall be thoroughly moistened in advance of placing concrete.

C. Inserts and Other Embedments: Furnish and install all anchors, bolts, inserts, metals ties, nailing blocks and other items to be built into the concrete before concrete is poured.

D. All reinforcing shall be continuous across construction joints. Keys and/or dowels shall be provided as required.

E. Placing: Prior to pouring of concrete, the subgrade shall be dampened but there shall be no puddles or pockets of mud on it. Concrete shall be poured continuously and shall be thoroughly tamped, screened, floated and trowelled to a smooth and even surface. The pouring and constructing of alternating blocks shall not be permitted.

F. All reinforcing shall be continuous across construction joints. Keys and/or dowels shall be provided as required.

G. Curing: Shall be accomplished by either water curing or impervious membrane curing or a combination of both and shall not be less than seven (7) days. No traffic of any kind shall be allowed on the concrete for at least ten days.

END OF SECTION

SECTION 16011

GENERAL ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. The Contractor under this Division shall provide all labor, materials, equipment, supervision, and services required for the construction of the electrical systems. The finished installations shall be complete, operable and shall include all work specified herein and shown on the Drawings.
- B. The work shall include complete testing of all equipment and wiring at the completion of the work and making any minor connection changes or adjustments necessary for the proper functioning of the system and equipment. All systems shall be properly adjusted and in working order at time of final acceptance.
- C. All steel reinforcement, miscellaneous metal-work, and grouting shall conform to the applicable requirements of the detailed equipment specifications as prescribed in appropriate sections.
- D. It is the intent of these Specifications and other Contract Documents to require an installation complete in every detail. Consequently, the Contractor will be responsible for minor details or for any special construction which may be found necessary to properly furnish, install, adjust, test, and place in successful and continuous operation, the entire electrical system.

1.2 DESCRIPTION OF WORK

Work specified in this Division shall include, but not be limited to the following:

- A. Secondary electrical utility service.
- B. Include in the bid and pay for the permits, inspection fees and deliver the certificate of final inspection to Engineer.
- C. Testing.

1.3 REFERENCES

Comply with the applicable requirements of the following standards unless otherwise indicated:

- A. Comply with local ordinances; National Electrical Code; National Electrical Safety Code; applicable regulations of the National Board of Fire Underwriters; specifications of ANSI, NEMA, UL, IES, and IPCEA; and regulations of the County of Kauai.
- B. Rules and regulations of the Kauai Island Utility Cooperative (KIUC).

- C. In the event of conflict between pertinent codes and regulations, and the requirements of the referenced standards, or those indicated in Specifications and on drawings, the provisions of the more stringent shall govern.

1.4 RELATED WORK

DIVISION 1 - GENERAL REQUIREMENTS

1.5 PERMITS AND INSPECTION

- A. All permits required by local ordinances shall be obtained and paid for by the Contractor.
- B. After completion of the work, the Engineer shall be furnished a certificate of final inspection and approval from the Electrical Inspection Department of local Authority Having Jurisdiction (AHJ).

1.6 COORDINATION

- A. Refer to all project Drawings and to all Sections of the project Specifications. Coordinate and fit all work accordingly so that all equipment will be properly located and readily accessible. The Drawings indicate the relation of wiring and connections and must not be scaled for exact locations. Verify all construction dimensions at the project and make changes necessary to conform to the building as constructed. Work improperly installed due to lack of construction verification shall be corrected at the Contractor's expense.
- B. Work shall be scheduled to avoid delays, interferences, and unnecessary work. If any conflicts occur necessitating departures from the Drawings and Specifications, details of departures and reasons therefore shall be submitted immediately for consideration by the Engineer.
- C. Coordinate utility company services with KIUC.

1.7 SUBMITTALS

- A. Submit in accordance with Section 01300 - SUBMITTALS.
- B. Written certification that electrical systems are complete and operational.

1.8 DELIVERY, HANDLING AND STORAGE

- A. Deliver all materials of this Division in manufacturer's original unopened packages or containers with label intact and legible.
- B. Use means necessary to protect the materials of this section before, during and after installation; to protect the installed work and materials of all other trades; and to protect the original structure, work, and materials of the State.

- C. In the event of damage, immediately make all repairs and replacements necessary to the approval of the Engineer and at no additional cost to the State.

1.9 WARRANTY

- A. Installation shall be complete in every detail as specified and ready for use. Any items supplied by Contractor developing defects of design, construction, or quality within one year of final acceptance by Engineer shall be replaced by such new materials, apparatus, or parts to make such defective portion of the complete system conform to the true intent and meaning of the Drawings and Specifications at no additional cost to the State.
- B. The warranty shall be countersigned by the General Contractor.

PART 2 - PRODUCTS

2.1 MATERIALS AND WORKMANSHIP

- A. All materials shall conform to the latest issue of all applicable standards as established by NEMA, NFPA, ANSI, IEEE, IES, ASTM and Underwriters' Laboratories, and shall bear the manufacturer's name and trade name and when available, the Underwriters' Label.
- B. Neat appearances in the finished work will be required. Only experienced electrical workers shall be employed for the electrical installation.
- C. All work not installed and completed in accordance with the latest rules and regulations of the NEC, OSHA, NESC, and all local ordinances shall be removed and reinstalled correctly at the Contractor's expense.

PART 3 - EXECUTION

3.1 GENERAL

- A. Install all electrical materials and equipment in accordance with manufacturer's recommendations and as approved by the Engineer for the seismic zone classification at the project site.
- B. Cut, break, drill and patch as required to install electrical system. Repair any surface damage or marred by notching, drilling or any other process necessary for installation of electrical work. Patch any damaged surfaces to match the existing surface.
- C. The Electrical Contractor shall coordinate his work with other trades to avoid conflicts with civil elements of this project.

3.2 JOBSITE CONDITIONS

- A. These specifications are accompanied by construction drawings including site plans of all trades, and show locations of conduits and other electrical equipment. The locations are approximate and before installing, study adjacent details and make installation in

most logical manner. Any device may be relocated within 10'-0" before installation at direction of Engineer without additional cost to State.

- B. Before installing, verify all dimensions and sizes of equipment.
- C. Verify that electrical system may be installed in strict accordance with the original design, the Drawings and Specifications and the manufacturer's recommendations.
- D. In the event of discrepancy, immediately notify the Engineer. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.3 DEMONSTRATION OF COMPLETE ELECTRICAL SYSTEMS

- A. Submit written certification that electrical systems are complete and operational. Submit certification with Contractor's request for final review.
- B. At the time of final review of electrical work, demonstrate the operation of electrical systems. Provide labor, apparatus, and equipment for systems' demonstration. The various tests shall be under the direction and supervision of the Engineer.
- C. A visual inspection of all electrical equipment, to check for foreign material, tightness of wiring and connection, proper grounding, matching nameplate charts with specification, etc., shall be made prior to actual testing.

END OF SECTION

SECTION 16100
ELECTRICAL WORK

PART 1 - GENERAL

1.1 SUMMARY

This section includes, but is not limited to, electrical systems as indicated in the drawings.

1.2 RELATED WORK

SECTION 16011 - GENERAL ELECTRICAL REQUIREMENTS applies to this section with additions and modifications specified herein.

1.3 APPLICABLE PUBLICATIONS

The publications cited within this specification form a part of this specification to the extent referenced. Unless otherwise indicated, the most recent edition of the publication with current revisions and amendments will be enforced.

1.4 SUBMITTALS

A. Submit in accordance with SECTION 01300 - SUBMITTALS.

B. Product Data:

1. Utility company metering equipment.
2. Overcurrent protection devices.
3. Warning tape.

C. Field Test Reports: Submit the following test results for approval in report form as stipulated in item "FIELD QUALITY CONTROL" hereinbelow:

Grounding system test.

PART 2 - PRODUCTS

2.1 GENERAL

A. Materials shall be new and those items listed by the Underwriters' Laboratories shall bear "UL" label of approval.

B. Brand names, manufacturer's names and catalog numbers indicate standard of design and quality required. Acceptable manufacturers for electrical apparatus include ABB, Square D, Siemens, Eaton or approved substitute. All apparatus supplied shall bear the name of the approved manufacturer on its nameplates.

C. Electrical apparatus shall be supplied through the manufacturer's designated representative by a local distributor.

D. Proof of compliance shall be furnished when shop drawings are submitted.

2.2 RACEWAYS

A. Rigid Nonmetallic Conduit: Polyvinyl chloride, Schedule 40 or Schedule 80 as indicated.

B. Fittings for Rigid Nonmetallic Conduit: NEMA TC 3 for PVC and UL 514B.

2.3 CONDUCTORS

A. Solid or stranded copper, sizes according to American Wire Gauge, as shown on Drawings and #12 AWG minimum unless otherwise indicated. Stranded conductors only for #8 AWG and larger. All wiring shall be color coded.

B. Conductors Larger Than #8 AWG: Type XHHW.

C. Cabling: Not acceptable.

D. Color Coding: Color shall be green for grounding conductors and white for neutrals; except where neutrals of more than one system are installed in same raceway or box, other neutrals shall be white with a different colored (not green) stripe for each. Color of ungrounded conductors in different voltage systems shall be as follows:

120/240 Volt, Single Phase:

a. Phase A - black.

b. Phase B - red.

2.4 SPLICES AND TERMINATION COMPONENTS

UL 486A-486B for wire connectors and UL 510 for insulating tapes. Connectors for No. 10 AWG and smaller diameter wires shall be insulated, pressure-type in accordance with UL 486A-486B or UL 486C (twist-on splicing connector). Provide solderless terminal lugs on stranded conductors.

2.5 CIRCUIT BREAKERS

Circuit breakers, unless otherwise shown, shall be molded case, toggle mechanism operated, with no-fuse ambient-compensated thermal-magnetic overload automatic trip units for overcurrent and short-circuit protection, and contacts rated to interrupt short-circuit currents as specified on Drawings. Multi-pole breakers shall have single, common operating handle for all poles. Toggle positions "ON", "OFF" and "TRIPPED" and breaker rating engraved or embossed on body and visible without removing enclosure cover.

2.6 UTILITY COMPANY METERING EQUIPMENT

Provide in accordance with Kauai Island Utility Cooperative (KIUC) standards.

2.7 GROUND RODS

UL 467. Ground rods shall be copper-clad steel, with minimum diameter of 5/8 inch and minimum length of 8 feet.

2.8 WARNING TAPE

Preprinted polyethylene tape, 4 mil thick, detectable foil-backed red color, 3-inch minimum width.

2.9 DUCT SEAL

Pliable, non-toxic material used for application around conductors in raceway and in empty conduits to minimize moisture and rodent/insect infiltration. Must be re-enterable material allowing for removal/reapplication after initial installation. Non-drying, non-cracking, non-corrosive material that will not adversely affect raceway and conductors. Provide duct seal at all duct entries in apparatus and risers to prevent water infiltration via duct system.

2.10 MANUFACTURER'S NAMEPLATE

Each item of equipment shall have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place; the nameplate of the distributing agent will not be acceptable.

2.11 WARNING SIGNS

Provide warning signs for arc flash protection in accordance with NFPA 70E and NEMA Z535.4 for equipment that is likely to require examination, adjustment, servicing, or maintenance while energized. Provide field installed signs to warn qualified persons of potential electric arc flash hazards when warning signs are not provided by the manufacturer. The marking shall be clearly visible to qualified persons before examination, adjustment, servicing, or maintenance of the equipment.

2.12 HARDWARE, SUPPORTS, BACKING, ETC.

A. Provide all hardware, supports, backing and other accessories necessary to install electrical equipment. Wood materials shall be treated against termites, steel materials shall be stainless steel or galvanized steel as indicated for corrosion protection, and non-ferrous materials shall be brass or bronze.

B. Bolts, nuts, washers, and screws used for exterior use shall be Type 316 stainless steel.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Electrical installations shall conform to requirements of NFPA 70 and IEEE C2 and to requirements specified herein.
- B. Service Entrance Identification: Service entrance disconnect devices shall be labeled and identified as such. Provide laminated plastic labels conforming to paragraph "IDENTIFICATION" hereinbelow.
- C. Conductors:
 - 1. Provide insulated conductors installed in rigid nonmetallic conduit, except where specifically indicated or specified otherwise or required by NFPA 70 to be installed otherwise. Utilize non-wax type lubricants for pulling, chemically neutral to insulation and sheath. Mechanical means for pulling to be tongue-limiting type and not be used for #2 AWG wires and smaller. Grounding conductor shall be separate from electrical system neutral conductor. Provide insulated green equipment grounding conductor for circuit(s) installed in conduit and raceways.
 - 2. Clean all raceways, boxes, and enclosures before pulling wires and cables. Form neatly in enclosures for minimum of cross-overs.
- D. Conduit Installation:
 - 1. Use conduits with approved coupling and connectors. All cuts square, using saw. Ream the ends. Bends made with approved tools. Reject flattened or crushed conduit. No running thread. Bushing and 2 locknuts at connection to boxes and enclosures.
 - 2. All raceways shall be blown and swabbed after installation to remove any water then immediately sealed to prevent water infiltration during construction. Raceways must remain sealed except when pulling conductors. If water is discovered during the warranty period the Contractor shall remove water from raceways and associated boxes at no additional cost to the State.
 - 3. Conduit Support: Support conduit by pipe straps. Fasten by machine screws, welded threaded studs, or spring-tension clamps on steel work. Threaded C-clamps shall not be used. Do not weld conduits or pipe straps to steel structures. Load applied to fasteners shall not exceed one-fourth proof test load.
 - 4. Directional Changes in Conduit Runs: Make changes in direction of runs with symmetrical bends or cast-metal fittings. Make field-made bends and offsets with hickey or conduit-bending machine. Do not install crushed or deformed conduits. Avoid trapped conduits. Prevent plaster, dirt, or trash from lodging in conduits, boxes, fittings, and equipment during construction. Free clogged conduits of obstructions.

5. Locknuts and Bushings: Fasten conduits to metal boxes and cabinets with 2 locknuts where required by NFPA 70, where insulated bushings are used, and where bushings cannot be brought into firm contact with the box; otherwise, use at least minimum single locknut and bushing. Locknuts shall have sharp edges for digging into wall of metal enclosures. Install bushings on ends of conduits and provide insulating type where required by NFPA 70. Provide threaded, weatherproof hubs for all raceway connections to boxes and enclosures.
- E. Concrete: Concrete for electrical requirements shall be at least 2500 psi concrete with one-inch maximum aggregate.
- F. Grounding and Bonding: Provide in accordance with NFPA 70. Ground exposed, non-current-carrying metallic parts of electrical equipment, grounding conductor in raceways, and neutral conductor of wiring systems. Make ground connection at main service equipment and extend grounding conductor to point of entrance of metallic water service. Make connection to water pipe by suitable ground clamp or lug connection to plugged tee. If flanged pipes are encountered, make connection with lug bolted to street side of flanged connection. Supplement metallic water service grounding system with additional made electrode in compliance with NFPA 70.
1. Ground connections to equipment and other metallic parts directly exposed to ungrounded conductors by insulated conductors, No. 12 minimum, AWG copper, N.E.C. Type TW, green insulation.
 2. All grounding wire runs shall be within raceways. Run equipment ground wires together with circuit conductors.
 3. Resistance: Maximum resistance-to-ground of grounding system shall not exceed 25 ohms under dry conditions. Where resistance obtained exceeds 25 ohms, contact the Engineer for further instructions.

3.2 IDENTIFICATION

- A. Metering equipment shall be provided with plastic plate identifying itself and its use.
- B. Plastic plate shall be laminated black and white, engraved 1/4-inch high lettering to expose black layer. Plate shall be riveted to the cover and located directly below device handle, or top side of door.
- C. CAUTION SIGNS shall be provided as required by Ordinances and/or by OSHA.

3.3 FIELD QUALITY CONTROL

Furnish test equipment and personnel and submit written copies of test results. Give the Engineer 10 working days' notice prior to each test.

- A. Devices Subject to Manual Operation: Each device subject to manual operation shall be operated at least 5 times, demonstrating satisfactory operation each time.

- B. Inspect conduit system for completeness, loose couplings and proper support.
- C. Grounding System Test: Test grounding system to ensure continuity and that resistance to ground is not excessive. Test each ground rod for resistance to ground before making connections to rod; tie grounding system together and test for resistance to ground. Make resistance measurements in dry weather, not earlier than 48 hours after rainfall. Submit written results of each test to the Engineer and indicate location of rods as well as resistance and soil conditions at time measurements were made.

END OF SECTION