

State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF BOATING AND OCEAN RECREATION
Honolulu, Hawaii

BOARD OF LAND AND NATURAL RESOURCES

Dawn N.S. Chang
Chairperson

CONTRACT SPECIFICATIONS AND PLANS


Job No. MA24-03
Kahului Small Boat Harbor Prefabricated Bathroom & Wastewater System
Kahului, Maui, Hawaii


March 2024

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Approved: 
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Division of Boating and Ocean Recreation

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March 2024

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NOTICE TO BIDDERS

(Chapter 103D, HRS)

COMPETITIVE SEALED BIDS for Job No. MA24-03, Kahului Small Boat Harbor Prefabricated Bathroom & Wastewater System, Kahului, Maui, Hawaii shall be submitted to the Department of Land and Natural Resources, Division of Boating and Ocean Recreation, Engineering Branch on the specified date and time through the State of Hawaii e-Procurement System (HIePRO) at: <http://www.spo.hawaii.gov/hiepro>.

The Department of Land and Natural Resources Interim General Conditions dated October 1994, as amended, and the General Conditions – AGS008 latest revision (General Conditions), shall be made a part of the specifications. Electronic copies of the General Conditions are available through the State Procurement Office website.

The purpose of this Invitation for Bids is to award to a Contractor work that shall consist of paying for all materials, tools, equipment, labor and other incidental work necessary to furnish, deliver and install a prefabricated bathroom and wastewater treatment system with absorption bed disposal and obtain Department of Health approval for construction and use of the wastewater system at the Kahului Small Boat Harbor, Kahului, Maui, Hawaii as required or called for in this Proposal, Specifications and Plans.

Due to the nature of work contemplated, bidders must possess a valid State Contractor's license Class "A". All plumbing work and installation of the wastewater treatment system shall be done by a contractor with a Class "C-37" plumbing license or equivalent specialty license. All electrical work shall be done by a contractor with a Class "C-13" electrical license. The installation of the prefabricated structure at the project site shall be done by a contractor licensed in the State of Hawaii with a minimum of five (5) years of experience installing prefabricated structures in the State of Hawaii. Upon request, contractor's may be required to submit a list of at least three (3) completed projects that included installation of pre-fabricated structures.

This project is located directly at the Kahului Small Boat Harbor, off Kahului Beach Road, Kahului, Hawaii.

The estimated cost of construction is \$750,000.00.

Prospective Bidders are strongly recommended to visit the project site prior to submitting their bid. Special arrangements shall be made by calling Mr. Paul Sensano at (808) 243-5818.

As a condition for award of the contract and final payment, the vendor shall provide proof of compliance with the requirements of 103D-310(c) HRS. Proof of compliance/documentation is obtained through Hawaii Compliance Express (HCE). Vendors shall register in Hawaii Compliance Express (HCE), a program separate from HIePRO. The vendor is responsible for maintaining compliance. If the vendor does not maintain timely compliance in HCE, an offer otherwise deemed responsive and responsible may not be awarded.

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

The Engineering Branch Head is responsible for administering and overseeing the Contract, including monitoring and assessing contractor performance.

The job is subject to preference for Hawaii Products established by Section 103D, Hawaii Revised Statutes. The Hawaii Product List may be examined at the State Procurement Office. Should there be any questions, please use the question and answer section of 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. SEALED PROPOSALS: **Not applicable. See 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 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 standard questionnaire. When required, 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. Bidders on this project shall possess a Class "A" contractor's license. See Notice to Bidders for specialty contractor license requirements.

- 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. **For contracts less than \$50,000, the State reserves the right to contract the work under a purchase order.**
- 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 Contractor shall process all required permit applications, obtain all

necessary permits and approvals, and pay all charges and fees related to project permits. Special attention shall be called to the Contractor's responsibility to obtain the services of civil engineer licensed in the State of Hawaii to prepare all necessary documents to obtain approval from the State Department of Health, Wastewater Branch (DOH-WWB) for construction and use of the wastewater system, including payment for all engineering and permitting fees due to the civil engineer for these services. The cost of these services shall be included in the Contractor's bid. In all cases, the Contractor shall give all notices necessary and incident to the due and lawful prosecution of the work.

The Department of Land and Natural Resources, Division of Boating and Ocean Recreation is exempt from the following permits:

- SMA Permit
- Building Permit
- Grading Permit

The following is a list of *known* permits or approvals required for this project. The contractor is still responsible to determine all project permit requirements whether listed below or not:

- Approval from DOH-WWB for construction and use of new wastewater system
- Approval from Disability and Communication Access Board for compliance with Americans with Disability Act

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 LOCAL LABOR: The Contractor shall hire local labor whenever practicable.

- 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 by the Contractor at the end of the project in both hard copy and electronic copy in Adobe PDF format on CD ROM.

- Y. ASBESTOS CONTAINING MATERIALS: The use of asbestos containing materials or equipment is prohibited. The Contractor shall insure that all materials and equipment

incorporated in the project are asbestos-free

- Z WORKER SAFETY: The Contractor shall provide, install and maintain in satisfactory condition all necessary protective facilities and shall take all necessary precautions for the protection and safety of its workers in accordance with the Occupational Safety and Health Standards for the State of Hawaii. The Engineer shall have the right to suspend the performance of the work in accordance with sub-section 7.20 - Suspension of Work of the General Conditions.
- AA. TOILET FACILITIES: All toilet facilities constructed at the project site shall be in accordance with the Public Health Regulations of the State Department of Health (DOH). All necessary precautions shall be observed at the project site. The use of sanitary facilities shall be strictly enforced and workers violating these provisions shall be promptly discharged.
- BB. SIGNS: Whenever the project involves closing or obstructing any public thoroughfare, the Contractor shall provide traffic signs conforming to the applicable provisions of the current edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways", published by the Federal Highway Administration as directed by the Engineer for the purpose of diverting or warning traffic prior to the construction area. All traffic signs shall bear proper wording stating thereon the necessary information as to diverting or warning traffic.
- The Contractor shall also 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. **Not in Contract.**
- All signs shall be kept neat and clean, and properly erected at all times.
- CC. FIELD OFFICE AREA FOR DEPARTMENT: 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. **Not in Contract.**
- 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 the contactor shall be in compliance with the following requirements:

- 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).
- 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).
- 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).

COMPLIANCE, DOCUMENTATION AND HAWAII COMPLIANCE EXPRESS

As a condition for award of the contract and as proof of compliance with the following requirements of 103D-310(c) HRS:

Vendors are required to be compliant with all appropriate state and federal statutes. Proof of compliance (compliance documentation) is required. See the HePS Buyer FAQ on the State Procurement website for more information.

Proof of compliance/documentation is obtained through Hawaii Compliance Express (HCE). Vendors shall register in Hawaii Compliance Express (HCE), a program separate from HePS. The annual subscription fee to utilize the HCE service is currently \$12.00. Allow 2 weeks to obtain complete compliance status after initial registration. It is highly recommended that vendors subscribe to HCE prior to responding to a solicitation.

The vendor is responsible for maintaining compliance. If the vendor does not maintain timely compliance in HCE, an offer otherwise deemed responsive and responsible may not be awarded.

Vendors are required to be compliant with all of the requirements of 103D-310(c) HRS at the specified response due date (bid opening). The proof of compliance/documentation will be verified through the Hawaii Compliance Express. Failure to be fully compliant at the specified response date may deem the vendor’s bid to be non-responsive and vendor’s bid will be rejected.

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.hawaii.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 “ninety (90)” 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 ninety (90) 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) days after the date of bid opening, the Contractor may submit a claim for increased labor and materials costs (but not overhead costs) that will be incurred after 365 days after the date of bid opening plus the contract time allowed for performance of the work. 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. INSURANCE REQUIREMENTS

1. **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.
2. All insurance described herein will be maintained by the Contractor for the full period of the contract and in no event will be terminated or otherwise allowed to lapse prior to written certification of final acceptance of the work by the Department.
3. 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.

4. Nothing contained in these insurance requirements is to be construed as limiting the extent of Contractor's responsibility for payment of damages resulting from its operations under this contract, including the Contractor's obligation to pay liquidated damages, nor shall it affect the Contractor's separate and independent duty to defend, indemnify and hold the Department harmless pursuant to other provisions of this contract. In no instance will the Department's exercise of an option to occupy and use completed portions of the work relieve the Contractor of its obligation to maintain the required insurance until the date of final acceptance of the work.
5. All insurance described herein shall 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.
6. 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.
7. 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.
8. 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.
9. In addition, the Contractor's insurance policies shall contain the following clauses:
 - (a) The State of Hawaii is added as an additional insured with respect to operations performed for the State of Hawaii.
 - (b) It is agreed that any insurance maintained by the State of Hawaii will apply in excess of, and not contribute with, insurance provided by this policy.
- 10. 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 commercial general liability insurance shall include the State as an additional insured. 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 State shall be named as additional insured. 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 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.

TECHNICAL SPECIFICATIONS

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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. Construction Lines, Levels and Grades: The Contractor shall verify all lines, levels and elevations indicated on the drawings before any clearing, excavation or construction begins. Any discrepancy shall be immediately brought to the attention of the Engineer, and any change shall be made in accordance with the Engineer's instruction. The Contractor shall not be entitled to extra payment for failing to report the discrepancies before proceeding with any work whether within the area affected or not.
- B. Examination of Premises: The Contractor shall contact the Engineer and obtain permission before visiting the site.
- 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 utilities 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 or the operations of the facilities in the adjacent areas. Where the Contractor's operations would result in interruptions which would hamper the operations of the facilities or its adjacent areas, the Contractor shall rearrange the schedule of work accordingly.
 - 2. The Contractor shall maintain safe passageway to and from the facility's occupied areas and other occupied spaces for the user agency personnel and the public at all times.
- F. Contractor Use of Premise
 - 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).

2. If lead testing was done and the data is appended to this Section, the Contractor shall review the data to insure understanding of lead containing paint identification and location, that the testing was for design purposes only, and that the results do not satisfy any of the requirements of the 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 and public parking.
2. Areas to be used by the Contractor shall be as designated by the Engineer. Any lawn or existing sites 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 award of contract.
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 together with the marked-up field office plans to the Engineer.
 - 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.

R. Permits

1. The Contractor shall obtain and pay for all necessary permits and approvals prior to the commencement of the work. These permits shall include, but not be limited to, the permits listed below.
 - a. Department of Health, Wastewater Branch: Approval for construction
 - b. Department of Health, Wastewater Branch: Approval for use
 - c. Disability and Communication Access Board: Approval for compliance with Americans with Disability Act and latest ADAAG.

END OF SECTION

SECTION 01090

STANDARD REFERENCES

PART 1 – GENERAL

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

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
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
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 American, Inc. (Formerly called: Overhead Electrical Crane Institute - OECI) 1326 Freeport Road Pittsburgh, PA 15238
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
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
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 77450NEC 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
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

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

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

- A. 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. The following submittals are required to be provided in accordance with the specific requirements of each section. This list does not relieve the Contractor from providing the comprehensive list required by Section 01019 – GENERAL SPECIFICATIONS.

1. Section 01019 – GENERAL SPECIFICATIONS

a. A comprehensive list of the required submittals.

2. Section 02050 – DEMOLITION

a. Proposed demolition and removal procedures.

3. Section 02243 – GEOTEXTILE

a. Manufacturer's product data.

b. Warranty.

4. Section 02372 – GROUTED BAG RIPRAP

a. Shop drawings.

b. Manufacturer's product data.

c. Manufacturer's installation instructions.

d. Project references.

5. Section 02457 – PRESTRESSED CONCRETE PILES

a. Manufacturer's product data.

b. Shop drawings.

c. Welding certificates.

d. Concrete design mixes.

- e. Qualification data for installer, manufacturer, and testing agency.
 - f. Material test reports.
 - g. Material certificates.
 - h. Pile driving equipment information.
 - i. Static pile test reports.
 - j. Pile driving records.
 - k. Pre-installation meeting minutes.
6. Section 02458 – STEEL SHEET PILING
- a. Detail drawings.
 - b. Descriptions of pile driving equipment.
 - c. Certified test reports.
7. Section 03210 – Reinforcing Steel
- a. Shop drawings.
8. Section 03320 – Marine Concrete
- a. Mix designs.
 - b. Certificates of compliance.
 - c. Catalog data.
 - d. Test results.
9. Section 03415 – Precast Structural Concrete
- a. Shop drawings.
 - b. Product data.
 - c. Design data.
 - d. Fabricator's installation instructions.

10. Section 05011 – Aluminum Fabrications

- a. Shop drawings and design data.

11. Section 05500 – Metal Fabrications

- a. Shop drawings.

12. Section 06500 – Plastic Lumber

- a. Shop drawings.
- b. Product data.
- c. Samples.
- d. Manufacturer’s installation instructions.
- e. Manufacturer’s certification.
- f. Warranty.

1.2 SUBMITTAL PROCEDURE

- 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 shall be required and shall be reviewed by the Engineer, prior to any ordering of materials and equipment.
- E. Unless otherwise noted, excepting for physical samples and documents requiring wet signatures, all submittals shall be provided to the Engineer in electronic (.pdf) format. 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.

1.3 REVIEW PROCEDURE

- A. When the shop drawings have been reviewed by the Engineer, the drawing(s), in pdf

format, will be returned to the Contractor appropriately stamped. If major changes or corrections are necessary the drawing(s) will be returned to the Contractor with such changes or corrections indicated. The Contractor shall correct and resubmit the drawing(s) in electronic (.pdf) format 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.

B. Returned submittals will indicate one of the following actions:

1. No Exceptions Taken
 - a. This response indicates that the material, or work method is in general conformance with the design concept and complies with the drawings and specifications. In this event the Contractor may begin to implement the work method or incorporate the material or equipment covered by the submittal.
2. Reviewed – See Remarks
 - a. This response indicates limited corrections are required. The Contractor may begin implementing the work method or incorporating the material and equipment covered by the submittal in accordance with the noted corrections. A corrected copy of the submittal shall be provided with the post-construction submittal package.
3. Amend & Submit
 - a. This response indicates that the submittal is insufficient or contains incorrect data. Copies will be marked accordingly and will be required to be resubmitted. Except at his own risk, the Contractor shall not undertake work covered by this submittal.
 - b. The Contractor shall resubmit the corrected package until the submittal is returned and marked either "No Exceptions Taken" or "Reviewed – See Remarks".
4. Rejected
 - a. This response indicates that the material, equipment, or work method is not in general conformance with the design concept or incompliance with the drawings and specifications. Except at its own risk, the Contractor shall not undertake work covered by such submittals.
 - b. The Contractor shall resubmit the corrected package until the submittal is returned and marked either "No Exceptions Taken" or "Reviewed –

See Remarks".

- C. 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.

- D. 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.

END OF SECTION

SECTION 01505

MOBILIZATION AND DEMOBILIZATION

PART 1 – GENERAL

1.1 GENERAL REQUIREMENTS

- A. This section covers the requirements for mobilization and demobilization.

1.2 MOBILIZATION

- A. 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

- A. 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

- A. 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.
- B. 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.
- C. 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

- A. This section covers the furnishing, installing and maintaining barricades in accordance with the requirements of the contract.
- B. 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 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. Nails shall be galvanized wire nails. As many and as large a size as is practicable shall be used.
- C. Paints shall be exterior enamel paint of the best grade or first line as made by approved manufacturers.
- D. 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 barricade designs such as plastic molded 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. Barricades shall be constructed in a first class, workmanlike manner in accordance with details shown on the plans and as specified herein.
- B. 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.

- C. 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.
- D. 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.
- E. Barricades furnished and paid for as provided herein may be used for temporary detours, construction phasing, or other temporary traffic control work.
- F. Barricades furnished and paid for use in temporary detours or construction phasing may be used for permanent location called for on the plans.
- G. 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.
- H. 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.
- I. 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.
 - 1. Both vertical faces of each barricade rail shall be reflectorized.
 - 2. Wooden rails shall be reflectorized with one of the following:
 - a. 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
 - b. A hardened aluminum backed reflective sheeting as specified in Subsection 712.20(C)(5) of the “Standard Specifications for Road and Bridge Construction.”
- J. Rails, frames, and braces shall be white.

1. 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:
 - a. Orange and white stripes shall be used in the following conditions:
 - 1) Construction work.
 - 2) Detours.
 - 3) Maintenance work.
 - b. Red and white stripes shall be used in the following conditions:
 - 1) On roadways with no outlet (i.e. dead ends, cul-de-sacs).
 - 2) Ramps or lanes closed for operational purposes.
 - 3) Permanent or semi-permanent closure or termination of a roadway.
- K. Barricades shall be kept in good condition throughout their usage during construction until the end of the contract.
- L. The Contractor shall repair, repaint, clean, or replace the barricades as required and as directed by the Engineer to maintain their effectiveness and appearance.
- M. The Contractor shall immediately replace all lost, stolen or damaged barricades, lamps, sand bags and other approved weights.
- N. 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.
- O. 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, chemicals, or asphalt 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. 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. Pile driving operations shall be confined to the period between 9:00 a.m. and 5:30 p.m., Monday through Friday. Pile driving will not be permitted on weekends and legal State and Federal holidays.
4. 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 and Stormwater Runoff

1. During interim grading 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. Best Management Practices shall be implemented, constructed, and maintained as needed 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 streams, waterways, the ocean waters, 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. No dumping of waste concrete will be permitted at the job site.
4. 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.

5. 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.
6. 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 02050

DEMOLITION

PART 1 – GENERAL

1.1 GENERAL REQUIREMENTS

- A. This section covers demolition and removal as indicated in the plans or specified herein. All materials resulting from demolition work, except as indicated or specified otherwise, shall become the property of the Contractor and shall be removed from the limits of Government property. Remove rubbish and debris from the job site daily, unless otherwise directed. Store materials which cannot be removed daily in areas specified by the Engineer. The Contractor shall pay for all necessary permits and certificates that may be required in connection with this work

1.2 SUBMITTALS

- A. Submit the following items for review. Work may not begin until these submittals have been reviewed and an adequate response per Section 01300 – has been provided.
 - 1. Proposed demolition and removal procedures.
 - a. Procedures shall provide for coordination with other work in progress and a detailed description of methods and equipment to be used for each operation, and sequence of operations.

1.3 DUST CONTROL

- A. Take appropriate action to check the spread of dust to the surrounding area and to avoid the creation of a nuisance in the surrounding area. Do not use water if it results in hazardous or objectionable conditions, such as flooding or pollution. Comply with all dust regulations imposed by Federal, State, and Local air pollution agencies.

1.4 PROTECTION

- A. Existing Improvements: Protect existing improvements that are to remain in place, that are to be reused, or that is to remain the property of the Engineer by temporary covers, shoring, bracing, and supports. Repair items damaged during performance of the work or replace with new to the satisfaction of the Engineer and at no cost to the State. Do not overload structural elements. Provide new supports or reinforcement for existing construction weakened by demolition, removal, and relocation work. Construction equipment and vehicles shall neither be permitted on, nor shall be

stored on the existing work that is to remain in place.

- B. Trees: Protect trees to remain within the project site which might be damaged during the demolition work.
- C. Public Safety: Where pedestrian and driver safety is endangered in the work or storage areas, use traffic barricades with flashing lights. Notify the Engineer prior to beginning any such work. The Contractor shall conduct operations with minimum interference to streets, driveways, sidewalks, and passageways, etc.
- D. Use of explosives will not be permitted. PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 EXISTING FACILITIES

- A. The existing below grade utilities shall be secured (capped) and remain in place. Seal and cap utility lines where necessary as required by regulations of the authority having jurisdiction.
- B. The existence of active utilities lines within the construction area other than those indicated is not definitely known. Should any be encountered, the Contractor shall not disconnect same without authorization of the Engineer, but shall inform the latter immediately of each discovery, and shall follow his instructions.

3.2 SAFETY

- A. Work shall be done in accordance with safety provisions of the Manual of Accident Prevention in Construction, published by the Associated General Contractors of America.

3.3 DISPOSITION OF MATERIALS

- A. Title to Materials: Title to all materials and equipment to be removed, except as specified otherwise, is vested in the Contractor upon receipt of notice to proceed. The Engineer will not be responsible for the condition or loss of, or damage to, such property after notice to proceed. Materials and equipment shall not be viewed by prospective purchasers or sold on the site. Burning or burying of materials on the site will not be permitted.
- B. When removing the materials from the property, truck loads shall be trimmed and loaded as to prevent spillage.

3.4 CLEANUP

- A. Debris and Rubbish: Remove and transport debris and rubbish in a manner that will

prevent spillage into ocean or adjacent areas. Cleanup spillage from ocean and adjacent areas. The Contractor shall leave the premises clean, neat, and orderly.

- B. Comply with all Federal, State, and Local hauling and disposal regulations.

END OF SECTION

SECTION 02100

SITE PREPARATION

PART 1 – GENERAL

1.1 GENERAL REQUIREMENTS

- A. The work to be performed under this section shall include clearing the premises of all obstacles and obstructions, the removal of which will be necessary for the proper reception, construction, execution and completion of the other work included in this contract.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 GENERAL

- A. Maintenance of Traffic: The Contractor shall conduct operations with minimum interference to streets, driveways, sidewalks, passageways, etc.
 - 1. When necessary, the Contractor shall provide and erect barriers, etc., with special attention to protection of personnel.
- B. Protection: Throughout the progress of the work, protection shall be provided for all property and equipment, and temporary barricades shall be provided as necessary. Work shall be done in accordance with the safety provisions of the Manual of Accident Prevention in Construction, published by the Associated General Contractors of America, and the State of Hawaii's Occupational Safety and Health Standards, Rules and Regulations.
- C. No burning of fires of any kind will be allowed.
- D. Reference Points: Bench marks, etc., shall be carefully maintained, but if disturbed or destroyed, shall be replaced as directed by the Engineer, at the Contractor's expense.
- E. Disposal: All materials resultant from operations under this Section shall become the property of the Contractor and shall be removed from the site. Loads of materials shall be trimmed to prevent droppings.

3.2 EXISTING UTILITY LINES

- A. The existence of active underground utility lines within the construction area is not definitely known other than those indicated in their approximate locations on the Drawings. Should any unknown line be encountered during excavation, the Contractor shall immediately notify the Engineer of such discovery. The Engineer shall then investigate and issue instructions for the preservation or disposition of the unknown line. Authorization for extra work shall be issued by the Engineer only as he deems necessary.

3.3 CLEARING AND GRUBBING

- A. The Contractor shall clear the premises of all obstacles and obstructions, the removal of which will be necessary for the proper reception, construction, execution, and completion of other work included in this contract.
- B. After clearing has been completed, remove tress and roots to a minimum of 3 feet below existing ground level. Remove all large roots in excess of 2 inches in diameter, and backfill and compact the resulting depression. All debris accumulated from this operation shall be completely removed from the premises by the Contractor.
- C. The Contractor shall protect from injury and damage all surrounding trees, plants, etc., that are to remain and shall leave all in as good as condition as at present. Any damage to existing improvement shall be repaired or replaced by the Contractor to the satisfaction of the Engineer.

3.4 CLEAN UP OF PREMISES

- A. Clean up and remove all debris accumulated from building operations from time-to-time as directed. Upon completion of the construction work and before final acceptance of the contract work, remove all surplus materials, equipment, scaffoldings, etc., and leave entire job site raked clean and neat to the satisfaction of the Engineer.

END OF SECTION

SECTION 02200

EARTHWORK

PART 1 – GENERAL

- 1.1 GENERAL REQUIREMENTS: This section covers the requirements for earthwork including but not limited to excavation, filling, and backfilling.
- A. It shall be the responsibility of the Contractor to examine the project 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.
 - D. The contractor shall coordinate with the State regarding archaeological monitoring requirements. No work shall begin prior to this coordination and all work shall proceed in accordance with the State's archaeological monitoring requirements.
- 1.2 SUBMITTALS
- A. Submit the following items for review. Work may not begin until these submittals have been reviewed and an appropriate response per Section 01300 – Submittals has been provided.
 - 1. Manufacturer's product data.
 - 2. A plan for achieving all compaction requirements noted on the plans and these specifications.
 - 3. Sequence of work.
 - 4. Name and license number of land surveyor or civil engineer responsible for laying out baselines, establishing grades, and staking.
- 1.3 REMOVAL AND REPAIR WORK
- A. The contractor shall exercise every precaution to preserve and protect all structures, walkways or utility improvements which are to remain or be relocated. Portions of

walkway and pavement which are to remain shall be saw-cut neat and true to line. Restore all pavement and curbs upon completion of the work.

1.4 PROTECTION

- A. Erect temporary barricade to prevent people from entering into project area, to the extent as required/approved by the Engineer. The extent of barricades may be adjusted as necessary with the approval of the Engineer. This work shall be accomplished at no extra cost to the State of Hawaii.
- 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 protect from damage all surrounding structures, trees, plants, grass, walks, pavements, etc. Any damage will be repaired or replaced by the Contractor to the satisfaction of the Engineer at no cost to the State.

1.5 PERMITS

- A. The Contractor shall obtain and pay for necessary permits prior to the commencement of work.

1.6 MAINTAINING TRAFFIC

- A. The Contractor shall conduct operations with minimum interference to streets, driveways, sidewalks, traffic activities, etc.
- B. When necessary, the Contractor shall provide, erect and maintain lights, barriers, etc., as required by traffic and safety regulations with special attention to protection of life.

1.7 CONSTRUCTION LINES, LEVELS, AND GRADES

- A. The Contractor shall verify all lines, levels and elevations indicated on the drawings before any clearing, excavation or construction begins. Any discrepancy shall be immediately brought to the attention of the Engineer and any changes shall be made in accordance with his instructions. The Contractor shall not be entitled to extra payment if he fails to report the discrepancies before proceeding with any work whether within the area affected or not.
- B. The laying out of base lines, establishment of grades and staking out the entire work shall be done by a licensed Surveyor or a licensed Civil Engineer, registered in the

State of Hawaii. He shall be solely responsible for their accuracy. Erect and maintain substantial batter boards showing construction lines and levels.

1.8 CLEANUP

- A. Clean up and remove all debris accumulated from construction operations from time to time, as directed by the Engineer. Upon completion of the construction work and before final acceptance of work, remove all surplus materials, equipment, etc. and leave entire jobsite clean and neat.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Aggregate base course shall meet the requirements of the 2005 Standard Specifications for Road and Bridge Construction, Sections 304 and 703.
- B. Riprap shall be sized as noted per plans and shall be composed of basalt “blue rock” or similar material, having specific gravity at or above 2.60.
- C. Boulders for grouted boulder fill shall be sized as noted per plans and shall be composed of basalt “blue rock” or similar material, having specific gravity at or above 2.60.
- D. General fill materials shall be composed of compactable native materials or imported 3” minus crushed rock.
- E. Excavated onsite basalt may be crushed or otherwise reused as fill or riprap with the Engineer’s approval.

PART 3 – EXECUTION

3.1 EXCAVATION

- A. Protective Measures
 - 1. All excavation shall be protected and guarded against danger to life, limb and property.
 - 2. Shoring, cribbing and logging, as required to safely preserve the excavations and earth banks, free from damages resulting from the work shall be provided and installed by the Contractor.
 - 3. All excavations shall be kept free from standing water. The Contractor shall do all pumping and draining that may be necessary to remove water to the extent required in carrying on the work. Grading shall be controlled so that the ground

surface is properly sloped to prevent water run-off into structural foundations and open trenching excavations.

4. The Contractor shall conduct operations with minimum interference to streets, driveways, sidewalks, passageways, traffic, etc. The Contractor shall confine all work, equipment, materials, and personnel as much as possible to the work area as indicated. 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 minimal disruptions to neighbors. When necessary and when directed, the Contractor shall provide and erect barriers, etc. with special attention to the protection of personnel.
5. The underground utility lines crossing the construction area known to exist by the designer are shown on the plans. Should any be encountered during excavation, whether shown on the plans or not, the Contractor shall not disconnect same without authorization from the Engineer but shall inform the latter immediately of each discovery. The Engineer shall investigate and issue proper authorization for procedure.

B. General

1. Excavation shall be done to the lines and grades indicated. Concrete indicated to be removed shall be removed or broken up into pieces of sizes permitted in other paragraphs of this section. When incorporated in fill, broken up pieces shall be well mixed with finer materials filling all spaces between the pieces.
2. Excavation for footings, foundation, etc., shall have level beds on unfilled, undisturbed, firm bearing, with stepped level where necessary. Small soft spots shall be compacted to unyielding firmness.
3. Excavated materials deemed unusable by the Engineer shall be removed from the site at the Contractor's expense.

3.2 BACKFILL

- A. Rough Grading: The areas within the contract zone limit shall be graded to the bottom of aggregate base course or riprap, whichever is applicable per plan. Contractor shall take the necessary precautions to prevent the drainage of water into construction area.

END OF SECTION

SECTION 02225

TRENCHING, BACKFILLING, AND COMPACTING

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

This section covers the requirements for trenching, backfilling, and compacting.

- A. Work included: Trench, backfill, and compact as specified herein and as needed for installation of underground utilities associated with the Work.
- B. Related Work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.2 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Use equipment adequate in size, capacity, and numbers to accomplish the work in a timely manner.
- C. In addition to complying with requirements of governmental agencies having jurisdiction, comply with the directions of the Engineer.
- D. Compaction requirements are defined by American Society for Testing and Materials (ASTM) publication D-1557 "Moisture-Density Relations of Soils and Soil-Aggregate Mixtures using 10-lb Rammer and 18-inch Drop."

1.3 SUBMITTALS

- A. Shoring and sheeting plan: Describe materials of shoring system to be used. Indicate whether or not components will remain after filling or backfilling. Provide plans, sketches, or details along with calculations by a professional engineer registered in Hawaii. Indicate sequence and method of installation and removal.

- B. Dewatering plan: Describe methods for removing collected water from open trenches and diverting surface water or piped flow away from work area. Describe equipment and procedures for installing and operating the dewatering system indicate.

1.4 PERMITS

- A. Obtain necessary permits required from applicable agencies. All permit fees will be considered incidental to the work and a separate payment shall not be made. If the Contractor elects to discharge dewatering effluent into State waters, the Contractor shall obtain an NPDES Permit.

PART 2 - PRODUCTS

2.1 BACKFILL MATERIALS

- A. All materials shall be in accordance to the Department of Public Works, County of Maui "STANDARD SPECIFICATIONS FOR PUBLIC WORKS" dated September 1986 and "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION", dated September 1984 as revised, except as amended in the plans and/or specifications herein (paragraphs of Measurements and Payments in the Sections are not applicable to this project).
- B. Materials shall be in accordance with the Geotechnical Engineering Exploration, Lahaina Small Boat Harbor Ferry Pier Improvements, Lahaina, Maui, Hawaii, prepared by Geolabs, Inc., January 17, 2019.
- C. Select Material: Backfill from the bottom of the trench to one foot above the top of the pipe shall be select material. Sand, graded crushed rock (commonly known as "rock sand") or excavated granular or sandy material shall be used for select material provided that all rocks or lumps of material over one inch in its longest dimension have been removed. Select material shall be free from salt, ashes, refuse, organic material or other material which, in the opinion of the Engineer, is unsuitable.

All material to be used as select material backfill shall be approved by the Engineer. If in the opinion of the Engineer the excavated material does not meet the grading requirements of select material, the Contractor shall be required to screen the material prior to its use as select material backfill.

- D. Ordinary Material: Material used in the upper portion of the backfill from one foot above the top of the pipe to the surface of the ground or subgrade of the road shall not contain stone, rock or other material larger than six inches in its longest dimensions. No wood, vegetable matter or other material which, in the opinion of the Engineer, is unsuitable, shall be included in the backfill. No "adobe" or other materials

determined to be deleterious by the Engineer shall be included in the backfill.

- E. The Contractor shall obtain the approval of the Engineer of all backfill material.

2.2 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Engineer.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 FINISH ELEVATIONS AND LINES

- A. All material excavated from trenches shall be considered unclassified, whether consisting of earth, lava, soft rock, decomposed rock, solid rock, boulders, or coral. The trench shall be so dug that the pipe can be properly installed to the alignment and grade specified. Excavation shall commence at the point directed by the Engineer and shall be carried on in an orderly manner. No trench shall be opened more than 500 feet in advance of the installed pipe without the approval of the Engineer. No jumps or spaces will be permitted unless approved by the Engineer. Before proceeding with any excavation under asphaltic concrete and concrete pavements, the Contractor shall cut the edges of the excavation with a power saw to insure a neat cut along the pavement.
- B. Trench Widths:
 - 1. The widths of trenches for all pipes and appurtenances shall be as shown on the Drawings.
 - 2. Increases in widths over those shown due to sheeting, bracing, or other necessities of construction, may be made by the Contractor with the approval of the Engineer but no additional compensation will be allowed for such extra width.
 - 3. Bell holes shall be provided at each joint to permit the jointing of pipes to be made properly.

C. Trench Depths:

1. In general, trench depths for all pipes and appurtenances shall be as shown on the Drawings.
2. Where necessary, the Engineer reserves the right to raise or lower the grades or to change alignments from those shown on the Drawings.

D. Excavation Below Grades:

1. Any part of the trench excavated below grade by the Contractor shall be corrected with select material, thoroughly compacted in place at no cost to the State.

3.3 PROCEDURES

A. Utilities:

1. All excavated areas shall be toned prior to excavation.
2. Unless shown to be removed, protect lines shown on the drawings or otherwise made known to the Contractor prior to trenching. If damaged, repair or replace at no additional cost to the State.
3. If active utility lines are encountered, and are not shown on the Drawings or otherwise made known to the Contractor, promptly take necessary steps to assure that service is not interrupted.
4. If service is interrupted as a result of work under this Section, immediately restore service by repairing the damaged utility at no additional cost to the State.
5. Expose existing utilities to confirm clearances as initial trenching work. If existing utilities are found to interfere with the permanent facilities being constructed under this Section, immediately notify the Engineer and secure his instructions.
6. Do not proceed with permanent relocation of utilities until written instructions are received from the Engineer.

B. Protection of persons and property:

1. Barricade open holes and depressions occurring as part of the Work, and post warning lights on property adjacent to or with public access.
2. Operate warning lights during hours from dusk to dawn each day and as

otherwise required.

3. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, washout, and other hazards created by operations under this Section.

C. Blasting:

1. Blasting for excavation will not be permitted.

D. Dewatering:

1. Remove water by pumping or other methods to prevent the softening of surfaces exposed by excavation, prevent hydrostatic uplift, and provide a stable trench condition for installation of the utility. Use screens and gravel packs or other filtering systems on the dewatering devices to prevent the removal of fines from soil.

2. Dispose water at an approved location by pumps, drains, and other approved methods. Dewatering effluent shall not be discharged into State waters unless the Contractor obtains an NPDES dewatering permit from the State Department of Health.

- E. During the period of construction, the Contractor shall protect the public against mud, dust and similar nuisances and shall take steps to abate such nuisances.

- F. Convenient access to buildings along the line of work shall be maintained and temporary approaches shall be provided and kept in order. Temporary bridges for pedestrian traffic shall have handrails securely fastened to them. Handrails shall be free from any projecting nails, splinters, and rough edges.

- G. Storing of excavated material alongside the trench shall be done in such a manner as not to obstruct traffic. Whenever, in the opinion of the Engineer, proper storage of excavated material cannot be made alongside the pipe trench, the material shall be hauled away from the work site. If the excavated material meets the requirements for backfill material and proper storage cannot be made alongside the pipe trench, the material shall be stockpiled at convenient locations for later use in backfill.

H. Surplus Material:

1. Unless otherwise specified in the Plans or Specifications, or ordered by the Engineer, surplus excavated material shall become the Contractor's property and shall be removed from the work site and disposed of at no cost to the

State.

3.4 TRENCHING

- A. Comply with pertinent provisions of this Section.
- B. Provide sheeting and shoring necessary for protection of the Work, undermining of existing facilities and for the safety of personnel.
 - 1. Prior to backfilling, remove all sheeting.
 - 2. Do not permit sheeting to remain in the trenches except when, in the opinion of the Engineer, field conditions or the type of sheeting or methods of construction such as use of concrete bedding are such as to make removal of sheeting impracticable. In such cases, the Engineer may permit portions of sheeting to be cut off and remain in the trench.
- C. Excavation:
 - 1. Short sections of a trench may be tunneled if, in the opinion of the Engineer, the conduit can be installed safely and backfill can be compacted properly into such tunnel.
 - 2. Where it becomes necessary to excavate beyond the limits of normal excavation lines in order to remove boulders or other interfering objects, backfill the voids remaining after removal of the objects at no additional cost to the State, as directed by the Engineer.
 - 3. When the void is below the subgrade for the utility bedding, use select materials and compact to the relative density directed by the Engineer, but in no case to a relative density less than 90%.
 - 4. When the void is in the side of the utility trench or open cut, use suitable earth or sand compacted or consolidated as approved by the Engineer, but in no case to a relative density less than 80%.
- D. Depressions:
 - 1. Dig bell holes and depressions for joints after the trench has been graded. Provide uniform bearing for the pipe on prepared bottom of the trench.
 - 2. Except where rock is encountered, do not excavate below the depth indicated or specified.

3. Where rock is encountered, excavate rock to a minimum overdepth of 4" below the trench depth indicated or specified.
- E. Where trenching occurs in existing lawns, remove turf in sections and keep damp. Replace turf upon completion of the backfilling.
- F. Cover:
1. Provide a minimum cover over the top of the pipe as indicated on the drawings.
 2. Where the minimum cover is not provided, jacket the pipes in concrete as indicated. Provide concrete with a minimum 28-day compressive strength of 2500 psi.

3.5 BEDDING

- A. Provide bedding as indicated on the Drawings.

3.6 BACKFILLING

A. General

1. All backfill material shall be placed in the trench by hand or by approved mechanical methods. The compaction of backfill material shall be done by tamping with hand tools or approved pneumatic tampers, by using vibratory compactors, by puddling if the backfill material can be suitably drained, or by any combination of the three. The method of compaction shall be approved by the Engineer and all compaction shall be done to the satisfaction of the Engineer.
2. When removal of unsuitable excavated material creates a shortage of backfill material, the Contractor shall, at no cost to the State, furnish material as specified in this section in the amount required to complete the backfill.
3. When backfill material is delivered by trucks, the material shall not be dumped directly into the trench but the fall of the material shall be broken at the edge of the trench. The backfill material shall then be deposited by hand or by approved mechanical methods.
4. Ensure that no damage is done to structures or their protective coatings.

B. Backfilling Around Pipe:

1. Select material shall be used to backfill the trench from its bottom to one foot above the pipe. Prior to the laying of the pipe, the select material cushion shall be deposited in the trench and shall be leveled off, compacted, and shaped to obtain a smooth compacted bed providing firm uniform bearing along the laying length of the pipe.
2. After the pipe is installed, but prior to testing the line, select material shall be deposited in the trench evenly on both sides and along the full length of the pipe in 6-inch maximum loose lifts. If necessary, additional select material can be deposited over the center of each length of pipe to prevent undue movement during testing of the line. Ensure that initially placed material is tamped firmly under pipe haunches. The bell holes at the pipe joints shall not be backfilled at this time.
3. The pipeline shall then be tested. After the pipeline has passed the test, the Contractor shall backfill the bell holes with select material. The select material, which had been previously deposited over the pipe in the trench, shall be leveled and compacted.

C. Backfilling to Grade:

1. From an elevation one foot above the top of the pipe to grade, the backfill material shall be placed in layers not to exceed 12 inches in loose lifts each lift shall be compacted to a relative density not less than 90%.
2. If the trench section is flooded, no further backfill shall be placed for two (2) days. After this period, the backfill shall again be thoroughly compacted to a relative density of not less than 90% by a method and with equipment approved by the Engineer.
3. The Contractor shall reconstruct the base course and pavement of roadway damaged by the construction of the pipeline as covered elsewhere in these Detailed Specifications.
4. Other improvements such as driveways, sidewalks, curbs, gutters, stonewalls, fences and other structures damaged during construction shall be replaced or repaired to their original condition or better as approved by the Engineer.

3.10 FIELD QUALITY CONTROL

- A. The Engineer will inspect and approve open cuts and trenches before installation of pipeline or structures, and will monitor the following tests:
1. Assure that trenches are not backfilled until all tests have been completed;

2. Check bedding for proper layer thickness and compaction;
3. Verify that test results conform to the specified requirements, and that sufficient tests are performed;
4. Assure that defective work is removed and properly replaced.
5. 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.

END OF SECTION

SECTION 02230

AGGREGATE BASE COURSE

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. Description. This work shall consist of furnishing and placing one or more courses of aggregate base on a prepared surface in accordance with the requirements of the contract.

PART 2 - PRODUCTS

2.1 MATERIALS

Materials shall meet the requirements specified in the following Subsections of Division 700 Materials of the "Standard Specifications for Road and Bridge Construction."

Aggregate – 703.06

Water – 712.01

PART 3 – EXECUTION

3.1 CONSTRUCTION REQUIREMENTS

A. Placing

1. The base material shall be placed on the prepared surface without segregation. Segregated materials shall be remixed until a uniform distribution is obtained. The material shall not be dumped in piles on the prepared surface.
2. Depositing and spreading shall commence at that part of the work farthest from the point of loading the material and shall progress continuously without breaks, unless otherwise directed by the Engineer.
3. If the required compacted depth of the base course exceeds 6 inches, the base shall be constructed on 2 or more layers of approximately equal thickness. The maximum compacted thickness of any one layer shall not exceed 6 inches.
4. If the contractor uses a vibratory roller weighing 9 tons or more, the lift

thickness may be increased to 7 inches.

5. Spreading of binder material over the surface of the compacted base will not be permitted. Additional material if required shall be incorporated uniformly throughout the thickness of the compacted material by scarifying and blading. The combined material shall meet all quality requirements as specified.

B. Shaping and compacting

1. The Contractor shall perform such shaping work as necessary and such that the finished base shall conform to the required grade and cross-section. The finished base where not controlled by adjacent structures or features shall not vary more than 0.04 foot above or below the theoretical grade.
2. Compaction of each layer shall continue until a density of not less than 95 percent of the maximum density, determined in accordance with the requirements of Subsection 106.09 - Special Test Methods, of the "Standard Specifications for Road and Bridge Construction, has been achieved. Field density determination will be made in accordance with Hawaii Test Method HWY-TC 1. The surface of each layer shall be maintained during the compaction operations in such a manner that a uniform texture is produced and the aggregates firmly keyed. Water shall be uniformly applied over the base materials during compaction in the quantity necessary for proper consolidation.
3. Should high or low spots develop during rolling operations, such spots shall be smoothed out by blading with a self-propelled and pneumatic-tired motor grader having a wheel base not less than 15 feet long and a blade not less than 10 feet long.
4. Each layer shall be compacted initially by rolling with three-wheel rollers followed by intermediate rolling with pneumatic-tired rollers. Final rolling shall be done with three-wheel rollers.

- C. Equipment. Three-wheel rollers and pneumatic-tired rollers shall conform to the requirements specified in Subsection 401.03(B)(4) - Rollers.

END OF SECTION

SECTION 02243

GEOTEXTILE AND GEOGRID

PART 1 – GENERAL

- 1.1 GENERAL REQUIREMENTS: This section covers the furnishing and installing of geotextile and geogrid fabric.
- 1.2 SUBMITTALS
- A. Submit the following items for review. Work may not begin until these submittals have been reviewed and an adequate response per Section 01300 – Submittals has been provided.
1. Manufacturer's product data.
 2. Sample warranty. The actual warranty may be submitted with project closeout documentation.
- 1.3 WARRANTY
- A. The contractor shall provide a one (1) year warranty against manufacturing defects in accordance with this specification.

PART 2 – PRODUCTS

- 2.1 MATERIALS
- A. The fabric shall be inert to biological degradation.
- B. The geotextile fabric shall be similar to Mirafi 135N or equal.
- C. The geogrid fabric shall be Tensar Tri-Ax or equal.

PART 3 – EXECUTION

- 3.1 DELIVERY
- A. The geotextile and geogrid fabric shall be delivered in a protective wrapping which shall protect the fabric from ultraviolet radiation and from abrasion during shipping and handling.
1. Any damaged geotextile or geogrid fabric or fabric that does not meet the

required physical property requirements in this specification shall be immediately replaced by the Contractor.

3.2 INSTALLATION

- A. The geotextile and geogrid fabric shall be installed in accordance with the manufacturer's specifications.

END OF SECTION

SECTION 02713

WATER SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

Furnish all labor, materials, equipment, and tools to install exterior water system up to 5 feet from the building. The work shall be inclusive of any phasing related work that may be required for the project.

1.2 SUBMITTALS

- A. Submit in accordance with SECTION 01330 – SUBMITTAL PROCEDURES.
- B. Submit certificates stating that the solder and fluxes used are lead free.

1.3 REFERENCE SPECIFICATIONS

The WATER SYSTEM STANDARDS, Department of Water Supply, Maui County, 2002, hereafter referred to as the DWS Standards or as amended. Measurement and payment provisions of these specifications are not applicable to this project.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Materials shall conform to DWS Standards.
- B. Water mains shall be PVC AWWA C900.
- C. Underground water service lines shall be copper tube, Type K, per ASTM B88.
- D. Above-ground water service lines shall be Schedule 80 PVC.
- E. Solder and Fluxes: Lead free, as recommended by copper manufacturer.
- F. Pipe Cushion: No. 4 manufactured fine sand. No substitutes.

2.2 OTHER MATERIALS

All other materials not specifically listed herein or shown on the drawings, but required for the successful installation and completion of the work are included and are subject to approval by the Engineer.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Lay out water lines as shown on the drawings or as needed. Location shown of 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; no assurance can be provided that actual locations will be precisely as shown on the contract drawings.
- B. All above-ground water piping shall be provided with stainless steel pipe thrust brackets or straps.
- C. Exercise due care and caution to avoid any damage to and impairment in the use of any existing utility lines.
- D. Installation, testing, disinfection and acceptance of water lines governed by DWS Standards.
- E. Connections to existing water lines in accord with DWS Standards. Contractor shall furnish all necessary pipe, fittings, appurtenances and incidental materials for connections.
- F. Trenching and backfilling in accord with DWS Standards. Compaction testing of backfill shall be done by an independent testing laboratory licensed in the State of Hawaii.
- G. Coordinate connection of new water lines with Engineer and DWS. Inform DWS and Engineer a minimum of one week prior to date of actual connection. Adjust slope of new water line to construct an acceptable, fully functional system.

3.2 CLEAN-UP

Upon completion of the work of this Section, immediately remove all debris and excess materials from the site.

END OF SECTION

SECTION 02720

SEWER SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

Furnish all labor, materials, equipment, and tools to construct exterior sewer system up to 5 feet from the building. The work shall be inclusive of any phasing related work that may be required for the project.

1.2 SUBMITTALS

Submit in accordance with SECTION 01330 – SUBMITTAL PROCEDURES. Before installation, submit affidavits from manufacturers or suppliers of pipe, pipe coating and fittings proposed, certifying that materials delivered to project conform to requirements of specifications.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Sewer System Standards: Standard Specifications for Public Works Construction, dated September 1986, and Standard Details for Public Works, dated September 1984, as revised, except as amended in the plans and/or specifications. (Paragraphs concerning Measurements and Payments in the sections are not applicable to this project.)
 - 1. PVC Sewer Pipe and Appurtenances..... Section 21
 - 2. Connection to Existing Sewer and Connecting Cesspool in Direct Line of Sewer..... Section 22
 - 3. Sewer Manholes..... Section 23
- B. Underground Piping: All underground piping shall be schedule 40 PVC with solvent welded joints/fittings.
- C. Above-ground Piping: All above-ground piping shall be schedule 80 PVC with solvent welded joints/fittings.
- D. Flexible Sewage Hose: 2” dia. crush proof reinforced flexible EPDM/Polyethylene All Weather, Max. Vacuum 29” Hg., Max. Temp. 180°F fitted with bronze or brass FNPSM fitting both ends, as manufactured by Good Year or approved equal.
- E. Dielectric Fittings: Up through 2 inches – nipple. 4-inch minimum length, per ASTM F 441, CPVC, Schedule 80. All size – dielectric union with galvanized or plated steel female pipe-threaded end and copper solder-joint end. Union shall have a water-impervious insulation barrier capable of limiting galvanic current to one percent of the short-circuit current in a corresponding bimetallic joint, and when dry, shall also be able to withstand a 600-volt break down test. Watts 3000 Series or approved equal.

2.2 DUPLEX SEWAGE LIFT STATION

- A. See Specification Section 13131 Sewage Treatment Unit for duplex sewage lift station specifications.
- B. Warranty
 - 1. All equipment and material shall be warranted to be free from defects in material and workmanship for a minimum of three (3) years following acceptance by the State.
 - 2. The warranty period shall not commence until the system has been proved proper by the State.

2.3 OTHER MATERIALS

- A. All other materials not specifically listed herein or shown on the drawings, but required for the successful installation and completion of the work are included and are subject to approval of the Contracting Officer.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Visit the worksite and become fully aware of all existing conditions. Investigate the Contract Documents and make proper provisions to avoid interferences or construction delays. Determine the exact route of each pipe.

3.2 INSTALLATION AND REQUIREMENTS

- A. Lay out sewer line shown on contract drawings or as needed for inspection by the Engineer. Location shown on the contract drawings of the various existing utility lines, which the new lines are to cross over or under or connect to where determined on the basis of the best information available, no assurance can be provided that actual locations will be precisely as shown on contract drawings.
- B. Duplex sewage lift station shall be installed in strict accordance with manufacturer's recommendations.
- C. Contractor shall exercise due care and caution to avoid damage to and impairment of the use of any existing utility lines.

3.3 CLEAN-UP

- A. Upon completion of the work of this Section, immediately remove all debris and excess materials from the site.

3.4 TESTING AND START-UP

- A. Installation of all equipment and accessories shall be done in accordance with the manufacturer's recommendations and as shown on the Drawings.

- B. The manufacturer's representative shall provide training to State operators after the systems have proved proper operation and as approved by the State and Engineer.

3.5 INSTRUCTIONS

- A. Instruct State personnel in the proper operation and maintenance for all plumbing, grinder and sewage pump-out systems. Provide and review the maintenance manuals with the State personnel. Submit a list of each manufacturer's warranties for the equipment furnished.

END OF SECTION

SECTION 03300

CAST-IN-PLACE CONCRETE PAVEMENT

PART I - GENERAL

This specification covers the requirements for furnishing, hauling, mixing, placing, and curing of concrete.

PART 2 - SUBMITTALS

The Contractor shall submit concrete mix design for approval.

PART 3 – PRODUCTS

3.1 MATERIALS

A. All materials shall be in accordance to the Department of Public Works, County of Maui “STANDARD SPECIFICATIONS FOR PUBLIC WORKS” dated September 1986 and “STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION”, dated September 1984 as revised, except as amended in the plans and/or specifications herein (paragraphs of Measurements and Payments in the Sections are not applicable to this project).

- | | | |
|----|-----------------------------------|------------|
| 1. | Portland Cement Concrete Pavement | Section 37 |
| 2. | Concrete Sidewalk | Section 42 |

3.2 ODD SHAPED SLABS

A. Concrete components shall have a minimum 28-day compressive strength of 4000 PSI and a minimum 28-day flexural strength of 650 PSI.

DESIGN WEIGHTS PER CUBIC YARD

MATERIAL	CEMENT	SAND	4F	3/4	1/2	WATER	TOTAL
Source	Hawaiian	Maui Lani	Camp 10	Camp 10	Camp 10	Camp 10	
SSD Weight (lbs)	630	421	997	634	1078	283	4043
Specific Gravity	3.15	2.69	2.79	2.84	2.84	1.0	
Absolute Volume, ft ³	3.21	2.51	5.73	3.58	6.08	4.54	25.65
Moisture (%)							
Absorption (%)		2.1	3.1	2.1	2.1		
Correction (%)							

Correction (lbs)							
Batch Wt. (lbs)							

- B. Unit Weight: A unit weight of 149.7 lb/ft³ shall be allowed.
- C. Maximum Water-Cementitious Materials Ratio: 0.45 for concrete required to have low permeability, such as interior slabs with vapor sensitive coverings.
- D. Do not add air entrainment to concrete of trowel-finished interior floors and suspended slabs. Do not allow entrapped air content to exceed 5 percent or 1.35 cubic feet.
- E. Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Master Builders - Pozzolith 322N at 3.0-7.0 oz/Cwt (6.5)
 - 2. Grace Concrete Products - STRUX 90/40 at 7.5 lbs/Cyd
 - 3. Master Builders – MasterLife CI 30 or approved equal calcium nitrite corrosion inhibitor at 3 gal/CY.
 - 4. Upon request, a hydration stabilizing admixture may be used to extend the slump life and placement time of this mix design. Any addition will be in accordance with the manufacturer’s recommendations. A slump of 2”-4” shall be allowed.

3.3 OTHER MATERIALS

All other materials not specifically listed herein or shown on the drawings, but required for the successful installation and completion of the work are included and are subject to approval by the Engineer.

PART 4 - EXECUTION

4.1 INSTALLATION

- A. All work shall be as detailed in “STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION”, dated September 1984, as revised or the construction drawings.
- B. All work shall conform to the Department of Public Works, County of Maui “STANDARD SPECIFICATIONS FOR PUBLIC WORKS” dated September 1986.

3.2 CLEAN-UP

Upon completion of the work of this Section, immediately remove all debris and

excess materials from the site.

END OF SECTION

PREFABRICATED BATHROOM

SECTION 13130

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

1.2 GENERAL CONDITIONS

This section covers the design, construction and installation of one (1) prefabricated bathroom complex (8'x 40'), in place complete.

A. The prefabricated bathroom (PB) manufacturer or its representative shall provide drawings, details and calculations necessary to demonstrate compliance with the requirements of this specification. All drawings shall be checked and stamped by a State of Hawaii, licensed Electrical, Mechanical and Structural Engineer.

B. Applicable Code Requirements:

1. The design and construction of the new prefabricated bathroom shall conform to the latest edition of the following:
 - a. 2003 International Building Code;
 - b. 2003 Uniform Plumbing Code;
 - c. 2008 National Electrical Code;
 - d. Americans with Disabilities Act Accessibility Guidelines (ADAAG) – Buildings and Facilities;
 - e. Section 103-44, HRS, and any revisions thereof, relating to Architectural Barriers to the Physically Handicapped;
 - f. State Occupational Safety and Health Law;
 - g. 2006 IECC;
 - h. All other applicable codes, laws, ordinances, rules and regulations of place of building. The strictest of the aforementioned shall govern the design and construction of this project.

C. Design Criteria:

1. The design and construction of the PB shall conform to the following design criteria:
 - a. The PB shall be a Type 5 NR structure.
 - b. The PB shall be designed for a Zone 2A, seismic load.
 - c. The PB shall comply with ADA Title III and latest ADAAG.
 - d. The anchor tie downs shall comply with the International Building Code for Exposure D, 105 mph wind load.

D. Coordination with others:

1. The PB - or its representative - shall coordinate the installation of the PB in accordance with the plans and recommendations by the Structural, Mechanical, and Electrical Engineers and manufacturer's instructions at the project site.

E. Design Phase:

1. Objectives: In preparing the Design Documents (plans and specifications), the prefabricated bathroom manufacturer or its representative shall take proper care to assure the following:
 - a. That all phases of the construction work are fully shown and/or described so that the intent of the work is understood by all concerned.
 - b. The use of sound construction practices utilizing methods, equipment and materials of proper dependability and durability with economy in operation and maintenance.
2. Working Drawings
 - a. All drawings shall be prepared in PDF format on 11" x17" sheets.
 - b. TITLE SHEET
 - 1) Standard Title Block.
 - 2) Name of project, tax key.
 - 3) Names of Architect and/or Engineers (for the manufacturer or its representative) with space allowance for their respective registration stamps.
 - 4) Index to drawings.
 - 5) Space for Signatures of Approval.
 - c. ARCHITECTURAL DRAWINGS
 - 1) Floor plans of each building shall be shown at a minimum scale of $\frac{1}{4}'' = 1'-0''$. Show the following:
 - a) Tabulation of gross floor area.
 - b) Room finish schedule.
 - c) Finish floor elevation.
 - d) Complete dimensions, locating all walls, columns, partitions, openings, equipment, fixtures, etc.
 - e) Door and window reference numbers.
 - f) Indicate reference to large scale details.
 - g) Indicate location and direction of "Section" cuts.
 - h) Indicate location and direction of "Section" cuts.
 - i) Plumbing fixture locations.

- 1) Detail floor plans of toilets shall be at a minimum scale of $\frac{1}{4}'' = 1'-0$. These are blow-ups of the interior floor plans and need not be drawings if the above floor plan is already at $\frac{1}{4}'' = 1'-0$.
 - 2) Roof Plan: Shall be at a minimum scale of $\frac{1}{4}'' = 1'-0$, showing the following:
 - a) Ridge, valleys, roof crickets.
 - b) Arrows, indicating direction of roof slope.
 - c) References to complete details.
 - 3) Exterior Elevations: Shall be at a minimum scale of $\frac{1}{8}'' = 1'-0$, showing additional information such as:
 - a) "Section" cuts.
 - b) Reference to details.
 - c) Profile of foundation.
 - 4) Interior Elevations: Shall be at a minimum scale of $\frac{1}{4}'' = 1'-0$, and showing the following:
 - a) Finish materials, casework, appliance, fixtures, mirrors.
 - b) "Section" cuts.
 - c) Reference to details.
 - 5) Building Sections: Shall be at a minimum scale of $\frac{1}{4}'' = 1'-0$. Cut as many complete sections through the building as required, including typical longitudinal and transverse sections.
 - 6) Details shall be drawn and dimensioned completely to show materials and method of construction.
 - 7) Door and Window Schedules: Elevations shall be at a minimum scale of $\frac{1}{4}'' = 1'-0$. Show the following:
 - a) Reference to schedule.
 - b) Reference to large scale details.
 - c) Dimensions as required.
 - d) Type of doors.
 - e) Type of windows.
- d. STRUCTURAL DRAWINGS
- 1) Foundation Plans: Shall be at a minimum scale of $\frac{1}{8}'' = 1'-0$, shall be oriented the same way as the architectural plans showing the following:

- a) Tie down sizes and details. May be incorporated with the architectural drawings showing the following:
 - b) Piers (jacks), bottom elevations and sizes.
 - c) Major dimensions locating structural elements.
 - d) References to details and “Section” cuts.
 - 2) Floor and Roof Framing Plans: Shall be at a minimum scale $\frac{1}{4}'' = 1'-0$. Show the following:
 - a) Structural members.
 - b) Indicate design assumptions (for future reference,
 - 3) Structural Details: Shall be at a minimum scale $\frac{3}{4}'' = 1'-0$. Shall be drawn and dimensioned completely to cover typical as well as special methods of construction. Show the following:
 - a) Size of structural members.
 - b) Size and spacing of bolts.
 - c) Size of welds (unless covered by notes).
 - d) All structural details shall be drawn on structural sheets.
 - e. MECHANICAL DRAWINGS: May be combined with architectural drawings. Show the following:
 - 1) Water service connection.
 - 2) Sewer system connection.
 - 3) Plumbing fixtures.
 - 4) Ventilation System.
 - f. ELECTRICAL DRAWINGS: May be combined with architectural drawings. Show the following:
 - 1) Electrical service connection. i.e. Live Load, etc.).
 - 2) Lighting and switching layout; and convenience outlets and telephone outlet location.
 - 3) Luminaires schedule.
 - 4) Power system, panels and outlets.
 - 5) Location of all special outlets.
 - 6) Panel board location.
 - 7) Electrical Engineer’s stamp and signature, where applicable
3. Submittal for Design Review
- a. Preliminary Design Submittal: The drawings and calculations shall be sent to the Department of Land and Natural Resources, Division of Boating and Ocean Recreation, Engineering Branch, 4 Sand Island Access Road, Honolulu, Hawaii, 96819, Attention: Mr. Finn McCall.

Submit the following:

PDF of prints of all drawings (11" x 17" sheets)

Word and PDF of specifications

PDF of the structural engineer calculations

- b. Final Design Submittal: The Final Design Submittal shall be made only after all comments on the Design Review have been incorporated in the final tracings and specification originals.

All final sheets of the final drawings shall have all required Structural, Mechanical, and Electrical Engineers' approval stamps and signatures. Submit the following:

1 set of prints of all drawings incorporating all revisions

1 set of specifications incorporating all revisions

1 set of all calculations

All State review check sets and comments.

PART 2 - PRODUCTS

2.1 PREFABRICATED BATHROOM COMPLEX MATERIALS

The specifications for the prefabricated bathroom complex are based on products provided by Container Storage Company of Hawaii, Ltd., 2276 Pahounui Dr, Honolulu, HI 96819.

- A. Brand names of materials or equipment indicated in this section are specified to indicate a quality, style, appearance or performance; the bidders shall use in their bids one of the specified brand names or approved equal.
- B. Warranty: The prefabricated bathroom complex shall be warranted, for a one-year period from the date of purchase, against material defects or workmanship.
- C. Structural Components:
Shall be based on base container being a new (2017 or later) 40' ISO shipping container.
General specifications as follows:

1. Base Container

New 40'L X 9.5'H X 8'W ("high cube") dry freight intermodal steel container, ISO 1AAA

Max. Gross Wt: 67,200 lbs

Empty Wt: 8,380 lbs

2. Shell: A-588 corrugated steel sides, roof, and swing doors on one end
 - a. Floors: 1 1/8" thick marine plywood, forklift tested to 16,000 lbs per 44 square inches
 - b. Wall tie down steel lashing rings, 4,000 lbs. cap. each (24 total) tested at 6,000 lbs.
 - c. Front corner post tie downs (10 total)
 - d. Door corner post tie downs (10 total) = restraint system, shoring slot will support 2" x 6" lumber
 - e. Vents, (2) each
3. Floor Framing
 - a. Floor joists: 16 ga. zinc-aluminum CSJ joist, ASTM A792 @ 16" O.C., blocking @ 4' O.C. (alt. 2x wood framing)
 - b. Decking: 1 1/8" marine grade T&G plywood subfloor, fasten to floor framing 6" O.C. edges, 12" O.C. field.
 - c. Fasteners: self-drilling #10 305 stainless steel bugle head screws.
4. Wall & Ceiling Framing
 - a. Furred wall framing: 20 ga. 1 5/8" galv. steel CSJ studs, ASTM A653 @ 16" O.C., top and bottom runners. IRC
 - b. Partition framing: 20 ga. 3 5/8" galv. steel studs, ASTM A653 @ 16" O.C., top and bottom runners.
 - c. Fasteners: self-drilling #8 pan-head framing screws, use 305 Stainless Steel for fastening to ISO container shell and in wet locations, electroplated galvanized elsewhere.
5. Exterior walls: All exterior walls are Corten Steel walls and roof. Exterior cladding wall includes T-111 siding and a elastomeric coated fabric roof system over treated plywood. All sheathing shall be treated for insect resistance in accordance with AWWA Standards U1, Use Category 2 (UC2) and specifically rated as suitable for Hawaii)
 - a. Framing shall be furring strips 5/16" c channel at 16. o.c.; with wall height of approximately 96".
 - b. Exterior siding shall be 5/8" T-111 exterior siding or equal, painted.
 - c. Trim shall be 1X4 rough sawn finger jointed treated lumber at corners, windows, and doors to match wall cover.
 - d. Fasteners shall be stainless steel on all siding and exterior trim.
 - e. Flashing: 2" X 2" galvanized or aluminum flashing installed over siding and under corners.

6. Side wall skirt:
The contractor shall install a side wall skirt continuously around the perimeter of the structure. The skirting material shall match the exterior siding.
7. Interior wall s (All framing use galvanized steel studs):
 - a. Framing shall be 2X4 stud grade at 16. o.c.
 - b. Bottom plate shall be single 2X4, utility grade.
 - c. Top plate shall be double or single 2X4, stud grade.
 - d. Insulation for interior partitions shall be R-11 unfaced full height.
 - e. Cove base shall be 4. rubber base.

B. Non-structural components:

1. Ceilings:
 - a. Ceiling height shall be minimum 7'-10" above finish floor.
 - b. Ceiling system shall be steel stud framed and insulated with PPG roll insulation, covered with laminated plywood.
2. Doors:
 - a. ANSI 250.8.3 Exterior grade fire-rated 1 hour honeycomb core doors, 1 3/4" thickness, 18 ga galvanized faces, elastomeric paint, UL listed.
 - b. Door Size: 32"W x 7'H, type LD (louvered top + bottom), with door closer reinforcement.
 - c. Accessible door: 36"W x 7'H, type LD (louvered top + bottom)
 - d. Frames: Custom 0.083" thickness welded tubular steel 4 sides, galvanized, elastomeric paint.
 - b. Door Prep: cylindrical bored latch + deadbolt
 - c. Hinges: 1 1/2 pair 4 1/2" x 4 1/2" full mortise, ANSI 5111, US32D finish.
 - d. Passage Latches: Lever style, cylindrical passage latchset, ANSI F75, US32D finish
 - e. Privacy lockset: cylindrical pushbutton combination lockset with outside key, lever style, ANSI F76B, US32D finish
 - f. Thresholds: low profile anodized aluminum, ADA accessible, ANSI A117.1
 - g. Closers: ANSI/BHMA A156.4 Grade 1 certified: Norton 410 series, 689 finish
 - h. Door guards will be furnished and installed by the by the contractor, PBCM and/or its representative and the cost shall be included in the appropriate proposal item for the project.
3. Windows
 - a. Aluminum Sliding Windows 1'x3' with screens
 - b. Tube Steel Frames (Painted)

4. Interior Finishes

- a. Wallboard: 5/8" Type WR gypsum board, Firecode 'X' (alt. Firecode 'C', ASTM 630, C1396 ("green board")), fire taped and floated, primed and painted exposed faces.
- b. Fasteners: #8 electroplated galvanized bugle head drywall screws, 8" O.C. edges, 12" O.C. field.
- c. FRP panels Fiber-reinforced plastic panel, 3/32" thickness, Fire rating Class C, color 'biscuit'.
- d. PVC trim: outside corner, edge, inside corner, division, color 'beige'

5. Exterior Finishes

- a. Roof Coating: Elastomeric, silicone based, white, 2 coats minimum
- b. Exterior Paint: Primer: Inorganic zinc oxide primer, 'Rust-Oleum' "Rust-O-Zinc"
- c. Color coat: Urethane mastic paint, 'Rust-Oleum' 9800 DTM Urethane Mastic, mist applied.

6. Interior Paint

- a. Primer: latex primer
- b. Color coat: mildew resistant interior latex enamel, water-based, 'Sherwin-Williams' "Bath Paint."

7. Floor covering:

- a. Flooring: Sheet vinyl, commercial grade, ASTM 1913, slip-resistant, fire rating
- b. Class B color 'blue-grey', weld seams.
- c. Base: 3/8" radius coved sheet vinyl, 6" high, PVC top edge trim.

8. Ventilation

- a. Bathroom vent fans: 180cfm,120VAC 1.5A UL listed: Broan mdl 509, thru-wall
- b. Blackwater Treatment Unit: 270 cfm, 120VAC 1.7A: Broan mdl 508, thru-wall

C. Electrical: Shall conform to the requirements of the latest edition of the NEC adopted by the County of Kaua'i at the time of construction.

1. Service: 120V single phase 200A

2. Panel: 200A NEMA Type 4, with NEMA 4 disconnect panel.

3. Materials:

- a. Supports:
- b. Channel/Struts: 'Unistrut' fiberglass channel, 1 1/5" x 1 5/8"

- b. Pipe clamps: 'Unistrut' 'Unisert' channel insert (conduit 3/4" and smaller), fiberglass rigid pipe clamps (conduits larger than 3/4").
 - c. Interior wiring: AC, MC armored cable, UL listed.
 - d. Exterior conduits: NMUA liquid-tight nonmetallic conduit, UL listed
 - e. Interior Boxes: galvanized steel, UL listed, BX cable clamps
 - f. Occupancy sensors: ultrasonic, 'Leviton' OSSMT-GAI, UL listed
 - g. Duplex outlets: GFCI 15A, 'Leviton' MGFN1, NEMA WD-1 and WD-6, UL 943 listed.
4. Lighting:
- a. LED vanity light: Lithonia Lighting FMVCAL 24" MVOLT, 120V 26W, UL listed
 - b. Ceiling wet listed: Lithonia Lighting VC150 vapor tight utility light, 20W A21 LED, UL listed
 - c. Emergency: Lithonia Lighting, EU2 LED M12, 120VAC, 90 minute battery, UL 924 listed, NFPA 101, NFPA 70-NEC and OSHA illumination standards. Damp location.
 - d. Exterior area: Outdoor 12V low voltage step lights (above doorways), UL listed.
- D. Mechanical: Shall conform to the requirements of the latest edition of the UPC adopted by the presiding County at the time of construction.
1. General
- a. Supply: Copper tubing, L grade, ATSM B88, sweat fittings, lead free solder.
 - b. plastic grommets on studs at copper pipes to prevent galvanic interaction.
 - c. Waste: Rigid PVC schedule 40, solvent welded joints, NSF and IAPMO certified.
 - d. Supports: Pipe clamps: 'Unistrut' fiberglass rigid pipe clamps
5. Bathroom Fixtures
- a. Handicap water closet, elongated bowl and seat, Gerber 21-718 or approved equal;
 - b. 19" X 17" wall hung lavatory with one piece wall hanger, Gerber 12- 314 or approved equal;
 - c. Lavatory faucet with ceramic disc, hot limit stop and ADA lever, A/S 7385.400.002;
 - d. Water heater shall be 2-1/2 gallon, 120 volts, 1440 Watts, High Efficiency, Ruud PEP2-1 or approved equal.
 - e. Vacuum relief valve shall be 1/2" brass, Watts #N36;
 - f. Sewer lines shall be PVC DWV, Schedule 40;
 - g. Water lines shall be copper;
6. ADA Options
- a. Lavatory: ADA compliant 'American Standard' 9140.047.020, white. ADA

ANSI/ICC A117.1 certified.

- b. Grab bars: 1 ½” diameter rolled, welded stainless steel tubes, ANSI 117.1 compliant. 18” – 36” – 42” – Bobrick B6806 series grab bars (or approved equal).

7. Accessories

- a. Toilet paper dispenser: Controlled delivery double roll holder, ANSI 117.1 compliant single roll – Bobrick B-685 (or approved equal) toilet tissue holder
- b. 18” X 30” framed glass mirror Bobrick B-164 series (or approved equal);

E. Signage

- 1. Nameplate: Each modular container shall have affixed to an exterior side, in a conspicuous place one 8”W x 5”H stainless steel plate engraved with the following information:
 - a. Manufacturer’s name and address
 - b. Product name and model number
 - c. Product serial number
 - d. Date of manufacture
- 2. Restrooms: Each restroom door shall have affixed on the exterior a sign conforming with the following:
 - a. General unisex bathroom: 9” square, ¼” thickness, pictogram male + female, plus braille.
 - b. ADA restroom: ADA unisex 12” diameter, ¼” thickness, contrasting blue circle and white triangle, plus Braille.
 - c. Toilet instructions: Each bathroom shall be fitted with a laminated plastic instructions poster, 11” x 17” minimum size affixed to the wall above the toilet paper dispenser.

PART 3 – EXECUTION

3.1 GENERAL REQUIREMENTS

- A. Workmanship:

All work shall be done by experienced and skilled workers that are familiar with the type of work required to the best practices of this trade.
- B. Qualifications: Prefabricated Bathroom Unit shall be provided by a manufacturer who has five (5) years prior manufacturing experience of modular buildings and is presently regularly engaged in the fabrication and erection of pre-fabricated structures of the type and quality indicated or specified.

3.2 PROJECT PHASING

The project is divided into the following phases, all of which shall be included in the Lump sum item for the Prefabricated Bathroom Complex:

- A. Design Phase: The Manufacturer or its representative shall engage the services of professional architectural and engineering consultants who are licensed to practice in the State of Hawaii; to prepare complete working drawings and technical specifications showing and describing the construction of the prefabricated bathroom complex. All drawings shall be stamped by the respective consultants preparing the construction drawings. The drawings and specifications shall be submitted for approval to the State. The Manufacturer or its representative shall continue onto the Construction Phase only when the drawings and specifications are approved by the State.

- B. Construction Phase:

The Contractor shall provide all labor, materials, tools and equipment necessary to install and construct the prefabricated bathroom complex based upon approved final design drawings and technical specifications prepared by his consultants.

The prefabricated bathroom complex shall be installed at the project site by detaching their hitch and tires; and mounting on concrete/CMU block piers with tie downs. The detachable items shall be stored under the structure.

3.3 CLEAN-UP AND PROTECTION

- A. Protect all installed finish work, millwork, fixtures, wall finishes, floor covering, ceiling panels, etc., from being defaced or marred during the installation. The PBCM and/or its representative shall replace or repair any damaged work/item as instructed by the Engineer at no additional cost to the State.
- B. At the completion of the installation, remove from the project site all rubbish, debris, etc., accumulated during the progress of this work.

PROJECT Q.A. CHECKLIST:

Item	DOR Description	Customer	CSCH	NA
1	Pre-Installation Site Inspection	X	X	
2	Bid Bonds			X
3	Labor & Material Payment Bonds			X
4	Work Schedule - To be mutually agreed upon	X	X	
5	Insurance Certificates	X	X	
6	Corporate Certification		X	
7	Catalog Cuts		X	
8	Samples			X
9	Taxes	X		
10	Permits: Building		X	
11	Permits: Electrical		X	
12	Permits: Plumbing		X	
13	Permits: Occupancy	X	X	
14	Permits: Building Transportation		X	
15	On-Site Insurance	X	X	
16	Geotechnical Tests	X		
17	Shop Drawings (Used for Manufacturing)		X	
18	Engineered Drawings/Calculations for Permit Approval		X	
19	Engineered Foundation Plan/Details		X	
20	Excavate Pit Set			X
21	Other			X
22	Transport Modules to site		X	
23	Verify Receipt of Ship Loose Materials		X	
24	Provide Site & Security for Modules	X		
25	Provide Level Grade Foundation	X		
26	Provide Piers and Pads			X
27	Concrete Block piers stacked with mortar.			X
28	Identify module location and elevation	X		
29	Position Modules		X	
30	Set Modules on Foundation with Truck		X	
31	Set Modules on Foundation with Crane		X	
32	Set Modules on Foundation with Rollers			X
33	Plumbing: Water Line Hook-up	X		
34	Plumbing: Sewer Line Hook-up	X		
35	Plumbing: Manifolds			
36	Electrical: Inter Connections Between Modules		X	X
37	Electrical: Distribution and Sub panels		X	
38	Electrical: Install Exterior Lights	X		
39	Electrical: Transformers & Poles	X		
40	Electrical: Other			X

Item	DOR Description	Customer	CSCH	NA
41	Electrical: Final Hook-ups	X	X	
42	Gutters & Downspouts- Material			X
43	Gutters & Downspouts- Labor			X
44	Gutters & Downspouts- Other			X
45	Flooring: Carpet Bars on Mod Line Carpet Seam			X
46	Flooring: Vinyl Tile on Mod Line Seam			X
47	Flooring: Other			X
48	Fire Alarms- Installation			X
49	Fire Alarms- Final Hook-ups			X
50	Sprinkler System: Installation			X
51	Sprinkler System: Final Hook-up			X
52	Suspended Ceiling: Restore T-Grid to Factory Config.			X
53	Suspended Ceiling: Restore Panels to Factory Config.			X
54	Suspended Ceiling: Restore Lights to Factory Config.			X
55	Ceiling: Modulux			X
56	Suspended Ceiling: Connect HVAC Drops and T-Grid			X
57	PA System – Design, Hardware, Wiring and Connections			X
58	Telephone Sys.– Design,Hardware,Wiring,Connections			X
59	Data System – Design,Hardware,Wiring and Connections			X
60	Skirting: Vinyl			X
61	Skirting: Aluminum			X
62	Skirting: Wood or Lattice			X
63	Re-Align Intersecting Partitions & Openings at Mod Lines			X
64	Install Interior/Exterior Trim at Wall Seams			X
65	Install Modifications per Scope of Work			X
66	Install Interior Doors			X
67	Steps - Two sets and install			X
68	Ramps			X
69	Platforms			X
70	Walkways			X
71	Step/Ramp Stamped Engineering Plans			X
72	Install Paving	X		X
73	Install Curbs	X		X
74	Install Landscaping	X		X
75	Roof: Membrane - Seal at Mod Lines			X
76	Roof: Steel - Seal at Mod Lines			X
77	Roof: Architectural Shingles			X
78	False Mansard			X
79	Overhangs			X

Item	DOR Description	Customer	CSCH	NA
80	Fascia			X
81	Dumpster	X		X
82	Disposal of Assembly Debris		X	
83	Substantial Completion Notification to Customer		X	
84	Notice of Defect within 48 hrs of Substantial Completion	X		
85	HVAC Balancing			X
86	Provide 120v power, water, sanitary facilities during install	X		
87	Window Coverings: Blinds			X
88	Site Restoration			X
89	Building Construction Clean		X	
90	Building Final Cleaning		X	

END OF SECTION

SEWAGE TREATMENT UNIT

SECTION 13131

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

1.2 GENERAL CONDITIONS

This section covers the design, construction and installation of one (1) prefabricated sewage treatment unit and absorption bed disposal system, in place complete.

- A. The contractor or prefabricated sewage treatment unit manufacturer or its representative shall provide drawings, details and calculations necessary to demonstrate compliance with the requirements of this specification. All drawings shall be checked and stamped by a State of Hawaii, licensed Electrical, Mechanical and Structural Engineer.
- B. The contractor or prefabricated sewage treatment unit manufacturer or its representative shall submit drawings, details and calculations as necessary to the State of Hawai`i, Department of Health, Wastewater Branch (DOH-WWB) for review and approval. The submittal to DOH-WWB shall include, but not be limited to, a Basis of Design Report including a site evaluation with percolation test results and design calculations; Construction Drawings showing all required details of the sewage treatment unit, distribution box, and absorption bed; and Operation & Maintenance Manuals. The contractor or prefabricated sewage treatment unit manufacturer or its representative shall obtain approval from DOH-WWB for construction as well as use of the sewage treatment system and wastewater effluent disposal absorption beds.
- C. The sewage treatment unit shall generally consist of the following components. These components do NOT represent all of the components require for proper construction and operation of the wastewater system. The contractor or prefabricated sewage treatment unit manufacturer is responsible to ensure all components required for proper construction and operation of the system are provided and installed.
 1. One 20' x 8' wastewater treatment module designed to treat restroom sewage to R-3 recycled water, as defined by the State of Hawaii, including:
 - a. Internal 500 gal. flow equalization tank,
 - b. 1000 gal RGP Bionest Anaerobic + Aerobic effluent treatment reactors,
 - c. 250 gal. treated effluent storage tank,
 - d. Pumps, hoses and connectors, and
 - e. Interior and exterior lighting.
 - f. Control panels
 - g. Backup power battery storage unit
 2. 2" connections for sewage input, 1" NPT connection for treated water output, with

buried plumbing between sewage treatment units and absorption bed fields.

3. Preloader Tank: Provide a minimum 1,500-gallon capacity, dual compartment, polypropylene septic tank, Infiltrator Model IM-1530 or approved equal. Excavation for the preloader tank shall extend a minimum of 12" from the walls of the tank. The tank shall be laid upon 6" of 1-1/2" clean drain rock and backfill around the tank shall be pea gravel. The top of the tank shall be a minimum of 12" below finish grade. A 12" wide x 12" deep non-reinforced concrete buoyancy counterweight collar shall be poured around the tank. Follow manufacturer's recommendations and details for construction of the concrete collar.
4. Duplex sewage pump station: Provide a duplex sewage lift station in HDPE pump basin with float tree, splice boxes, wiring, piping. A 12" wide x 12" deep non-reinforced buoyancy counterweight collar shall be poured around the sewage lift station pump basin. Follow manufacturer's or supplier's recommendations and details for construction of the concrete collar.
5. Absorption Bed: Provide a duplex sewage lift station in HDPE pump basin with float tree, splice boxes, wiring, piping. A 12" wide x 12" deep non-reinforced buoyancy counterweight collar shall be poured around the sewage lift station pump basin. Follow manufacturer's or supplier's recommendations and details for construction of the concrete collar.
6. Connection to the prefabricated bathroom complex plumbing and electrical systems.
7. See construction plans for requirement for the wastewater effluent disposal absorption beds.

D. Applicable Code Requirements:

2. The design and construction of the new prefabricated sewage treatment unit shall conform to the latest edition of the following:
 - a. 2003 International Building Code;
 - b. 2003 Uniform Plumbing Code;
 - c. 2008 National Electrical Code;
 - d. Americans with Disabilities Act Accessibility Guidelines (ADAAG) – Buildings and Facilities;
 - e. Section 103-44, HRS, and any revisions thereof, relating to Architectural Barriers to the Physically Handicapped;
 - f. State Occupational Safety and Health Law;
 - g. 2006 IECC;
 - h. All other applicable codes, laws, ordinances, rules and regulations of place of building. The strictest of the aforementioned shall govern the design and construction of this project.

E. Design Criteria:

The design and construction of the sewage treatment unit shall conform to, but not be limited to, the following design criteria:

- a. Hawaii Administrative Rules, Chapter 11-62 Wastewater Systems
- b. Type 5 NR structure.
- c. Designed for a Zone 2A, seismic load.
- d. Comply with ADA Title III.
- e. The anchor tie downs shall comply with the International Building Code for Exposure D, 105 mph wind load.

F. Coordination with others:

1. See 1.2 General Conditions, Paragraph B above for requirement to obtain services of a licensed civil engineer to obtain approval from DOH-WWB.
2. The sewage treatment unit manufacturer, or its representative, shall coordinate the installation of the sewage treatment unit in accordance with the plans and recommendations by the Structural Engineer and manufacturer's instructions at the project site. The utility hook ups will be performed by the State and/or its contractors.
3. Objectives: In preparing the Design Documents (plans and specifications), the sewage treatment unit manufacturer or its representative shall take proper care to assure the following:
 - a. That all phases of the construction work are fully shown and/or described so that the intent of the work is understood by all concerned.
 - b. The use of sound construction practices utilizing methods, equipment and materials of proper dependability and durability with economy in operation and maintenance.
 - c. The contractor or prefabricated sewage treatment unit manufacturer or its representative shall obtain approval of the sewage treatment system and wastewater effluent disposal absorption beds from the DOH.
4. Drawings: All drawings prepared by Structural, Mechanical, and Electrical engineers shall meet the following specifications:
 - a. All drawings shall be prepared on 11" x17".
 - b. TITLE SHEET
 - c. Standard Title Block.
 - d. Name of project, tax key.
 - e. Names of Architect and/or Engineers (for the manufacturer or its representative) with space allowance for their respective registration stamps.
 - f. Index to drawings.
 - g. Space for Signatures of Approval.

5. ARCHITECTURAL DRAWINGS

Floor plans of each building shall be shown at a minimum scale of $\frac{1}{4}'' = 1'-0$. Show the following:

- a. Tabulation of gross floor area.
 - b. Room finish schedule.
 - c. Finish floor elevation.
 - d. Complete dimensions, locating all walls, columns, partitions, openings, equipment, fixtures, etc.
 - e. Door and window reference numbers (if any).
 - f. Indicate reference to large scale details.
 - g. Indicate location and direction of "Section" cuts.
 - h. Indicate location and direction of "Section" cuts.
 - i. Plumbing fixture locations.
- j. Detail floor plans of toilets shall be at a minimum scale of $\frac{1}{4}'' = 1'-0$. These are blow-ups of the interior floor plans and need not be drawings if the above floor plan is already at $\frac{1}{4}'' = 1'-0$.
- k. Roof Plan: Shall be at a minimum scale of $\frac{1}{4}'' = 1'-0$, showing the following:
1. Ridge, valleys, roof crickets.
 2. Arrows, indicating direction of roof slope.
 3. References to complete details.
- l. Exterior Elevations: Shall be at a minimum scale of $\frac{1}{8}'' = 1'-0$, showing additional information such as:
1. "Section" cuts.
 2. Reference to details.
 3. Profile of foundation.
- m. Interior Elevations: Shall be at a minimum scale of $\frac{1}{4}'' = 1'-0$, and showing the following:
1. Finish materials, casework, appliance, fixtures, mirrors.
 2. "Section" cuts.
 3. Reference to details.
- n. Building Sections: Shall be at a minimum scale of $\frac{1}{4}'' = 1'-0$. Cut as many complete sections through the building as required, including typical longitudinal and transverse sections.
- o. Details shall be drawn and dimensioned completely to show materials and method of construction.

p. Door and Window Schedules (if any): Elevations shall be at a minimum scale of $\frac{1}{4}'' = 1'-0$. Show the following:

1. Reference to schedule.
2. Reference to large scale details.
3. Dimensions as required.
4. Type of doors.
5. Type of windows.

6. STRUCTURAL DRAWINGS

Foundation Plans: Shall be at a minimum scale of $\frac{1}{8}'' = 1'-0$, shall be oriented the same way as the architectural plans showing the following:

- a. Tie down sizes and details. May be incorporated with the architectural drawings showing the following:
- b. Piers (jacks), bottom elevations and sizes.
- c. Major dimensions locating structural elements.
- d. References to details and "Section" cuts.

Floor and Roof Framing Plans: Shall be at a minimum scale $\frac{1}{4}'' = 1'-0$. Show the following:

- a. Structural members.
- b. Indicate design assumptions,

Structural Details: Shall be at a minimum scale $\frac{3}{4}'' = 1'-0$. Shall be drawn and dimensioned completely to cover typical as well as special methods of construction. Show the following:

- a. Size of structural members.
- b. Size and spacing of bolts.
- c. Size of welds (unless covered by notes).
- d. All structural details shall be drawn on structural sheets.

7. MECHANICAL DRAWINGS: Show the following:

- a. Water service connection.
- b. Sewer system connection.
- c. Plumbing fixtures.
- d. Ventilation System.
- e. Sewage treatment system components.
- f. Pump systems.

8. ELECTRICAL DRAWINGS: Show the following:

- a. Electrical service connection. i.e. Live Load, etc.).
- b. Lighting and switching layout; and convenience outlets and telephone outlet location.
- c. Luminaires schedule.
- d. Power system, panels and outlets.
- e. Location of all special outlets.
- f. Panel board location.

9. Submittal for Design Review

- a. Preliminary Design Submittal: The drawings and calculations shall be sent to the Department of Land and Natural Resources, Division of Boating and Ocean Recreation, Engineering Branch, 4 Sand Island Access Road, Honolulu, Hawaii, 96819, Attention: Mr. Finn McCall. Email PDF files to: finn.d.mccall@hawaii.gov.

Submit the following:

- a. PDF file of all drawings
- b. Word and PDF File of specifications

10. Final Design Submittal: The Final Design Submittal shall be made only after all comments on the Design Review have been incorporated in the final tracings and specification originals.

All sheets of the final drawings shall have all required Structural, Mechanical, and Electrical Engineers' approval stamps and signatures.

Submit the following:

- a. PDF file of all drawings
- b. Word and PDF File of specifications

PART 2 - PRODUCTS

2.1 SEWAGE TREATMENT UNIT

The specifications for the sewage treatment unit are based on products provided by Modular Sanitation Systems LLC, 435 Seaside Avenue, Suite 1608, Honolulu, HI 96815.

- A. Brand names of materials or equipment indicated in this section are specified to indicate a quality, style, appearance or performance; the bidders shall use in their bids one of the specified brand names or approved equal.
- B. Warranty: The sewage treatment unit shall be warranted, for a one-year period from the date of purchase, against material defects or workmanship.

C. Structural Components:

Shall be based on base container being a new (2017 or later) 20' ISO shipping container.

General specifications as follows:

1. Base Container

New 20'L X 9.5'H X 8'W ("high cube") dry freight intermodal steel container, ISO 1AAA

2. Shell: A-588 corrugated steel sides, roof, and swing doors on one end

- a. Floors: 1 1/8" thick marine plywood, forklift tested to 16,000 lbs per 44 square inches
- b. Wall tie down steel lashing rings, 4,000 lbs. cap. each (24 total) tested at 6,000 lbs.
- c. Front corner post tie downs (10 total)
- d. Door corner post tie downs (10 total) = restraint system, shoring slot will support 2" x 6" lumber
- e. Vents, (2) each

3. Floor Framing

- a. Floor joists: 16 ga. zinc-aluminum CSJ joist, ASTM A792 @ 16" O.C., blocking @ 4' O.C. (alt. 2x wood framing)
- b. Decking: 1 1/8" marine grade T&G plywood subfloor, fasten to floor framing 6" O.C. edges, 12" O.C. field.
- c. Fasteners: self-drilling #10 305 stainless steel bugle head screws.

4. Wall & Ceiling Framing

- a. Furred wall framing: 20 ga. 1 5/8" galv. steel CSJ studs, ASTM A653 @ 16" O.C., top and bottom runners. IRC
- b. Partition framing: 20 ga. 3 5/8" galv. steel studs, ASTM A653 @ 16" O.C., top and bottom runners.
- c. Fasteners: self-drilling #8 pan-head framing screws, use 305 Stainless Steel for fastening to ISO container shell and in wet locations, electroplated galvanized elsewhere.

5. Exterior walls; All exterior walls are Corten Steel walls and roof. Exterior cladding wall includes T-111 siding and a elastomeric coated fabric roof system over treated plywood. All sheathing shall be treated for insect resistance in accordance with AWWA Standards U1, Use Category 2 (UC2) and specifically rated as suitable for Hawaii)

- a. Framing shall be furring strips 5/16" c channel at 16. o.c.; with wall height of approximately 96".

- b. Exterior siding shall be 5/8" T-111 exterior siding or equal, painted.
 - c. Trim shall be 1X4 rough sawn finger jointed treated lumber at corners, windows, and doors to match wall cover.
 - d. Fasteners shall be stainless steel on all siding and exterior trim.
 - e. Flashing: 2" X 2" galvanized or aluminum flashing installed over siding and under corners.
 - f. Side wall skirt: The contractor shall install a side wall skirt continuously around the perimeter of the structure. The skirting material shall match the exterior siding.
6. Interior walls (if any) (All framing is galvanized steel studs):
- a. Framing shall be 2X4 stud grade at 16. o.c.
 - b. Bottom plate shall be single 2X4, utility grade.
 - c. Top plate shall be double or single 2X4, stud grade.
 - d. Insulation for interior partitions shall be R-11 unfaced full height.
 - e. Cove base shall be 4. rubber base.
- D. Non-structural components:
1. Ceilings:
- c. Ceiling height shall be minimum 7'-10" above finish floor.
 - d. Ceiling system shall be steel stud framed and insulated with PPG roll insulation, covered with laminated plywood.
2. Doors (if any):
- a. ANSI 250.8.3 Exterior grade fire-rated 1 hour honeycomb core doors, 1 3/4" thickness, 18 ga galvanized faces, elastomeric paint, UL listed.
 - b. Door Size: 32"W x 7'H, type LD (louvered top + bottom), with door closer reinforcement.
 - c. Accessible door: 36"W x 7'H, type LD (louvered top + bottom)
 - d. Frames: Custom 0.083" thickness welded tubular steel 4 sides, galvanized, elastomeric paint.
 - e. Door Prep: cylindrical bored latch + deadbolt
 - f. Hinges: 1 1/2 pair 4 1/2" x 4 1/2" full mortise, ANSI 5111, US32D finish.
 - g. Passage Latches: Lever style, cylindrical passage latchset, ANSI F75, US32D finish
 - h. Privacy lockset: cylindrical pushbutton combination lockset with outside key, lever style, ANSI F76B, US32D finish
 - i. Thresholds: low profile anodized aluminum, ADA accessible, ANSI A117.1
 - j. Closers: ANSI/BHMA A156.4 Grade 1 certified: Norton 410 series, 689 finish
 - k. Door guards will be furnished and installed by the by the contractor, PBCM and/or its representative and the cost shall be included in the appropriate proposal item for the project.

3. Windows (if any):

- a. Aluminum Sliding Windows 1'x3' with screens
- b. Tube Steel Frames (Painted)

4. Interior Finishes

- a. Wallboard: 5/8" Type WR gypsum board, Firecode 'X' (alt. Firecode 'C', ASTM 630, C1396 ("green board"), fire taped and floated, primed and painted exposed faces.
- b. Fasteners: #8 electroplated galvanized bugle head drywall screws, 8" O.C. edges, 12" O.C. field.
- c. FRP panels Fiber-reinforced plastic panel, 3/32" thickness, Fire rating Class C, color 'biscuit'.
- d. PVC trim: outside corner, edge, inside corner, division, color 'beige'

5. Exterior Finishes

- d. Roof Coating: Elastomeric, silicone based, white, 2 coats minimum
- e. Exterior Paint: Primer: Inorganic zinc oxide primer, 'Rust-Oleum' "Rust-O-Zinc"
- f. Color coat: Urethane mastic paint, 'Rust-Oleum' 9800 DTM Urethane Mastic, mist applied.

5. Interior Paint

- a. Primer: latex primer
- b. Color coat: mildew resistant interior latex enamel, water-based, 'Sherwin-Williams' "Bath Paint."

6. Floor covering:

- a. Flooring: Sheet vinyl, commercial grade, ASTM 1913, slip-resistant, fire rating
- d. Class B color 'blue-grey', weld seams.
- c. Base: 3/8" radius coved sheet vinyl, 6" high, PVC top edge trim.

7. Ventilation

As required for sewage treatment unit.

E. Electrical: Shall conform to the requirements of the latest edition of the NEC adopted by the County of Maui at the time of construction.

- 1. Service: As required for sewage treatment unit.
- 2. Panel: As required for sewage treatment unit.
- 3. Equipment: As required for sewage treatment unit.

4. Materials: As required for sewage treatment unit.

5. Lighting:

- a. Ceiling wet listed: Lithonia Lighting VC150 vapor tight utility light, 20W A21 LED, UL listed
- b. Emergency: Lithonia Lighting, EU2 LED M12, 120VAC, 90 minute battery, UL 924 listed, NFPA 101, NFPA 70-NEC and OSHA illumination standards. Damp location.
- c. Exterior area: Outdoor 12V low voltage step lights (above doorways), UL listed.

F. Mechanical: Shall conform to the requirements of the latest edition of the UPC adopted by the presiding County at the time of construction.

1. General

- a. Supply: Copper tubing, L grade, ATSM B88, sweat fittings, lead free solder.
- b. Plastic grommets on studs at copper pipes to prevent galvanic interaction.
- c. Waste: Rigid PVC Schedule 40, solvent welded joints, NSF and IAPMO certified.
- d. Supports: Pipe clamps: 'Unistrut' fiberglass rigid pipe clamps

G. Signage

1. Nameplate: Each modular container shall have affixed to an exterior side, in a conspicuous place one 8"W x 5"H stainless steel plate engraved with the following information:
 - a. Manufacturer's name and address
 - b. Product name and model number
 - c. Product serial number
 - d. Date of manufacture

H. Substitutions: Alternate sewage treatment unit manufacturer/supplier may be considered provided a substitution request is submitted to the Engineer in writing at least 10 days prior to the bid deadline. The substitution request must be approved by the Engineer in writing prior to the bid deadline to be allowed to base bid off substitute sewage treatment unit. The Engineer's decision shall be final and conclusive.

2.2 PRELOADER TANK

The specifications for the preloader tank are based on products provided by International Wastewater Technologies, Inc., 1931-A Kahai Street, Honolulu, HI 96819.

C. Brand names of materials or equipment indicated in this section are specified to indicate a quality, style, appearance or performance; the bidders shall use in their bids one of the specified brand names or approved equal.

- D. Warranty: The preloader tank shall be warranted, for a one-year period from the date of purchase, against material defects or workmanship.
- E. Tank: 1,500-gallon capacity, dual compartment, polypropylene shell, Infiltrator Model IM-1530 or approval equal. Tank shall be provided with 24” bolted manways for access and pumping including necessary manway risers.
- F. Inlet/Outlet: Inlet and outlets shall be 4” capable of accommodating schedule 40 PVC pipe.
- G. Substitutions: Alternate preloader tank manufacturer/supplier may be considered provided a substitution request is submitted to the Engineer in writing at least 10 days prior to the bid deadline. The substitution request must be approved by the Engineer in writing prior to the bid deadline to be allowed to base bid off substitute tank. The Engineer’s decision shall be final and conclusive.

2.3 DUPLEX SEWAGE LIFT STATION

The specifications for the duplex sewage lift station are based on products provided by International Wastewater Technologies, Inc., 1931-A Kahai Street, Honolulu, HI 96819.

- C. Brand names of materials or equipment indicated in this section are specified to indicate a quality, style, appearance or performance; the bidders shall use in their bids one of the specified brand names or approved equal.
- D. Warranty: The duplex sewage lift station shall be warranted, for a one-year period from the date of purchase, against material defects or workmanship.
- E. Pumps: Two (2) grinder pumps shall be provided. Each pump shall be rated 1 hp, 110v, 1 ph., 60 Hz. Pump shall be by Zoeller Engineered Products or approved equal.
- F. Pump Basin: Shell shall be HDPE with 4” inlet and 1-1/2” outlet. Basin shall be provided with internal piping, ball valves, check valves, float switches, splice boxes, wiring, and all appurtenant components required for operation.
- G. Control Panel: Panel shall be NEMA 4X rated and mounted inside the sewage treatment unit container with stainless steel unistruts. Power and control wiring between the sewage treatment unit and pump basin shall be installed in 1” schedule 40 PVC (below ground wiring) conduit with minimum 12” cover. All above ground wiring shall be installed in 1” schedule 80 PVC or schedule 40 PVC if painted with UV protective paint.
- H. Duplex Sewage Lift Station System: Specifications above are based on CBT Model 1000G W/ PUMPS provided by International Wastewater Technologies, Inc.
- I. Substitutions: Alternate sewage lift station manufacturer/supplier may be considered

provided a substitution request is submitted to the Engineer in writing at least 10 days prior to the bid deadline. The substitution request must be approved by the Engineer in writing prior to the bid deadline to be allowed to base bid off substitute pump system. The Engineer's decision shall be final and conclusive.

PART 3 – EXECUTION

3.1 GENERAL REQUIREMENTS

- A. Workmanship:
All work shall be done by experienced and skilled workers that are familiar with the type of work required to the best practices of this trade.

- C. Qualifications: Prefabricated sewage treatment unit shall be provided by a manufacturer/supplier/subcontractor who has five (5) years prior experience in design and construction of prefabricated sewage treatment units and is presently regularly engaged this type of work.

3.2 PROJECT PHASING

The project is divided into the following phases, all of which shall be included in the Lump sum item for the sewage treatment unit:

- A. Design Phase:
 - 1. The Manufacturer or its representative shall engage the services of professional structural, mechanical, and electrical engineering consultants who are licensed to practice in the State of Hawaii; to prepare complete working drawings and technical specifications showing and describing the construction of the sewage treatment unit. All drawings shall be stamped by the respective consultants preparing the construction drawings. The drawings and specifications shall be submitted for approval to the Engineer. The Manufacturer or its representative shall continue onto the Construction Phase only when the drawings and specifications are approved by the Engineer and DOH-WWB.
 - 2. See 1.2 General Conditions, Paragraph B above for requirement to obtain services of a licensed civil engineer to obtain approval from DOH-WWB for construction and use of the sewage treatment unit and absorption bed disposal system.

- B. Construction Phase:

The Contractor shall provide all labor, materials, tools and equipment necessary to install and construct the sewage treatment unit based upon approved final design drawings and technical specifications prepared by his consultants.

3.3 TESTING AND START-UP

- A. Installation of all equipment and accessories shall be done in accordance with the manufacturer's recommendations and as shown on the Drawings. All system components and controls shall be tested for proper operation of the system prior to requesting an inspection by the Engineer.
- B. The sewage treatment unit manufacturer's representative shall provide training to the State's contracted wastewater treatment plant operators after the system has been tested and proved proper operation and as approved by the State and Engineer.

3.4 CLEAN-UP AND PROTECTION

- A. Protect all installed finish work, millwork, fixtures, wall finishes, floor covering, ceiling panels, etc., from being defaced or marred during the installation. The contractor, the sewage treatment unit manufacturer and/or its representative shall replace or repair any damaged work/item as instructed by the Engineer at no additional cost to the State.
- B. At the completion of the installation, remove from the project site all rubbish, debris, etc., accumulated during the progress of this work.

3.5 SPARE PARTS

- A. The sewage treatment unit manufacturer shall provide a list with quantities of recommended spare parts to have on hand for operation of the system.
- B. Spare parts required for one (1) full year of operating the sewage treatment unit shall be provided and the cost shall be incidental to the bid items.

END OF SECTION