

DIVISION OF STATE PARKS

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

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BOARD OF LAND AND NATURAL RESOURCES

Dawn N.S. Chang  
Chairperson

**CONTRACT SPECIFICATIONS AND PLANS**

JOB NO. F55C642G  
WAIANAPANAPA STATE PARK PHASE 2 IMPROVEMENTS  
CABIN ELECTRICAL REPAIRS  
HANA, MAUI, HAWAII


April 2023


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DEPARTMENT OF LAND AND NATURAL RESOURCES  
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WAIANAPANAPA STATE PARK PHASE 2 IMPROVEMENTS  
CABIN ELECTRICAL REPAIRS  
HANA, MAUI, HAWAII

Approved:  ALAN B. CARPENTER  
(for) CURT A. COTTRELL  
Administrator  
Division of State Parks

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

April 2023

**TABLE OF CONTENTS**

NOTICE TO BIDDERS .....	ii
INFORMATION AND INSTRUCTIONS TO BIDDERS .....	I-1
PROPOSAL .....	P-1
SPECIAL PROVISIONS.....	SP-1
DETAILED SPECIFICATIONS .....	S-1

PLANS (Bound Separately)

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

NOTICE TO BIDDERS  
(Chapter 103D, HRS)

COMPETITIVE BIDS for Job No. F55C642G, Waianapanapa State Park Phase 2 Improvements, Cabin Electrical Repairs shall be submitted to the Department of Land and Natural Resources, Engineering Division on the specified date and time through the Hawaii State e-Procurement (HIePRO). HIePRO is accessible through the State Procurement Office website at [www.spo.hawaii.gov](http://www.spo.hawaii.gov).

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

The project is located at Waianapanapa State Park, Hana, Maui, Hawaii.  
Tax Map Key: 2<sup>nd</sup> Division 1-3-006: 009  
Address: Waianapanapa Road, Hana, Hawaii 96713

The work shall generally consist of removal and re-installation new electrical wiring, bonding of electrical to plumbing to ensure proper grounding of each cabin to mitigate shock hazard, and related work.

Due to the nature of work contemplated, bidders must possess a valid State Contractor's license, "C-13" classification.

A voluntary pre-bid meeting will be held at the project site, Waianapanapa State Park, Park Caretaker's residence located at the entrance of the park on May 10, 2023, at 10:00 am, from here we will drive over to the cabins for the State conducted site visit.

All interested parties are invited to attend a State conducted site visit that will start immediately following the pre-bid meeting mentioned above. It is highly recommended that all interested parties attend the site visit to become familiar with the existing cabin conditions, the possible staging area(s), and ingress/egress requirements. The site visit is anticipated to start around 10:15 am and end around 11:15 am.

The estimated cost of construction is \$225,000.00.

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

Since the estimated value of the cost of construction is less than \$250,000, the apprenticeship agreement preference pursuant to Hawaii Revised Statutes §103-55.6 (ACT 17, SLH 2009) shall not apply.

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

# INFORMATION AND INSTRUCTIONS TO BIDDERS

## CONTENTS

		<u>Page</u>
A	Project Location and Scope of Work .....	I-2
B	Proposals .....	I-2
C	General Conditions .....	I-2
D	Proposal Form .....	I-2
E	Omissions or Erasures .....	I-2
F	Notice of Intent to Bid and Questionnaire.....	I-2
G	Bid Security .....	I-2
H	Contractor's License Required.....	I-2
I	Irregular Bids .....	I-3
J	Withdrawal of Bids .....	I-3
K	Method of Award .....	I-3
L	Successful Bidder to File Performance and Payment Bonds .....	I-3
M	Number of Executed Original Counterparts of Contract Documents .....	I-3
N	Change Orders .....	I-3
O	Wages and Hours .....	I-3
P	Permits.....	I-4
Q	Property Damage.....	I-4
R	Time .....	I-4
S	Bidder's Responsibility to Provide Proper Superintendence .....	I-4
T	Liquidated Damages .....	I-4
U	Hiring of Hawaii Residents .....	I-5
V	Water and Electricity .....	I-5
W	Public Convenience and Safety .....	I-5
X	Work to be Done Without Direct Payment .....	I-5
Y	As-Built Drawings .....	I-5
Z	Asbestos Containing Materials .....	I-5
AA	Worker Safety.....	I-5
BB	Toilet Facilities .....	I-6
CC	Signs .....	I-6
DD	Field Office for Department .....	I-6
EE	Quantities .....	I-6
FF	Other Health Measures .....	I-6
GG	Hawaii Business Requirement .....	I-6
HH	Compliance With §3-122-112 HAR .....	I-6

## INFORMATION AND INSTRUCTIONS TO BIDDERS

- A. PROJECT LOCATION AND SCOPE OF WORK: The project location and scope of work shall be as generally described in the Notice to Bidders.
- B. PROPOSALS: Bidders shall submit their bid, including the completed proposal form, bid bond, and any other documents required by the solicitation as part of their bid through the State of Hawaii e-Procurement System (HIePRO). See Item D, PROPOSAL FORM.
- C. GENERAL CONDITIONS: The Department of Land and Natural Resources Interim General Conditions dated October 1994, as amended, shall be made a part of these contract specifications and are referred to hereafter as the General Conditions.
- D. PROPOSAL FORM: **The Bidders shall fill out and upload the electronic copy of the proposal form to the HIePRO website when submitting the bid. Bid Proposals shall not be mailed, faxed, or delivered to the State, unless requested to do so after the designated closing date. The successful Bidder shall fill out and print a hard copy of the proposal form, sign and submit the form with the contract award package.**
- E. OMISSIONS OR ERASURES: Any proposal which contains any omission or erasure or alteration not properly initialed, or conditional bid, or other irregularity may be rejected by the Board of Land and Natural Resources (Board).
- F. NOTICE OF INTENT TO BID AND QUESTIONNAIRE:  
A Notice of Intent to Bid is not required for this project. In compliance with HRS Section 103D-310, the lowest responsive and responsible bidder may be required to complete a questionnaire. When requested by the State, the completed questionnaire shall be submitted to the Chief Engineer for evaluation. Failure to furnish the requested information within the time allowed may be grounds for a determination of non-responsibility, in accordance with HRS Section 103D-310 and HAR Section 3-122-108.
- G. BID SECURITY: A bid security will be furnished by each bidder as provided in sub-section 2.7 of the General Conditions. The successful bidder's bid security will be retained until Contract execution and furnished a performance and payment bond in an amount equal to one hundred percent (100%) of the total Contract price, including an amount estimated to be required for extra work, is furnished.
- The Board reserves the right to hold the bid securities of the four lowest bidders until the successful bidder has entered into a contract and has furnished the required performance bond. All bid securities will be returned in accordance with sub-section 3.5 of the General Conditions.
- Should the successful bidder fail to enter into a contract and furnish a satisfactory performance bond within the time stated in the proposal, the bid security shall be forfeited as required by law.
- H. CONTRACTOR'S LICENSE REQUIRED: The Board will reject all bids received from contractors who have not been licensed by the State Contractors License Board in accordance with Chapter 444, HRS; Title 16, Chapter 77, Hawaii Administrative Rules; and statutes amendatory thereto.

- I. IRREGULAR BIDS: No irregular bids or propositions for doing the work will be considered by the Board.
- J. WITHDRAWAL OF BIDS: No bidder may withdraw his bid between the time of the opening thereof and the award of contract.
- K. METHOD OF AWARD:
1. The contract will be awarded to the lowest responsive and responsible Bidder whose bid meets the requirements and criteria set forth in the solicitation documents and as determined by the Comptroller.
  2. In the event the Lump Sum Base Bid of all bidders exceeds the project control budget, the Department reserves the right to make an award to the bidder with the lowest total lump sum base bid, after application of the preferences is designated, if additional funds are available or by reducing the scope of work through negotiation.
- L. 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.
- M. 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.
- N. 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.

- O. 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.

- P. PERMITS: The State will process permit applications whenever possible, and the Contractor shall procure the pre-processed permits and pay the required fees. If permit applications are not processed by the State, the Contractor shall process the permit applications, permits and licenses, and pay all charges and fees. In all cases, the Contractor shall give all notices necessary and incident to the due and lawful prosecution of the work.

The Contractor shall obtain and pay for all permits required by the County of Hawaii.

- Q. 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.

- R. 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.

- S. 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.

- T. 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.

U. HIRING OF HAWAII RESIDENTS: The Contractor shall comply with Act 68, SLH 2010, in the performance and for the duration of this contract. The Contractor shall ensure that Hawaii residents compose not less than eighty percent of the workforce employed to perform the contract work on the project. The eighty percent requirement shall be determined by dividing the total number of hours worked on the contract by Hawaii residents, by the total number of hours worked on the contract by all employees of the Contractor in the performance of the contract. The hours worked by any Subcontractor of the Contractor shall count towards the calculation for this section. The hours worked by employees with shortage trades, as determined by the Department of Labor and Industrial Relations (DLIR), shall not be included in the calculation for this section.

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

V. 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.

W. 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.

X. 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.

Y. AS-BUILT DRAWINGS: As-built drawings, the intent of which is to record the actual in-place construction so that any future renovations or tie-ins can be anticipated accurately, shall be required. All authorizations given by the Engineer to deviate from the plans shall be drawn on the job site plans. All deviations from alignments, elevations and dimensions, which are stipulated on the plans, shall be recorded on the as-built drawings. Final as-built drawings shall be submitted to the Engineer for review and approval. After the Engineer approves the as-built drawings, the contractor shall submit an electronic copy in Adobe PDF format on CD ROM.

Z. 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.

AA. 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.

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

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

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

- DD. FIELD OFFICE AREA FOR DEPARTMENT: When indicated in the Proposal, the Contractor shall provide a housed working area of at least 100 square feet adjacent to the Contractor's office for the Department's use. This area will be used by the Engineer to perform tests and to store equipment. As a minimum, the field office shall include the following: standard sized office desk and chair, lighting, ventilation, window-type air conditioning rated at 5,000 BTU, door and window with locking hardware, electrical outlets, and working communications facilities (a cellular telephone is acceptable). The Department will pay for all long-distance toll charges made by the Engineer.
- EE. 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.
- FF. 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.
- GG. 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.
- HH. COMPLIANCE WITH §3-122-112 HAR: As a condition for award of the contract and as proof of compliance with the requirements of 103D-310(c) HRS, the apparent low bidder shall furnish the required documents to the Department. If the valid required certificates are not submitted on a timely basis for award of a contract, a bidder otherwise responsive and responsible may not receive the award. Bidder is responsible to apply for and submit the following documents to the Department.

- A. TAX CLEARANCE REQUIREMENTS (HRS Chapter 237): Bidder shall obtain a tax clearance certificate from the Hawaii State Department of Taxation (DOTAX) and the Internal Revenue Service (IRS). The certificate is valid for six months from the most recently approved stamp date on the certificate; the certificate must be valid on the date received by the Department.
- B. Department of Labor (DLIR) “**Certificate of Compliance**”. (HRS Chapter 383 - Unemployment Insurance, Chapter 386 - Workers’ Compensation, Chapter 392 - Temporary Disability Insurance, and 393 – Prepaid Health Care): Bidder shall obtain a certificate of compliance from the Hawaii State Department of Labor and Industrial relations (DLIR). The certificate is valid for six months from the date of issue; certificates must be valid on the date received by the Department.
- C. Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG) “**Certificate of Good Standing**”. Bidder shall obtain a certificate of good standing issued by the Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG). The certificate of good standing is valid for six months from the date of issue; certificates must be valid on the date received by the Department.

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

PROPOSAL

FOR

DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION  
State of Hawaii

JOB NO. F55C642G  
WAIANAPANAPA STATE PARK PHASE 2 IMPROVEMENTS  
CABIN ELECTRICAL REPAIRS  
HANA, MAUI, HAWAII

DATE: \_\_\_\_\_

Chief Engineer  
Engineering Division  
Department of Land and Natural Resources  
State of Hawaii  
Honolulu, Hawaii

Dear Sir:

The undersigned, having carefully examined the local conditions and all available records and information covering conditions which may affect the cost of the work to be performed, and having carefully examined the Plans and Specifications, and other contract documents, hereby proposes to furnish and pay for all materials, tools, equipment, labor and other incidental work necessary for the removal and re-installation of new electrical wiring, and bonding of electrical to plumbing to ensure proper grounding of each cabin to mitigate shock hazard, as required or called for in this Proposal, all according to the true intent and meaning of the Notice to Bidders, Information and Instructions to Bidders, Proposal, Detailed Specifications, Interim General Conditions, Plans, and any and all addenda for:

JOB NO. F55C642G  
WAIANAPANAPA STATE PARK PHASE 2 IMPROVEMENTS  
CABIN ELECTRICAL REPAIRS  
HANA, MAUI, HAWAII

on file in the office of the Engineering Division for the TOTAL BASE BID (Items 1 to 14) of:

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

and will fully complete all work under this contract within 180 consecutive calendar days from the date of written notice to proceed, including date of said order, said total sum being itemized on the following pages.

Item No.	Quantity	Unit	Description	Unit Price	Total
1	L.S.	L.S.	Project Sign	Lump Sum	\$ _____
2	L.S.	L.S.	Cabin 1 Electrical Repair	Lump Sum	\$ _____
3	L.S.	L.S.	Cabin 2 Electrical Repair	Lump Sum	\$ _____
4	L.S.	L.S.	Cabin 3 Electrical Repair	Lump Sum	\$ _____
5	L.S.	L.S.	Cabin 4 Electrical Repair	Lump Sum	\$ _____
6	L.S.	L.S.	Cabin 5 Electrical Repair	Lump Sum	\$ _____
7	L.S.	L.S.	Cabin 6 Electrical Repair	Lump Sum	\$ _____
8	L.S.	L.S.	Cabin 7 Electrical Repair	Lump Sum	\$ _____
9	L.S.	L.S.	Cabin 8 Electrical Repair	Lump Sum	\$ _____
10	L.S.	L.S.	Cabin 9 Electrical Repair	Lump Sum	\$ _____
11	L.S.	L.S.	Cabin 10 Electrical Repair	Lump Sum	\$ _____
12	L.S.	L.S.	Cabin 11 Electrical Repair	Lump Sum	\$ _____
13	L.S.	L.S.	Cabin 12 Electrical Repair	Lump Sum	\$ _____
Subtotal Base Bid (Items 1 - 13, inclusive) \$					_____
14	L.S.	L.S.	Mobilization and demobilization, not to exceed 10% of the total sum bid, excluding the bid price for mobilization and demobilization.	Lump Sum	\$ _____
TOTAL BASE BID (Items 1 - 14, inclusive) \$					_____

RECYCLED PRODUCTS PREFERENCE

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

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

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

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

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

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

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

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

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

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

## APPRENTICESHIP AGREEMENT PREFERENCE

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

qualify for the preference.

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

**CONTRIBUTIONS BY STATE AND COUNTY CONTRACTORS PROHIBITED**

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

## CONDITION OF AWARD

It is understood that the award of the contract will be made on the basis of the lowest responsible Total Base Bid (Items 1 to 14) selected by the Board of Land and Natural Resources. Write the total of bid items 1 to 14 on page P-1.

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

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

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

It is also understood and agreed that the award of the contract shall be conditioned upon funds being made available for this project and further upon the right of the Board of Land and Natural Resources to hold all bids received for a period of three hundred sixty-five (365) days from the date of the opening thereof, unless otherwise required by law, during which time no bid may be withdrawn.

It is also understood that Notice to Proceed may be delayed up to five hundred forty-five (545) days after the bid opening date, and that no additional compensation will be provided for any claim for escalation or delay for issuance of Notice to Proceed on or before that date.

It is also understood and agreed that the quantities given herewith are approximate only and are subject to increase or decrease, and that the undersigned will perform all quantities of work as either increased or decreased, in accordance with the provisions of the Contract Specifications.

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

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

It is also understood and agreed that liquidated damages in the amount of one hundred dollars (\$100.00) for each and every calendar day in excess thereof prior to completion of the contract shall be withheld from payments due to the Contractor.

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

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

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

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

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

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

Compliance with §103-310 HRS. As a condition of award all bidders shall comply with all laws governing entities doing business in the State, including Chapter 237 HRS (general excise tax); Chapter 383 HRS (employment security – unemployment insurance); Chapter 386 HRS (workers compensation); Chapter 392 HRS (temporary disability insurance); and Chapter 393 HRS (pre-paid health care), and shall produce all documents to the State (DLNR, Engineering Division) required to demonstrate compliance with these subsections. Any bidder making a false affirmation

or certification under this subsection shall be suspended and may be debarred from further offerings or awards pursuant to §103D-702 HRS.

**RECEIPT OF ADDENDA**

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

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

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

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

JOINT CONTRACTORS OR SUBCONTRACTORS  
TO BE ENGAGED ON THIS PROJECT

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

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

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

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

In completing the Joint Contractors or Subcontractors List, describe the specialty contractor's nature and scope of work to be performed for this project and provide the complete firm name of the joint contractor or subcontractor in the respective columns. If the Bidder is a general contractor providing the work of a required specialty contractor, whose license is not automatically held pursuant to HAR 16-77-32, fill in the Bidder's (general contractor's) name and nature and scope of work to be performed on this project.

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

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



Enclosed herewith is a:

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

(Cross Out Those Not Applicable)

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

as required by law.

Respectfully submitted,

\_\_\_\_\_  
Name of Company, Joint Venture  
or Partnership

\_\_\_\_\_  
Contractor's License No.

By:

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

\_\_\_\_\_  
Title

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

\_\_\_\_\_  
Date

\_\_\_\_\_  
Address

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

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

NOTES:

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

End of Proposal

## SPECIAL PROVISIONS

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

### Section 2 – Proposal Requirements and Conditions

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

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

Standard Qualification Questionnaire: Bidders may be required to complete a standard qualifications questionnaire. When requested, the information shall be furnished within two working days or longer at the discretion of the Engineer. Failure to furnish the requested information within the time allowed may be grounds for a determination of non-responsibility, in accordance with HRS Section 103D-310 and HAR Section 3-122-108.

Hawaii Business or Compliant Non-Hawaii Business Requirement: Bidders shall be incorporated or organized under the laws of the State or be registered to do business in the State as a separate branch or division that is capable of fully performing under the contract, as stipulated in §3-122-112 HAR. A certified letter is not required prior to bid opening.

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

- A. Tax Clearance (HRS Chapter 237): Bidder shall obtain a tax clearance certificate from the Hawaii State Department of Taxation (DOTAX) and the Internal Revenue Service (IRS). The certificate is valid for six months from the most recently approved stamp date on the certificate; the certificate must be valid on the date received by the Department.
- B. Department of Labor (DLIR) “Certificate of Compliance”. (HRS Chapter 383 - Unemployment Insurance, Chapter 386 - Workers’ Compensation, Chapter 392 - Temporary Disability Insurance, and 393 – Prepaid Health Care): Bidder shall obtain a certificate of compliance from the Hawaii State Department of Labor and Industrial relations (DLIR). The certificate is valid for six months from the date of issue; certificates must be valid on the date received by the Department.
- C. Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG) “Certificate of Good Standing”. Bidder shall obtain a certificate of good standing issued by the Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG). The certificate of good standing is valid for six months from the date of issue; certificates must be valid on the date received by the Department.

**Hawaii Compliance Express.** Alternately, instead of separately applying for these certificates at the various state agencies, bidder may choose to use the Hawaii Compliance Express (HCE), which allows businesses to register online through a simple wizard interface at <http://vendors.ehawaii.gov> to acquire a “Certificate of Vendor compliance” indicating that bidder’s status is compliant with requirements of §103D-310(c), HRS, shall be accepted for contracting and final payment purposes.

Bidders that elect to use the new HCE services will be required to pay an annual fee of \$15.00 to the Hawaii

Information Consortium, LLC (HIC). Bidders choosing not to participate in the HCE program will be required to provide the paper certificates as instructed in the previous paragraphs.

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

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

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

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

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

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

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

**Section 3 – Award and Execution of Contract**

1. **AMEND** Section 3.3, Award of Contract, by deleting “sixty (60)” and replacing with “three hundred sixty-five (365)” 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 five hundred and forty-five (545) calendar days after the date of bid opening, the Contractor may submit a claim for increased labor and materials costs (but not overhead costs). The claim shall be for labor and material

costs incurred after 545 days and the full duration of the contract time allowed for the performance of the work (as specified on Page P-1 of the [Bid] PROPOSAL) have elapsed. Such claims shall be accompanied with the necessary documentation to justify the claim. No payments will be made for escalation costs that are not fully justified as determined by the State.

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

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

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

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

**Section 5 – Control of Work**

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

**Section 6 – Substitution of Materials and Equipment**

**ADD** the following to Section 6.3 Sub-paragraph b:

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

**Section 7 – Prosecution and Progress**

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

**“d. Proof of Insurance Coverage**

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

**1. Insurance Requirements**

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

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

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

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

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

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

The Contractor shall either:

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

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

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

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

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

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

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

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

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

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

### **Section 8 – Measurement and Payment**

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

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

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

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

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

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

**TECHNICAL SPECIFICATIONS**

**TABLE OF CONTENTS**

	PAGE(S)
<b><u>DIVISION 1 – GENERAL REQUIREMENTS</u></b>	
SECTION 01019 – GENERAL SPECIFICATIONS .....	4
SECTION 01090 – STANDARD REFERENCES .....	2
SECTION 01300 – SUBMITTALS .....	3
SECTION 01400 – QUALITY REQUIREMENTS .....	1
SECTION 01505 – MOBILIZATION AND DEMOBILIZATION .....	1
SECTION 01581 – PROJECT SIGN.....	4
SECTION 01715 – EXISTING CONDITIONS – ASBESTOS\LEAD PAINT SURVEY.....	1
June 2, 1993 Report .....	6
March 12, 2004 Report .....	10
 <b><u>DIVISION 16 – ELECTRICAL</u></b>	
SECTION 16000 – GENERAL REQUIREMENTS FOR ELECTRICAL WORK .....	8
SECTION 16110 – RACEWAYS, FITTINGS, AND SUPPORTS .....	4
SECTION 16120 – CONDUCTORS, WIRE, AND CABLE .....	3

END OF TABLE OF CONTENTS

## SECTION 01019

### GENERAL SPECIFICATIONS

#### PART 1 - GENERAL

##### 1.1 GENERAL REQUIREMENTS

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

##### 1.2 GENERAL

- A. Examination of Premises: The Contractor shall contact the Engineer and obtain permission before visiting the site.
- B. All lines and grades shall be established by a licensed surveyor, or licensed Civil Engineer, registered in the State of Hawaii. The Contractor shall submit evidence of current and valid registration.
- C. Notices: The Contractor shall notify the Engineer and give at least three (3) working days notice before starting any work.
- D. Disruption of Utility Services: All work related to the disconnection of the electrical system or water system shall be pre-arranged with the Engineer so that any disruption of such services will be kept to a minimum. In the event of temporary water or electrical service hook-ups are required, the Contractor shall provide the necessary services.
- E. Contractor's Operations
  - 1. The Contractor must employ, insofar as possible, such methods and means of carrying out the work so as not to cause any interruption or interference to the facility's operations. Where the Contractor's operations would result in interruptions that would hamper the operations of the facilities, the Contractor shall rearrange the schedule of work accordingly.
  - 2. The Contractor shall maintain safe passageway to and from the facility for the user agency personnel and the public at all times.
  - 3. The Contractor shall coordinate with the Engineer the quantity and time required to work on each cabin. A maximum of three cabins can be take out of service for a given duration.
- F. Lead Paint
  - 1. When the project includes paint to be disturbed that was applied prior to 1980, it shall be assumed to contain lead. The Contractor shall inform its employees, subcontractors, and all other persons engaged in the project that lead containing paints are present in the existing structure 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

- G. Parking Policy for Contractor
1. The Contractor and its employees will not be allowed to park in zones assigned to facility personnel.
  2. Areas to be used by the Contractor shall be as designated by the Engineer. Any lawn or areas 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 State; however, it is the Contractor's responsibility to keep same clean and in a sanitary condition at all times. If the Contractor does not adhere to maintaining the cleanliness of the State provided facilities, Contractor shall be responsible for providing and maintaining his own toilet facilities.
- 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 DLNR Interim General Conditions.
- M. Responsibility
1. The State will hold the Contractor liable for all the acts of Subcontractors and shall deal only with the prime Contractor in matters pertaining to other trades employed on the job. The Contractor shall be responsible for coordinating the work of all trades on the job.
  2. Should the Contractor discover any discrepancy in the plans or specifications, the Contractor shall immediately notify the Engineer before proceeding any further with the work, otherwise, the Contractor will be held responsible for any cost involved in correction of work placed due to such discrepancy.
- N. Cooperation With Other Contractors: The State reserves the right at any time to contract for or otherwise perform other or additional work within the contract zone limits of this Contract. The Contractor of this project shall, to the extent

ordered by the State, conduct its work so as not to interfere with or hinder the progress or completion of the work performed by other contractors.

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

P. Drawings and Specifications

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

Q. Required Submittals

1. Required submittals as specified in the Technical Sections of these specifications include one or more of the following: Shop drawings; color samples; material samples; technical data; schedules of materials; schedules of operations; guarantees; operating and maintenance manuals; and as-built drawings.
2. The Contractor shall make a comprehensive list of the required submittals, by Specification Section, and submit this list to the Engineer within 15 days after notice to proceed.
3. As-Built Drawings: When as-built drawings are required for submittal, the following shall apply:
  - a. As-built drawings, the intent of which is to record the actual in-place construction so that any future renovations or tie-ins can be anticipated accurately, shall be required.
  - b. All deviations from alignments, elevations and dimensions which are stipulated on the plans shall be recorded in red on the as-built drawings.
  - c. The following procedure shall be followed:
    - 1) Immediately after these changes are constructed in place, the Contractor shall record them on the field office plans.

- 2) Within two weeks after final inspection of the project, the Contractor shall transfer the changes marked on the field office plans onto a clean copy of plans using a red pencil. Any deletions shall be so noted and redrawn as necessary. The Contractor shall stamp or mark the tracings "AS-BUILT", and also sign and date each drawing so marked.
- 3) The Contractor shall submit the as-built drawings 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.

END OF SECTION

SECTION 01090

STANDARD REFERENCES

PART 1 - GENERAL

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

<u>Abbreviation</u>	<u>Company</u>
ANSI	American National Standards Institute, Inc. 1430 Broadway New York, NY 10018
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103
AWS	American Welding Society 2501 N.W. 7th Street Miami, FL 33125
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235
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
IAPMO	International Association of Plumbing and Mechanical Officials 5032 Alhambra Avenue Los Angeles, CA 90032
IEEE	Institute of Electrical and Electronics Engineers, Inc. 345 East 47th Street New York, NY 10017
NEC	National Electric Code National Fire Protection Association 470 Atlantic Avenue Boston, MA 02210

<u>Abbreviation</u>	<u>Company</u>
NEMA	National Electrical Manufacturer's Association 155 East 44th Street New York, NY 10017
NESC	National Electrical Safety Code American National Standards Institute 1430 Broadway New York, NY 10018
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
SSPWC	Standard Specifications for Public Works Construction Building News, Inc. 3055 Overland Avenue Los Angeles, CA 90034
UMC	Uniform Mechanical Code Published by ICBO
UPC	Uniform Plumbing Code Published by IAPMO

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

- END OF SECTION -

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.01 SUBMITTALS

- A. Shop drawings shall be required for:  
As called for in the plans, specifications or by the Engineer.
- B. Submittals shall include, but not be limited to:
  - 1. Project Schedule
  - 2. As-Built Drawings
  - 3. Reports, Certifications, Test Reports.

1.02 BIDDER'S SPECIAL RESPONSIBILITY FOR COORDINATING CONTRACTUAL WORK AND SUBMITTALS:

- A. The Contractor is responsible for the coordination of all contractual work and submittals. The Contractor shall certify the submittals were reviewed and coordinated with the various trades.
- B. The Contractor shall have a certification form or stamp in the following format:

CONTRACTOR's 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.

Submittal No.:	Date Received:
Revision No. :	Date Received:
SPECIFICATION SECTION	
SPECIFICATION PARAGRAPH	
DRAWING NUMBER	
SUBCONTRACTOR's NAME	
SUPPLIER NAME	
MANUFACTURER NAME	

NOTE: Deviations from the contract documents are proposed as follows; (Indicate "NONE" if there are no deviations.)

CERTIFIED BY:

- C. This form or 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, with a minimum 4"x6" space at bottom of sheet for consultants review stamp, or on one face of a cardstock tag (min. 3" x 6") tied to each sample. The tag on the samples should state what the sample is so that, if the tag is accidentally separated from the sample, it can be matched up again. The back of this tag will be used by the Engineer for his receipt, review, and log stamp and for any comments that relate to the sample.
- D. All submittals for material, equipment, and shop drawings listed in the contract documents, including dimensioned plumbing shop drawings, shall be required, and shall be reviewed by the Engineer, prior to any ordering of materials and equipment.
- E. Unless otherwise noted, the Contractor shall submit to the Engineer for his review two copies of all shop drawings, piping layout, and/or catalog cuts for fabricated items and manufactured items (including mechanical and electrical equipment) required for the construction. Drawings shall be submitted in sufficient time to allow the Engineer not less than seven regular working days for examining the drawings.
- F. The drawing shall be accurate, distinct, and complete and shall contain all required information, including satisfactory identification of items, units and assemblies in relation to the contract drawings and specifications.
- G. Unless otherwise approved by the Engineer, shop drawings shall be submitted only by the Contractor, who shall indicate by a signed stamp on the drawings or other approved means that the Contractor has checked the shop drawings and that the work or equipment shown is in accordance with contract requirements and has been checked for dimensions and relationship with work of all other trades involved. All deviations from the plans and specifications shall be listed. The practice of submitting incomplete or unchecked shop drawings for the Engineer to correct or finish will not be acceptable, and shop drawings which, in the opinion of the Engineer, clearly indicate that they have not been checked by the Contractor will be considered as not complying with the intent of the contract documents and will be returned to the Contractor for resubmission in the proper form.
- H. When the shop drawings have been reviewed by the Engineer, one set of submittals will be returned to the Contractor appropriately stamped. If major changes or corrections are necessary, the drawing may be rejected and one set will be returned to the Contractor with such changes or corrections indicated, and the Contractor shall correct and resubmit two copies of the drawings, unless otherwise directed by the Engineer. No changes shall be made by the Contractor to the resubmitted shop drawings other than those changes indicated by the Engineer. The resubmittal shall be so indicated on the shop drawing.

- I. The review of such drawings and catalog cuts by the Engineer shall not relieve the Contractor from responsibility for correctness of the dimensions, fabrication details, and space requirements or for deviations from the contract drawings and specifications, unless the Contractor has called attention to such deviations, in writing, by a letter accompanying the drawings and the Engineer approved the change or deviations, in writing, at the time of submission; nor shall review by the Engineer relieve the Contractor from the responsibility for errors in the shop drawings. When the Contractor does call such deviations to the attention of the Engineer, he shall state in his letter whether or not such deviations involve any deduction or extra cost adjustment.
- J. The approval of the above drawings, lists, prints, specifications, or other data shall in no way release the Contractor from his responsibility for the proper fulfillment of the requirements of this contract nor for fulfilling the purpose of the installation nor from his liability to replace the same should it prove defective or fail to meet the specified requirements.
- K. As-Built Drawings. As -Built drawings shall meet requirements of Section Y of the Information and Instruction to Bidders.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

## SECTION 01400

### QUALITY REQUIREMENTS

#### PART 1 - GENERAL

##### 1.01 SUBMITTALS

- A. Reports: Prepare and submit certified written reports that include the following:
  - 1. Date of issue.
  - 2. Project title and number.
  - 3. Name, address, and telephone number of testing agency.
  - 4. Dates and locations of samples and tests or inspections.
  - 5. Names of individuals doing tests and inspections.
  - 6. Description of the Work and test and inspection method.
  - 7. Identification of product and Specification Section.
  - 8. Complete test or inspection data.
  - 9. Test and inspection results and an interpretation of test results.
  - 10. Ambient conditions at time of sample taking, testing, and inspecting.
  - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  - 12. Recommendations on retesting and reinspecting.
  
- B. Submittals shall include, but not be limited to:
  - 1. Validation for grounding of the individual cabin electrical system.
  - 2. Identification of anomalies that occurred and recommended remedial action.
  - 3. Maintenance recommendations to ensure shock hazard does not occur in future.

##### 1.02 SCHEDULE FOR SUBMITTING INFORMATION AND REPORTS:

- A. Prior to turn over of individual cabin to Engineer.
  
- B. Packaged compilation of reports for all cabins prior to closeout of project.

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

#### PART 3 - EXECUTION (NOT USED)

END OF SECTION

## SECTION 01505

### MOBILIZATION AND DEMOBILIZATION

#### PART 1 - GENERAL

##### 1.1 GENERAL REQUIREMENTS

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

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

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

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

#### PART 3 - EXECUTION

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

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

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

END OF SECTION

## SECTION 01581

### PROJECT SIGN

#### PART 1 - GENERAL

##### 1.01 GENERAL REQUIREMENTS

Furnish all labor, materials, and equipment necessary to construct and install all project sign as specified hereinafter.

##### 1.02 SUBMITTAL

The contractor shall provide the Engineer with six (6) shop drawings of the project sign for review and approval by the Engineer prior to ordering the sign.

##### 1.03 LETTER STYLE

Copy is centered and set in Adobe Type Futura Heavy. If this specific type is not available, Futura Demi Bold may be substituted. Copy should be set and spaced by a professional typesetter and enlarged photographically for photo stencil screen process.

##### 1.04 ARTWORK

Constant elements of the sign layout - frame, outline, stripe, and official state information - may be duplicated following drawing measurements or be reproduced and enlarged photographically using a layout template if provided. The "STATE OF HAWAII" masthead should be reproduced and enlarged as specified, using the artwork provided.

##### 1.05 TITLES

The specific major work of the project under construction is emphasized by using 3-3/4" type, all capitals. Secondary information such as location or buildings uses 2-1/4" type, all capitals. Other related information of lesser importance uses letter heights as indicated on 01581-3, upper / lower case letters.

Design should follow the example on page 01581-3.

#### PART 2 - PRODUCTS

##### 2.01 MATERIALS

###### A. LUMBER

1. Panel is 3/4" exterior grade high density overlaid plywood, with resin-bonded surfaces on both sides.
2. 4"x4" signposts shall be Douglas Fir No. 1 or better.

B. PAINTS & INKS

Screen print inks are matte finish. Paints are satin finish, exterior grade. References to Ameritone Color Key Paint are for color match only.

COLOR:	1.	1BL10A Bohemian Blue
	2.	2H16P Softly (White)
	3.	2VR2A Hot Tango (Red)
	4.	1M52E Tokay (Gray)

C. CONCRETE

Concrete shall be class B with a 2,500 psi 28-day compressive strength.

PART 3 - EXECUTION

3.01 GENERAL

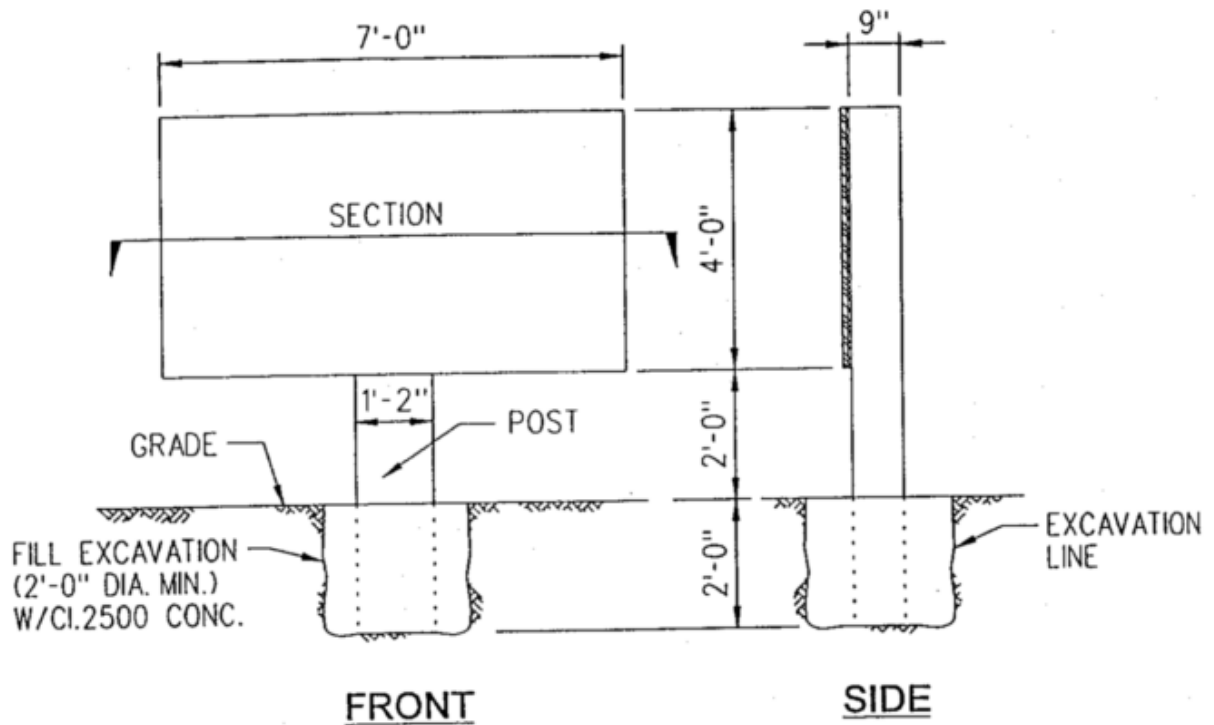
- A. The Project Sign shall be constructed with new materials as specified above.
- B. The Project sign shall be installed at the location indicated on the drawings or as designated by the Engineer. The project sign shall be erected upon commencement of work.
- C. The project sign shall be removed at the completion of the project. The Contractor shall restore the ground area to its original or better condition.

3.02 MEASUREMENTS AND PAYMENT

The construction of the project sign, including all equipment, labor and material necessary to furnish and install the project sign will be paid for under the "Project Sign" proposal item.

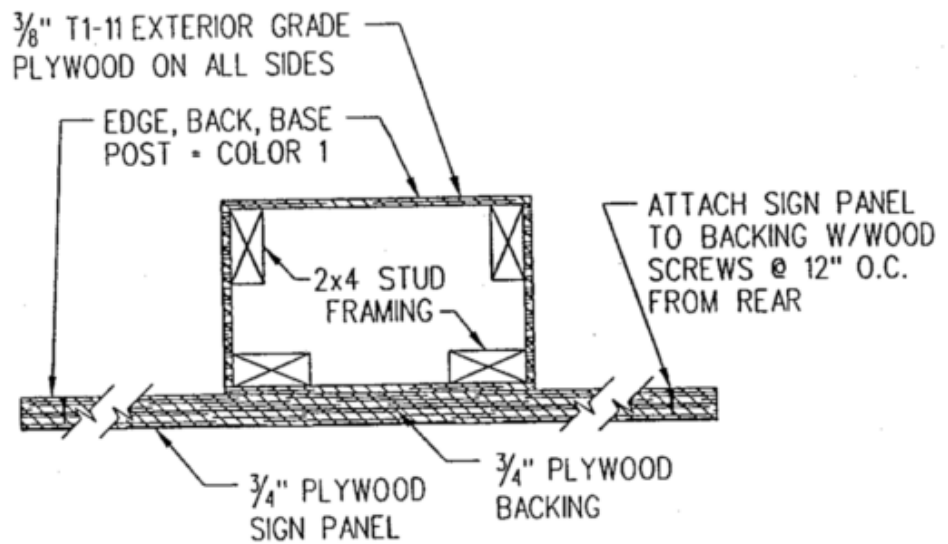
END OF SECTION





## ELEVATIONS

NOT TO SCALE



## SECTION

NOT TO SCALE

## SECTION 01715

### EXISTING CONDITIONS – ASBESTOS\LEAD PAINT SURVEY

#### PART 1 - GENERAL

##### 1.01 ASBESTOS AND LEAD-CONTAINING PAINT

A. The structures to be renovated under this contract were surveyed previously for the presence of asbestos-containing building materials (ACBM), and lead-containing paint (LCP). A copy of the various reports is attached to this Section. The surveys were taken in 1993 titled “Asbestos Inspection Final Report and Management Plan, Volume 1”, dated June 2, 1993 and on March 12, 2004 titled “Asbestos, Lead-based Paint and Arsenic (Canec) Survey for Wainapanapa State Park, Hawaii. VEC Project No. 0402-735B”.

B. Due to the age and specifics of the reports provided, the reports are for informational use only. They identify generally where asbestos and lead-containing paint hazardous may be located within the various cabins. The Contractor may perform additional asbestos and/or lead content testing of suspect surfaces being worked on at the Contractor’s expense.

##### 1.02 APPLICABLE ASBESTOS AND LEAD-CONTAINING PAINT REQUIREMENTS

A. If applicable, the Contractor shall notify his employees, subcontractors and all other persons engaged in the renovation and demolition work of the presence of asbestos in accordance with the requirements of Chapter 110, Article 12-110-2 (f) (1) (B) of the Occupational Safety and Health Standards, State of Hawaii.

B. If applicable, the Contractor shall notify his employees, subcontractors and all other persons engaged in the project that lead-containing paint (LCP), which includes lead-based paint (LBP), is present in the existing building(s) and at the job site. Conduct work in accordance with the requirements of Title 12 (Department of Labor and Industrial Relations), Subtitle 8 (Division of Occupational Safety and Health), Chapter 148.1 (Lead Exposure in Construction), Hawaii Administrative Rules.

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

#### PART 3 - EXECUTION (NOT USED)

END OF SECTION

**ASBESTOS INSPECTION**

**FINAL REPORT**

**AND**

**MANAGEMENT PLAN**

**VOLUME I**

---

**DEPARTMENT OF LAND**

**AND NATURAL RESOURCES**

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**FOR**

**DEPARTMENT OF THE**

**ATTORNEY GENERAL**

**ASBESTOS LITIGATION UNIT**

**PSI/HK Project Number 642-19001**

**June 2, 1993**



**Professional Service Industries, Inc.**  
Hall-Kimbrell Division

## TABLE OF CONTENTS

### VOLUME I

I.	STATE AGENCY SUMMARY .....	1
A.	Introduction.....	1
B.	Synopsis of Findings.....	1
II.	INSPECTION REPORT INTRODUCTION.....	2
A.	Inspection Procedures.....	2
B.	Sampling Procedures .....	2
C.	Random Sampling Protocol.....	2
D.	Statements and Certifications .....	3
E.	Building Inspector Summary.....	4
III.	MANAGEMENT PLANNING.....	6
A.	Management Planning Introduction .....	6
B.	List of Materials Addressed by Categories .....	10
C.	Definitions of ACM Status.....	41
D.	List of Buildings and ACM Status.....	41
E.	Building Assessments.....	51
IV.	SYNOPSIS OF ANTICIPATED ABATEMENT COST .....	68
V.	COST SUMMARY .....	72

### APPENDIX A - INSPECTION RESULTS .....

A-1

A.	Introduction .....	A-2
B.	Sample/Material Location Diagrams.....	A-2
C.	Spreadsheets .....	A-4
D.	Laboratory/Petrographic Analysis .....	A-8
E.	Report Format for Petrographic Analysis .....	A-9
F.	Building Inventory Sheets .....	A-10
G.	Building Name and Number List .....	A-12

### APPENDIX B - OPERATIONS AND MAINTENANCE PLAN.....

B-1

A.	Introduction.....	B-2
B.	The Department Asbestos Manager.....	B-3
C.	Mechanisms for Reducing Exposure .....	B-4
D.	Respiratory Protection Program .....	B-6
E.	Minor Abatement/Repair Techniques.....	B-8
F.	Operations and Maintenance Codes and Procedures .....	B-10
G.	Warnings and Notifications.....	B-13
H.	Management Tools.....	B-15
I.	Codes and Regulations .....	B-23

### VOLUME IV

### APPENDIX C - PHOTO LOG .....

C-1

A.	Photo Log.....	C-2
B.	Photos .....	C-35

<u>Building No.</u>	<u>Building Name</u>
51004030	Wahikuli Picnic Shelter 27
51004031	Wahikuli Picnic Shelter 28
51004032	Wahikuli Picnic Shelter 29
51004033	Wahikuli Picnic Shelter 30
51004034	Wahikuli Picnic Shelter 31
51004035	Wahikuli Picnic Shelter 32
51004036	Wahikuli Picnic Shelter 33
51004037	Wahikuli Picnic Shelter 34
51004038	Wahikuli Picnic Shelter 35
51004039	Wahikuli Picnic Shelter 36
51004040	Wahikuli Picnic Shelter 37
51004041	Wahikuli Picnic Shelter 38
51003001	Waianapanapa Comfort Station
51003002	Waianapanapa Caretaker's Cottage
51003004	Waianapanapa Rental Cabin #1
51003005	Waianapanapa Rental Cabin #2
51003006	Waianapanapa Rental Cabin #3
51003007	Waianapanapa Rental Cabin #4
51003008	Waianapanapa Rental Cabin #5
51003009	Waianapanapa Rental Cabin #6
51003010	Waianapanapa Rental Cabin #7
51003011	Waianapanapa Rental Cabin #8
51003012	Waianapanapa Rental Cabin #9
51003013	Waianapanapa Rental Cabin #10
51003014	Waianapanapa Rental Cabin 11
51003015	Waianapanapa Rental Cabin 12
51003003	Waianapanapa Storage Bldg.

## HAWAII

61006002	Akaka Falls Restroom
61006001	Akaka Falls Storage Shed
61004001	Boiling Pots Restroom
61013014	Hapuna A-Frame Shelter #1
61013015	Hapuna A-Frame Shelter #2
61013016	Hapuna A-Frame Shelter #3
61013017	Hapuna A-Frame Shelter #4
61013018	Hapuna A-Frame Shelter #5
61013019	Hapuna A-Frame Shelter #6
61013020	Hapuna Caretaker's Cottage
61013021	Hapuna Comfort Station (Cabins 1-3)
61013022	Hapuna Comfort Station (Cabins 4-6)
61013012	Hapuna Comfort Station (Parking Lot)
61013013	Hapuna Comfort Station (North End)
61013011	Hapuna Comfort Station (South end)
61013023	Hapuna Maintenance Bldg.
61013024	Hapuna Pavilion (Cabin Area)
61013001	Hapuna Pavilion #1 (North end)
61013003	Hapuna Pavilion #2 (South End)
61013004	Hapuna Picnic Shelter #2
61013005	Hapuna Picnic Shelter #3

Bldg. No.	Area	Material Description	Location	Category	Friability (Y/N)
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**ALA WAI BOAT HARBOR ATTENDANT'S OFFICE**

23201001	2	Vinyl Floor Tile	Room 2 - White 12"x12"	Miscellaneous	N
23201001	2	Vinyl Floor Tile	Room 3 - 12"x12" Brown w/White	Miscellaneous	N
23201001	2	Vinyl Floor Tile	Rooms 1,4-6 - 4"x24" Tan	Miscellaneous	N
23201001	2	Vinyl Floor Tile	Rooms 1,4-6 - 4"x24" Brown	Miscellaneous	N

**WAIANAE BOAT HARBOR ATTENDANT'S OFFICE**

23202001	3	Mastic	See Comments - Beige 12"x12"	Miscellaneous	N
23202001	4	Roofing Tar Paper/Roofing Felt	Roof parapet walls	Miscellaneous	N

**KEEHI BOAT HARBOR ATTENDANT'S OFFICE**

23203001	2	Vinyl Floor Tile	Room 1 - Beige 9"x9"	Miscellaneous	N
23203001	3	Patching Compound	Room 3 - See Comments	Miscellaneous	N

**HALEIWA BOAT HARBOR ATTENDANT'S OFFICE**

23204001	3	Mastic	Rooms 201,202 - White 12"x12"	Miscellaneous	N
23204001	3	Vinyl Floor Tile	Rooms 201,202 - White 12"x12"	Miscellaneous	N

**HEEIA KEA BOAT HARBOR COMFORT STATION #2**

23205002	1	Waterproof Coating	Rooms 1 & 2	Miscellaneous	N
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**MOLOKAI**

**MOLOKAI FORESTRY GUEST HOUSE BUILDING**

30903002	1	Mastic	Room 5 - White 12"x12"	Miscellaneous	N
30903002	1	Vinyl Floor Tile	Room 4 - Tan 12"x12"	Miscellaneous	N

**MOLOKAI FORESTRY MAIN CABIN BUILDING**

30903003	1	Mastic	Room 4 - White 12"x12"	Miscellaneous	N
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**PALAAU CARETAKER'S COTTAGE**

31001001	1	Vinyl Floor Tile	Rooms 5-15 - White 12"x12" See Appendix A	Miscellaneous	N
31001001	2	Sink Undercoating	Room 5 - White	Miscellaneous	N

**MAUI**

**KAHULUI NURSERY/WORKROOM/GREENHOUSE**

50901004	1	Tar	Room 4 - on Walls	Miscellaneous	N
50901004	2	Sink Undercoating	Room 2 - Pink	Miscellaneous	N

Bldg. No.	Area	Material Description	Location	Category	Friability (Y/N)
<b>POLI-POLI RENTAL CABIN</b>					
51001001	2	Sink Undercoating	Room 1 - Black	Miscellaneous	N
51001001	3	Vinyl Floor Tile	Room 2 - Tan 12"x12"	Miscellaneous	N
<b>IAO VALLEY COMFORT STATION</b>					
51002001	1	Corrugated Cementitious Panel	All Rooms - Ceiling	Miscellaneous	N
<b>WAIANAPANAPA CARETAKER'S COTTAGE</b>					
51003002	1	Vinyl Floor Tile	Room 13 - See Appendix A Green 9"x9"	Miscellaneous	N
51003002	3	Sink Undercoating	Room 5 - Gray	Miscellaneous	N
<b>WAIANAPANAPA STORAGE BUILDING</b>					
51003003	1	Corrugated Cementitious Panel	All Rooms - Ceiling	Miscellaneous	N
51003003	2	Vinyl Floor Tile	Rooms 2, 3 - Tan 12"x12"	Miscellaneous	N
<b>WAIANAPANAPA RENTAL CABIN #1</b>					
51003004	1	Vinyl Floor Tile	Room 4 - Beige 12"x12"	Miscellaneous	N
51003004	1	Mastic	Room 1 - Brown 12"x12"	Miscellaneous	N
51003004	1	Vinyl Floor Tile	Rooms 2, 3, 5, H1 - Tan 12"x12"	Miscellaneous	N
51003004	2	Sink Undercoating	Room 1 - Gray	Miscellaneous	N
<b>WAIANAPANAPA RENTAL CABIN #2</b>					
51003005	1	Vinyl Floor Tile	Room 4 - Beige 9"x9"	Miscellaneous	N
51003005	1	Vinyl Floor Tile	Rooms 2, 3, 5, H1 - Tan 12"x12"	Miscellaneous	N
51003005	2	Sink Undercoating	Room 1 - Gray	Miscellaneous	N
<b>WAIANAPANAPA RENTAL CABIN #3</b>					
51003006	1	Mastic	Rooms 2, 3, 5, H1 - Tan 12"x12"	Miscellaneous	N
51003006	1	Vinyl Floor Tile	Rooms 2, 3, 5, H1 - Tan 12"x12"	Miscellaneous	N
51003006	2	Sink Undercoating	Room 1 - Gray	Miscellaneous	N
<b>WAIANAPANAPA RENTAL CABIN #4</b>					
51003007	1	Vinyl Floor Tile	Room 4 - Beige 12"x12"	Miscellaneous	N
51003007	1	Vinyl Floor Tile	Rooms 2, 3, 5, H1 - Tan 12"x12"	Miscellaneous	N
51003007	1	Mastic	Room 1 - Brown 12"x12"	Miscellaneous	N
51003007	2	Sink Undercoating	Room 1 - Gray	Miscellaneous	N
<b>WAIANAPANAPA RENTAL CABIN #5</b>					
51003008	1	Vinyl Floor Tile	Room 4 - Beige 12"x12"	Miscellaneous	N
51003008	1	Vinyl Floor Tile	Rooms 2, 3, 5, H1 - Tan 12"x12"	Miscellaneous	N

Bldg. No.	Area	Material Description	Location	Category	Friability (Y/N)
<b>WAINAPANAPA RENTAL CABIN #5 (cont.)</b>					
51003008	1	Mastic	Room 4 - Beige 12"x12"	Miscellaneous	N
51003008	2	Sink Undercoating	Room 1 - Gray	Miscellaneous	N
<b>WAIANAPANAPA RENTAL CABIN #6</b>					
51003009	1	Vinyl Floor Tile	Room 4 - Beige 12"x12"	Miscellaneous	N
51003009	1	Vinyl Floor Tile	Rooms 2, 3, 5, H1 - Tan 12"x12"	Miscellaneous	N
51003009	2	Sink Undercoating	Room 1 - Gray	Miscellaneous	N
<b>WAIANAPANAPA RENTAL CABIN #7</b>					
51003010	1	Vinyl Floor Tile	Rooms 3-5, H1 - Tan 9"x9"	Miscellaneous	N
51003010	1	Mastic	Rooms 3-5, H1 - Tan 9"x9"	Miscellaneous	N
51003010	2	Sink Undercoating	Room 1 - Gray	Miscellaneous	N
<b>WAIANAPANAPA RENTAL CABIN #8</b>					
51003011	1	Vinyl Floor Tile	Rooms 1-3, 5, H1 - Brown 9"x9"	Miscellaneous	N
51003011	1	Mastic	Rooms 1-3, 5, H1 - Brown 9"x9"	Miscellaneous	N
51003011	1	Vinyl Floor Tile	Room 4 - Tan 9"x9"	Miscellaneous	N
51003011	1	Mastic	Room 4 - Tan 9"x9"	Miscellaneous	N
51003011	2	Sink Undercoating	Room 1 - Gray	Miscellaneous	N
<b>WAIANAPANAPA RENTAL CABIN #9</b>					
51003012	1	Vinyl Floor Tile	Rooms 1-5, H1 - Tan 9"x9"	Miscellaneous	N
51003012	1	Mastic	Rooms 1-5, H1 - Tan 9"x9"	Miscellaneous	N
51003012	2	Sink Undercoating	Room 1 - Gray	Miscellaneous	N
<b>WAIANAPANAPA RENTAL CABIN #10</b>					
51003013	1	Mastic	Rooms 1-5, H1 - Brown 9"x9"	Miscellaneous	N
51003013	1	Vinyl Floor Tile	Rooms 1-5, H1 - Tan 9"x9"	Miscellaneous	N
51003013	1	Vinyl Floor Tile	Rooms 1-5, H1 - Brown 9"x9"	Miscellaneous	N
51003013	2	Sink Undercoating	Room 1 - Gray	Miscellaneous	N
<b>WAIANAPANAPA RENTAL CABIN #11</b>					
51003014	2	Sink Undercoating	Room 1 - Gray	Miscellaneous	N
<b>WAIANAPANAPA RENTAL CABIN #12</b>					
51003015	1	Mastic	Rooms 1-5, H1 - Tan 9"x9"	Miscellaneous	N
51003015	1	Vinyl Floor Tile	Rooms 1-5, H1 - Tan 9"x9"	Miscellaneous	N
51003015	2	Sink Undercoating	Room 1 - Gray	Miscellaneous	N



## Consultants, Inc.

March 25, 2004

Mr. Robert Tanaka  
Tanaka Engineers, Inc.  
871 Kolu Street, Suite 201  
Wailuku, HI 96793

RE: Asbestos, Lead-based Paint and Arsenic (Canec) Survey for Wainapanapa State Park, Hawaii.  
VEC Project No. 0402-735B

Dear Mr. Tanaka,

Please find attached the laboratory results from EMC Laboratories for the asbestos and lead-based paint sampling survey conducted by Vuich Environmental Consultants, Inc. (VEC) at the above referenced location on March 12, 2004. This project consisted of surveying and/or sampling the following separate locations:

- Cabin #3
- Parking Areas 1 through 5

### Limited Asbestos Sampling Survey

The Environmental Protection Agency (EPA) and the State of Hawaii, Department of Health (DOH), define asbestos-containing materials (ACM) as those containing greater than 1% asbestos (Chrysotile, Amosite, Crocidolite, Anthophyllite, Tremolite, and Actinolite). A total of eleven (11) samples were collected from suspect materials identified in Cabin #3 and Areas 4 and 5. Suspect materials were not identified at the other project locations. According to the laboratory analysis, the following building materials are by definition *asbestos-containing*:

- Cabin #3 - Kitchen floor, underlying mastic and underlying (second layer) 12" Light Brown Floor tile;
  - Floor tile, 10% Chrysotile
  - Yellow mastic, 2% Chrysotile
  - Black mastic, 3% Chrysotile
- Cabin #3 - Kitchen sink, white undercoat (15% Chrysotile);
- Cabin #3 - Bedroom/Hallway, 12" gray floor tile (8% Chrysotile).

Asbestos-containing materials are in fair to good condition over the surface area. Some floor tiles were damaged. Removal of all asbestos-containing materials, including small, untested areas, is recommended prior to any demolition/renovation work that may impact the above-noted materials.

OSHA's and HIOSH's Construction Standard for Asbestos regulates safety, work procedures, training, and medical surveillance of workers.

Demolition and renovation work activities involving ACM must follow the requirements and guidelines under EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) and Hawaii Administrative Rules (HAR) Chapter 11-501. Notification, emission control, and waste disposal protocols should be conducted in accordance with NESHAP regulations.

Limited Lead-Based Paint Sampling Survey

The EPA and U.S. Department of Housing and Urban Development's (HUD's) definition of lead-based paint is 0.5% lead by weight. The Consumer Products Safety Commission's (CPSC's) criteria for lead-free paint is 0.06% lead by weight. The laboratory detection limit for lead during the paint analysis was 0.010% lead by weight. The Occupational Safety and Health Administration (OSHA) Lead Construction Standard rules are effective for any levels above the laboratory detection limit.

VEC personnel collected a total of eleven (11) paint chip samples from the exterior and interior building components of Cabin #3 and from the below listed areas. (See table below).

The following is a description of the sampled paint schemes with *lead levels above the laboratory detection limit*: Paint schemes that were determined by laboratory analysis to be below the reportable limit of the laboratory (0.010 % Pb by weight) are indicated with the letters **BRL**.

735 (B) - 01L	Cabin #3, Exterior Front Steps	Green Paint	0.042
735 (B) - 02L	Cabin #3, Exterior Front Entry Rail	Green Paint	0.036
735 (B) - 03L	Cabin #3, Rear Porch Door Interior	Red Brown Paint	0.010
735 (B) - 04L	Cabin #3, Rear Porch Door Jamb	Beige Tan Paint	0.082
735 (B) - 05L	Cabin #3, Kitchen Cabinet	Red Brown Paint	0.085
735 (B) - 06L	Cabin #3, Interior Wall (main color)	Tan Paint	0.099
735 (B) - 07L	Parking Area #2, Parking Stripe	White Paint	BRL
735 (B) - 08L	Picnic Area #3, Concrete Table Top	Green Paint	BRL
735 (B) - 09L	Picnic Area #3, Wood Seat (Table)	Green Paint	BRL
735 (B) - 10L	Area #4, Restroom Interior, Concrete Bench	White Paint	BRL
735 (B) - 11L	Area #4, Restroom Interior, Concrete Partition	White Pant	BRL

Both the front and rear doors and door jams appeared to have the same paint schemes and should be considered to have similar lead levels.

VEC recommends following the risk assessment and work control guidelines presented in EPA's Requirements for Lead-Based Paint Activities in Target Housing and Child-Occupied Facilities and HUD's "Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing, 1995, for any demolition or renovation work activity that disturbs paint with measurable levels of lead.

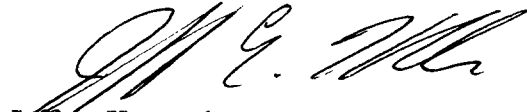
In addition, compliance with OSHA and HIOSH standards is compulsory for worker training and work practices. Under the OSHA Lead Construction Standard, any scheduled renovation or demolition work conducted on these building components will require certain notification to workers and work procedures to be followed.

Limited Canec-Arsenic Sampling Survey

No Canec materials were noted during the site inspection.

If you should have any questions or would like further assistance, please contact our office at (808) 249-2777.

Sincerely yours,



Jeffrey Kermode  
Inspector

cc            File

Enclosure    EMC Laboratories - Results and Chain-of-Custody

# EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044  
 Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report  
**0020153**

## Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	VUICH ENVIRONMENTAL	Job# / P.O. #:	0402-735	735
Address:	1498 LOWER MAIN ST, STE C WAILUKU, HI 96793	Date Received:	03/17/2004	
Collected:	03/16/2004	Date Analyzed:	03/19/2004	
Project Name/	WAINAPANAP	Date Reported:	03/19/2004	
Address:		EPA Method:	EPA 600/M4-82-020	
		Submitted By:	JEFFREY KERMODE	
		Collected By:	Customer	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0020153-001 735-B-01A	CABIN #3 KITCHEN FLOOR	LAYER 1 12" Floor Tile, Lt. Red	No		Quartz Carbonates Binder/Filler 100%
		LAYER 2 Mastic, Yellow Note: Very small amount of sample-may effect analysis	Yes	Chrysotile 2%	Carbonates Binder/Filler 98%
		LAYER 3 12" Floor Tile, Lt. Brown	Yes	Chrysotile 10%	Carbonates Binder/Filler 90%
		LAYER 4 Mastic, Black	Yes	Chrysotile 3%	Carbonates Binder/Filler 97%
0020153-002 735-B-02A	CABIN #3 KITCHEN FLOOR	LAYER 1 12" Floor Tile, Lt. Red	No		Quartz Carbonates Binder/Filler 100%
		LAYER 2 Mastic, Yellow	No		Cellulose Fiber 1% Carbonates Binder/Filler 99%
		LAYER 3 12" Floor Tile, Lt. Brown	Yes	Chrysotile 10%	Carbonates Binder/Filler 90%
		LAYER 4 Mastic, Black	Yes	Chrysotile 5%	Cellulose Fiber 1% Carbonates Binder/Filler 94%

# EMC LABS, INC.

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Laboratory Report  
**0020153**

## Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	VUICH ENVIRONMENTAL	Job# / P.O. #:	0402-735	735
Address:	1498 LOWER MAIN ST, STE C WAILUKU, HI 96793	Date Received:	03/17/2004	
Collected:	03/16/2004	Date Analyzed:	03/19/2004	
Project Name/	WAINAPANAP	Date Reported:	03/19/2004	
Address:		EPA Method:	EPA 600/M4-82-020	
		Submitted By:	JEFFREY KERMODE	
		Collected By:	Customer	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0020153-003 735-B-03A	CABIN #3 BATHRM FLOOR	LAYER 1 12" Floor Tile, Lt. Red	No		
		LAYER 2 Mastic, Brown	No		Quartz Carbonates Binder/Filler 100% Cellulose Fiber 2% Mineral Wool 1% Synthetic Fiber <1% Quartz Carbonates Binder/Filler 96%
0020153-004 735-B-04A	CABIN #3 KITCHEN FLOOR	Sink Undercoat, White/Lt. Blue	Yes	Chrysotile 15%	
					Carbonates Binder/Filler 85%
0020153-005 735-B-05A	CABIN #3 KITCHEN FLOOR	Sink Caulk, Off White	No		
					Quartz Carbonates Binder/Filler 100%
0020153-006 735-B-06A	CABIN #3 BEDROOM	LAYER 1 12" Floor Tile, Gray/ Beige	Yes	Chrysotile 8%	
		LAYER 2 Mastic, Yellow Note: Very small amount of sample-may effect analysis	No		Carbonates Binder/Filler 92% Cellulose Fiber 1% Carbonates Binder/Filler 99%
0020153-007 735-B-07A	CABIN #3 BEDROOM	12" Floor Tile, Gray/ Beige Note: No Mastic Present	Yes	Chrysotile 5%	
					Quartz Carbonates Binder/Filler 95%

# EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044  
 Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report  
**0020153**

## Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client: VUICH ENVIRONMENTAL	Job# / P.O. #: 0402-735	735
Address: 1498 LOWER MAIN ST, STE C WAILUKU, HI 96793	Date Received: 03/17/2004	
Collected: 03/16/2004	Date Analyzed: 03/19/2004	
Project Name/ WAINAPANAP	Date Reported: 03/19/2004	
Address:	EPA Method: EPA 600/M4-82-020	
	Submitted By: JEFFREY KERMODE	
	Collected By: Customer	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0020153-008 735-B-08A	CABIN #3 HALLWAY	LAYER 1 12" Floor Tile, Gray/ Beige	Yes	Chrysotile 5%	
		LAYER 2 Mastic, Brown	No		Quartz Carbonates Binder/Filler 95% Cellulose Fiber 1% Carbonates Binder/Filler 99%
0020153-009 735-B-09A	CABIN #3 BATHRM	Shower Caulk, White	No		Carbonates Binder/Filler 100%
0020153-010 735-B-10A	AREA #4 WASHRM	Grout, Gray	No		Quartz Carbonates Binder/Filler 100%
0020153-011 735-B-11A	AREA #5 BBQ PIT	Grout, Gray	No		Cellulose Fiber <1% Quartz Carbonates Binder/Filler 99%

*K S*

Analyst - Kenneth Scheske

*Kurt Kettler*  
 Signatory - Lab Director - Kurt Kettler

Distinctly stratified, easily separable layers of samples are analyzed as subsamples of the whole and are reported separately for each discernable layer. All analyses are derived from calibrated visual estimate and measured in weight percent unless otherwise noted. The report applies to the standards or procedures identified and to the sample(s) tested. The test results are not necessarily indicative or representative of the qualities of the lot from which the sample was taken or of apparently identical or similar products, nor do they represent an ongoing quality assurance program unless so noted. These reports are for the exclusive use of the addressed client and that they will not be reproduced wholly or in part for advertising or other purposes over our signature or in connection with our name without special written permission. The report shall not be reproduced except in full without written approval by our laboratory. The samples not destroyed in testing are retained a maximum of thirty days. The laboratory measurement of uncertainty for the test method is approximately <1% by weight. Accredited by the National Institute of Standards and Technology, Voluntary Laboratory Accreditation Program for selected test method for asbestos. The accreditation or any reports generated by this laboratory in no way constitutes or implies product certification, approval, or endorsement by the National Institute of Standards and Technology. The report must not be used by any entity to claim product endorsement by NVLAP or any agency of the U.S. Government. Polarized Light Microscopy may not be consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials.

# CHAIN OF CUSTODY

EMC Labs, Inc.  
9830 S. 51<sup>ST</sup> St., Ste B-109  
Phoenix, AZ 85044  
(800) 362-3373 Fax (480) 893-1726

LAB#: <u>73510</u>
TAT: <u>2 day</u>
Rec'd: <u>MAR 17 PM</u>

COMPANY NAME: VUICH ENVIRONMENTAL CONSULTANTS, INC.  
1498 LOWER MAIN ST, STE C  
WAILUKU, HI 96793  
 CONTACT: JOHN VUICH  
 Phone/Fax: (808) 249-2777 / (808) 249-2778  
 Email: \_\_\_\_\_

BILL TO: \_\_\_\_\_ (If different location)

APPROVED  
[Signature]

Now Accepting: **VISA - MASTERCARD**

Price Quoted: \$ \_\_\_\_\_ / Sample \$ \_\_\_\_\_ / Layers

COMPLETE ITEMS 1-4: (Failure to complete any items may cause a delay in processing or analyzing your samples)

1. TURNAROUND TIME: [4hr rush] [8hr rush] [1-Day] [2-Day] [3-Day] [5-Day] [6-10 Day]

\*\*\*\*Prior confirmation of turnaround time is required  
 \*\*\*\*Additional charges for rush analysis (please call marketing department for pricing details)  
 \*\*\*\*Laboratory analysis may be subject to delay if credit terms are not met

2. TYPE OF ANALYSIS: [Bulk-PLM] [Air-PCM] [Lead] [Point Count]

3. DISPOSAL INSTRUCTIONS: [Dispose of samples at EMC] / [Return samples to me at my expense]  
(If you do not indicate preference, EMC will dispose of samples 60 days from analysis.)

4. Project Name: <u>WAINAPANAPA</u>		P.O. Number: <u>735</u>		Project Number: <u>0402 - 735</u>			
EMC SAMPLE #	CLIENT SAMPLE #	DATE & TIME SAMPLED	LOCATION/MATERIAL TYPE	Samples Accepted Yes / No	AIR SAMPLE INFO / COMMENTS		
					ON	OFF	FLOW RATE
1	<u>735(B)-01A</u>	<u>3/12/04</u>	<u>CABIN #3 KITCHEN FLOOR / 12" RED/BROWN CERAMIC TILE</u>	<u>Y</u> <u>N</u>			
2	<u>-02A</u>			<u>Y</u> <u>N</u>			
3	<u>-03A</u>		<u>CABIN #3 BATHROOM FLOOR</u>	<u>Y</u> <u>N</u>			
4	<u>-04A</u>		<u>CABIN #3 KITCHEN / WH. SINK</u>	<u>Y</u> <u>N</u>			
5	<u>-05A</u>		<u>KITCHEN / UNDER COAT</u>	<u>Y</u> <u>N</u>			
6	<u>-06A</u>		<u>SINK</u>	<u>Y</u> <u>N</u>			
7	<u>-07A</u>		<u>CABIN #3 / 12" GRAY BEOROOM FLOOR TILE</u>	<u>Y</u> <u>N</u>			
8	<u>-08A</u>			<u>Y</u> <u>N</u>			
9	<u>-09A</u>		<u>CABIN #3 HALLWAY</u>	<u>Y</u> <u>N</u>			
10	<u>-10A</u>		<u>CABIN #3 BATHROOM / WH. SHOWER</u>	<u>Y</u> <u>N</u>			
11	<u>735(B)-11A</u>	<u>3/12/04</u>	<u>AREA #5 WASHROOM / ROSE WALL</u>	<u>Y</u> <u>N</u>			
			<u>WASHROOM / GROUT</u>	<u>Y</u> <u>N</u>			
			<u>AREA #5 BRQ PIT / ROCK BOP PIT</u>	<u>Y</u> <u>N</u>			
				<u>Y</u> <u>N</u>			
				<u>Y</u> <u>N</u>			
				<u>Y</u> <u>N</u>			
				<u>Y</u> <u>N</u>			

SPECIAL INSTRUCTIONS:

Sample Collector: (Print) J. KERMODE (Signature) [Signature]  
 Relinquished by: [Signature] Date/Time: 3/16/04 Received by: [Signature] Date/Time: 3/17/04  
 Relinquished by: [Signature] Date/Time: 3/17/04 Received by: [Signature] Date/Time: 3/19/04  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

\*\* In the event of any dispute between the above parties for these services or otherwise, parties agree that jurisdiction and venue will be in Phoenix, Arizona and prevailing party will be entitled to attorney's fees and court costs.



9830 South 51<sup>st</sup> Street, Suite B-109 / PHOENIX, ARIZONA 85044 / 480-940-5294 or 800-362-3373 / FAX 480-893-1726  
emclab@emclabs.com

**LEAD (Pb) IN PAINT CHIP SAMPLES**  
EMC SOP METHOD #L01/1 EPA SW-846 METHOD 7420

<b>EMC LAB #:</b> L25908		<b>DATE RECEIVED:</b> 03/17/04			
<b>CLIENT:</b> Vuich Environmental Consultants, Inc.		<b>REPORT DATE:</b> 03/19/04			
		<b>DATE OF ANALYSIS:</b> 03/18/04			
<b>CLIENT ADDRESS:</b> 1498 Lower Main St. Ste C Wailuku, HI 96793		<b>P.O. NO.:</b> 735			
<b>PROJECT NAME:</b> Wainapanapa		<b>PROJECT NO.:</b> 0402-735			
EMC # L25908-	SAMPLE DATE /04	CLIENT SAMPLE #	DESCRIPTION	REPORTING LIMIT (%Pb by weight)	%Pb BY WEIGHT
1	03/12	735 (B)-01L	Cabin #3 Front Steps-Green Paint	0.010	0.042
2	03/12	735 (B)-02L	Cabin #3 Entry Rail-Green Paint	0.010	0.036
3	03/12	735 (B)-03L	Cabin #3 Rear Porch Door Interior-Red Brown Paint	0.010	0.010
4	03/12	735 (B)-04L	Cabin #3 Rear Porch Door Jamb-Beige Tan Paint	0.010	0.082
5	03/12	735 (B)-05L	Cabin #3 Kitchen Cabinet-Red Brown Paint	0.010	0.085

^ = Dilution Factor Changed

\* = Excessive Substrate May Bias Sample Results

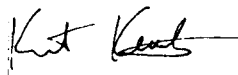
BRL = Below Reportable Limits

This report applies to the standards or procedures identified and to the samples tested only. The test results are not necessarily indicative or representative of the qualities of the lot from which the sample was taken or of apparently identical or similar products, nor do they represent an ongoing quality assurance program unless so noted. Unless otherwise noted, all quality control analyses for the samples noted above were within acceptable limits. Blank correction is performed if the result for the blank is higher than the reporting limit.

Where it is noted that a sample with excessive substrate was submitted for laboratory analysis, such analysis may be biased. The lead content of such sample may, in actuality, be greater than reported. EMC makes no warranty, express or implied, as to the accuracy of the analysis of samples noted to have been submitted with excessive substrate. Resampling is recommended in such situations to verify original laboratory results.

These reports are for the exclusive use of the addressed client and are rendered upon the condition that they will not be reproduced wholly or in part for advertising or other purposes over our signature or in connection with our name without special written permission. Samples not destroyed in testing are retained a maximum of sixty (60) days.

**ANALYST:**   
Jason Thompson

**QA COORDINATOR:**   
Kurt Kettler



9830 South 51<sup>st</sup> Street, Suite B-109 / PHOENIX, ARIZONA 85044 / 480-940-5294 or 800-362-3373 / FAX 480-893-1726  
emclab@emclabs.com

**LEAD (Pb) IN PAINT CHIP SAMPLES**  
EMC SOP METHOD #L01/1 EPA SW-846 METHOD 7420

<b>EMC LAB #:</b> L25908		<b>DATE RECEIVED:</b> 03/17/04			
<b>CLIENT:</b> Vuich Environmental Consultants, Inc.		<b>REPORT DATE:</b> 03/19/04			
		<b>DATE OF ANALYSIS:</b> 03/18/04			
<b>CLIENT ADDRESS:</b> 1498 Lower Main St. Ste C Wailuku, HI 96793		<b>P.O. NO.:</b> 735			
<b>PROJECT NAME:</b> Wainapanapa		<b>PROJECT NO.:</b> 0402-735			
EMC # L25908-	SAMPLE DATE /04	CLIENT SAMPLE #	DESCRIPTION	REPORTING LIMIT (%Pb by weight)	%Pb BY WEIGHT
6	03/12	735 (B)-06L	Cabin #3 Interior Wall-Tan Paint	0.010	0.099
7	03/12	735 (B)-07L	Parking Area #2 Stripe-White Paint	0.010	BRL
8	03/12	735 (B)-08L	Picnic Area #3 Concrete Wall-Green Paint	0.010	BRL
9	03/12	735 (B)-09L	Picnic Area #3 Wood Seat-Green Paint	0.010	BRL
10	03/12	735 (B)-10L	Area #4 Restroom Concrete Bench-White Paint	0.010	BRL
11	03/12	735 (B)-11L	Area At #4 Restroom Interior Partition-White Paint	0.010	BRL

^ = Dilution Factor Changed


\* = Excessive Substrate May Bias Sample Results

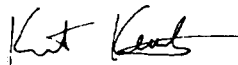
BRL = Below Reportable Limits

This report applies to the standards or procedures identified and to the samples tested only. The test results are not necessarily indicative or representative of the qualities of the lot from which the sample was taken or of apparently identical or similar products, nor do they represent an ongoing quality assurance program unless so noted. Unless otherwise noted, all quality control analyses for the samples noted above were within acceptable limits. Blank correction is performed if the result for the blank is higher than the reporting limit.

Where it is noted that a sample with excessive substrate was submitted for laboratory analysis, such analysis may be biased. The lead content of such sample may, in actuality, be greater than reported. EMC makes no warranty, express or implied, as to the accuracy of the analysis of samples noted to have been submitted with excessive substrate. Resampling is recommended in such situations to verify original laboratory results.

These reports are for the exclusive use of the addressed client and are rendered upon the condition that they will not be reproduced wholly or in part for advertising or other purposes over our signature or in connection with our name without special written permission. Samples not destroyed in testing are retained a maximum of sixty (60) days.

**ANALYST:**   
Jason Thompson

**QA COORDINATOR:**   
Kurt Kettler

Page 1 of 1

### CHAIN OF CUSTODY

EMC Labs, Inc.  
9830 S. 51<sup>ST</sup> St., Ste B-109  
Phoenix, AZ 85044  
(800) 362-3373 Fax (480) 893-1726

LAB#: <u>225908</u>
TAT: <u>2day</u>
Rec'd: <u>MAR 17 AM</u>

COMPANY NAME: VIUCH ENVIRONMENTAL CONSULTANTS, INC.  
1498 LOWER MAIN ST, STE C  
WAILUKU, HI 96793  
 CONTACT: JOHN VIUCH  
 Phone/Fax: (808) 249-2777 / (808) 249-2778  
 Email: \_\_\_\_\_

BILL TO: \_\_\_\_\_ (If different location)  
 \_\_\_\_\_  
 \_\_\_\_\_

Now Accepting: VISA - MASTERCARD Price Quoted: \$ \_\_\_\_\_ / Sample \$ \_\_\_\_\_ / Layers

COMPLETE ITEMS 1-4: (Failure to complete any items may cause a delay in processing or analyzing your samples)

1. TURNAROUND TIME: [4hr rush] [8hr rush] [1-Day] [2-Day] ~~[3-Day]~~ [5-Day] [6-10 Day]

\*\*\* Prior confirmation of turnaround time is required  
 \*\*\* Additional charges for rush analysis (please call marketing department for pricing details)  
 \*\*\* Laboratory analysis may be subject to delay if credit terms are not met

2. TYPE OF ANALYSIS: [Bulk-PLM] [Air-PCM] [Lead] [Point Count]

3. DISPOSAL INSTRUCTIONS: [Dispose of samples at EMC] [Return samples to me at my expense]  
 (If you do not indicate preference, EMC will dispose of samples 60 days from analysis.)

EMC SAMPLE #	CLIENT SAMPLE #	DATE & TIME SAMPLED	LOCATION/MATERIAL TYPE	Samples Accepted Yes / No	AIR SAMPLE INFO / COMMENTS		
					ON	OFF	FLOW RATE
1	<u>735(B)-01L</u>	<u>3/12/04</u>	<u>CABIN 3 FRONT SEAT / GREEN PAINT</u>	<u>Y N</u>			
2	<u>-02L</u>		<u>CABIN 3 ENTRY RAIL</u>	<u>Y N</u>			
3	<u>-03L</u>		<u>CABIN 3 REAR / RED BROWN PAINT</u>	<u>Y N</u>			
4	<u>-04L</u>		<u>CABIN 3 REAR / BEIGE TAN PAINT</u>	<u>Y N</u>			
5	<u>-05L</u>		<u>CABIN 3 REAR / RED BROWN PAINT</u>	<u>Y N</u>			
6	<u>-06L</u>		<u>CABIN 3 INTER. WALL / TAN PAINT</u>	<u>Y N</u>			
7	<u>-07L</u>		<u>PARKING AREA / WHITE PAINT</u>	<u>Y N</u>			
8	<u>-08L</u>		<u>PICNIC AREA / GREEN PAINT</u>	<u>Y N</u>			
9	<u>-09L</u>		<u>WOOD SEAT</u>	<u>Y N</u>			
10	<u>-10L</u>		<u>AREA BY REAR / WHITE CONCRETE BENCH PAINT</u>	<u>Y N</u>			
11	<u>735(B)-11L</u>	<u>3/12/04</u>	<u>AREA BY REAR / INTERIOR PARTITION</u>	<u>Y N</u>			

SPECIAL INSTRUCTIONS: \_\_\_\_\_  
 Sample Collector: (Print) J. KERMONE (Signature) \_\_\_\_\_  
 Relinquished by: JOHN VIUCH Date/Time: 3/16/04 Received by: \_\_\_\_\_ Date/Time: 3/17/04  
 Relinquished by: \_\_\_\_\_ Date/Time: 3/17/04 Received by: \_\_\_\_\_ Date/Time: 3/17  
 Relinquished by: \_\_\_\_\_ Date/Time: 3/16/04 9:05 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

\*\* In the event of any dispute between the above parties for these services or otherwise, parties agree that jurisdiction and venue will be in Phoenix, Arizona and prevailing party will be entitled to attorney's fees and court costs.

## DIVISION 16 - ELECTRICAL

### SECTION 16000

#### GENERAL REQUIREMENTS FOR ELECTRICAL WORK

##### PART 1 - GENERAL

###### 1.1 SCOPE

This section covers all electrical work including labor and materials.

###### 1.2 DESCRIPTION OF WORK

- A. Scope: This section specifies general requirements for electrical work. Detailed requirements for specific electrical items are specified in other sections but are subject to the general requirements of this section. The electrical drawings and schedules included in this project manual are functional in nature and do not specify exact locations of equipment or equipment terminations.

Furnish all labor and materials required to complete all electrical work as indicated on the drawings and/or specified herein.

1. In general, the following work is included:
  - a. Installation of equipment assemblies including service equipment and interconnections.
  - b. Preparation of "Field Posted" as-built drawings.
  - c. Coordination with utilities.
- B. The term "wiring" shall include raceways, conductors, and supports.
- C. Wiring and connecting all electrical equipment supplied for installation and use in this contract and not specifically listed as work by others.

###### 1.3 QUALITY ASSURANCE

- A. References: This section contains references to the following documents. They are a part of this section as specified and modified. In case of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

<u>Reference</u>	<u>Title</u>
NFPA-70-2017	National Electrical Code (NEC) Maui County Code
UL 943	Ground-Fault Circuit Interrupters (2006)
IEEE 81	(2012) Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials for a Ground System
ANSI / NEMA GR 1	(2007) Grounding Rod Electrodes and Grounding Rod Electrode Couplings
UL 467	(2022) UL Standard for Safety Grounding and Bonding Equipment

- B. Identification of Listed Products: Electrical equipment and materials shall be listed for the purpose for which they are to be used, by an independent testing laboratory. Two such organizations are Underwriters Laboratories (UL), and Electrical Testing Laboratories (ETL). Independent testing laboratory shall be acceptable to the inspection authority having jurisdiction.

When a product is not available with a testing laboratory listing for the purpose for which it is to serve, the product may be required by the inspection authority, to undergo a special inspection at the manufacturer's place of assembly. All costs and expenses incurred for such inspections shall be included in the original contract price.

- C. Ground Resistance Test Equipment: Provide combination 3-point and 4-point type ground resistance test equipment specifically designed for grounding electrode resistance and soil resistivity tests. Submit proof of current equipment calibration with test equipment product data.

#### 1.4 SUBMITTALS

- A. Submit for approval one (1) electronic copy and three (3) hardcopies or alternatively six (6) hardcopies of shop drawings or catalog cuts of following equipment and resubmit until approval is received before placing order:
1. Service equipment
  2. Electrical apparatus
  3. Ground resistance test equipment

## 1.5 DRAWINGS

Where the Contractor is required to provide information on drawings as part of the specified work, such drawings shall be prepared on 24-inch by 36-inch polyester plastic (Mylar) drafting media complete with borders and title blocks clearly identifying project name, equipment and the scope of the drawing. Drawing quality and size of presentation shall be such as to permit 50 percent reduction of such drawings for insertion in operation and maintenance manuals.

## 1.6 PROJECT/SITE CONDITIONS

- A. General: Unless otherwise specified, equipment and materials shall be sized and derated for the ambient conditions, but not less than an ambient temperature of 40 degrees C at an elevation ranging from sea level to 3000 feet without exceeding the manufacturer's stated tolerances.
- B. Corrosive Areas: The following areas are designated as corrosive: exteriors.
- C. Seismic: Electrical equipment and supports shall be braced in accordance with UBC for Seismic Zone 2B.

## 1.7 STORAGE OF MATERIALS AND EQUIPMENT

Materials and equipment shall be stored to prevent damage and theft.

## PART 2 - PRODUCTS

### 2.1 EQUIPMENT AND MATERIALS

General: Equipment and materials shall be new and free from defects; those listed by Underwriter's Laboratories shall be the "UL" label of approval. All material and equipment of the same or a similar type shall be of the same manufacturer throughout the work. Standard production materials shall be used wherever possible.

Substitute materials may be used only if submitted prior to bidding and if qualified and approved by addendum to the bid documents. List of substitute materials together with qualifying data shall be submitted for approval as provided in the GENERAL TERMS AND CONDITIONS.

Example

<u>Item</u>	<u>Manufacturer and Catalog No. Specified</u>	<u>Substitute Manufacture and Catalog Number</u>
Cable	Joe Doe - No. 3020	King - No. 2200

Qualifying data shall include cuts, shop drawings, and specifications to show equality with material specified herein and in drawings.

## 2.2 NAMEPLATES

Nameplates shall be made from laminated phenolic plastic. The nominal size of the nameplates shall be  $\frac{3}{4}$  inch high by 2 inches long. Nameplates shall have black backgrounds with  $\frac{3}{16}$ -inch white letters. If abbreviations are required because of space limitations, abbreviations shall be submitted to the Owner prior to manufacture. Nameplates shall be fastened using self-tapping stainless steel screws. The use of adhesives will not be permitted on the outside of enclosures.

## 2.3 DEVICES AND COVER PLATES

Plates for interior flush construction shall be satin finished 302 high nickel stainless steel, 18% chrome, 8% nickel with suitable hole for device.

## 2.4 Ground Rods: Provide ground rods of copper conforming to UL 467 and ANSI /NEMA GR 1. Ensure ground rods are not less than $\frac{3}{4}$ inch in diameter and 10 feet in length.

Provide ground rods and ground rod sections die-stamped near the top with the name or trademark of the manufacturer and the segment in feet.

## 2.5 Connectors and Fasteners:

- A. Exothermic Welds: Ensure the molds, materials and powder charges used to make exothermic welds are the standard product of a single manufacturer and listed by the manufacturer for use on the specific type, size, quantity and configuration of conductors to which the weld is applied.
- B. Irreversible Compression Lugs: Provide irreversible compression lug type connectors manufactured from tin-plated copper and installed using a hydraulic compression tool and die to apply correct, uniformly distributed, circumferential pressure. Ensure tools and dies are as recommended by the irreversible compression lug type connector manufacturer. Use an embossing die code or other standard method to provide visible indication that a connector has been adequately compressed onto the conductor. Apply irreversible compression lug type connectors in strict accordance with the manufacturer's written instructions and published installation instructions. Use 2-hole lug type connectors for connections to NEMA cable pads and bus bars, and single-hole connectors otherwise.

## PART 3 - EXECUTION

### 3.1 GENERAL

- A. Construction: The work under Division 16 shall be performed in accordance with these general requirements.  
Unless otherwise detailed or dimensioned, electrical layout drawings are diagrammatic. Locations are shown approximately only. The Contractor shall coordinate the location of electrical material or equipment with the work. Minor changes in location of electrical material or equipment made prior to installation shall be made at no cost to the Owner.

- B. Housekeeping: Electrical equipment shall be protected from dust, water and damage. Before final acceptance, the Contractor shall touch up any scratches on equipment.

Electrical equipment temporarily exposed to weather, debris, liquids, or damage during construction shall be protected.

### 3.2 TESTING

- A. General: Prior to energizing the electrical circuits, the following tests shall be performed. Unless otherwise specified, a 1,000 volt megohmmeter shall be used for resistance measurements.

- B. Insulation Resistance Measurements:

- 1. General: Insulation resistance measurements shall be made on conductors and energized parts of electrical equipment. Minimum acceptable values of insulation resistance shall be in accordance with the applicable ICEA, NEMA or ANSI standards for the equipment or material being tested, unless otherwise specified. The ambient temperature at which insulation resistance is measured shall be recorded on the test form.

Insulation resistance measurements shall be recorded in a form acceptable to the Owner. Insulation with resistance of less than 10 megohms is not acceptable.

- 2. Conductor and Cable Tests: The phase-to-ground insulation resistance shall be measured for all circuits 120 volts and above except lighting circuits. Measurements may be made with motors and other equipment connected, except that solid state equipment shall be disconnected unless the equipment is normally tested by the manufacturer at voltages in excess of 1000 volts DC.

- C. Ground Resistance Tests: Test grounding systems for ground resistance. Total resistance from any point on the ground network cannot exceed 25 milliohms.

Make ground resistance during dry weather, and no sooner than 48 hours after rainfall. Conduct tests using the ratio method that measures the ratio of the resistance to earth of an auxiliary test electrode to the series resistance of the electrode under test and a second auxiliary electrode. Perform measurements in accordance with IEEE 81.

- D. Three (3) copies of all test results shall be provided to the Owner.

### 3.3 INSTALLATION

- A. Provide all necessary foundations, supports and backing for enclosures, conduit, and equipment. Fixture support shall be capable of 300-pound loading, and shall be made to building structure.

- B. Perform all cutting, drilling and patching necessary for installation of conduit and equipment. Repair any surface damaged or marred during the installation. Cutting, repairs and finish shall be subject to the approval of the Owner.
- C. Minimum wire size for branch circuit shall be #12 AWG. Larger sizes may be used as necessary.
- D. Crimp or pressure-connect all splices #10 AWG or smaller. Leave no sharp points that can pierce taping. Use no-solder pressure connectors for #8 AWG and larger. Use highest grade insulating and friction tape, applied in accordance with best practice of trade. Connections of light fixture wires to building wires may be made with approved wire-nuts.
- E. Form wires neatly in all enclosures. Cable together and lace with waxed strings or tie wraps branch circuit conductors at panelboards.
- F. Lubricants used for wire-pulling in all areas except as noted, shall be such that lubricant will not damage conductor insulation or sheathing. For neoprene jacketed and plastic-sheathed conductors, use powdered soapstone.
- G. Where ducts pass through structural wall, provide openings with minimum of 1" mastic fill between duct envelope and structure to eliminate transfer of stresses from one to another. Through each duct, pull a test mandrel 10" long and 1/4" less than nominal size of duct. Clean duct with compressed air or "mouse". Provide duct "separators and chairs", or supports for all multiple duct runs.
- H. Where ducts pass through fire-rated wall or floor, seal opening around duct with UL listed foamed silicone elastomer compound.
- I. Attach conduit to concrete and masonry with expansion anchors. Attach to wood by means of wood or lag screws.
- J. Set all enclosures plumb and exactly flush with finish surface.
- K. All cable splices shall be made in accordance with manufacturer's instructions. In underground locations, all splices shall be cast type using thermo-setting epoxy resin insulation.
- L. Except as indicated in this section, the electrical subcontractor shall be responsible for the proper wiring of the electrical equipment pertaining to this project whether furnished by him or by others and shall install and connect whatever control equipment which may be furnished to him by the equipment Contractor or the Owner. He shall also furnish whatever raceways, disconnect switches, motor starters, boxes, fittings, wires and devices that he may need for proper and adequate installation of such electrical equipment.
- M. Fixtures to be safely, positively and securely supported to structure by means of fixture studs in outlet boxes or other approved methods.

N. Grounding System:

1. Install grounding systems in accordance with NFPA 70, and as indicated.

Bond exposed non-current-carrying metallic parts of electrical equipment and metallic raceway systems to ground.

Bond grounding conductors in metallic and non-metallic raceways to ground. Make ground connections at equipment and to ground rods as indicated. Interconnect all grounding media in or on the structure to provide a common ground potential. This includes lightning protection, electrical service, telecommunications system grounds, as well as underground metallic piping systems.

Bond wiring system neutrals to ground in accordance with the requirements of NFPA 70. Where ground fault protection is employed, ensure that connection of ground and neutral does not interfere with correct operation of fault protection.

2. Ground Rods: Install ground rods so that the top of the rod is 4 inches above grade.
3. Equipment and Enclosure Bonding: Bond each metallic enclosure and all electrical equipment to ground. Make at least one copper connection from the system ground point to one or more enclosures in the area such that all enclosures and equipment provide a low-impedance path to ground when properly bonded together.
4. Bonding of Conduit and Raceway Systems: Bond all metal conduit, fittings, junction boxes, outlet boxes, armored and metal sheathed cable, and other raceways. Ensure adequate electrical contact at the joints and terminations. Ensure metallic raceway systems have electrical continuity with equipment. Individually and directly connect equipment to the building ground, independent of the raceway system.

For rigid metal conduit and terminations, ensure threaded connections are wrench-tight with no exposed threads. Ream all ends of the conduit to remove burrs and rough edges. Bond conduits entering boxes and enclosures to the box with locknuts and grounding-type bushings. Locknuts that gouge into the metal box when tightened are not acceptable.

5. Cleaning of Bonding Surfaces: Thoroughly clean surfaces that comprise the bond before joining. Apply an appropriate abrasive with gentle and uniform pressure to ensure a smooth and uniform surface. Do not remove excessive metal from the surface. Clean clad metals in such a manner that the cladding material is not penetrated by the cleaning process. Then clean bare metal with an appropriate solvent to remove any grease, oil, dirt, corrosion preventives, and other contaminants. Bond to the cleaned area within one hour after cleaning. Seal joint and refinish the exposed surfaces within two hours of exposure to prevent oxidation. When additional time is required, apply a corrosion preventive compound until the area can be refinished.

- O. Finishing:
1. Patch, repair and restore all structural and architectural elements cut or drilled for installation of electrical system. Drilling, cutting, patching, repairing and restoring shall be subject to approval.
  2. Attach electrical equipment to wood by wood screws, and attach to concrete by embedded or expansion inserts and bolts. Use powdered-driven charge with approval only. Close unused knock-outs on boxes or enclosures with metal cap. Powder actuated fasteners shall not be used on precast concrete. Do not use powder activated fasteners to attach enclosures and boxes to the building.
- P. Prefunctional Checkout: Functional testing shall be performed. Prior to functional testing, all protective devices shall be adjusted and made operative. Prior to energization of equipment, the Contractor shall perform a functional checkout of the control circuit. Checkout shall consist of energizing each control circuit and operating each control, alarm or malfunction device and each interlock in turn to verify that the specified action occurs. The Contractor shall submit a description of his proposed functional test procedures prior to the performance of functional checkout.

#### 3.4 GUARANTEE

Installation shall be complete in every detail and ready for use. Any item supplied by Contractor developing defects within one (1) year of final acceptance by the Owner, shall be replaced by such materials, apparatus or parts including installation labor to make such defective portion of complete system conform to true intent and meaning of Drawings and Specifications, at no additional charge to the Owner.

#### 3.5 RECORD DOCUMENTS

Record documents refer to those documents maintained and annotated by the Contractor during construction, and include record drawings in accordance with changes or new information for schedules, lists, and drawings:

Record documents shall include the raceway wiring numbering system used by the Contractor.

END OF SECTION

## SECTION 16110

### RACEWAYS, FITTINGS, AND SUPPORTS

#### PART 1 - GENERAL

##### 1.1 SUMMARY

This section specifies raceways for electrical conductors including fittings and supports. Raceways shall be provided for power to signaling devices.

##### 1.2 REFERENCES

This section contains references to the following documents. They are a part of this section as specified and modified. In case of conflict between the requirements of this section and the listed documents, the requirements of this section shall prevail.

<u>Reference</u>	<u>Title</u>
ANSI C80.1-2005	American National Standard for Electrical Rigid Steel Conduit (ERSC)
ANSI C80.1-83	Rigid Steel Conduit – Zinc Coated
ANSI C80.3-83	Electrical Metallic Tubing
FEDSPEC WW-C-581E-77	Conduit, Metal, Rigid and Intermediate; and Coupling, Elbow, and Nipple, Electrical Conduit; Zinc Coated
NFPA 70-2017	National Electrical Code (NEC)
UL 6	Electrical Rigid Metal Conduit – Steel (2007)

#### PART 2 - PRODUCTS

##### 2.1 RACEWAY

###### A. Steel Conduit:

1. Rigid Steel Conduit: Rigid steel conduit shall comply with ANSI C80.1 and UL 6 with smooth finished surfaces. Conduit shall be galvanized. Unless otherwise specified, minimum size shall be 3/4 inch.

2. Fittings: Locknuts shall be extra heavy electrogalvanized steel for sizes through 2 inches. Locknuts larger than 2 inches shall be electrogalvanized malleable iron. Bushings shall be electrogalvanized malleable iron with insulating collar. Grounding bushings shall be locking type and shall be provided with a feed-through compression lug for securing the ground cables. Unions shall be electrogalvanized ferrous alloy type Appleton UNF or UNY, Crouse-Hinds UNF or UNY, or equal. Threadless fittings are not acceptable. Conduit bodies shall be ferrous alloy type with screw taps for fastening covers. Gaskets shall be made of neoprene.

Expansion fittings in embedded runs shall be watertight and shall be provided with an internal bonding jumper. The expansion material shall be neoprene and shall allow for 3/4-inch movement in any direction.

- B. Electrical Metallic Tubing (EMT): Electrical metallic tubing shall be electrogalvanized and shall be ANSI C80.3. EMT fittings shall be compression type. Minimum size shall be 3/4-inch.

## 2.2 BOXES AND FITTINGS

- A. Cast Ferrous Alloy Boxes: Boxes shall be hot-dip galvanized cast ferrous alloy unless otherwise specified. Integrally cast threaded hubs or bosses shall be provided for conduit entrances and shall provide for full 5-thread contact on tightening. Drilling and threading shall be done before galvanizing. A full body neoprene gasket shall be provided with the cover. Type 316 stainless steel screws shall be provided for covers.
- B. Boxes and Fittings in Outdoor or Corrosive Areas: Boxes and fittings located outdoors or in corrosive areas shall be NEMA 4X, Type 316 stainless steel.
- C. Hubs: Threaded hubs for connection of conduit to junction, device or terminal boxes shall be made of cast ferrous alloy, electroplated with zinc and shall have insulated liner and insulating bushings. The hubs shall utilize a neoprene O-ring and shall provide a watertight connection. All treaded fitting threads to be coated with anti-seize compound.

## 2.3 RACEWAY SUPPORTS

- A. Conduit Supports: Individual conduit supports shall be one-hole stainless steel straps used with stainless steel clamp backs and nesting backs where required.
- B. Structural Attachments (Racks): Structural attachments shall be constructed from hot-dip galvanized framing channel for interior spaces and 316 stainless steel for exterior spaces as specified.

PART 3 - EXECUTION

3.1 CONDUIT

A. General:

1. Conduit Locations: Unless otherwise specified, in Table A, unscheduled conduit shall be galvanized, rigid steel.

Table A

<u>Location</u>	<u>Conduit type</u>
• Exposed in interior areas	Electrical Metallic Tubing
• Exposed in exterior areas	Rigid steel – Zinc Coated

2. Conduit Runs Between Boxes: The Contractor shall limit the number of directional changes of the conduit to total not more than 270 degrees in any run between pull boxes. Conduit runs shall be limited to 400 feet, less 100 feet or fraction thereof, for every 90 degrees of change in direction.

Bends and offsets shall be avoided where possible but, where necessary, shall be made without flattening or kinking, or shall be factory preformed bends. Turns shall be made with cast metal fittings or conduit bends. Welding, brazing or otherwise heating of conduit is not acceptable.

3. Junction and Pull Boxes: Where required for pulling cable and as necessary, the Contractor shall provide pull boxes.
4. Conduit Terminations: Conduit entering NEMA 1 type sheet steel boxes or cabinets shall be secured by locknuts on both the interior and exterior of the box or cabinet and shall have an insulating grounding or bonding bushing constructed over the conduit end. Conduit entering all other boxes shall be terminated with a threaded hub. Cast boxes and nonmetallic enclosures shall have threaded hubs. Joints shall be made with standard couplings or threaded unions. Metal parts of nonmetallic boxes and plastic coated boxes shall be bonded to the conduit system.

Running threads shall not be used in lieu of conduit nipples, nor shall excessive thread be used on any conduit. The ends of conduit shall be cut square, reamed, and threaded with straight threads. Rigid steel conduit shall be made up tight and without thread compound. Exposed male threads on rigid steel conduit shall be coated with zinc-rich paint.

- B. Conduit Support: Exposed rigid steel conduits shall be run on supports spaced not more than 10 feet apart and shall be constructed with runs parallel or perpendicular to walls, structural members, or intersections of vertical planes.

Steel conduits shall be supported away from the structures using stainless steel straps with nesting backs unless otherwise indicated. Use stainless steel for exterior locations unless otherwise indicated. Where three or more conduits are located in a parallel run, they shall be spaced out from the wall using framing channel.

- C. Damaged areas shall be patched, using manufacturer's recommended material. The area to be patched shall be built up to the full thickness of the coating. Painted fittings are not acceptable.

END OF SECTION

## SECTION 16120

### CONDUCTORS, WIRE, AND CABLE

#### PART 1 - GENERAL

##### 1.1 SUMMARY

This section specifies conductors and cables rated 600 to 15,000 volts used for power and control circuits.

##### 1.2 REFERENCES

This section contains references to the following documents. They are a part of this section. In case of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

<u>Reference</u>	<u>Title</u>
ASTM B3-74	Soft or Annealed Copper Wire
ASTM B33-81	Tinned Soft or Annealed Copper Wire for Electrical Purposes
NEMA WC7-82	Cross-Linked-Thermosetting Insulated Wire and Cable for the Transmission and Distribution of Electric Energy
NFPA 70-2017	National Electric Code (NEC)
UL 44-83	Rubber-Insulated Wires and Cables
UL 83-83	Thermoplastic-Insulated Wires and Cables

#### PART 2 - PRODUCTS

##### 2.1 GENERAL

With the exception of lighting, and receptacle circuits, the type, size and number of conductors shall be as specified on the drawings or schedules. Lighting and receptacle circuit conductors are unscheduled and shall be sized by the Contractor in accordance with the NEC to limit voltage drop to 3 percent.

##### 2.2 COLOR CODING

Power Conductors: Single-conductor power conductors shall have the following colors for the indicated voltage:

120/240V

Phase A	Black
Phase B	Red
Phase C	
Ground	Green
Neutral	White

2.3 POWER, LIGHTING AND RECEPTACLE BRANCH CIRCUIT CONDUCTORS

Minimum conductor size shall be 12 AWG.

Conductors shall be provided with the following characteristics:

- A. Voltage: 600 volts.
- B. Conductor: Copper, 600 volt, No. 12 AWG minimum, stranded.
- C. Insulation: THHN, 90 degree damp, polyvinylchloride (PVC) per UL 83.
- D. Jacket: Nylon.
- E. Flame Resistance: UL 83.
- F. Manufacturer: Alpha, Carol, Northern Wire and Cable, General Cable; or equal.

2.4 SPLICING AND TERMINATING MATERIALS

600 Volt Conductor and Cable Connectors: Connectors shall be tool applied compression type of correct size and UL listed for the specific application. Connectors shall be tin-plated high conductivity copper.

In-line splices and taps shall be used only where specified, or by written consent of the Owner. When used, they shall be of the same construction as other connectors. Splices shall be compression type, made with a compression tool die approved for the purpose, as made by Thomas and Betts Corp., or equal. Splice shall be covered with a heat-shrinkable sleeve or boot.

2.5 CABLE IDENTIFICATION

White or light colored heat shrink type sleeves with designations made with permanent ink.

PART 3 - EXECUTION

3.1 GENERAL

Each power and control conductor shall be identified at each terminal to which it is connected and identified with heat shrink type number sleeves on both ends.

Pulling wire and cable into conduit or trays shall be completed without damaging or putting undue stress on the cable insulation. Soapstone, talc or UL listed pulling compounds are acceptable lubricants for pulling wire and cable. Grease is not acceptable. Raceway construction shall be complete, cleaned, and protected from the weather before cable is placed.

Whenever a cable leaves a raceway, a cable support shall be provided.

When flat bus bar connections are made with unplated bar, the Contractor shall scratch-brush the contact areas. Bolts shall be torqued to the bus manufacturer's recommendations.

### 3.2 600 VOLT CONDUCTOR AND CABLE

Conductors in panels and electrical equipment, No. 6 AWG and smaller, shall be bundled and laced at intervals not greater than 6 inches, spread into trees and connected to their respective terminals. Lacing shall be made up with plastic cable ties. Lacing is not necessary in plastic panel wiring duct. Conductors crossing hinges shall be bundled into groups not exceeding 12 and shall be so arranged that they will be protected from chafing when the hinged member is moved.

Slack shall be provided in junction and pull boxes, handholes and manholes. Slack shall be sufficient to allow cables or conductors to be routed along the walls of the box. Amount of slack shall be equal to largest dimension of the box. Where plastic panel wiring duct is provided for wire runs, lacing is not required.

Raceway fill limitations shall be as defined by NEC and the following:

Solid wire shall not be lugged nor shall electrical spring connectors be used on any except for solid wires in lighting and receptacle circuits. Lugs and connectors shall be installed with a compression tool.

All splices and terminations are subject to inspection prior to and after insulating. In-line splices and tees, where approved, shall be made with tubular compression connectors and insulated as specified for motor terminations, except that conductors No. 10 AWG and smaller may be spliced using self-insulating connectors. Splices and tees in underground handholes or pull boxes shall be insulated using Scotch-cast epoxy resin splicing kits. Terminations at devices with 120V pigtail leads shall be made using self-insulating tubular compression connectors.

Conductor and cable identification markers shall be provided within each enclosure where tap, splice, or terminations are made.

### 3.3 TESTING

General: The Contractor shall test conductors and cable in accordance with paragraph 16000-3.2 B.

Three (3) copies of all test results shall be provided to the Owner.

END OF SECTION