

Engineering Division

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

BOARD OF LAND AND NATURAL RESOURCES

Suzanne Case
Chairperson

CONTRACT SPECIFICATIONS AND PLANS

Job No. J38CH20B
Geothermal Well Plugging and Abandonment
SOH-1 and SOH-2
Puna, Hawaii

Civil Engineer: Brown and Caldwell

Geothermal Engineer: Geothermal Resource Group

April 2016

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

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Puna, Hawaii

Approved: _____



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

April 2016

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PLANS (Bound Separately)

DEPARTMENT OF LAND AND NATURAL RESOURCES INTERIM GENERAL
CONDITIONS, DATED OCTOBER 1994.

NOTICE TO BIDDERS

(Chapter 103D, HRS)

COMPETITIVE BIDS for Job No. J38CH20B, GEOTHERMAL WELL PLUGGING AND ABANDONMENT, SOH-1 and SOH-2, Puna, Hawaii shall be submitted to the Department of Land and Natural Resources, Engineering Division on the specified date and time through the Hawaii State e-Procurement (HiePRO). HiePRO is accessible through the State Procurement Office website at www.spo.hawaii.gov.

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

The project is located at Puna, Hawaii Island, Hawaii.

The work shall generally consist of plugging the SOH-1 and SOH-2 Geothermal Wells; including mobilization, well plugging, cellar demolition, demobilization, dewatering, hauling and disposal of material, pollution control, and restoring the area.

Due to the nature of work contemplated, bidders must possess a valid State Contractor's license, Classification C-57.

A mandatory pre-bid conference and voluntary State conducted site visit will be held at the SOH-1 site, located at N 19.48178, W 154.89444, off of Geothermal Road, on May 5, 2016 at 10:00 a.m.

The estimated cost of construction is \$2,146,000.

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

This project is subject to preference to Hawaii Products established by Section 103D, Hawaii Revised Statutes. The Hawaii Product List may be examined at the State Procurement Office website.

This project is subject to the Apprenticeship Agreement Preference.

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

INFORMATION AND INSTRUCTIONS TO BIDDERS

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INFORMATION AND INSTRUCTIONS TO BIDDERS

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

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

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

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

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

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

No work shall be done on Saturdays, Sundays, legal State holidays, and/or in excess of eight (8) hours each day without the written consent of the Engineer. Should permission be granted to work at such times, the Contractor shall pay for all inspection administrative costs thereof. No work shall be done at night unless authorized by the Engineer.

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

licenses, and pay all charges and fees. In all cases, the Contractor shall give all notices necessary and incident to the due and lawful prosecution of the work.

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

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

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

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

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

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

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

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

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

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

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

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

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

General Conditions.

- AA. TOILET FACILITIES: All toilet facilities constructed at the project site shall be in accordance with the Public Health Regulations of the State Department of Health (DOH). All necessary precautions shall be observed at the project site. The use of sanitary facilities shall be strictly enforced and workers violating these provisions shall be promptly discharged.
- BB. SIGNS: Whenever the project involves closing or obstructing any public thoroughfare, the Contractor shall provide traffic signs conforming to the applicable provisions of the current edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways", published by the Federal Highway Administration as directed by the Engineer for the purpose of diverting or warning traffic prior to the construction area. All traffic signs shall bear proper wording stating thereon the necessary information as to diverting or warning traffic.

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

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

- CC. FIELD OFFICE AREA FOR DEPARTMENT: When indicated in the Proposal, the Contractor shall provide a housed working area of at least 100 square feet adjacent to the Contractor's office for the Department's use. This area will be used by the Engineer to perform tests and to store equipment. As a minimum, the field office shall include the following: standard sized office desk and chair, lighting, ventilation, window-type air conditioning rated at 5,000 BTU, door and window with locking hardware, electrical outlets, and working communications facilities (a cellular telephone is acceptable). The Department will pay for all long distance toll charges made by the Engineer.
- DD. QUANTITIES: All bids will be compared on the basis of quantities of work to be done as shown in the Proposal; the quantities shown in the Unit Price items are estimated, being given as a basis for comparison of bids. The Board reserves the right to increase or decrease the quantities given under the items or delete items entirely as may be required during the progress of the work.
- EE. OTHER HEALTH MEASURES: Forms of work site exposure or conditions which may be detrimental to the health or welfare of workers or of the general public shall be eliminated or reduced to safe levels as required by the DOH codes, standards, and regulations. Suitable first aid kits and a person qualified to render first aid, as specified in the DOH regulations, shall be provided at all times when work is scheduled.
- FF. HAWAII BUSINESS OR COMPLIANT NON-HAWAII BUSINESS REQUIREMENT: Bidders (Contractors) shall be incorporated or organized under the laws of the State or be registered to do business in the State as a separate branch or division that is capable of fully performing under the contract, as stipulated in §3-122-112 HAR.

GG. COMPLIANCE WITH §3-122-112 HAR:

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

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

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

PROPOSAL
FOR
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION
State of Hawaii

JOB NO. J38CH20B
GEOTHERMAL WELL PLUGGING AND ABANDONMENT
SOH-1 AND SOH-2
PUNA, HAWAII

_____, 2016

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

Dear Sir:

The undersigned, having carefully examined the local conditions and all available records and information covering conditions which may affect the cost of the work to be performed, and having carefully examined the Plans and Specifications, and other contract documents, hereby proposes to furnish and pay for all materials, tools, equipment, labor, and other incidental work necessary to construct the plugging and abandonment, safety equipment, cellar removal, backfill, and all other appurtenances 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. J38CH20B
GEOTHERMAL WELL PLUGGING AND ABANDONMENT
SOH-1 AND SOH-2
PUNA, HAWAII

on file in the office of the Engineering Division for the TOTAL BASE BID (Items 1 to 17) of:

_____ Dollars (\$ _____)

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

PROPOSAL
FOR
JOB NO. J38CH20B
GEOTHERMAL WELL PLUGGING AND ABANDONMENT
SOH-1 AND SOH-2
PUNA, HAWAII

Item No.	Quantity	Unit	Description	Unit Price	Total
1.	1	L.S.	Project Sign	L.S.	\$
2.	1	L.S.	Temporary BMPs	L.S.	\$
			SOH-1		
3.	1	L.S.	Mobilization and Demobilization. Sum of Item 3 and Item 10 not to exceed ten percent (10%) of the Total Base Bid.	L.S.	\$
4.	1	L.S.	Install and remove Blowout Prevention system, H2S monitor, other safety equipment	L.S.	\$
5.	1	L.S.	Remove capillary tubing and pressure chamber, cut and pull rod	L.S.	\$
6.	1	L.S.	Fill with bentonite mud	L.S.	\$
7.	1	L.S.	Set cement plugs	L.S.	\$
8.	1	L.S.	Cut off casing, weld steel plate; Remove cellar and all other structures; Fill to same level as existing surrounding grade	L.S.	\$
9.	1	L.S.	Well location reference to established property corners, by licensed surveyor	L.S.	\$
			SOH-2		
10.	1	L.S.	Mobilization and Demobilization. Sum of Item 3 and Item 10 not to exceed ten percent (10%) of the Total Base Bid.	L.S.	\$
11.	1	L.S.	Install and remove Blowout Prevention system, H2S monitor, other safety equipment	L.S.	\$
12.	1	L.S.	Remove capillary tubing and pressure chamber, cut and pull rod	L.S.	\$
13.	1	L.S.	Fill with bentonite mud	L.S.	\$
14.	1	L.S.	Set cement plugs	L.S.	\$

PROPOSAL
 FOR
 JOB NO. J38CH20B
 SOH-1 AND SOH-2 GEOTHERMAL WELL
 PLUGGING AND ABANDONMENT
 PUNA, HAWAII

Item No.	Quantity	Unit	Description	Unit Price	Total
15.	1	L.S.	Cut off casing, weld steel plate; Remove cellar and all other structures; Fill to same level as existing surrounding grade	L.S.	\$
16.	1	L.S.	Well location reference to established property corners, by licensed surveyor	L.S.	\$
			Allowance		
17.	1	L.S.	Milling work	L.S.	\$ 90,000

Total Base Bid (Items 1 - 17) \$ _____

HAWAII PRODUCTS PREFERENCE AND/OR USE OF HAWAII PRODUCTS

In accordance with Act 175, SLH 2009, the Hawaii products preference is applicable to this solicitation. Hawaii products may be available for items noted on the Offer Form. The Hawaii Products List is available on the SPO webpage at <http://hawaii.gov/spo>. Click on *Procurement of Goods, Services and Construction-Chapter 103D, HRS*; under *Procurement* click on *Preferences, Hawaii Products* and select *Hawaii Products List* to view.

Bidder offering a Hawaii product (“HP”) shall identify the HP in the table below. Any person desiring a Hawaii product preference shall have the product(s) certified and qualified, if not currently on the Hawaii Products List, prior to the deadline for receipt of offer(s) specified in the procurement notice and solicitation. The responsibility for certification and qualification shall rest upon the person requesting the preference.

Persons desiring to qualify their product(s) not currently on the Hawaii Product List, shall complete Form SPO-38, *Certification for Hawaii Product Preference*, and submit the completed form to the Procurement Officer providing any additional information required by the Procurement Officer. One form shall be completed and submitted for each product. Form SPO-38 is available on the SPO webpage at <http://hawaii.gov/spo>, under the *Quicklinks* menu click on *Forms for Vendors/Contractors/Services Providers*.

For the purpose of selecting the low bid when a solicitation contains both HP and non-HP, the price offered for a HP item shall be decreased by subtracting 10% for the Class I or 15% for the Class II HP item(s) offered. The lowest total offer, taking the preference into consideration, shall be awarded the contract, unless the offer provides for additional award criteria. The contract amount of any contract awarded, however, shall be the amount of the price offered, exclusive of the preferences.

In the event of any change that materially alters the bidder’s ability to supply the Hawaii product(s), the bidder shall immediately notify the procurement officer in writing and the parties shall enter into discussions for the purpose of revising the contract or terminating the contract for convenience.

Item No.	Pre-Approved Hawaii Product Description & Manufacturer	Class (I or II)	Quantity	Unit Measure	Unit Price	Total Price

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 postconsumer 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 (e.g. Hawaii Products), all applicable preferences shall be applied to the bid price.

CONTRIBUTIONS BY STATE AND COUNTY CONTRACTORS PROHIBITED

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

CONDITION OF AWARD

It is understood that the award of the contract will be made on the basis of the lowest responsible Total Base Bid (Items 1 to 17) selected by the Board of Land and Natural Resources. Write the total of bid items 1 to 17 on page P-1.

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

It is understood and agreed that the Board of 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 sixty (60) days from the date of the opening thereof, unless otherwise required by law, during which time no bid may be withdrawn.

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

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

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

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

It is also understood and agreed that liquidated damages in the amount of Two Hundred and No/100 Dollars (\$200.00) 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 § 16-7732*). 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 bidder must have the required license prior to the award of the project and all subcontractors prior to the start of the subcontracted work.

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 HlePRO solicitation for interpretation and must be received in the time frame set in the HlePRO solicitation. Any interpretation, if made and any supplemental instructions will be in the form of written addenda to the plans and specifications and made available prior to the offer due date. It shall be the prospective bidder's sole responsibility to verify and obtain any said addenda. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the contract documents.”

Section 3 – Award and Execution of Contract

1. **AMEND** Section 3.3, Award of Contract, by deleting “sixty (60)” and replacing with “ninety (90)” in the first paragraph.

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

“If the contract is not awarded within the ninety (90) days, the Department may request the successful Bidder to extend the time for the acceptance of its bid. The Bidder may reject such a request without penalty; and in such case, the Department may at its sole discretion make a similar offer to the next lowest responsive and responsible bidder and so on until a bid is duly accepted or until the Department elects to stop making such requests.”

3. **AMEND** Section 3.9, Notice to Proceed, by deleting “180 days” and replacing with “one (1) year” in the last paragraph.

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 Procurement System on the SPO website: <http://hawaii.gov/spo2/>.

Section 5 – Control of Work

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

Section 6 – Substitution of Materials and Equipment

ADD the following to Section 6.3 Sub-paragraph b:

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

Section 7 – Prosecution and Progress

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

“d. Insurance Requirements

1. Obligation of Contractor

The Contractor shall not commence any work until it obtains, at its own expense, all required 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 law to issue such insurance in the State of Hawaii.

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.

Certificate(s) of Insurance acceptable to the Department shall be filed with the Engineer prior to commencement of the work. These certificates shall contain a provision that coverages afforded under the policies will not be canceled or changed

until at least thirty 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; the Kapoho Land & Development Company Ltd., its officers and employees; the Kapoho Management Company Inc., its officers and employees; and the Kapoho Land Partnership, 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.

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.

All insurance described herein shall cover the insured for all work to be performed under the contract, all work performed incidental thereto or directly or indirectly connected therewith, including traffic detour work or other work performed outside the work area, and all change order work.

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.

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 full worker's compensation insurance coverage 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 Insurance and Automobile Insurance. Contractor's commercial general liability insurance and automobile liability insurance shall both be obtained in a combined, single limit of not less than \$1,000,000 per occurrence that 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 a single combined limit of not less than \$1,000,000 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.

- (c) **Builder's Risk Insurance.** Unless included in the Specifications of this project, the Contractor shall not be required to provide builder's risk insurance. If required as noted in the Specifications, builder's risk insurance shall be provided during the progress of work and until final acceptance by the Department upon completion of the contract. It shall be "All Risk" (including but not limited to earthquake, windstorm and flood damage) completed value insurance coverage on all completed work and work in progress to the full replacement value thereof. Such insurance shall include the Department as additional name insured. The Contractor shall submit to the Engineer for its approval all items deemed to be uninsurable. The policy may provide for a deductible in an amount of up to 25% of the amount insured by the policy. With respect to all losses up to any deductible amount, the relationship between the Contractor and the Department shall be that of insurer and additional insured as if no deductible existed".

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

"RESPONSIBILITY FOR DAMAGE CLAIMS; INDEMNITY – The Contractor shall indemnify the State and the Department against all loss of or damage to the State's or the Department's existing property and facilities arising out of any act or omission committed in the performance of the work by the Contractor, any subcontractor or their employees and agents. Contractor shall defend, hold harmless and indemnify the Department and the State, the Kapoho Land & Development Company Ltd., the Kapoho Management Company Inc., the Kapoho Land Partnership, and 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, the Kapoho Land & Development Company Ltd., the Kapoho Management Company Inc., the Kapoho Land Partnership, 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, the Kapoho Land & Development Company Ltd., the Kapoho Management Company Inc., the Kapoho Land Partnership, and their officers, representatives, employees or agents from all suits, actions or claims of any character brought on account of any claims or amounts arising or recovered under the Worker's Compensation Laws or any other law, by-law, ordinance, order or decree.

Section 8 – Measurement and Payment

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

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

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

- d. A Certification from the Contractor affirming that the Contractor has, as applicable, remained in compliance with all laws as required by Section 103D-310, HRS, and Section 3-122-112, HAR. A contractor making a false affirmation shall be suspended and may be debarred pursuant to section 103D-702, HRS.

1. Certification of Compliance for Final Payment, State Procurement Office Form-22. Must be Signed Original.

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

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

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SECTION 01006

PROJECT LOCATION AND SITE ACCESS

1.0 PROJECT LOCATION

- A. SOH-1 and SOH-2 are located in Puna District, Hawaii Island, Hawaii. Both well sites are on private land owned by the Kapoho Land & Development Company, Ltd. The Contractor shall be responsible for obtaining right-of-entry from the landowner. The Contractor shall comply with all right-of-entry provisions.

Contact:

Mr. A. Lono Lyman
Kapoho Land & Development Company, Ltd.
P. O. Box 3896
Honolulu HI 96812-3896

- B. Approximate coordinates (World Geodetic System 1984) for the sites are given below. The coordinates are based on the best available information and shall be verified by the Contractor prior to the start of work. Both sites are located outdoors and are not protected from the weather by any buildings or other structures. The sites are at an approximate elevation of 620 feet (SOH-1) and 270 feet (SOH-2) above mean sea level (MSL).

1. SOH-1: N 19.48178, W 154.89444
2. SOH-2: N 19.50364, W 154.86221

2.0 SITE ACCESS

- A. Access to SOH-1 shall be from Geothermal Road.
- B. Access to SOH-2 shall be via an unpaved access road from Kapoho Road, to the south of the site.

END OF SECTION

SECTION 01010
SUMMARY OF WORK

PART 1 GENERAL

1.01 SUMMARY

- A. The work covered under this contract will be performed at the site of geothermal wells SOH-1 and SOH-2 in Puna District, Hawaii Island, Hawaii. The wells are located at two separate sites on private land.

1.02 DESCRIPTION OF OWNER'S PROJECT

- A. The overall project will consist of the plugging and abandonment of existing geothermal wells SOH-1 and SOH-2.

1.03 NOT USED

1.04 WORK OF THIS CONTRACT

- A. The work to be performed under this contract includes all work necessary to plug and abandon geothermal wells SOH-1 and SOH-2. Work tasks include but are not limited to the following:
1. Obtain right-of-entry from landowner.
 2. Prepare site and well for plugging and abandonment operations. Check operation of all wellhead valves.
 3. Provide and install safety equipment.
 4. Fill hole with approved plugging materials.
 5. Remove cellar and all other structures. Fill existing holes with uncontaminated fill to the same elevation as the surrounding ground.
 6. Clean up location and restore as near as practicable to original conditions.
 7. Provide locations of both wells, as surveyed by a licensed surveyor. The survey information will be used to satisfy the location requirements of the Hawaii Administrative Rules §13-183-85 (3).

END OF SECTION

SECTION 01020

PERMITS

PART 1 GENERAL

1.01 GENERAL

- A. The Contractor shall be responsible for complying with all permit requirements for the project. The Contractor shall ensure that all permits remain valid and that all permits are renewed in a timely manner, throughout the duration of the project.
- B. The following permits have been or are being obtained for the project:
 - 1. State of Hawaii Department of Land and Natural Resources Geothermal Drilling and Well Modification Permit.
- C. Plugging operations shall be restricted to the hours of 7:00 a.m. to 7:00 p.m.

1.02 PERMITS, CHARGES, AND FEES

- A. The Contractor shall consult the applicable County and other governmental agencies for required permits, charges, and fees. The Contractor shall obtain all required permits and shall submit two copies of all required permits to the Engineer.
- B. Permits, charges, and fees required for the project may include the following:
 - 1. Building Permit.
 - 2. Refuse Disposal Permit.
 - 3. Fire Hydrant Use Permit.
 - 4. Community Noise Variance.
 - 5. State of Hawaii, Department of Health Non-Covered Source Permit.

1.03 NOISE VARIANCE

- A. Refer to the Information and Instructions to Bidders and Section 01560 for work hour and noise requirements, respectively.

- B. If the Contractor opts to obtain a noise variance for additional work hours or noise, the Contractor shall first obtain approval from the State and comply with all requirements set forth by the State Department of Health and in Hawaii Administrative Rules Title 11, Chapter 46. Costs for application for a noise variance shall be borne by the Contractor.
- C. If a project noise variance is revoked because of complaints from the public because of excessive noise from the Contractor's work, the Contractor shall reapply and reobtain necessary approvals for the noise variance with additional noise mitigation measures as required at no additional cost to the State and no additional contract time.

1.04 STORM WATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES

- A. In accordance with State law, all discharges related to project construction or operations are required to comply with State Water Quality Standards (Hawaii Administrative Rules, Chapter 11-54) and Water Pollution Control (Chapter 11-55) regulations. Best Management Practices shall be used to minimize or prevent the discharge of sediment, debris, and other pollutants to State waters. Permit coverage is available from the Department of Health, Clean Water Branch at <http://health.hawaii.gov/cwb>.

1.05 TIME

- A. Time required to obtain all permits is considered part of the construction period of this Contract.
- B. The Contractor shall not be entitled to additional contract time or compensation in its efforts to complete work within the hours allowed by any Noise Variance obtained.

END OF SECTION

SECTION 01300
SUBMITTAL PROCEDURES

PART 1 GENERAL

1.01 SUBMITTALS

- A. Submittals covered by these requirements include manufacturers' information, shop drawings, test procedures, test results, samples, requests for substitutions, and miscellaneous work-related submittals. Submittals shall also include, but not be limited to, all mechanical, electrical and electronic equipment and systems, materials, reinforcing steel, fabricated items, and piping and conduit details. The Contractor shall furnish all drawings, specifications, descriptive data, certificates, samples, tests, methods, schedules, and manufacturer's installation and other instructions as specifically required in the contract documents to demonstrate fully that the materials and equipment to be furnished and the methods of work comply with the provisions and intent of the contract documents.

1.02 CONTRACTOR'S RESPONSIBILITIES

A. General:

1. The Contractor shall be responsible for the accuracy and completeness of the information contained in each submittal and shall assure that the material, equipment or method of work shall be as described in the submittal. The Contractor shall verify that all features of all products conform to the specified requirements. Submittal documents shall be clearly edited to indicate only those items, models, or series of equipment, which are being submitted for review. All extraneous materials shall be crossed out or otherwise obliterated. The Contractor shall ensure that there is no conflict with other submittals and notify the Engineer in each case where his submittal may affect the work of another contractor or the State. The Contractor shall coordinate submittals among his subcontractors and suppliers.
2. The Contractor shall coordinate submittals with the work so that work will not be delayed. He shall coordinate and schedule different categories of submittals, so that one will not be delayed for lack of coordination with another. No extension of time will be allowed because of failure to properly schedule submittals. The Contractor shall not proceed with work related to a submittal until the submittal process is complete. This requires that submittals for review and comment shall be returned to the Contractor stamped "No Exceptions Taken" or "Make Corrections Noted."
3. The Contractor shall certify on each submittal document that he has reviewed the submittal, verified field conditions, and complied with the contract documents.
4. The Contractor may authorize in writing a material or equipment supplier to deal directly with the Engineer or with the State with regard to a submittal. These

dealings shall be limited to contract interpretations to clarify and expedite the work.

1.03 CATEGORIES OF SUBMITTALS

A. General:

- a. Submittals fall into three general categories; Action Submittals - Action Submittals require review and response by the Engineer before the Contractor proceeds with incorporating the equipment, materials, or procedure addressed in a submittal into the work. Review comments for Action Submittals, and the subsequent actions of the Contractor based on the review comments, shall conform to REVIEW ACTION requirements specified in this section.
 - b. Informational Submittals - Informational Submittals are examined to verify that the information has been furnished as specified. If the information has not been furnished as specified the submittal will be returned marked “MAKE CORRECTIONS NOTED” and any deficiencies will be noted. If the information has been furnished as specified the submittal will be returned marked “RECEIPT ACKNOWLEDGED”.
 - c. Closeout Submittals – Closeout Submittals consist of documentation that is not available for review at the time Action Submittals are submitted for review or documentation that is typically generated or furnished following incorporation of the equipment, materials, or procedure into the work. Closeout submittals include spare parts inventory listing, spare parts, extra stock materials, special tools and other materials or components that are furnished separate from the installed and completed work. Closeout Submittals require review and response by the Engineer. Closeout Submittal requirements are not satisfied until they have been reviewed and returned marked “NO EXCEPTIONS TAKEN” or “MAKE CORRECTIONS NOTED”.
2. At the beginning of work, the Contractor will furnish to the Engineer lists of those submittals specified. Two separate lists will be provided: submittals for review and comment and product data (submittals) for information only.

B. Submittals for review and comment:

1. All submittals except where specified to be submitted as product data for information only shall be submitted by the Contractor to the Engineer for review and comment.

C. Submittals (product data) for information only:

1. Where specified, the Contractor shall furnish submittals (product data) to the Engineer for Information only.

1.04 TRANSMITTAL PROCEDURE

A. General:

1. Unless otherwise specified, submittals regarding material and equipment shall be accompanied by Transmittal Form 01 33 00-A (attached to this Section). A separate form shall be used for each specific item, class of material, equipment, and items specified in separate, discrete sections, for which the submittal is required. Submittal documents common to more than one piece of equipment shall be identified with all the appropriate equipment numbers. Submittals for various items shall be made with a single form when the items taken together constitute a manufacturer's package or are so functionally related that expediency indicates checking or review of the group or package as a whole.
2. A unique number, sequentially assigned, shall be noted on the transmittal form accompanying each item submitted. Original submittal numbers shall have the following format: "XXX"; where "XXX" is the sequential number assigned by the Contractor. Resubmittals shall have the following format: "XXX-Y"; where "XXX" is the originally assigned submittal number and "Y" is a sequential letter assigned for resubmittals, i.e., A, B, or C being the 1st, 2nd, and 3rd resubmittals, respectively. Submittal 25B, for example, is the second resubmittal of submittal 25.

B. Deviation from contract:

1. If the Contractor proposes to provide material, equipment, or method of work which deviates from the specifications, he shall indicate so under "deviations" on the transmittal form accompanying the submittal copies.

C. Submittal completeness:

1. Submittals which do not have all the information required to be submitted, including deviations, are not acceptable and will be returned without review.

1.05 REVIEW PROCEDURE

A. General:

1. Submittals are specified for those features and characteristics of materials, equipment, and methods of operation which can be selected based on the Contractor's judgment of their conformance to the specified requirements. Other features and characteristics are specified in a manner which enables the Contractor to determine acceptable options without submittals. The review procedure is based on the Contractor's guarantee that all features and characteristics not requiring submittals conform as specified. Review shall not extend to means, methods, techniques, sequences or procedures of construction, or to verifying quantities, dimensions, weights or gages, or fabrication processes (except where specifically indicated or required by the specifications) or to safety precautions or programs incident thereto. Review of a separate item, as such, will not indicate approval of the assembly in which the item functions.
2. When the contract documents require a submittal, the Contractor shall submit the specified information as follows:

- a. Submitted information will be sent to the following address. The individual to whom submittals should be addressed will be furnished by the Engineer.

Department of Land and Natural Resources
Engineering Division
1151 Punchbowl Street, Room 221
Honolulu, Hawaii 96813
Attn: Mineral Resources Section

- b. Five copies of all submitted information plus one reproducible original of all information shall be transmitted with submittals for review and comment.
- c. Unless otherwise specified, five copies of all submitted information shall be transmitted with submittals (Product Data) for information only.

B. Submittals for review and comment:

1. Unless otherwise specified, within 30 calendar days after receipt of a submittal for review and comment, the Engineer shall review the submittal and return two copies of the marked-up reproducible original noted above. The reproducible original will be retained by the Engineer. The returned submittal shall indicate one of the following actions:
 - a. If the review indicates that the material, equipment or work method complies with the specifications, submittal copies will be marked "NO EXCEPTIONS TAKEN." In this event, the Contractor may begin to implement the work method or incorporate the material or equipment covered by the submittal.
 - b. If the review indicates limited corrections are required, copies will be marked "MAKE CORRECTIONS NOTED." The Contractor may begin implementing the work method or incorporating the material and equipment covered by the submittal in accordance with the noted corrections. Where submittal information will be incorporated in O&M data, a corrected copy shall be provided.
 - c. If the review reveals that the submittal is insufficient or contains incorrect data, copies will be marked "AMEND AND RESUBMIT." Except at his own risk, the Contractor shall not undertake work covered by this submittal until it has been revised, resubmitted and returned marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED."
 - d. If the review indicates that the material, equipment, or work method does not comply with the specifications, copies of the submittal will be marked "REJECTED - SEE REMARKS." Submittals with deviations which have not been identified clearly may be rejected. Except at his own risk, the Contractor shall not undertake the work covered by such submittals until a new submittal is made and returned marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED."

C. Submittals (product data) for information only:

1. Such information is not subject to submittal review procedures and shall be provided as part of the work under this contract and its acceptability determined under normal inspection procedures.

1.06 EFFECT OF REVIEW OF CONTRACTOR'S SUBMITTALS:

A. General:

1. Review of contract drawings, methods of work, or information regarding materials or equipment the Contractor proposes to provide, shall not relieve the Contractor of his responsibility for errors therein and shall not be regarded as an assumption of risks or liability by the Engineer or the State, or by any officer or employee thereof, and the Contractor shall have no claim under the contract on account of the failure, or partial failure, of the method of work, material, or equipment so reviewed. A mark of "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED" shall mean that the State has no objection to the Contractor, upon his own responsibility, using the plan or method of work proposed, or providing the materials or equipment proposed.

END OF SECTION

01 33 00-A. SUBMITTAL TRANSMITTAL FORM

Submittal Transmittal

Submittal Description:	Submittal No: ¹	Spec Section:
------------------------	----------------------------	---------------

	Routing	Sent	Received
Owner:	Contractor/Engineer		
Project:			
Contractor:	Engineer/Contractor		

We are sending you:

- Attached
- Under separate cover via _____
- Submittals for review and comment
- Product data for information only

Remarks: _____

Item	Copies	Date	Section No.	Description	Review action ^a	Reviewer initials	Review comments attached

^aNote: NET = No exceptions taken; MCN = Make corrections noted; A&R = Amend and resubmit; R = Rejected
Attach additional sheets if necessary.

Contractor

Certify either a or b:

- a. We have verified that the material or equipment contained in this submittal meets all the requirements, including coordination with all related work, specified (no exceptions).
- b. We have verified that the material or equipment contained in this submittal meets all the requirements specified except for the attached deviations.

No.	Deviation

Certified by: _____

Contractor's Signature: _____

SECTION 01310
CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.01 SCOPE

- A. This section specifies reports and schedules for planning and monitoring the progress of the work.

1.02 DESCRIPTION

- A. The Contractor shall provide a graphic construction schedule indicating the various subdivisions of the work and the dates of commencing and finishing each. The schedule shall show the time allowed for testing and for other procedures which must be completed prior to the work being put into operation. The schedule will take into account the time of completion and the specific dates as specified in the Contract Documents.

1.03 SUBMITTAL PROCEDURES

- A. Within 20 days after the date of the Notice to Proceed, the Contractor shall submit in accordance with Section 01300, a construction schedule conforming to paragraph 1.02 Description. The submittal shall consist of a reproducible original and two copies.
- B. Within 7 calendar days after receipt of the submittal, the Engineer shall review the submitted schedule and return one copy of the marked up original to the Contractor. If the Engineer finds that the submitted schedule does not comply with specified requirements, the corrective revisions will be noted on the submittal copy returned to the Contractor.

1.04 SCHEDULE REVISIONS

- A. Revisions to the accepted construction schedule may be made only with the written approval of the Contractor and Engineer. A change affecting the contract value of any activity, the completion time, and specific dates as specified in the Contract Documents may be made only in accordance with applicable provisions of the General Conditions of the Contract Documents.

1.05 PROJECT STATUS UPDATE

- A. Project status review and update shall be provided every two weeks. Project updates shall be provided daily during periods of on-site activity.

END OF SECTION

SECTION 01560
ENVIRONMENTAL CONTROLS

PART 1 GENERAL

1.01 SITE MAINTENANCE

- A. The Contractor shall keep the work site clean and free from rubbish and debris. Materials and equipment shall be removed from the site when they are no longer necessary. Upon completion of the work and before final acceptance, the work site shall be cleared of equipment, unused materials, and rubbish to present a clean and neat appearance.

1.02 TEMPORARY DAMS

- A. Except in time of emergency, earth dams are not acceptable at catch basin openings, local depressions, or elsewhere. Temporary dams of sand bags, asphaltic concrete, or other acceptable material will be permitted when necessary to protect the work, provided their use does not create a hazard or nuisance to the public. Such dams shall be removed from the site as soon as they are no longer necessary.

1.03 AIR POLLUTION CONTROL

- A. The Contractor shall not discharge smoke, dust, and other contaminants into the atmosphere that violate the regulations of any legally constituted authority. The Contractor shall also abate dust nuisance by cleaning, sweeping, and sprinkling with water, or other means as necessary. The use of water, in amounts which result in mud on public streets, is not acceptable as a substitute for sweeping or other methods.

1.04 NOISE CONTROL

- A. Noise from Contractor's operations shall not exceed limits established by applicable laws or regulations and in no event shall exceed 70 dBA. The Contractor shall utilize best available technologies and methods to control noise levels, such as sound blankets and mufflers.

END OF SECTION

SECTION 01581
PROJECT SIGN

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

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

1.02 SUBMITTALS

- A. The Contractor shall provide the Engineer with shop drawings of the project sign for review and approval prior to ordering the sign.

1.03 LETTER STYLE

- A. 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 the photo stencil screen process.

1.04 ART WORK

- A. 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

- A. 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.
- B. Design shall follow the example shown in this section. The project information shall be updated as appropriate.

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" sign posts 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 have a 2,500 psi 28-day compressive strength.

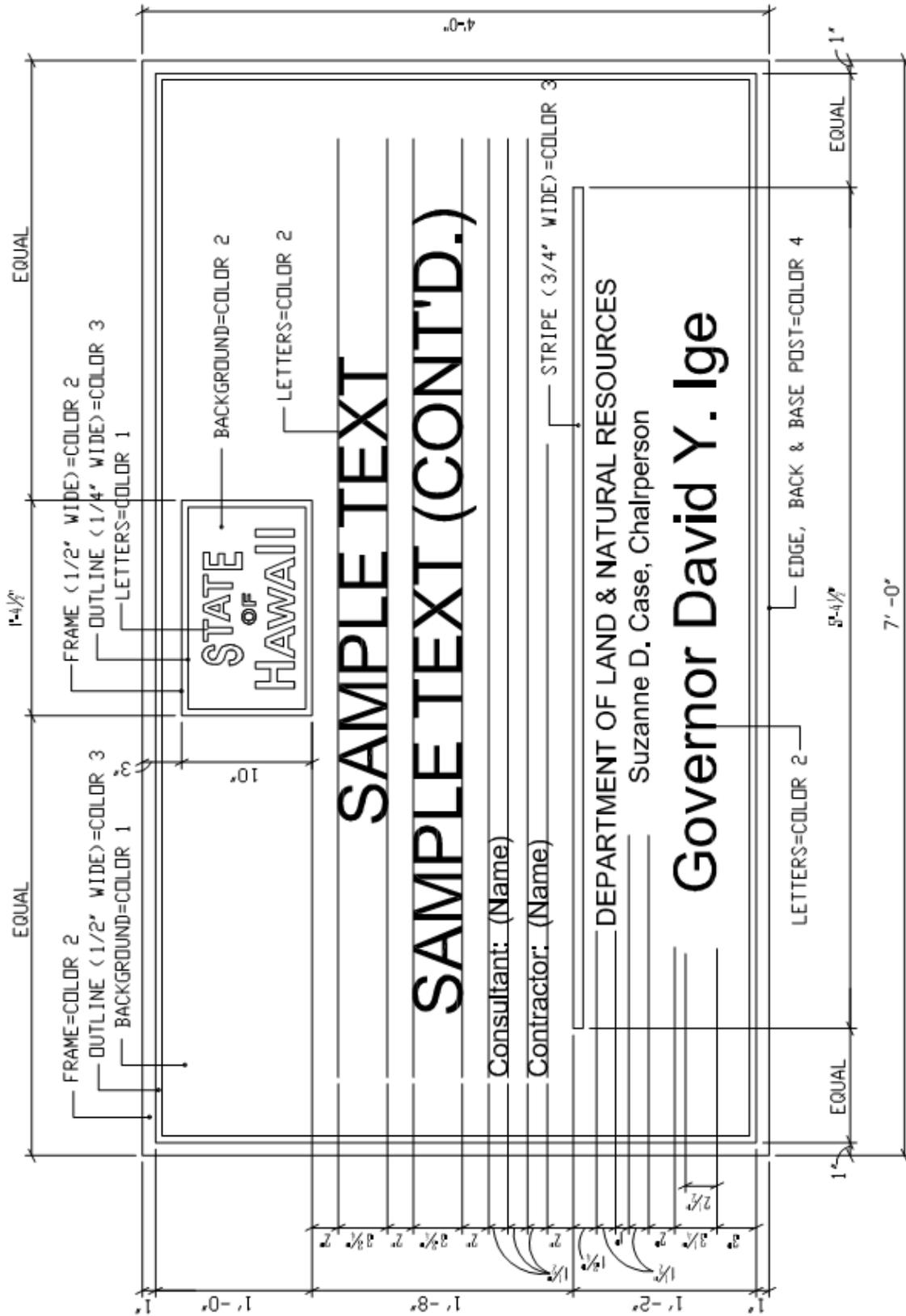
PART 3 EXECUTION

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 designated by the Engineer.

3.02 MEASUREMENT AND PAYMENT

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



SECTION 02050
DEMOLITION

PART 1 - GENERAL

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

1.2 SUBMITTALS: Submit proposed demolition and removal procedures to the Engineer for approval before work is started. Procedures shall provide for coordination with other work in progress and a detailed description of methods and equipment to be used for each operation, and sequence of operations.

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

1.4 PROTECTION

A. Existing Improvements: Protect existing improvements that are to remain in place, that are to be reused, or that is to remain the property of the State by temporary covers, shoring, bracing, and supports. Repair items damaged during performance of the work or replace with new to the satisfaction of the Engineer. Do not overload structural elements. Provide new supports or reinforcement for existing construction weakened by demolition, removal, and relocation work. Construction equipment and vehicles shall neither be permitted on, nor shall be stored on the existing work that is to remain in place.

B. Trees: Protect trees within the project site which might be damaged during the demolition work.

C. Public Safety: Where pedestrian and driver safety is endangered in the work or storage areas, use traffic barricades with flashing lights. Notify the Engineer prior to beginning any such work. The Contractor shall conduct operations with minimum interference to streets, driveways, sidewalks, and passageways, etc.

D. Explosives: Use of explosives will not be permitted.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 EXISTING FACILITIES

A. SOH-1:

1. After plugging the well, demolish and remove the existing concrete cellar walls, floor and stairs. Any below grade utilities shall be secured (capped) and remain in place. Seal and cap utility lines where necessary as required by regulations of the authority having jurisdiction.
2. The existence of active utility lines transversing the construction area other than those indicated is not definitely known. Should any be encountered, the Contractor shall not disconnect same without authorization of the Engineer, but shall inform the latter immediately of each discovery, and shall follow his instructions.
3. After the well is plugged and the concrete cellar walls are removed, the existing hole must be filled with uncontaminated fill material.

B. SOH-2:

1. After plugging the well, demolish and remove the existing concrete cellar walls, floor and stairs. Any below grade utilities shall be secured (capped) and remain in place. Seal and cap utility lines where necessary as required by regulations of the authority having jurisdiction.
2. The existence of active utility lines transversing the construction area other than those indicated is not definitely known. Should any be encountered, the Contractor shall not disconnect same without authorization of the Engineer, but shall inform the latter immediately of each discovery, and shall follow his instructions.
3. After the well is plugged and the concrete cellar walls are removed, the existing hole must be filled with uncontaminated fill material.

3.2 SAFETY

- A. Work shall be done in accordance with safety provisions of the Manual of Accident Prevention in Construction, published by the Associated General Contractors of America and the Hawaii Geothermal Drilling Guide, Circular C-126.

3.3 DISPOSITION OF MATERIALS

- A. Title to Materials: Title to all materials and equipment to be removed, except as specified otherwise, is vested in the Contractor upon receipt of notice to proceed. The

Engineer will not be responsible for the condition or loss of, or damage to, such property after notice to proceed. Materials and equipment shall not be viewed by prospective purchasers or sold on the site. Burning or burying of materials on the site will not be permitted.

B. When removing the materials from the property, truck loads shall be trimmed and loaded as to prevent spillage.

3.4 CLEANUP

A. Debris and Rubbish: Remove and transport debris and rubbish in a manner that will prevent spillage into ocean or adjacent areas. Clean up any spillage that occurs. The Contractor shall leave the premises clean, neat, and orderly.

B. Regulations: Comply with Federal, State, and local hauling and disposal regulations.

END OF SECTION

SECTION 02100
SITE CLEARING

PART 1 GENERAL

1.01 DESCRIPTION

- A. Scope: This section specifies site preparation which consists of clearing, grubbing and demolition.
- B. Existing Conditions: The Contractor shall determine the actual condition of the site as it affects this portion of work.
- C. Protection: Site preparation shall not damage structures, landscaping or vegetation adjacent to the site. The Contractor shall repair, or replace any damaged property.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 CLEARING AND GRUBBING

- A. Unless otherwise specified, the Contractor shall remove obstructions such as brush, trees, logs, stumps, roots, heavy sod, vegetation, rock, stones larger than 6 inches in any dimension, broken or old concrete and pavement, debris, and structures where the completion of the work require their removal.
- B. Material that is removed and is not to be incorporated in the work shall be disposed of off the site.

3.02 DEMOLITION AND REMOVAL

- A. Structures: Demolition and removal of structures consist of removal of abandoned superstructures, foundation walls, footings, slabs and any other structures. Excavations caused by existing foundations shall be cleared of waste, debris and loose soil, and refilled as specified.
- B. Pavement: When portions of asphalt pavements and concrete pads are to be removed and later construction is to be connected, edges shall be saw cut, on a neat line at right angles to the curb face.
- C. Salvage: The State has the right to salvage any items scheduled for removal. The Contractor shall notify the Engineer 5 days prior to any salvage or demolition work to determine the disposition of items to be removed. The Engineer will mark items to be salvaged. Such items shall be properly disconnected, removed from their foundations, cleaned, and stored at a location on the project site as specified.

3.03 UTILITY INTERFERENCE

- A. Where existing utilities interfere with the prosecution of the work, the Contractor shall relocate them in accordance with the General Conditions of the Contract Documents.

END OF SECTION

SECTION 02200
EXCAVATION AND FILL

PART 1 GENERAL

1.01 DESCRIPTION

A. Scope:

1. This section specifies earthwork which consists of excavation, filling, grading, and disposal of excess material.

B. Definitions:

1. Compaction: The degree of compaction is specified as percent compaction. Maximum or relative densities refer to dry soil densities obtainable at optimum moisture content.
2. Excavation Slope: Excavation slope shall be defined as an inclined surface formed by removing material from below existing grade.

1.02 QUALITY ASSURANCE

A. References:

1. This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.
2. Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Bids or Invitation to Bid (or on the effective date of the Agreement if there were no Bids). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, whether or not the document has been superseded by a version with a later date, discontinued or replaced.

Reference	Title
ASTM C136	Standard Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM D1556	Test Method for Density of Soil in Place by the Sand-Cone Method

ASTM D1557	Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb (4.5-kg) Rammer and 18-in. (457-mm) Drop
ASTM D2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
ASTM D6938	Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

B. Not used.

1.03 SUBMITTALS

- A. Samples of fill materials to be used shall be submitted at least 2 weeks in advance of use. Samples shall consist of 0.5 cubic feet of each type of material.
- B. Provide material testing results demonstrating conformance with product requirements.
- C. Provide test report to demonstrate compliance with compaction requirements.

PART 2 PRODUCTS

2.01 FILL MATERIALS

- A. Type A material shall be a clean gravel-sand mixture free from organic matter and shall conform to the following gradation:

U.S. standard sieve size	Percent by weight passing
3/4 inch	100
3/8 inch	70-100
No. 4	55-100
No. 10	35-95
No. 20	20-80
No. 40	10-55
No. 100	0-2

- B. Type B:

1. Type B material shall be a select granular material free from organic matter and of such size and gradation that the specified compaction can be readily attained. Material shall have a sand equivalent value determined in accordance with ASTM D2419 of not less than 20 and shall conform to the following gradation:

U.S. standard sieve size	Percent by weight passing
3 inch	100
No. 4	35-100
No. 30	20-100

2. The coefficient of uniformity shall be 3 or greater.
3. The material may be an imported quarry waste, clean natural sand or gravel, select trench excavation or a mixture thereof.

C. Type C:

1. Type C material shall be imported non-expansive granular select borrow, hereinafter referred to as “Select Borrow” or “Structural Fill”. Select Borrow and Structural Fill shall consist of well-graded granular materials free of organic matter, debris, other deleterious substances, particles greater than 2.5 inches in maximum dimensions, and should have less than 15 percent fines passing the No. 200 sieve. If the material excavated from the site meets these requirements, it may be classified as Type C.

D. Type D:

1. Type D material shall be granular material commonly known as pea gravel and shall conform to the following gradation:

U.S. standard sieve size	Percent by weight passing
1/4 inch	100
No. 8	0-5

E. Type E:

1. Type E material shall be crushed rock commonly known as drain rock and shall conform to the following gradation:

U.S. standard sieve size	Percent by weight passing
1-1/2 inch	100
3/4 inch	30-75
1/2 inch	15-55
1/4 inch	0-5

2. Type E material shall be composed of hard, durable, sound pieces having a specific gravity of not less than 2.65.

PART 3 EXECUTION

3.01 GENERAL

A. Control Of Water:

1. The Contractor shall keep excavations reasonably free from water during construction. The static water level shall be drawn down a minimum of 1 foot below the bottom of excavations to maintain the undisturbed state of natural soils and allow the placement of any fill to the specified density. Disposal of water shall not damage property or create a public nuisance. The Contractor shall have on hand pumping equipment and machinery in good working condition for emergencies and shall have workmen available for its operation. Dewatering systems shall operate continuously until backfill has been completed to 1 foot above the normal static groundwater level.
2. Groundwater shall be controlled to prevent softening of the bottom of excavations, or formation of "quick" conditions. Dewatering systems shall not remove natural soils. The Contractor shall control surface runoff to prevent entry or collection of water in excavations.
3. Release of groundwater to its static level shall be controlled to prevent disturbance of the natural foundation soils or compacted fill and to prevent flotation or movement of structures or pipelines.

B. Overexcavation:

1. Where the undisturbed condition of natural soils is inadequate for support of the planned construction, the Engineer will direct the Contractor to overexcavate to adequate supporting soils. The excavated space shall be filled to the specified elevation with backfill. The overexcavated space under footings may be filled with concrete. The quantity and placement of such material will be paid for as extra work.

C. Surplus Material:

1. Unless otherwise specified, surplus excavated material shall be disposed of off site in accordance with applicable ordinances and environmental requirements.

D. Hauling:

1. When hauling is done over highways or city streets, the loads shall be trimmed and the vehicle shelf areas shall be cleaned after each loading. The loads shall be watered after trimming to eliminate dust.

E. Finish Grading:

1. Finished surfaces shall be smooth, compacted and free from irregularities. The degree of finish shall be that normally obtainable with a blade-grader.
2. Finished grade shall be as specified by the contours plus or minus 0.10 foot except where a local change in elevation is required to match sidewalks, curbs,

manholes and catch basins, or to ensure proper drainage. Allowance for topsoil and grass cover, and subbase and pavement thickness shall be made so that the specified thickness of topsoil can be applied to attain the finished grade.

3. When the work is an intermediate stage of completion, the lines and grades shall be as specified plus or minus 0.5 foot to provide adequate drainage.
4. If the soil is to be cultivated or straw is to be incorporated into the surface, rocks larger than 2-1/2 inches in maximum dimension, roots and other debris on the surface of the slope shall be removed and disposed of prior to cultivation or placement of straw.

F. Control Of Erosion:

1. The Contractor shall maintain earthwork surfaces true and smooth and protected from erosion. Where erosion occurs, the Contractor shall provide fill or shall excavate as necessary to return earthwork surfaces to the grade and finish specified.

3.02 CLASSIFICATION OF FILL

- A. Fill material shall be placed in horizontal layers and compacted with power operated tampers, rollers, idlers, or vibratory equipment. Material type, maximum layer depth, relative compaction, and general application are specified in Table A. Unless otherwise specified, fill classes shall be used where specified in Table A under general application.

Table A, Fill Classifications

Fill class	Material type	Maximum uncompressed layer depth, inches	Minimum relative compaction, percent	General application
A1	A	8	95	NOT USED
B1	B	8	95	NOT USED
C1	C	8	90-95	Backfill; compaction as specified
D1	D	-	95	NOT USED
E1 ^a	E	8	-	NOT USED

^aCompaction of layers shall be accomplished in two passes of equipment with complete coverage across the width of the field.

3.03 EARTHWORK FOR STRUCTURES

A. Structure Excavation:

1. The bottom shall not be more than 0.15 foot above or below the lines and grades specified. If the elevation of structure excavation is not specified, the excavation

shall be not more than 0.15 foot above or below the elevation specified for fill material below the structure. Slopes shall vary no more than 0.5 foot from specified grade unless the excavation is in rock where the maximum variation shall be 2 feet.

2. Should the excavation be carried below the lines and grades specified on the drawings or should the bottom of the excavation be disturbed because of the Contractor's operations and require overexcavation and backfill, the Contractor shall refill such excavated space to the proper elevation in accordance with the procedure specified for backfill. The cost of such work shall be borne by the Contractor.
3. Unless otherwise specified, excavations shall extend a sufficient distance from walls and footings to allow for placing and removal of forms, installation of services, and for inspection, except where concrete is specified to be placed directly against excavated surfaces.

B. Structure Backfill:

1. Unless otherwise specified, structure backfill shall be Class B1.
2. After completion of construction below the elevation of the final grade, and prior to backfilling, forms shall be removed and the excavation shall be cleaned of debris.
3. Structure backfill shall not be placed until the subgrade portions of the structure have been inspected by the Engineer. No backfill material shall be deposited against concrete structures until the concrete has developed a strength of not less than 2500 pounds per square inch in compression, or until the concrete has been in place for 28 days, whichever occurs first.
4. Backfill material shall be placed in uniform layers and shall be brought up uniformly on all sides of the structure. Unless otherwise specified, backfill around and above pipelines within the excavation line of any structure shall be the same as that specified for structures.

3.04 EARTHWORK FOR PIPELINES AND CONDUITS

A. General:

1. Earthwork for pipelines and conduits is specified in Table A; in the standard details; and in the following paragraphs.

B. Pipeline Excavation:

1. The bottom of the trench shall be carried to the specified lines and grades with proper allowance for pipe thickness and for bedding as specified.

C. Pipeline Backfill:

1. Bedding: The Contractor shall not proceed with backfill placement in excavated areas until the subgrade has been inspected by the Engineer. All pipe shall have a minimum thickness of bedding material below the barrel of the pipe as specified.

Bedding material shall be placed in the bottom of the trench, leveled and compacted. Bell holes shall be excavated at each pipe joint to permit proper inspection and uniform bearing of pipe on bedding material.

- a. After the pipe has been laid to alignment and grade, unless otherwise specified, additional bedding material shall be placed in layers the full width of the trench and compacted up to the specified level. Bedding shall be placed simultaneously on both sides of the pipe, keeping the level of backfill the same on each side. The material shall be carefully placed and compacted around the pipe to ensure that the pipe barrel is completely supported and that no voids or uncompacted areas are left beneath the pipe. Contractor shall use particular care in placing material on the underside of the pipe to prevent lateral movement during backfilling.
2. Initial Backfill: After pipe has been properly bedded, Contractor shall place and compact initial backfill as specified. Initial backfill, where specified below the springline of the pipe, shall be placed and compacted in accordance with paragraph 3.04 Bedding for additional bedding material.
 3. Subsequent Backfill:
 - a. General: Backfill material, placement and compaction above the pipe zone shall be as specified. Backfill above the pipe zone shall not commence until pipe zone backfill has been inspected and accepted by the Engineer.
 - b. Improved Areas: Unless otherwise specified, select granular backfill (Class C1 or Class E1) shall be used under all paved and unpaved roadways and paved and unpaved roadway shoulders, roadway embankments, and in all public right-of-ways and easements. The trench shall be backfilled to an elevation which will permit the placement of the specified surface or paving. Paving shall be as specified in the Standard Specifications for Public Works Construction for the County of Hawaii. Other surfaces shall be restored, including compaction, to the condition existing prior to construction including restoration of yard areas.
 - c. Unimproved Areas: Class C1 backfill shall be used for all trenches in pastureland, cultivated land, undeveloped land, and for other unimproved areas where specified. Class C1 backfill shall not be used in any public right-of-way. Trench operation which meets the requirements of Type C material may be used. The Contractor shall maximize the use of fine-grained materials (e.g., sand, silty sand, sandy silt) as Class C1 backfill.
 - 1) For Class C1 backfill, the trench above the pipe zone shall be backfilled to within 12 inches of original ground surface. The top 12 inches of soil shall be removed and stored in such a manner that it will not become mixed with unsatisfactory soils. After the trench has been backfilled, the stored topsoil shall be replaced at a uniform depth in its original area compacted to its original condition. The Contractor shall leave the backfilled trench neatly mounded not more than 6 inches above existing grade for the full width of the Class C1 backfill area.

3.05 SUBGRADE FOR PAVEMENT

- A. The prepared subgrade shall be scarified to a depth of at least 12 inches and recompact to at least 95 percent of the maximum density.

END OF SECTION

SECTION 02671
WELL PLUGGING

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

This section covers the requirements for plugging geothermal well SOH-1 and geothermal well SOH-2. The contractor shall comply with all provisions of HAR §13-183, Rules on Leasing and Drilling of Geothermal Resources, and the State's Hawaii Geothermal Drilling Guide, Circular C-126. The contractor shall maintain a complete, chronologic report detailing daily abandonment activities. The contractor shall provide a description of each plug set, including the following:

1. Type and amount of cement used
2. Depth drilling pipe or tubing was run to set the plug
3. Depth of top of plug
4. Method of verification of plug placement/success

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 ABBREVIATIONS:

bbl – oilfield barrel; 42 U.S. gallons
BOPE – Blowout prevention equipment
BWOC – By weight of cement
EFSO – External flanged side outlet
ID – Internal diameter
EUE – External upset end
MIRU – Move in and rig up
NPT – National Pipe Thread
NU – Nipple up
OD – Outer diameter
POH – Pull out of the hole
ppb – pounds per barrel
ppf – pounds per foot
RDMO – Rig down and move off
RIH – Run in hole
STC – Short threaded and coupled
TD – Total depth
WOC – Wait on cement
XO – Cross over

3.2 WELL SOH-1 ORDER OF WORK

Geothermal Well Plugging and
Abandonment SOH-1 and SOH-2

1. Prepare location for plugging and abandonment operations
 - 1.1. Check operation of all wellhead valves
2. MIRU appropriate rig with pump system and rotating equipment
 - 2.1. Rig up H₂S monitors, fire extinguishers and safety equipment, as necessary
 - 2.2. Set up mobile noise monitoring station and install hospital grade mufflers on all engines and compressors to keep noise level below allowable limits
 - 2.3. Drilling contractor to post the permits and a list of emergency contacts including phone numbers for the police, fire department, hospital, other emergency services, field manager, and state and county regulatory agencies, as necessary
 - 2.4. 'Best Available Control Technology' (BACT) with respect to geothermal emissions will be employed
 - 2.5. Kill well with water if necessary and keep it from heating up and flowing by constant or frequent addition of water from surface
 - 2.6. Remove capillary tubing and pressure chamber
 - 2.7. Remove valve and XO flange
 - 2.8. NU appropriate 7-1/16" BOPE stack on 7" EFSO wellhead
3. Pull NQ perforated liner rod string
 - 3.1. Run screw in sub or spear and engage to NQ rod string at surface
 - 3.2. Pull and lay down NQ rod string
 - 3.3. Cut and pull rod, if necessary, to at least 200' below 4-1/2" shoe at 3,022'
4. Run in hole to TD (5,526') and fill hole with 20 ppb bentonite mud from TD to 7" casing shoe.
 - 4.1. Bottom of hole was cored with NQ and the hole diameter is 2.98"
 - 4.2. If any NQ rod is left in hole, ID of NQ rod is 2.375"
 - 4.3. Plan to use 1-1/4" EUE tubing to run to bottom (tube OD is 1.66" and coupling OD is 2.0" OD)
 - 4.3.1. Have 2,600' of tubing on hand with crossovers as needed to run tapered string
 - 4.3.2. If some NQ rod remains in hole, run to bottom inside of rod
 - 4.3.3. NQ rod in hole is perforated and circulation of mud should fill annular space
 - 4.4. Pump at least 64 barrels of 20 ppb bentonite mud
5. Set cement plugs in open hole and across liner shoe
 - 5.1. If any tubing is left in hole
 - 5.1.1. Set cement plug from at least 300' inside top of tubing to 200' above tubing top
 - 5.1.2. Calculate volume based on hole diameter (tubing is perforated)
 - 5.1.3. This should ensure good cement inside and outside of tubing for at least 200'
 - 5.1.4. POH. WOC. Tag top of plug
 - 5.1.5. Pump cement as needed to raise top of cement at least 200' above tubing top
 - 5.2. If tubing is pulled out of hole or after plug has been set across tubing top,
 - 5.2.1. Set plug from 200' below to 200' inside of 4-1/2" liner
 - 5.2.2. POH. WOC. Tag top of plug
 - 5.2.3. Re-cement as needed to raise top of cement at least 200' into 4-1/2" liner
 - 5.2.4. Circulate out excess from 200'+ inside of liner shoe
6. Cut and pull 4-1/2" liner from above cement
 - 6.1. RIH and cut liner at above cement top
 - 6.2. Engage liner with spear, pull and lay down liner
 - 6.2.1. Cut and pull in sections if necessary

- 6.2.2. Liner must be cut and pulled at least 200' below 7" casing shoe at 1,996'
- 6.2.3. Liner is 10.5 ppf STC from surface to 2,005' and 11.6 ppf flush below 2,005'
- 7. Set cement plug in, around and above any 4-1/2" liner left in hole
 - 7.1. Run 200'+ inside of liner and set plug at least 200' above liner top
 - 7.2. Pump at least 15 barrels cement
 - 7.3. Pull above cement and squeeze at least 5 barrels to fill annular space around 4-1/2" stub
 - 7.3.1. POH. WOC. Tag top of plug
 - 7.4. Re-cement as needed to raise top of cement at least 200' above 4-1/2" stubs
- 8. Set cement plug across 7" shoe
 - 8.1. Run drill string to at least 2,200'
 - 8.2. Set at least 14 barrel cement as a balanced plug
 - 8.2.1. POH. WOC. Tag top of plug
 - 8.3. Pump additional cement as needed to raise top of cement at least 200' above 7" shoe
- 9. Circulate 7" casing full of 20 ppb bentonite mud to surface
 - 9.1. This requires 63 barrels mud
- 10. Pull to 400' and fill 7" casing to surface with cement
 - 10.1. This requires 14 barrels cement
 - 10.2. POH. WOC. Ensure that hole stands full of cement at surface
- 11. Nipple down BOPE, RDMO, and abandon location
 - 11.1. Cut off all casing at least 6' below surface
 - 11.2. Make sure that 7" by 9-5/8" annulus is filled with cement to the bottom of the cellar. If not, fill the annulus by mixing and dumping cement from surface
 - 11.3. Cap casing by welding a steel plate on casing and install 1/4" NPT threaded inspection plug in plate. The well number and date of abandonment must be clearly marked (etched or welded in the metal) on the steel plate with a minimum lettering size of 1/2" high.
 - 11.4. Remove cellar and all other structures
 - 11.5. Clean up and restore as near as practicable to original conditions

3.3 WELL SOH-2 ORDER OF WORK

- 1. Prepare location for plugging and abandonment operations
 - 1.1. Check operation of all wellhead valves
- 2. MIRU appropriate rig with pump system and rotating equipment
 - 2.1. Rig up H₂S monitors, fire extinguishers and safety equipment, as necessary
 - 2.2. Set up mobile noise monitoring station and install hospital grade mufflers on all engines and compressors to keep noise level below allowable limits
 - 2.3. Drilling contractor to post the permits and a list of emergency contacts including phone numbers for the police, fire department, hospital, other emergency services, field manager, and state and county regulatory agencies, as necessary
 - 2.4. 'Best Available Control Technology' (BACT) with respect to geothermal emissions will be employed
 - 2.5. Kill well with water if necessary and keep it from heating up and flowing by constant or frequent addition of water from surface
 - 2.6. Remove capillary tubing and pressure chamber
 - 2.7. Remove valve and XO flange

- 2.8. NU appropriate 7-1/16" BOPE stack on 7" EFSO wellhead
3. Pull NQ blank and perforated liner rod string
 - 3.1. Run screw in sub or spear and engage to NQ rod string at surface
 - 3.2. Pull and lay down NQ rod string
 - 3.3. Cut and pull rod if necessary to at least 200' below 5" shoe (4,103')
4. Run in hole and fill open hole with 20 ppb bentonite mud from TD to the 7" shoe
 - 4.1. Bottom of hole was cored with NQ rod and hole diameter is 2.98"
 - 4.2. If any NQ rod is left in hole, ID of NQ rod is 2.375"
 - 4.3. Plan to use 1-1/4" EUE tubing to run to bottom (tube OD is 1.66" and coupling OD is 2.0")
 - 4.3.1. Have 2,600' of tubing on location with crossovers as needed to run tapered string
 - 4.3.2. If some NQ rod remains in hole, run to bottom inside of rod
 - 4.3.3. NQ rod in hole is perforated and circulation of mud should fill annular space
 - 4.4. Pump at least 97 barrels of 20 ppb mud
5. Set cement plugs in open hole and across HMQ rods left in hole
 - 5.1. If any tubing is left in hole
 - 5.1.1. Set cement plug from at least 300' inside top of tubing to 200' above tubing top
 - 5.1.2. Calculate volume based on hole diameter (tubing is perforated)
 - 5.1.3. This should ensure good cement inside and outside of tubing for at least 200'
 - 5.1.4. POH. WOC. Tag top of plug
 - 5.1.5. Pump cement as needed to raise top of cement at least 200' above tubing top
 - 5.2. If tubing is pulled out of hole or after plug has been set across tubing top,
 - 5.2.1. Set plug from 200' below to 200' above HMQ from 4,988' to 4,762'
 - 5.2.2. POH. WOC. Tag top of plug
 - 5.2.3. Pump cement as needed to raise top of cement at least 200' above HMQ
6. Cut and pull combination 4-1/2" and 5" liner from above cement
 - 6.1. Engage liner with spear, pull and lay down liner
 - 6.1.1. Cut and pull in sections if necessary
 - 6.1.2. Liner must be cut and pulled at least 200' below 7" casing shoe at 1,896'
 - 6.1.3. Liner is 4-1/2", 10.5ppf, J55 from 1,794' to 3,721' and 5", 23ppf, K55 to 4,103'
7. Set cement plug in, around and above any 5" and 4-1/2" liner strings left in hole
 - 7.1. Run 200'+ inside of liner and set plug at least 200' above liner top
 - 7.2. Pump at least 15 barrels cement
 - 7.3. Pull above cement and squeeze at least 5 barrels to fill annular space around liner stub
 - 7.3.1. POH. WOC. Tag top of plug
 - 7.4. Re-cement as needed to raise top of cement at least 200' above 5" and 4-1/2" stubs
8. Run in hole and fill with 20 ppb bentonite mud from current TD into 7" shoe
 - 8.1. Use at least 3.5 barrels mud per 100' of open 5-7/8" hole
9. Set cement plug across 7" shoe
 - 9.1. Run drill string to at least 2,100'
 - 9.2. Set at least 15 barrel cement as a balanced plug
 - 9.2.1. POH. WOC. Tag top of plug
 - 9.3. Pump cement as needed to raise top of cement at least 200' above 7" shoe
10. Circulate 7" casing full of 20 ppb bentonite mud to surface
 - 10.1. This requires 67 barrels
11. Pull to 400' and fill 7" casing to the bottom of the cellar with cement

- 11.1. This requires 15.8 barrels
- 11.2. POH. WOC. Ensure that hole stands full of cement to the bottom of the cellar
- 12. Nipple down BOPE, RDMO, and abandon location
 - 12.1. Cut off all casing at least 6' below surface
 - 12.2. Make sure that 7" by 9-5/8" annulus is filled with cement to surface. Install pack off if necessary and attempt to squeeze cement into annulus.
 - 12.3. Cap casing by welding a steel plate on casing and install 1/4" NPT threaded inspection plug in plate. The well number and date of abandonment must be clearly marked (etched or welded in the metal) on the steel plate with a minimum lettering size of 1/2" high.
 - 12.4. Remove cellar and all other structures
 - 12.5. Clean up and restore as near as practicable to original conditions

3.4 NOTES:

- A. All mud used in abandonment will have 20 ppb bentonite (chemical thinners may be used if necessary).
- B. All cement will be premium cement with at least 40% BWOC silica flour and additives as needed to reduce friction and prevent premature thickening during pumping and displacing.

END OF SECTION

SECTION 03300
PLUGGING MATERIALS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

This covers the materials to be used to plug the well: plugging mud, sand and cement.

PART 2 - PRODUCTS

2.1 MATERIALS

A. SOH-1 WELL

1. Mud Materials

- a. Mud mixing system capable of mixing mud to 20 ppb gel.
- b. Mud materials on hand to mix at least 200 bbl of mud
- c. Drilling supervisor to oversee the mixing of the mud system
- d. Theoretical mud volume requirements:
 - 7" casing = 49 bbl
 - 5.875" = 25 bbl (w/ 100% excess)
 - HQ (3.83") = 26 bbl (w/ 100% excess)
 - NQ (2.98") = 16 bbl (w/ 100% excess)
 - Total = 116 bbl**

2. Plug Cement Materials

- a. Cement used should contain 40% silica flour BWOC
- b. Cement used should be API Premium Class
- c. Silica Flour – SSA-1 or equivalent

B. SOH-2 WELL

1. Mud Materials

- a. Mud mixing system capable of mixing mud to 20 ppb gel.
- b. Mud materials on hand to mix at least 250 bbl of mud
- c. Drilling supervisor to oversee the mixing of the mud system
- d. Theoretical mud volume requirements:
 - 7" casing = 52 bbl
 - 5.875" = 108 bbl (w/ 100% excess)
 - HQ (3.83") = 8 bbl (w/ 100% excess)
 - NQ (2.98") = 20 bbl (w/ 100% excess)
 - Total = 188 bbl**

2. Plug Cement Materials

- a. Cement used should contain 40% silica flour BWOC
- b. Cement used should be API Premium Class
- c. Silica Flour – SSA-1 or equivalent

END OF SECTION

SECTION 03301
PLUGGING EQUIPMENT

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

This covers equipment planned to be used to plug the well: rig mast, BOP, drill string, mud pumps, and miscellaneous equipment.

PART 2 - PRODUCTS

2.1 EQUIPMENT

1. Mast capacity:

Minimum pullback: 40,000 lb (6,800 ft x 5.31 ppf = 36,108lb. + 4,000 lb overpull)

2. Mud /Cement pumping equipment:

- a. Two (2) each triplex, plunger pumps; capable of pumping 5 bbl/min @ 5,000 psi
- b. Crew to mix and cement silos and/or batch mixer for cement storage.
- c. Mud mixing system capable of mixing 250 bbl mud to 20 ppb gel.

3. BOP system:

7-1/16" 2M double gate ram preventer, at a minimum

4. Drill string:

7,000 ft, 1.315", 1.8 ppf, EUE tubing or BQ (2.2" x 1.9") drill rod

5. Miscellaneous:

- a. Rod cutters, as required
- b. Welder to cut off casing stub and weld on casing plate

END OF SECTION