<table>
<thead>
<tr>
<th>TO:</th>
<th>INIT:</th>
<th>PLEASE:</th>
<th>REMARKS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>G. MATSUMOTO</td>
<td>F. Ching</td>
<td>See Me</td>
<td>Glenn</td>
</tr>
<tr>
<td>E. Hirano</td>
<td>G. Bauer</td>
<td>Call</td>
<td>Do you know if the nearby</td>
</tr>
<tr>
<td>B. Rozeboom</td>
<td>P. Haraguchi</td>
<td>Review &amp; Comment</td>
<td>stream was monitored before,</td>
</tr>
<tr>
<td>N. Fujii</td>
<td>L. Mizuno</td>
<td>Take Action</td>
<td>during, and after test pumping</td>
</tr>
<tr>
<td>K. Yoda</td>
<td></td>
<td>Investigate &amp; Report</td>
<td>of the well as per the permit?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Draft Reply</td>
<td>Cond. #9 of the permit.</td>
</tr>
</tbody>
</table>

FOR YOUR:
- R. LOUI
- S. Kokubun
- E. SAKODA
- Y. SHIROMA

Approval
Signature
Information
TO: State Historic Preservation Division  
Department of Land & Natural Resources  
State of Hawaii  
P.O. Box 373  
Honolulu, Hawaii 96809  

ATTENTION: Ms. Nancy McMahon  

SUBJECT: JOB NO. 91-4  
DRILL AND TEST PUHI WELL NO. 4  
PUHI WATER SYSTEM  
PUHI, KAUAI, HAWAII  
TMK: 4TH DIV., 3-4-05:3  
A&A JOB NO: CKDOW91-01  


We are sending you attached herewith:  

<table>
<thead>
<tr>
<th>No. of Copies</th>
<th>Description or Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Construction Plans dated 1/10/92</td>
</tr>
</tbody>
</table>

General Remarks:  

The above item is submitted for your review and comments as required under paragraph 2, in the above Reference (attached).  

If there are any questions, please call the undersigned.  

Very truly yours,  
AKINAKA & ASSOCIATES, LTD.  

By Robert Y. Akinaka  
President  

c.c. Mr. William Paty, Chairperson  
Commission on Water Resource Management  
Mr. Raymond Sato, Manager & Chief Engineer  
Kauai Dept. of Water  

Transmittal Form  

bcc: Mr. Manabu Tagomori
TO: Mr. Manabu Tagomori  
Manager & Chief Engineer  
Division of Water Resource Management  
Department of Land & Natural Resources  
State of Hawaii  
P.O. Box 373  
Honolulu, Hawaii 96809  

ATTENTION: Mr. Edward Sakoda, Mr. Glenn Bauer

SUBJECT: JOB NO. 91-4  
DRILL AND TEST PUHI WELL NO. 4  
PUHI WATER SYSTEM  
PUHI, KAUAI, HAWAII  
TMK: 4TH DIV., 3-4-05:3  
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<tr>
<th>No. of Copies</th>
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</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Final Plans and Specifications dated 1/10/92</td>
</tr>
</tbody>
</table>

General Remarks:

The above item is submitted for your information and files.  
If there are any questions, please call the undersigned.

Very truly yours,  
AKINAKA & ASSOCIATES, LTD.

By  
Robert Y. Akinaka  
President

c.c. Mr. Raymond Sato  
Kauai Dept. of Water  

RTY\RYA:cyk

Transmittal Form
DEPARTMENT OF WATER
COUNTY OF KAUA'I
LIHUE, KAUA'I, HAWAII

CONTRACT SPECIFICATIONS

JOB NO. 91-4

DRILL AND TEST PUHI WELL NO. 4
PUHI WATER SYSTEM
PUHI, KAUA'I, HAWAII

DECEMBER 1991
DEPARTMENT OF WATER
COUNTY OF KAUAI
LIHUE, KAUAI, HAWAII

CONTRACT SPECIFICATIONS

JOB NO. 91-4

DRILL AND TEST PUHI WELL NO. 4
PUHI WATER SYSTEM
PUHI, KAUAI, HAWAII

DECEMBER 1991
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PROPOSAL P-1 TO P-6
GENERAL CONDITIONS 1 TO 15
WAGE RATES
SPECIAL PROVISIONS SP-1 TO SP-16
INVITATION FOR BIDS

DEPARTMENT OF WATER, COUNTY OF KAUAI

JOB NO. 91-4  DRILL AND TEST PUHI WELL NO. 4  
PUHI WATER SYSTEM  
PUHI, KAUAI, HAWAII

SCOPE OF WORK: Drilling of one 18-inch or larger diameter exploratory well at the proposed Puhi Well No. 4 Site. The project consists of drilling, casing and testing of an 18-inch well, approximately 300 to 500 feet deep.

PLAN AND SPECIFICATIONS: May be examined and obtained at the Department's office at 4398 Pua Loke Street, Lihue, Kauai. Refundable Deposit - $25.00 per set.

The contract documents may be reviewed at the following locations:
- Department of Water Office, Lihue, Kauai
- Building Industry Digest Plan Room, Honolulu, Hawaii
- General Contractors' Association Plan Room, Honolulu, Hawaii

PUBLIC BID OPENING: Held at the above office on _______________ at 2:00 p.m.

DEPARTMENT OF WATER  
COUNTY OF KAUAI

Publish in: Garden Island____________________________
INFORMATION TO BIDDERS

1. **SCOPE OF WORK:** This contract consists of the drilling, casing and testing of an 18-inch well approximately 300-500 feet deep at Puhi, Kauai, Hawaii.

2. **LOCATION OF THE PROJECT:** The general location of the exploratory well is shown on the contract plans. Upon request, prospective bidders will be shown the actual well site by a representative of the Engineer.

3. **POWER AND WATER SUPPLIES:** The contractor shall make all the necessary arrangements and installation work that may be required for his power and water supplies for the well drilled under this contract. Cost for said power and water supplies shall be included in appropriate unit prices bid and no direct payment will be made therefor.

4. **PROPOSAL FORM:** The attached form of Proposal is furnished only for the guidance of bidders and is not to be used for actual bidding. An official copy of the Proposal on which the bid shall be made will be furnished to the prospective bidder when plans and specifications are obtained.

5. **OMISSIONS OR ERASES:** Any proposal which contains any omission or erasure or alteration not properly initialed, or conditioned bid, or other irregularity may be rejected by the Board.

6. **NOTICE OF INTENTION TO BID, STANDARD QUESTIONNAIRE AND FINANCIAL STATEMENT:** Before any prospective bidder shall be entitled to submit any bid, the bidder must file with the Manager and Chief Engineer of the Department of Water a written notice of his intention to bid at least six (6) calendar days prior to the day designated for the opening of bids, as required by Section 103-25, Hawaii Revised Statutes.

The Manager and Chief Engineer may require the prospective bidder to file a "Standard Questionnaire and Financial Statement for Bidders" as required by Section 103-25, Hawaii Revised Statutes, at least seventy-two (72) hours exclusive of Sundays and holidays, prior to the time advertised for the opening of bids. If this proves satisfactory, the bidder’s proposal will be received.

The "Standard Questionnaire and Financial Statement for Bidders" shall be on the form provided by the Department of Water. The completed form shall be received in the office of the Manager and Chief Engineer at least 48 hours prior to the opening of bids.
7. **CONTRACTOR'S LICENSE REQUIRED:** The Department shall reject all bids received from contractors who have not been licensed by the State Contractor's License Board in accordance with Chapter 444, Hawaii Revised Statutes.

8. **HOURS:** 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 inspectional and administrative costs thereof. No work shall be done at night unless authorized by the Engineer.

9. **RETURN OF PLANS AND SPECIFICATIONS BY BIDDERS:** Should any bidder taking out plans and specifications fail to return them intact to the office of the Manager and Chief Engineer within thirty (30) calendar days after the opening of bids, the deposit on said plans and specifications shall be forfeited to the Board. The sample form of proposal in the specifications is not to be detached from the specifications. The plans and specifications shall not, under any circumstances be disassembled. Should the Department discover any evidence of disassembling upon the return of the plans and specifications, the deposit on said plans and specifications shall be forfeited to the Board.

10. **SPECIFICATIONS:**

   a. The Water System Standards, Volume 1 and 2, 1985, adopted by the Department of Water, County of Kauai; Board of Water Supply, City and County of Honolulu; Department of Water Supply, County of Maui; and Department of Water Supply, County of Hawaii; for use in the design and construction of the department's water system facilities, are hereby made a part of the Contract and shall apply in all cases except as called for otherwise in the plans or in the proposal. In case of any conflict between the Standard Specifications and the Special Provisions included herein, the Special Provisions shall take precedence. Wherever the words "Board" or "Board of Water Supply" are used in this contract, it shall mean the "Department of Water, County of Kauai," as provided for in the County Charter which became effective January 2, 1969.

   b. The American Water Works Association (AWWA) Standard for Water Wells (ANSI/AWWA A100-90) effective date February 1, 1991, is hereby made a part of the Contract and shall apply in all cases except as called for otherwise in the plans or in the proposal. In case of any conflict between the Standard for Water Wells and the Special Provisions included herein, the Special Provisions shall take precedence.
Wherever the words "Revised Laws of Hawaii 1955, as amended" are used in this contract, it shall mean the applicable Section or Chapter as contained within the Hawaii Revised Statutes. The contractor's attention is called to the following chapters within the Hawaii Revised Statutes which affect this contract and the performance thereof:

a. Chapter 103, relating to expenditure of public money;
b. Chapter 104, relating to wages and hours of employees on public works;
c. Chapter 376, relating to industrial safety;
d. Chapter 386, relating to workmen's compensation;
e. Chapter 321, relating to the Health Department;
f. Section 507-17, relating to recovery on bond for material and labor used on public works; and
g. Chapter 378, relating to fair employment practices.

11. PUBLIC CONVENIENCE AND SAFETY: The contractor shall conduct his construction operation with due regard to the convenience and safety of the public at all times. No material 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 traffic.

12. SEALED BIDS: All bids for the construction of this project shall be enclosed in sealed envelopes, supplied by the Department, and marked "JOB NO. 91-4, DRILL AND TEST PUHI WELL NO. 4, PUHI WATER SYSTEM, PUHI, KAUAI, HAWAII."

13. BID BOND: A bid bond shall accompany the bid.

14. RESPONSIBILITY OF BIDDERS TO STUDY SITE: At the time of opening of bids, each bidder shall be presumed to have inspected the project site and to have read and to be thoroughly familiar with the specifications and other contract documents, including all addenda. The failure or omission of any bidder to receive or examine any form, instrument or document shall in no way relieve him from any obligations regarding his bid.
Each bidder must form his own opinion of the character of the work by examining the project site and by such other investigation as he may desire to make. Failure of the bidder to inform himself of the construction and labor conditions under which the work is to be performed will not relieve him of his obligations to furnish all materials, equipment and labor necessary to perform the work as set forth in his bid and to perform the contract if awarded to him.

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

16. WORK TO BE DONE WITHOUT DIRECT PAYMENT: Whenever it is specified in the contract that the contractor is to do work or furnish materials of any kind for which no price is fixed in the contract, it shall be understood that he is to do such work or furnish such materials without extra charge of allowance or direct payment of any sort and that the cost of doing such work or furnishing such materials is to be included by him 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.

17. TIME OF COMPLETION: It is understood and agreed that the work called for under this project must and shall be completed within Two Hundred Ten (210) calendar days after written notice has been given to the successful bidder to commence work. No extension of time will be granted for shipping and manufacturer's delays. The Contractor shall be subject to liquidated damages as stated in the PROPOSAL.

18. MATERIALS FURNISHED FOR THE PROJECT: All materials necessary for the completion of the project shall be furnished by the bidder, unless specifically stated otherwise, and full compensation thereof shall be included in the various items in the bid. All materials shall be ordered after notice of award is issued by the Department of Water.

19. SUBCONTRACTOR: The contractor shall not sublet any of the work to be performed under the contract without the previous written approval of the Engineer and without having complied with the provisions of Chapter 103, Hawaii Revised Statutes, and no subcontractor will be recognized unless under a subcontract so approved.

The contractor shall give his personal attention to the fulfillment of the contract and shall keep the work under his control. 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 fifty percent (50%) of the value of all work embraced in the contract.
20. **WAGES AND LABOR REQUIREMENTS:** Pursuant to HRS Section 103-55, each bidder completing the bid and list of subcontractors certifies that:

**WAGES:** The services to be rendered shall be performed by employees paid not less than wages paid to public officers and employees for similar work.

**COMPLIANCE WITH LABOR LAWS:** All applicable laws of the Federal and State governments relating to workmen's compensation, unemployment compensation, payment of wages, and safety will be fully complied with.

In accordance with HRS Section 104-2 et seq., the Hawaii Director of Labor and Industrial Relations has determined the prevailing wages applicable to the project to be as set at the time of bid opening. The wage rates are the minimum rates to be paid during the life of the contract. This not a representation that labor can be obtained at these rates. It is the responsibility of bidders to inform themselves of local labor conditions and prospective changes or adjustments of wage rates. No increase in the contract price shall be allowed or authorized an account of the payment of wage rates in excess of those listed herein. Wage rate schedules are available at the office of the Department of Water.

21. **CONTRACT PAYMENT:** The Department will retain five percent of the amount due under the contract to the Contractor to insure the proper performance of the contract. After fifty percent of the contract is completed and progress of work is satisfactory, no additional sums for retainage shall be withheld. However, if progress of work is not satisfactory, the Department may continue to withhold as retainage, sums not exceeding five percent of the amount due the Contractor. The Department will hold the retainage amount until completion, in an acceptable manner of all the work as indicated in the Plans and Specifications. The monthly estimate as ascertained hereinabove, less the retainage and previous payments, will be certified and paid to the Contractor.

The Department may enter into an agreement with the Contractor which will allow the Contractor to withdraw from time to time the whole or any portion of the sum retained upon depositing with the Department any general obligation bond of the State or its political subdivisions with a market value not less than the sum to be withdrawn. The Department may require that the total market value of such bond be greater than the sum to be withdrawn.

22. **AWARD OF CONTRACT:** All bids will be compared on the basis as specified elsewhere herein. The award, if made, will be to the lowest responsible bidder. No bidder may withdraw his bid for a period of sixty (60) days after the date set for the opening of bids.
Bond for Faithful Performance: Within ten days after the award of the Contract or within such further time as may be allowed by the Board or the Manager, the successful bidder must execute a bond to the Board in an amount equal to one hundred (100) percent of the Contract amount or of the cost of the work as previously estimated by the Department, whichever is higher.

23. PERMITS AND REGULATION: The Contractor shall procure and pay all permits, licenses and approval necessary for the execution of the Contract. The Contract shall comply with all laws, ordinances, rules, orders and regulations relating to performance of the work, the protection of adjacent property, and the maintenance of passageways, fences, or other protective facilities.

24. CONTRACTOR PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE: The Contractor shall procure and shall maintain during the life of this contract a Comprehensive Public Liability Insurance, and Property Damage Insurance in an amount not less than $500,000 per occurrence and $1,000,000 annual net aggregate, and Comprehensive Auto Liability Insurance in the amount of not less than $50,000 for bodily injury, including accidental death, to any one person and an amount not less than $1,000,000 on account of any one occurrence; property damage in an amount not less than $500,000 per occurrence and $500,000 aggregate. The Contractor shall insure the activities of his/her subcontractor in his/her policy. The Contractor shall be liable for the actions of his/her insurance litigation to the Department. The Department will review this information and exercise its rights to increase the umbrella limits if necessary. The Department of Water shall also be named an additional insured.

The Contractor shall furnish to the Department of Water, Lihue Plantation Co., and Grove Farm Properties, Inc. one copy each of certificate of said insurance prior to commencement of work. The Department of Water, Lihue Plantation Co. and Grove Farm Properties, Inc. shall also be named as an additional insured.

25. SCOPE OF INSURANCE AND SPECIAL HAZARDS: The insurance required under subparagraph b. and c. above shall provide adequate protection for the Contractor and his/her subcontractors, respectively, against damage claims which may arise from operations under this contract, whether such operations be by the insured or by any one directly or indirectly employed by him/her and also against any of the special hazards which may be encountered in the performance of this contract.
26. **PROOF OF THE CARRIAGE OF INSURANCE:** The Contractor shall furnish the owner with certificates showing the type, amount, class of operations covered, effective dates and dates of expiration of policies. Such certificates shall also contain substantially the following statement: "The insurance covered by this certificate will not be canceled or materially altered, except after ten (10) days written notice has been received by the owner."

27. **WORKMEN'S COMPENSATION ACT:** The Contractor will be required to comply with the provisions of Chapter 97, Revised Laws of Hawaii 1955, known as the "Workmen's Compensation Laws," and all laws amendatory thereof, relating to the compensation of employees for personal injuries sustained in the course of their employment. The Contractor's surety or sureties shall be liable for any loss caused the Department of Water be reason of the Contractor's failure to comply with the provisions of said laws.

The Contractor shall furnish to the Department of Water one copy of certificate of said insurance prior to commencement of work.
PROPOSAL
FOR
DEPARTMENT OF WATER, COUNTY OF KAUA\I
JOB NO. 91-4
DRILL AND TEST PUHI WELL NO. 4
PUHI WATER SYSTEM
PUHI, KAUAI, HAWAII

_______________________ , 19__

Manager and Chief Engineer
Department of Water
County of Kauai
4398 Pua Loke Street
Lihue, Hawaii 96766

Dear Sir:

Pursuant to and in compliance with your Invitation for Bids and other documents relating thereto, the undersigned bidder, having familiarized himself with the terms of the contract, the local conditions affecting the performance of the contract and the cost of the work at the place where the work is done, and with the plans and specifications and other contract documents, hereby proposes and agrees to perform, within the time stipulated in the contract, including all its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment and all utility and transportation services necessary to perform the contract and complete in a workmanlike manner in place complete all of the work covered by the contract in connection with these specifications and accompanying construction plans titled:

JOB NO. 91-4
DRILL AND TEST PUHI WELL NO. 4
PUHI, KAUAI, HAWAII

on file in the office of the Department of Water, County of Kauai, for the total sum of:

BID ______________________________ DOLLARS ($________) Said total sums being itemized on the following pages:
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Estimated Quantity</th>
<th>Description</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2</td>
<td>Mobilization (Not to Exceed $8,000 each).</td>
<td>$</td>
</tr>
<tr>
<td>2.</td>
<td>2</td>
<td>Demobilization (not to exceed $4000 each).</td>
<td>$</td>
</tr>
<tr>
<td>3.</td>
<td>300</td>
<td>Lin. Ft., Drilling 18-inch diameter open hole from the ground surface to the bottom of the well (1st level).</td>
<td>$</td>
</tr>
<tr>
<td>4.</td>
<td>200</td>
<td>Lin. Ft., Drilling additional 18-inch diameter open hole to bottom of well (2nd level).</td>
<td>$</td>
</tr>
<tr>
<td>5.</td>
<td>100</td>
<td>Lin. Ft., Furnishing and installing 12-inch minimum I.D., 0.365&quot; thick, solid well casing conformance to ASTM A-53, Grade B, Type E or S.</td>
<td>$</td>
</tr>
<tr>
<td>6.</td>
<td>400</td>
<td>Lin. Ft., Furnishing and Installing 12-inch minimum I.D., 0.365&quot; thick perforated well casing conformance to ASTM A-53, Grade B.</td>
<td>$</td>
</tr>
<tr>
<td>7.</td>
<td>2</td>
<td>Each, Furnishing, installing and subsequent removal of pumping test equipment, one at 1st level, one at 2nd level.</td>
<td>$</td>
</tr>
<tr>
<td>8.</td>
<td>300</td>
<td>Hrs., Pumping Test, 150 hrs per test.</td>
<td>$</td>
</tr>
<tr>
<td>9.</td>
<td>100</td>
<td>Lin. Ft., Cement grouting the annular space including Grout Seal.</td>
<td>$</td>
</tr>
<tr>
<td>10.</td>
<td>400</td>
<td>Lin. Ft., Rock-packing the annular space.</td>
<td>$</td>
</tr>
<tr>
<td>11.</td>
<td>L.S.</td>
<td>Disinfection of well.</td>
<td>$</td>
</tr>
</tbody>
</table>

**TOTAL LUMP SUM BID**

$
It is understood and agreed that the Department of Water reserves the right to reject any and/or all bids and waive any defects when, in the Department's opinion, such rejection or waiver shall be for the best interest of the Department.

It is also understood and agreed that bids will be compared on the basis of the Total Sum Bid which shall be considered to be the total sum of actual or corrected amounts bid on each item.

It is also understood and agreed that the work called for under this project must and shall be completed within Two Hundred Ten (210) consecutive calendar days after written notice has been given to the successful bidder to commence work.

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 increase or decrease, in accordance with the provisions of the specifications.

It is also understood and agreed that the estimated quantities shown for items for which a UNIT PRICE is asked in the 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 estimate quantities as a means of comparing the bids. It is understood and agreed that he will make no claims for anticipated profit or loss of profit because of a difference between quantities of the various classes of work done or the materials and equipment actually 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.

It is also understood and agreed that if the product of the UNIT PRICE bid and the number of units does not equal the total amount stated by the undersigned in the bid for any item, it will be assumed that the error was made in computing the total amount. For the purpose of determining the lowest bidder, the stated UNIT PRICE alone will be considered as representing the bidders' intention and the total amount bid on such item shall be considered to be the amount arrived at by multiplying the UNIT PRICE by the number of units.
It is also understood and agreed that the liquidated damages in the amount of ONE HUNDRED AND FORTY DOLLARS ($140.00) for each and every calendar day in excess thereof prior to completion of the work. Contractor shall be withheld from payments due to the Contractor.

It is also understood and agreed that if this bid is accepted, the successful bidder will contract with the Department and said bidder shall furnish the required bonds to the Board within 10 days from the date of receiving from the Department the contract prepared and ready for execution.

It is further understood and agreed that the successful bidder will provide all necessary materials, labor, 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 also understood and agreed that if this bid shall be accepted and the undersigned shall fail to or neglect to contract as aforesaid, the Department may determine that the bidder has abandoned the contract and thereupon forfeiture of the security accompanying his bid shall operate and the same shall become the property of the Department.

It is further understood and agreed that the award of the contract, if it be awarded, will be to the lowest responsible bidder whose proposal complies with all the requirements prescribed. Such award, if made, will be made within 60 calendar days after the opening of the proposals. The period of time, specified above within the award of a contract may be made, shall be subject to extension for such further period as may be agreed upon in writing between the Department and the bidder concerned.
The bidder also acknowledges receipt of any and all addenda issued by the Department of Water, by recording the date of receipt of the respective addenda in the space provided below:

<table>
<thead>
<tr>
<th>Date Received</th>
<th>Addendum No.</th>
<th>Date Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addendum No. 1</td>
<td>1</td>
<td>Addendum No. 6</td>
</tr>
<tr>
<td>Addendum No. 2</td>
<td>2</td>
<td>Addendum No. 7</td>
</tr>
<tr>
<td>Addendum No. 3</td>
<td>3</td>
<td>Addendum No. 8</td>
</tr>
<tr>
<td>Addendum No. 4</td>
<td>4</td>
<td>Addendum No. 9</td>
</tr>
<tr>
<td>Addendum No. 5</td>
<td>5</td>
<td>Addendum No. 10</td>
</tr>
</tbody>
</table>

Enclosed herewith is a bidder’s bond)
Cashier’s or Certified Check) for the sum
Cash)
(CROSS OUT ALL BUT ONE)

of _____________________ DOLLAR ($_______),
payable to the Department of Water for or in a sum equal to five percent of the total amount of the bid submitted; provided, when the amount bid exceeds Fifty Thousand Dollars ($50,000.00) the said bid bond, surety bond, legal tender, certificate of deposit or certified check shall be Two Thousand Five Hundred Dollars ($2,500.00) plus two percent of the amount in excess of Fifty Thousand Dollars ($50,000.00).

ALL JOINT CONTRACTORS OR SUBCONTRACTORS TO BE ENGAGED ON THIS PROJECT

The bidder certifies that the following is a complete listing of all joint contractors or subcontractors who will be engaged by the bidder on this project to perform the nature and scope of work indicated pursuant to Section 103-29, Hawaii Revised Statutes, and understands that failure to comply with this requirement shall be just cause for rejection of the bid.

The bidder further understands that only those joint contractors or subcontractors listed shall be allowed to perform work on this project and that all other work necessary shall be performed by the bidder with his own employees. If no joint contractor or subcontractor for any subdivision work is listed, it shall be construed that the work shall be performed by the bidder with his own employees.

Complete Firm Name of Joint Contractor or Subcontractor | Nature and Scope of Work to be Performed
--------------------------------------------------------|--------------------------------------------------------
--------------------------------------------------------|--------------------------------------------------------
--------------------------------------------------------|--------------------------------------------------------
--------------------------------------------------------|--------------------------------------------------------

PROPOSAL
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 Department of Water capacity, been involved in the subject matter of this contract.

Evidence of the undersigned bidder having the authority to submit this bid and to enter a contract is herewith furnished.

Respectfully submitted,

__________________________________________
Bidder

By: ________________________________

__________________________________________
Address

__________________________________________
Contractor's License No.
SEC. 1. DEFINITIONS. Whenever used herein, the term:

"DEPARTMENT" means the Department of Water, County of Kauai.

"BOARD" means the Board of Water Supply of the Department.

"MANAGER OR ENGINEER" means the Manager and Chief Engineer of the Department or his duly authorized representatives.

"LOWEST RESPONSIBLE BIDDER" means a qualified bidder whose bid conforms to the invitation for bids and the acceptance of which is most advantageous to the Department, price and other factors considered.

"CONTRACTOR" means a party or parties, individuals, corporation or partnership who enter into a contract with the Department in connection with these General Conditions.

"OFFICIAL COMMENCEMENT DATE" means the commencement date for work or delivery designated in written "Notice to Proceed" issued by the Manager, after execution of the contract by the Board.

SEC. 2. PROPOSAL. Proposal shall be on blank form furnished as part of the bid documents. Unless otherwise noted in the special provisions, the bidder may bid on any of the items or parts noted in the proposal. Any proposal which contains any omissions (except as noted above), erasures, alterations, additions not called for, conditional bids or irregularities of any kind, may be rejected. Proposal shall be sealed and enclosed in envelope. Said envelope must show briefly the subject matter covered by such proposal.

SEC. 3. PREPARATION OF BIDS. Bids must be signed in ink by the person or persons duly authorized to sign bids in the space provided for signature on the bid forms and said signature must be notarized if bidder is an individual. In the case of a domestic corporation, the title or titles of the person or persons signing must be stated and the corporate seal affixed thereto. In the case of a foreign corporation, if the corporate seal is not readily available, a copy of a resolution of the Board of Directors of such corporation, or other written evidence of authority signed by an officer of the corporation, authorizing the person or persons signing to execute bids, contract and other necessary documents in connection therewith shall be attached. Where the bidder is an association or group, the title or titles of the person or persons signing must be
stated and an affidavit of the association or group must be attached which acknowledges the authority of the signer or signers to sign bids and all other necessary documents in connection therewith for the association or group.

No bid will be considered from any person submitting more than one bid, under the same or different name. Without limiting the generality of the foregoing provisions, a person shall be considered to have submitted more than one bid, which shall include, but not limited to the following:

a. An individual submitting more than one bid whether in his own name or through an agent;

b. An individual or legal entity submitting a bid who also owns directly or indirectly, more than 25% interest in a joint venture, partnership or corporation, which has also submitted a bid;

c. A joint venture, partnership or corporation submitting a bid where a person owning, directly or indirectly, more than 25% interest in such joint venture, partnership or corporation has also submitted a bid; and

d. A joint venture, partnership or corporation submitting a bid where a person owning, directly or indirectly, more than 25% interest in such joint venture, partnership or corporation also owns more than 25% interest in another joint venture, partnership or corporation which has submitted a bid.

If there is any evidence indicating that two or more bidders are in collusion to restrict competitive bidding, the bids of such bidders shall be rejected and such evidence may be a cause for the disqualification of the participants in any future proposal for any contract with the Department.

Bidders in figuring the bid price, shall take into consideration the cost of all freight and delivery charges, marine insurance and taxes; and shall include the cost of furnishing and installing all equipment as called for in the specifications including warranty repairs of the complete unit. Whenever installation is specified, shall include all necessary labor, materials and other incidentals required to make a complete operative unit.

Bids shall be typewritten or printed in ink. Errors may be erased or crossed out, and corrections typewritten or printed in ink must be initialed in ink by the persons or persons signing the bids.
In case of error in extending the unit price, the unit price shall govern.

Unsigned bids shall be rejected.

SEC. 4. SUBMISSION OF BIDS. Before submitting bids, bidders must read and examine the Special Provisions, Minimum Specifications, Proposal and Specifications, General Conditions and all other bid documents attached hereto and by reference made a part hereof. Submission of bids shall be deemed verification of such reading and examination.

If the bid envelope is mailed, bidders shall address his bid envelope to the Department of Water, County of Kauai, 4398 Pua Loke Street, Lihue, Kauai, Hawaii, by CERTIFIED MAIL. RETURN RECEIPT REQUESTED. Bid envelope must be in the Office of the Department of Water prior to the bid opening time and date specified in the Notice to Bidders. Envelopes received after the bid opening time and date specified in the Notice to Bidders will be rejected. RISK OF LATE DELIVERY OF MAIL SHALL LIE WITH THE BIDDER.

SEC. 5. DEPOSIT ACCOMPANYING BIDS. Each bid shall be accompanied by a deposit of legal tender, negotiable certificate of deposit, cashier's check, certified check drawn on a bank doing business in the State and is insured by the Federal Deposit Insurance Corporation; or by a surety bond executed by any corporation organized for the purpose of becoming surety on bonds, authorized under the laws of the United States or of the State to act as surety, and doing business in the State under the laws of the United States or of the State, if a foreign corporation, and under the laws of the State; if a Hawaiian corporation. Bid deposits shall be in a sum not less than five percent (5%) of the amount bid, payable at sight to the Department of Water, County of Kauai, provided, that when the amount bid exceeds fifty thousand dollars ($50,000.00), the legal tender, certificate of deposit, cashier's check or certified check shall be in a sum not less than two thousand five hundred dollars ($2,500.00) plus two percent (2%) of the amount in excess of fifty thousand dollars ($50,000.00). A certificate of deposit, cashier's check or certified check may be utilized only to a maximum of one hundred thousand dollars ($100,000.00).

Deposits for bids which require a deposit in excess of one hundred thousand dollars ($100,000.00) shall only be in the form of a legal tender or a surety bond conforming to the requirements of Section 103-31, Hawaii Revised Statutes.

In case of alternate bids, the amount of such security shall be based upon the highest alternate bid submitted. If the bidder to whom a contract is awarded shall fail or neglect to enter into the
contract and furnish satisfactory security within ten (10) days after the award or within such further time as the Department may allow, said security shall be forfeited as liquidated damages and not as a penalty and the Manager shall deposit such security or the proceeds thereof in the Treasury of the County as its realization. The Department may thereupon award the contract to the next lowest responsible bidder, or may call for other bids, as they may deem best. The bid security shall be returned to the successful and unsuccessful bidders as provided by Section 103-30, Hawaii Revised Statutes.

SEC. 6. QUALIFICATIONS OF BIDDERS. Any bidder, before acceptance of his bid or at any time thereafter, may be required to prove to the Manager his responsibility by showing, among other things, his experience in handling the class of service, article, material or machinery to be furnished and delivered, and that he possesses or is in a position financially and otherwise to secure and pay for said service, article, machinery or material. The Manager shall be the sole judge of the responsibility of the bidder. All information submitted shall be treated as confidential in accordance with Section, 103-25, Hawaii Revised Statutes. Information so submitted shall be returned to the bidders after having served its purposes.

SEC. 7. BROCHURES, SPECIFICATIONS AND QUESTIONNAIRES. Whenever a questionnaire is attached to the bid form, bidders shall complete and submit such questionnaire with their bids, together with all specifications and brochures.

The Manager reserves the right to require bidders to provide, at their own expense, within ten (10) calendar days from the date of the Department's request, all specifications and brochures on the item or items offered. Failure to comply with the Department's request within the time specified may be sufficient cause for rejection of bid.

Whenever the preparation and submission of a questionnaire is required, all specifications and brochures submitted by the bidder shall be properly annotated identifying all applicable data on the item(s) being offered and shall fully substantiate the information requested in the questionnaire. In the event the information requested in the questionnaire cannot be substantiated by the manufacturer's specifications and brochures, the manufacturer shall certify in writing that the time(s) will be manufactured in accordance with the bid questionnaire and manufacturer's specifications.
Failure to comply with the requirements of the provisions herein may be sufficient cause for rejection of a bid.

SEC. 8. UNBALANCED BIDS. The Manager may reject any bid or item bid which he considered unbalanced.

SEC. 9. INTERPRETATION OF BID PROPOSAL, SPECIAL PROVISIONS, REQUIREMENTS, PLANS, DETAILED SPECIFICATIONS AND GENERAL CONDITIONS. In case of any doubt as to the meaning of any proposal, special provisions, requirements, detailed specifications, plans and general conditions, the interpretation by the Manager shall control. All directions and explanations required or necessary to complete the contract shall be formulated by the Manager or his authorized representative.

Anything within the reasonable intentment of the specifications that may have been omitted in the material, or goods to be furnished and delivered shall be furnished and delivered by the Contractor, the same as if it had been specifically stated or provided for, and without extra charge.

SEC. 10. BRAND OR TRADE NAME. Whenever one or more manufacturer's brand or trade name is specified, a bidder shall base his bid on one of the specified brands. However, other manufacturers' brands may also qualify if found to be equal to or better than those specified. A bid based on an unspecified brand will be subject to evaluation as to its comparable quality.

The burden of proof as to the comparable quality of alternate products shall be upon the bidder and he shall, at his own expense, furnish within 10 calendar days from the date of the Department's request, all necessary information and/or exact samples of the item(s) being considered for award. The Manager reserves the right to determine whether alternate brands are equivalent to and meet the indicated standards of quality, and his decision shall be final.

SEC. 11. STANDARD EQUIPMENT. Whenever the word "standard" is used in these specifications to describe any item, price of equipment, or parts assembly, it shall construed to mean that the item or assembly so described shall be the newest, regular, and current product of the manufacturer thereof. Such product shall be identified by a model or other designation without modification or omission of any of its usual parts, or the substitution of others, except as hereinafter specified, and the details, capacities and ratings must conform in every respect to the said manufacturer's catalog or other printed matter describing the items or assemblies. Standard subassemblies,
accessories, fittings and finishes shall be construed to be those which are regularly furnished as part of the principal unit or assembly and shall be included in the selling price thereof.

SEC. 12. WAIVER OF MINOR DEVIATIONS. The Manager reserves the right to waive and/or accept any minor deviations from the specifications, if in his opinion such waiver will be in the best interest of the Department and that such waiver shall not in any way affect the standard of performance, operation, capacities or capabilities of the item offered.

SEC. 13. OUT-OF-STATE BIDDERS. Where the bidder or vender is an out-of-state vendor not doing business in the State of Hawaii, the package bid or purchase price, for the purpose of determining the lowest price bid, shall be increased by the applicable retail rate of general excise tax, which is four percent (4%) plus the applicable rate of the use tax, which is one-half percent (1/2%), total 4-1/2%. The lowest responsible bidder, taking into consideration the above increases, shall be awarded the contract, but the contract amount of any contract awarded shall be the amount of the bid offered and shall not include the amount of said increases.

SEC. 14. PREFERENCE FOR AMERICAN PRODUCTS. Pursuant to Section 103-24, Hawaii Revised Statutes, as amended, preference shall be given to American products, materials and supplies.

SEC. 15. LOCAL PREFERENCE. Sections 103-41 through 103-48, Hawaii Revised Statutes, as amended, provide that preference be given to bidders who claim such preference for locally produced or manufactured products which have been qualified and registered with the State Comptroller. Section 103-43, Hawaii Revised Statutes, as amended, establishes procedures for mandatory purchase of Hawaii products which are on the State Comptroller's Hawaii Product List, therefore, bidders claiming such preference shall designate in their bids which items are Hawaii products and classified thereunder. If the products are not qualified or registered with the State comptroller, or in the absence of any Hawaii Product List compiled by the State Comptroller, local product preference shall not be granted by the Department.

SEC. 16. SPECIAL PROVISIONS, REQUIREMENTS OR DETAILED SPECIFICATIONS. Whenever separate proposals, special provisions, requirements, detailed specifications or plans are referred to or attached hereto, they shall be considered a part of the contract as if contained therein. Should any of the proposals, special
provisions, requirements, detailed specifications or plans conflict with these general conditions, said proposals, special provisions, requirements, detailed specifications or plans shall govern.

**SEC. 17.** AWARD OF CONTRACT. RIGHT TO REJECT BIDS. Unless otherwise stipulated, the Manager will issue a written award of the contract, if an award is made, to the lowest responsible bidder on each individual item called for. The Department reserves the right to reject any or all bids, or any part thereof, or waive any defects when, in their opinion, such rejection or waiver will be for the best interest of the Department. Where time of delivery or completion of work is specified as one of the factors to be considered in awarding the contract, the Department may award the contract to the bidder proposing the earliest completion or delivery date if it appears to be to the advantage of the Department, even though such bidder is not the lowest bidder.

The Department, further, reserves the right to delete, decrease or increase quantity and make an award in accordance with availability of funds at the same bid price and under the same terms and conditions as specified in the proposal.

In the event the quantity is changed and award made in accordance with availability of funds, any loss of anticipated profits from such change shall not constitute grounds for equitable adjustment under the contract.

**SEC. 18.** CANCELLATION OF AWARD. The Department reserves the right to cancel an award at any time before the signing of the contract by the Department.

**SEC. 19.** CONTRACTS. The successful bidder must within ten (10) days after notification of the award, or within such further time as the Department may allow, enter into a contract, which contract shall be in form attached to these general conditions.

**SEC. 20.** CONTRACT NOT BINDING UNLESS APPROPRIATION AVAILABLE. No contract shall be binding or of any force unless the Department certifies that there is an available unexpended appropriation or balance of an appropriation over the above all outstanding contracts, sufficient to cover the amount required by the contract; provided that this section shall not apply to any price-term, open-end, or requirements contract under which the total amount to be paid to the contractor cannot be accurately estimated at the time the contract is to be awarded.
In contracts involving local and supplemental funds from the Federal government, this section shall be applicable only to the portion of the contract price that is payable out of local funds. The portion of the contract price that is expressed in the contract to be payable out of Federal funds shall be construed to be an agreement to pay such portion to the contractor only out of funds received from the Federal government. It shall not be construed as a general agreement to pay such portion out of any funds other than those which are received from the Federal government.

SEC. 21. SECURITY FOR FAITHFUL PERFORMANCE. Except for awards on insurance coverages for the Department, the successful bidder must, within ten (10) days after notification of the award or within such further time as the Manager may authorize, deposit legal tender, certificate of deposit which shall be a negotiable instrument as set forth in Section 490: 3-104, Hawaii Revised Statutes, as amended, certified check or cashier’s check drawn on a bank doing business in the State of Hawaii, or execute a surety bond on the form attached to these General Conditions, naming the Contractor as principal and the Department of Water as obligee with a surety company authorized to do surety business under the laws of the State. Such surety shall be in an amount equal to One Hundred Percent (100%) of the contract price or of the estimated contract price, whichever is higher. The security shall guarantee the full and faithful performance of the contract in accordance with the terms and intent thereof and also for the prompt payment to all others for all labor, material, and goods furnished by others to the Contractor and used in the prosecution of the work required by the contract. The bond shall also, by its terms, inure to the benefit of any and all persons entitled to file claims for labor performed or materials furnished in the work so as to give them a right of action as contemplated by Section 507-17, Hawaii Revised Statutes. The said security shall continue in force for a period of 1 month after final acceptance of the work. Interest shall not be payable to the Contractor on such security.

Notwithstanding such security, should the Contractor fail to satisfactorily perform the contract, the Manager may suspend the Contractor from bidding on any or all of the Department’s purchase for a period of six (6) months or longer.

SEC. 22. DELIVERY. The number of calendar days for delivery of goods or completion of contract will be calculated from the official commencement date.

After the contract is signed by the Manager, he will issue to the Contractor a written "Notice to Proceed" establishing the official commencement date.

-8- GENERAL CONDITIONS
Should the Contractor begin work or make delivery in advance of the official commencement date, such work or delivery shall be considered as having been done at his own risk and expenses as a volunteer and no payment will be owed to him for such advance work or delivery.

The service, material or goods shall be performed, completed or delivered on or before the due date specified by the Department in its "Notice to Proceed." Should job completion or delivery of goods or services be delayed on account of any act of omission on the part of the Department, or extraordinary weather, or by fire or other extraordinary reason for which the Contractor is not responsible, or by any other circumstances for which the Contractor has no control, the due date for such performance may be extended by the Department. The Department shall be the final judge for extending the due date of any contract, provided that written application for an extension of time is filed by the Contractor with the Manager before the expiration of the due date or before the expiration of any extended time limit. The request for extension shall be in writing and include documents such as Contractor's Purchase Order, Manufacturer's Acknowledgement, Shipping Manifest and any other documents substantiating the causes for such delay. Such extension, if granted, shall not be deemed a waiver of the right to terminate the contract for other or additional delays not covered by the specific terms of such extension(s).

The Contractor shall deliver the materials or goods and furnish services at such particular location designated and in the manner directed by the Manager.

Whenever equipment is specified, the Contractor shall deliver the equipment completely assembled.

SEC. 23. QUALITY OF MATERIAL. The material or goods covered by these general conditions shall be new and the best quality of its kind. Only standard products of recognized manufacturers will be considered.

SEC. 24. RIGHTS AND REMEDIES OF THE DEPARTMENT BECAUSE OF DEFAULT. In the event services performed, or materials or goods furnished by the Contractor in the performance of the contract or purchase order should fail to conform to the Specifications therein, the Manager may reject the same. It shall thereupon become the duty of the Contractor to reclaim and remove the materials and goods forthwith, without expense to the Department, and immediately replace all such rejected services, materials or goods which do not conform to specifications. However, should the Contractor fail, neglect, or
refuse to do as directed within the time provided by the Manager, the Department thereupon shall have the right to apply the provisions for liquidated damages as set forth in Section 26 of the General Conditions for each and every calendar day the Contractor delays in replacing rejected services, materials or goods. The Department may also utilize all other remedies provided by law.

SEC. 25. **LIQUIDATED DAMAGES.** It is mutually understood and agreed by and between the parties to the contract that time shall be the essence of the contract and that in case of failure on the part of the Contractor to complete his contract within the time specified, the Department will be damaged thereby, and the amount of said damages, being difficult if not impossible of definite ascertainment and proof, it is hereby agreed that the amount of such damages shall be estimated, agreed upon, liquidated and fixed at the sum of one hundred forty dollars, ($140.00) for each and every calendar day, including Sundays and holidays, of delay in the completion of his contract; and the Contractor hereby agrees to pay the Department as liquidated damages, and not by way of penalty, such total sum as shall be due on such delay, computed as aforesaid.

SEC. 26. **ASSIGNING AND SUBLETTING.** The Contractor shall not assign or sublet any of the work to be performed without written permission from the Manager. The assignment or subcontracting shall not, under any circumstances, relieve the Contractor of his obligation and liability under his contract with the Department and all persons engaged in performing the work covered by the contract shall be considered as agents of the Contractor, and shall be subject to the provisions thereof.

SEC. 27. **PAYMENTS.** Unless otherwise specified in the special provisions or proposal, payments will be authorized by the Manager as soon as the article, material, machinery or work is accepted by the Manager, and will be made as soon thereafter as the regular course of business will allow; provided, however, that final payment will not be made in any event without the written consent of the surety or sureties on the Contractor's bond nor until the receipt of a certificate from the Director of Taxation of the State of Hawaii to the effect that all taxes levied or accrued under State statutes against the Contractor with respect to this contract have been paid.

SEC. 28. **ASSIGNMENT OF MONEY DUE ON CONTRACTS OR PURCHASE ORDERS.** No assignment of money due or to become due to a Contractor on any Department contract shall be made without the prior written consent of the Manager. Such consent shall be given and such an assignment shall be accepted only if the assignment meets the following requirements.
a. The assignment must be of money due or to become due on a formal contract. A formal contract is a contract in writing which has been approved as to form and legality by the County Attorney, and certified as to availability of funds by the Board. A formal contract would not include a purchase order or letter contract.

b. The assignment must be of the entire amount due on the contract and the amount due or to become due must be not less than $1,000.00.

SEC. 29. **GENERAL CONDITIONS INTENDED TO COVER.** These general conditions are intended to cover the furnishing and paying for of the service, material, or goods called for including the delivery to the place designated.

SEC. 30. **LIABILITY OF CONTRACTOR.** The liability of the Contractor shall not cease when acceptance is made of the service, goods or material covered by the contract, but shall be continued as provided by the terms of the contract and by law. Materials or goods which are found to be damaged or defective, before or within 15 days after acceptance or delivery, shall be immediately removed by the Contractor and replaced with a like material or goods in perfect condition. In addition, the Contractor shall hold the Department and all of its officers, agents, and employees harmless against any and all claims arising out of or occasioned by, any acts or omissions of the Contractor, his officer, agents or employees, pursuant to the contract, and from any and all claims arising out of, or occasioned by, any damaged or defective material or goods.

SEC. 31. **PATENTED ARTICLE, PATENTED INFRINGEMENTS.** The Contractor shall hold the Department and all its officers, agents, servants and employees harmless against all claims arising from the use of any patented articles, patented process or patented appliance used in connection with the contract. Any royalties due or becoming due for the use of any patented article or process shall be paid by the Contractor and considered to be originally included within the Proposal and contract price. The Contractor shall defend any suit or proceeding and hold the Department free and harmless against any claim that the article, material, machinery or goods or part thereof or process furnished under the contract constitutes any infringement of any patent. In case any material of any part thereof is held to constitute an infringement under the payment of any damages ordered, at its own expenses either procure for the
Department the right to continue using the material or part thereof or replace the same with non-infringement material of equal or superior quality.

SEC. 32. ADDITIONAL SERVICES, MATERIALS, GOODS. During the one-year period beginning from the date of the contract, the Department, subject to approval of the Contractor, reserves the right to purchase additional items as specified in the Minimum Specifications on Proposal and Specifications at the same unit price and under the same terms and conditions as specified herein.

SEC. 33. CONTRACTORS PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE: The Contractor shall procure and shall maintain during the life of this contract a Comprehensive Public Liability Insurance, and Property Damage Insurance in an amount not less than $500,000 per occurrence and $1,000,000 annual net aggregate, and Comprehensive Auto Liability Insurance in the amount of not less than $500,000 for bodily injury, including accidental death, to any one person and an amount not less than $1,000,000 on account of any one occurrence; property damage in an amount not less than $500,000 per occurrence and $500,000 aggregate. The Contractor shall insure the activities of his/her subcontractor in his/her policy. The Contractor shall be liable for the actions of his/her subcontractors. The Contractor shall reveal his/her insurance litigation to the Department. The Department will review this information and exercise its rights to increase the umbrella limits if necessary. The Department of Water shall also be named an additional insured.

SEC. 34. SCOPE OF INSURANCE AND SPECIAL HAZARDS: The insurance required under Section 33 above shall provide adequate protection for the contractor and his/her subcontractors, respectively, against damage claims which may arise from operations under this contract, whether such operations be by the insured or by any one directly or indirectly employed by him/her and also against any of the special hazards which may be encountered in the performance of this contract.

SEC. 35. PROOF OF THE CARRIAGE OF INSURANCE: The Contractor shall furnish the owner with certificates showing the type, amount, class of operations covered, effective dates and dates of expiration of policies. Such certificates shall also contain substantially the following statement: "The insurance covered by this certificate will not be canceled or materially altered, except after ten (10) days written notice has been received by the owner."

SEC. 36. WORKMEN'S COMPENSATION ACT. The Contractor will be required to comply with the provisions of Chapter 97, Revised Laws of Hawaii 1955, known as the "Workmen's Compensation Laws", and all laws
amendatory thereof, relating to the compensation of employees for personal injuries sustained in the course of their employment. The Contractor's surety or sureties shall be liable for any loss caused the Department of Water by reason of the Contractor's failure to comply with the provisions of said law.

The Contractor shall furnish to the Department of Water one copy of certificate of said insurance prior to commencement of work.

SEC. 37. **WARRANTY OF TITLE.** The Contractor shall warrant that it has absolute title and full and clear right to sell the article, machinery, material or goods to the Department and that there are no liens, claims or encumbrances of any kind on the article, machinery, materials or goods. The Contractor shall hold the Department free and harmless or and adverse title claim.

SEC. 38. **SERVICE WARRANTY.** The Contractor shall service the article, material, machinery or goods as indicated in the proposal without charge.

SEC. 39. **COMPLIANCE WITH LAWS.** The Contractor will observe, perform and comply with all laws, statutes, ordinances, rules, and regulations of the United States Government, the State of Hawaii, the County or any department or agency of the above.

The Contractor shall indemnify, save and hold harmless the Department against all actions, suits, damages, and claims by whomsoever brought or made by reason of nonobservance, nonperformance or noncompliance with the said laws, statutes, ordinances, rules and regulations.

SEC. 40. **SUBCONTRACTORS.** Under the terms of this contract, no subcontractor will be recognized. His dealings shall be with the General Contractor, however, each and every subcontractor shall manage and take care of his materials as part of the work to be performed. He shall clean up the premises.

SEC. 41. **FEDERAL EXCISE TAX.** It is understood that on such items which the Department of Water is exempt from Federal Excise Tax under Revenue Act of 1943, the price bid shall not include such tax.

SEC. 42. **DISQUALIFICATION OF BIDDERS.** If there is reasonable grounds to believe that collusion exists among the bidders, any or all bids may be rejected and none of the participants in such collusion will be considered in future proposals.
ADDENDA. Should a bidder find any discrepancies in or omissions from the specifications and documents, or be in doubt as to their meaning, he should at once notify the Manager.

Any questions will be recorded and written instructions in the form of Addenda will be issued by the Manager to all bidders.

Any addendum issued during the time of bidding shall be covered in the bid and shall be made a part of the contract.

Neither the Manager nor the Department will be responsible for any oral instructions.

No addenda can be issued during the last three (3) calendar days before the bid opening.

WITHDRAWAL OF BID. No Bidder may withdraw his proposal after the time of the opening thereof without forfeiture of his certified check herein below mentioned. The Manager shall have the right to hold all bids received for a period of 60 calendar days from the date of opening, during which time no bids may be withdrawn, unless otherwise required by law.

FORBIDDEN INTEREST IN GOVERNMENT CONTRACTS. No officer or head of any department having the power to make or award a contract shall make, award, or participate in the awarding of a contract to himself or to any partnership or corporation in which he is a member or stockholder when the contract involves the expenditure of government funds in excess of $50.00.

Nor shall any officer or head of any department, before or after award of contract, gain an interest as subcontractor or otherwise for which he shall receive a consideration of over $50.00 if any contract which he has made or awarded or participated in the making or awarding of. This section shall not apply (1) if the contract is made with a corporation in which the officer has the ownership of not more than five percent (5%) of the capital stock if it is a corporation; (2) if any contract is awarded to the lowest responsible bidder after advertisement for sealed tenders according to law in cases where the sum to be expended is $1,000.00 or more; or (3) if any contract is awarded to the lowest responsible bidder when requests of the same character have been made to the principal dealers, contractors, persons, partnerships, or corporations doing such work or selling such commodities for sealed tenders for the same in cases where the sums to be expended is more than $50.00 and less than $100.00.
Any person who violates this section shall be fined not more than $1,000.00 or imprisoned not more than one (1) year, or both and shall render the contract or agreement void.

SEC. 46. PREFERENCE FOR NONPROFIT CORPORATIONS OR PUBLIC AGENCIES OPERATING SHELTERED WORKSHOPS. Five percent (5%) preference shall be given to nonprofit corporation or public agencies which are operating sheltered workshops as certified by the State Department of Labor and Industrial Relations. The bidder, however, must claim such preference by submitting with his bid, a written statement of the preference claimed, together with a copy of the certification by the State Department of Labor and Industrial Relations, of qualifications as a sheltered workshop for physically or mentally handicapped persons. (Act 175 SLH 1976)

SEC. 47. VEHICLE INDUSTRY LICENSING ACT. Section 437 of the Hawaii Revised Statutes, as amended, provides for regulating and licensing of motor vehicles manufacturers and distributors and their branches and representatives, motor vehicle dealers, salesman, auctions, and auctionners and any other persons engaged in the business of selling or purchasing motor vehicle in the State; therefore, all prospective bidders who are interested in selling motor vehicle to the Department shall provide proof that they do meet and satisfy the license requirement set forth in said statutes.

SEC. 48. STATUTORY OR ORDINANCE REQUIREMENTS. The applicable provisions of Chapter 103, Hawaii Revised Statutes, the County Charter, and the County Ordinances shall be deemed to be a part of the contract as though fully set forth therein.
SPECIAL PROVISIONS

These Special Provisions supplement and modify the "Water System Standards," Volume 1 and 2, 1985, and the General Conditions of the Department of Water, County of Kauai, to render them applicable to this specific project. There are no deletions to the Water System Standards and General Conditions except those subsections which are specifically deleted by these Special Provisions or those which obviously cannot apply to this project. Where there are discrepancies between the Special Provisions, the Water System Standards and the General Conditions, the provisions set forth in these Special Provisions shall govern.

BID REQUIREMENTS AND CONDITIONS

1. ADDENDA OR BULLETINS: Any addenda or bulletins issued during the term of bidding or forming a part of the documents loaned to the bidder or forming a part of the documents loaned to the bidder for the preparation of his bid shall be covered in the bid and shall be made a part of the contract.

Prior to the receipt of bids, any necessary addenda will be mailed or delivered to each person or firm recorded by the representative as having received the bidding documents.

2. WITHDRAWAL OF BIDS: The provisions in this subsection shall be deleted in their entirety and the following substituted in lieu thereof:

A bidder may withdraw any proposal he has submitted at any time prior to the date and hour set for the closure of the bids, provided the request for withdrawal is signed in a manner identical with the bidder's proposal being withdrawn. No withdrawal or modifications will be permitted after the date and hour designated for closing the bids. The bidder's proposal shall then hold firm for sixty (60) days to enable Department to complete its financing arrangements prior to issuing any Notice of Award.

3. OMISSION AND ERASURE: Proposals which are incomplete, unbalanced, conditional or obscure, or which contain additions not called for, erasures, alterations, or irregularities of any kind which do not comply with the Information for Bidders and Supplemental Information for Bidders, may be rejected at the option of the Department.

4. SECURITY FOR FAITHFUL PERFORMANCE: The second sentence of this section shall be deleted in its entirety and the following substituted in lieu thereof:

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SPECIAL PROVISIONS
Such surety shall be in an amount equal to one hundred percent (100%) of the contract price or of the estimated contract price, whichever is higher.

AWARD AND EXECUTION OF CONTRACT

1. AWARD OF CONTRACT: The following paragraph shall be added to this section:

All bids will be compared on the basis as specified elsewhere herein. The award, if made, will be to the lowest responsible bidder. No bidder may withdraw his bid for a period of sixty (60) calendar days after the date set for the opening of bid.

PRECONSTRUCTION CONFERENCE

1. The Contractor shall arrange a preconstruction conference with the Engineer, along with other affected agencies, firms and individuals at least ten (10) calendar days prior to the start of construction.

At the preconstruction conference, the contractor shall submit to the Department, the name of its authorized superintendent of the job.

The Contractor shall notify the Engineer at least three (3) working days prior to the start of construction.

LEGAL RELATIONS AND RESPONSIBILITY:

1. PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE: This section shall be deleted in its entirety and the following substituted in lieu thereof:

The Contractor shall not commence work under this contract until he/she has obtained all the insurance required under this paragraph and such insurance has been approved by the owner, nor shall the Contractor allow any subcontractor to commence work on his/her subcontract until the insurance required of the subcontractor has been so obtained and approved by the Department.

a. Compensation Insurance: The Contractor shall procure and shall maintain during the life of this contract Workmen’s Compensation Insurance as required by applicable State law for all of his/her employees to be engaged in work at the site of the project under this contract and, in case of any such work sublet, the Contractor shall require the subcontractor similarly to provide Workmen’s Compensation Insurance for all the latter’s employees to be engaged in such work unless such employees are covered by the protection afforded by the Contractor’s Workmen’s Compensation Insurance. In
the case where any class of employees engages in hazardous work on the project under this contract and is not protected under the Workmen's Compensation Statute, the Contractor shall provide and shall cause each subcontractor to provide adequate employer's liability insurance for the protection of such of his/her employees as are not otherwise protected.

b. Contractors Public Liability and Property Damage Insurance:
The Contractor shall procure and shall maintain during the life of this contract a Comprehensive Public Liability Insurance, and Property Damage Insurance in an amount not less than $500,000 per occurrence and $1,000,000 annual net aggregate, and Comprehensive Auto Liability Insurance in the amount of not less than $500,000 for bodily injury, including accidental death, to any one person and an amount not less than $1,000,000 on account of any one occurrence; property damage in an amount not less than $500,000 per occurrence and $500,000 aggregate. The Contractor shall insure the activities of his/her subcontractor in his/her policy. The Contractor shall be liable for the actions of his/her subcontractors. The Contractor shall reveal his/her insurance litigation to the Department. The Department will review this information and exercise its rights to increase the umbrella limits if necessary. The Department of Water, Lihue Plantation Co. and Grove Farm Properties, Inc. shall also be named as an additional insured.

c. Scope of Insurance and Special Hazards: The insurance required under subparagraphs a. and b. above shall provide adequate protection for the Contractor and his/her subcontractors, respectively, against damage claims which may arise from operations under this contract, whether such operations be by the insured or by any one directly or indirectly employed by him/her and also against any of the special hazards which may be encountered in the performance of this contract.

d. Proof of the Carriage of Insurance: The Contractor shall furnish the Department of Water, Lihue Plantation Co. and Grove Farm Properties, Inc. with certificates showing the type, amount, class of operations covered, effective dates and dates of expiration of policies. Such certificates shall also contain substantially the following statement: "The insurance covered by this certificate will not be canceled or materially altered, except after ten (10) days written notice has been received by the owner."

2. WORKMEN'S COMPENSATION ACT: The Contractor will be required to comply with the provisions of Chapter 97, Revised Laws of Hawaii 1955, known as the Workmen's Compensation Laws", and all laws amendatory thereof, relating to the compensation of employees for personal injuries sustained
in the course of their employment. The Contractor's surety or sureties shall be liable for any loss caused by the Department of Water by reasons of the Contractor's failure to comply with the provisions of said law.

3. **CONSTRUCTION STAKING:** The Manager and Chief Engineer will set construction stakes establishing lines, grades and bench marks for the Contractor's guidance. When the Contractor requires stakes or marks, seven (7) days advance notice shall be given to the Manager and Chief Engineer. The furnishing of such information or performance of such work shall not, however, relieve the Contractor of responsibility for performing the work in accordance with the Plans and Specifications, and the Department of Water assumes no responsibility for the accuracy of such information.

**PART III CONSTRUCTION**

The following shall be **ADDED** to and made a part of this Section:

**INTRODUCTION**

**Public Convenience.** This section defines the Contractor's responsibility with regard to convenience of the public and public traffic in connection with this operation.

The Contractor shall so conduct his operations as to offer the least possible obstruction and inconvenience to the public and he shall have under construction no greater length or amount of work than he can prosecute properly with due regard to the rights of the public.

Construction operations shall be conducted in such a manner as to cause as little inconvenience as possible to abutting property owners.

Spillage resulting from hauling operations along or across any public traveled way shall be removed immediately by the Contractor at his own expense.

Water or dust palliative shall be applied or ordered by the Engineer for the alleviation or prevention of dust nuisance.

**Public Safety.** This section defines the Contractor's responsibility with regard to providing for the safety of the public during construction.

Whenever the Contractor's operations create a condition hazardous to traffic or to the public, he shall furnish, erect and maintain, at his expense and without cost to the Department, such fences, barricades, lights, signs and other devices as are necessary to prevent accidents or damage or injury to the public.
Should the Contractor appear to be neglectful or negligent in furnishing warning and protective measures as above provided, the Engineer may direct attention to the existence of a hazard and the necessary warning and protective measures shall be furnished and installed by the Contractor at his expense.

Should the Engineer point out the inadequacy of warning and protective measures, such action on the part of the Engineer shall not relieve the Contractor from responsibility for public safety or abrogate his obligation to furnish and pay for these devices.

The installation of general roadway illumination shall not relieve the Contractor of his responsibility for furnishing and maintaining any of the protective facilities hereinbefore specified.

The Contractor’s equipment shall enter and leave the highway via existing ramps and crossovers and shall move in the direction of public traffic at all times. All movements on or across the traveled way shall be performed in a manner that will not endanger public traffic.

Environmental Pollution Control. This section covers the requirements of environmental pollution controls during construction activities. The Contractor shall be responsible for conformance to Chapter 37 and 37-A of the Public Health Regulations, Department of Health, State of Hawaii.

Guidelines and Criteria.

A - Landscape Preservation and Protection

1. Construction activities shall be confined to the work areas defined by the plans and specifications. Care shall be exercised to preserve the existing trees and sugar cane.

2. All items having any apparent historical or archaeological interest which are discovered in the course of any construction activities shall be carefully preserved.

C - Waste Disposal Areas:

1. Care shall be exercised to insure that disposal of wastes from construction operations do not create pollution problems.

2. Disposal of any materials, wastes, effluents, trash, garbage, oil, grease, chemicals, etc., in areas adjacent to streams shall be subject to the approval of the Engineer.

D - Dust Control: Dust, which could damage crops, orchards, cultivated fields and dwellings, or cause nuisance to persons, shall be abated and
control measures shall be performed. The Contractor shall be held liable for any damage resulting from dust originating from his operations.

E - Waste Water: Construction operations shall be conducted so as to prevent discharge or accidental spillage of pollutants, solid waste, debris and other objectional wastes in surface waters and underground water sources.

F - Noise Control: The operating schedule of large horsepower heavy equipment shall be planned to have the least impact upon nearby residents. Night operations shall be curtailed or eliminated when disturbances will be created in urban or built-up areas.

Measurement and Payment. The cost for any pollution control activity specified above or deemed necessary by the Department will not be measured or paid for directly but will be considered as incidental to and included in appropriate contract pay items.
SECTION 5 - WELL DRILLING

The following shall supplement the applicable subsections of Section 5 of the Water System Standards and the AWWA Standard for Water Wells (ANSI/AWWA A100-90).

SECTION 5.2 MOBILIZATION - DEMOBILIZATION

Mobilization shall consist of the transporting, assembling, constructing, installing and making ready for use at the well site all equipment, machinery, structures, utilities and incidentals necessary to do the work covered by this contract. Demobilization shall consist of the dismantling and removal from the project site all of the above mentioned equipment, machinery, structures, utilities and incidentals not incorporated in or a necessary part for the completed well.

The Contractor shall be completely mobilized at the well site and shall begin his drilling operations within 30 calendar days after he has been notified, in writing, to proceed under this contract. Any provisions in the Standard Specifications to the contrary is hereby deleted.

If the Contractor utilizes private lands other than the well site and access road for mobilization purposes, the provisions of this section shall still apply, and the mobilization and demobilization work on said private lands shall also be in accordance with the agreement between the Contractor and the land owners.

When the project is completed the Contractor shall clean up the well site and shall be responsible for all grading work required to leave the site in a neat and orderly condition to the satisfaction of the Engineer.

The maximum total amount that will be paid for Item No. 1, "Mobilization", and for Item No. 2 "Demobilization" shall be as shown in the Proposal. All additional mobilization or demobilization costs in excess of the maximum amounts specified above shall be included in the appropriate unit prices bid in the Proposal. The Contractor shall not be entitled to receive any additional compensation beyond the amounts herein and in the Proposal.

MEASUREMENT. Measurement for payment of the work under this section of the specifications will be made as follows:

1. The contract lump sum price for Item No. 1, Mobilization, will be paid when 50 feet of the well has been acceptably drilled and in the Engineer's opinion the Contractor has fully mobilized.
SECTION 5.3 WELL DRILLING TO CASING DEPTH

GENERAL: The well shall be drilled at the location shown on the plans and to a depth of 500 feet. The exact location of the well shall be designated by the Engineer.

The cased section of the well shall be drilled plumb and straight as specified herein and shall be large enough to install the well casing specified in Section 5.4 of the Specifications and to provide an annular space of at least 3" all around the casing. No deviation from this allowance will be made.

PROCEDURE: After the initial 200 feet to 300 feet is drilled and perched water is encountered, the Contractor shall install a test pump and determine the yield capacity in accordance with Section 5.12. The permanent steel casing shall not be installed at this time. The test pump installation and subsequent yield testing shall be done under the presence of the Engineer. The contractor shall have the option of using a temporary casing in the well for the first yield testing.

Removal of pump and commencement of drilling shall be as directed by the engineer. The well shall be drilled and cased to the depth shown on the plans. The upper 100 feet shall be solid steel casing with cement grout. The lower 400 feet shall be perforated steel casing and rock packed as shown on the plans.

The Contractor shall reinstall the test pump and conduct the second yield testing in accordance with Section 5.12.

The Contractor may conduct drilling operations in excess of eight hours a day only with the written consent of the Engineer. Not less than 72 hours prior to the commencement of any such overtime work, the Contractor shall submit to the Engineer a written notice of his intention and schedule. The order of major work shall be as follows or as required by the Engineer:

1. Drill well section to perched water, 200 feet to 300 feet.
2. Video Log #1 prior to pump install.
3. Should perched water be encountered, install pump and conduct test No. 1. (Temporary casing may be used for this yield testing).
4. Remove test pump (and temporary casing) and commence drilling to 500 feet.
5. Video Log #2
6. Install 400 feet of perforated steel casing and pack annular space with rock.
7. Install 100 feet of solid steel casing and fill annular space.

8. Plumbness and Alignment Test.

9. Install pump and conduct test No. 2.

MEASUREMENT, DRILLER'S LOGS, AND SAMPLES: The Department wishes to gather as much geological and hydrological data as possible and every opportunity shall be accorded the Department to obtain additional samples, make observations, and to study the apparent conditions.

The Contractor shall keep a continuous log of the well; recording the general character, thickness, type and drilling characteristics of materials encountered including the depth and drilling time, the color and hardness of the formations, and all other data which may be helpful in the interpretations of the geology, hydrology, and drilling conditions in the area. The log shall indicate depths where water is encountered and the pertinent facts connected with its occurrence. All other information such as the location of lava tubes and cave-ins shall also be noted in the log. All work done including but not limited to reaming, backfilling and concreting log shall be kept current and available at the well site for inspection by the Engineer at any time during the work. A copy of the daily drilling log shall be submitted to the Engineer at the end of each day.

Samples of drill cuttings shall be taken at successive interval of 10 feet of depth and at every change in formation. Samples of drill cuttings shall be obtained by bailing the hole, by screening the circulating medium or by any other method acceptable to the Engineer. These samples shall be collected in sample bags (plastic bags, packages, etc. are not acceptable) provided by the Contractor and shall be properly labeled on bag tags and delivered to the Engineer at the end of each working day.

The Contractor shall assist the Engineer in determining the elevation of the water level in the drilled hole with reference to the datum which will be established by the Engineer at the well site. Water level measurements shall be taken immediately when water is encountered in the well during the drilling work and another measurement shall be taken after the casing has been installed and well bailed clean. An electrical sounding reel approved by the Engineer shall be used to make all water level measurements. The water level data shall include the date and time at which the measurements are taken and the depth of the well at the time of measurement. The Department shall be entitled to make additional water level measurements with its own equipment. When ordered and in the manner directed by the Engineer, the Contractor shall obtain water samples.

The Contractor shall comply to the provisions and requirements of Chapter 174C, HRS STATE WATER CODE as amended (Wells Generally).
DRILLING OR CIRCULATING MEDIUM: Cable tool, rotary or reverse rotary circulation with clear water or air will be used in the drilling or circulating medium. Bentonite or other commercial drilling fluid additives shall not be used in drilling the wells.

PROTECTION: During the progress of the work, the Contractor shall provide an adequate cover over the top of the hole to prevent debris or other objects from entering the well when the crew is not at the well site. The Contractor shall preserve the well in good condition until the Engineer has completed all the sampling, testing and measurement; has examined the records; and has accepted the work.

ABANDONED WELL: A well will be considered abandoned if the Contractor does not complete the well to the depth ordered by the Engineer or if the Contractor should abandon the well due to loss of tools or for any other cause. Such an abandoned well shall be sealed and the site left in a neat and presentable condition comparable to its original condition as determined by the Engineer.

The Contractor shall show justification of abandoning the well in writing to the Engineer for approval prior to drilling another well. All partial payments received by the Contractor for work done on a well that has been abandoned or considered abandoned shall be adjusted and the balance, if any, shall be refunded to the Board and the Contractor shall drill another well in the vicinity of the abandoned well, as directed by the Engineer.

PLUMBNESS AND ALIGNMENT: The hole shall be constructed and the casing set round, plumb and true to line as specified herein. To demonstrate the compliance of his work with these requirements the Contractor shall furnish all labor, tools and equipment and in the presence of the Engineer, shall make the tests described herein in the manner prescribed by, and to the satisfaction of the Engineer. Tests for plumbness and alignment must be made both after the hole is drilled and after the casing is installed. Additional tests, however, may be made by the Contractor during the performance of the work. No specified payments shall be made by the Department for making these tests and the Contractor shall include the costs of such tests in the applicable contract items.

The requirements for plumbness and alignment shall be in accordance with AWWA A100-90 such that all parts of this contract can be satisfactorily performed.

Plumbness and alignment shall be tested in the presence of the Engineer by lowering into the well, to a depth specified by the Engineer, a section of rigid pipe 40 feet long or a dummy of the same length. The outer diameter of the plumb shall not be more than 1/2-inch smaller than the diameter of that part of the casing or hole being tested. If a dummy is used, it shall consist
of a rigid 6-inch minimum diameter spindle with three rings, each ring being 12 inches wide. The rings shall be truly cylindrical and shall be spaced one each end of the dummy and one ring in the center thereof.

The plumbness, alignment and drift from vertical of the cased well shall be tested with approved commercial directional well survey equipment or with an 1/16" diameter steel airplane cable and an approved centralizer cage secured 30 to 40 ft. plumb above the top of casing.

A log of the drift at 20-foot intervals shall be accurately recorded and submitted to the Engineer.

Should the dummy fail to move freely throughout the length of the casing or hole to the depth specified by the Engineer or should the well vary from the vertical in excess on one-half the smallest inside diameter of that part of the well being tested per any 100-foot interval of depth, or beyond limitations of this test, the plumbness and alignment of the well shall be corrected by the Contractor at his own expense and, should he fail to correct faulty alignment, plumbness, or insufficient well diameter, the Department may refuse to accept the well and consider the well abandoned.

VIDEO LOGGING: Prior to pump test No. 1 and following drilling to the final depth, the Contractor shall run video logs of the well from surface to its total depth. The video logging shall be recorded with the VHS cassette system together with a final plumbness and alignment test in the presence of the Engineer. The Contractor shall allow at least one full working day for running the video log and plumbness and alignment test. The Contractor shall give a minimum of three working days advance notice to the Engineer. The full working days shall fall within the normal Monday through Friday work week, excluding any State or National holiday. The video cassette tape record shall be delivered to the Engineer upon completion and shall become the property of the Department of Water.

MEASUREMENT: The depth of the well to be paid for shall be the actual depth in lineal feet measured vertically from the surface of the prepared ground to the bottom of the well as ordered by the Engineer.

The Contractor shall not receive specific compensation for making the plumbness and alignment tests, video log, and the cost of all testing and corrections for plumbness, alignment, and well diameter shall be included in the contract price for Item Nos. 3 and 4.

SECTION 5.4 WELL CASING

GENERAL: Both the solid and perforated steel casings to be installed in the well under this contract shall be furnished at the well site by the Contractor.
The casings shall be installed in the well only when ordered in writing by the Engineer and as specified herein. The Engineer will specify the total lengths of the casings to be installed. Installation shall be made only during normal daylight working hours and in the presence of the Engineer.

**CASING:** The solid and perforated casings to be furnished and installed in the well shall be of corrosion resistant steel having four to six times the atmospheric corrosion resistance of structural carbon steel, and conforming to ASTM Designation A-53 Grade B (Kaiser Steel Kaisaloy or approved equal). The well casings shall be manufactured in accordance with applicable sections of ASTM A139. The casings shall have a minimum inside diameter and a minimum wall thickness as called for in the proposal and shall be clean, straight and free from kinks. The individual lengths of casings shall be provided with beveled ends suitable for butt welding. The bottom of the solid casing shall be supplied with a fabricated cement basket as detailed in the plans.

The top of the installed casing shall be capped with a 1/2-inch steel plate and three-inch diameter threaded coupling with a plug as shown on the plans.

The perforated casings shall have perforations of 1/4" for the 12-inch full-flo screen. The opening shall be a minimum of 59.1 square inches per foot of screen. All perforations shall be casing manufacturer provided. Louvered openings shall be acceptable.

**CASING MARKINGS:** Each length of solid and perforated casing shall be marked by the casing manufacturer with the following information:

1. Manufacturer's identification.
2. Nominal thickness of casing wall.
3. ASTM Designation and trade name of the steel used for the manufacturer of the casing.

All markings shall be clear and legible and shall be within three (3) feet from one end of each casing.

**CASING CERTIFICATION:** Prior to the delivery of any casing to the project site, the Contractor shall submit for approval the casing manufacturer's certification to the Engineer. The certificate shall clearly indicate the total footage and number of casing shipped; the name of the customer; and the physical and chemical properties of the casing material. (ASTM Designation and trade name of steel may be used to designate the physical and chemical properties respectively).

**INSTALLATION:** The casing shall be installed in the presence of and as directed by the Engineer. The casing shall be properly aligned and welded by qualified welders and shall also be continuous for its entire length. Every precaution shall be taken to prevent the casing from dropping into the hole.
Driving of the casing which is likely to damage the pipe or cause a change in the circular cross section of the pipe will not be permitted.

The Contractor shall carefully lower the casing until the bottom of the casing is approximately five (5) feet from the bottom of the drilled hole. (At no time during the installation of the casing shall the total weight of the casing rest on the bottom of the drilled hole). The casing shall then be temporarily secured and the well initially developed and cleaned by bailing. When the well has been acceptably cleaned of drill cuttings, cave-in materials etc., the casing shall then be lowered to its final position with the bottom of the casing resting on the bottom of the drilled hole with only partial weight of the total length of the casing such that the casing will not be damaged, distorted or misaligned and shall then be held temporarily until cement grouted as called for in Section 5.5 - Filling of Annular Space.

INSTALLATION OF CASING GUIDES: During the installation of the well casing, the Contractor shall furnish and install casing guides at 30' o.c. in the ungrouted annular space. The casing guides may be commercially made or fabricated as shown in the Contract Plans.

MEASUREMENT: The length of casing to be paid for shall be the number of linear feet of casing measured to the nearest foot acceptably installed in the well.

PAYMENT: The total footage, measured as provided above of casing furnished and installed by the Contractor will be paid for at the contract unit price per linear foot for:

Item No. 5, "Furnishing and installing 12-inch minimum I.D., 0.365" thick, solid well casing conforming to ASTM A-53 Grade B".

Item No. 6, "Furnishing and installing 12-inch minimum I.D., 0.365" thick perforated well casing conforming to ASTM A-53 Grade B."

which price shall be full compensation for furnishing and hauling the casing to the well site; for bailing; for cleaning and surging the well; for furnishing and installing casing guides; for unloading, handling, cutting, aligning, welding and setting the casing; for capping the top of the casing; and for all labor, equipment, tools, materials and incidentals necessary to complete the work.

The Contractor may furnish and install casing with a larger inside diameter and/or thickness than specified in the above specifications; however, he shall not be entitled to additional compensation over and above the contract unit price bid for the items listed above.
The optional temporary casing will not be paid for separately but shall be incidental to the various items in the proposal.

SECTION 5.5 FILLING THE ANNULAR SPACE

DESCRIPTION: This section covers the rock-packing and cement-grouting of the annular space between the wall of the drilled hole and the casing. All work required in this section shall be done during normal daylight working hours. The Contractor shall notify the Engineer not less than 48 hours prior to rock-packing and cement-grouting.

ROCK-PACKING THE ANNULAR SPACE: When ordered in writing and as directed by the Engineer, the Contractor shall rock-pack the annular space between the wall of the drilled hole and the casing from the bottom of the casing to a height above the top of the perforated casing as shown on the Plans. The Engineer shall approve all materials to be placed in the annular space and the Contractor shall place materials in the annular space in a manner that will avoid bridging of the aggregate and permit even distribution around the casing.

Aggregate to be used in rock-packing the annular space shall be obtained from clean, washed, blue lava rock and shall be graded such that 0% is retained on 3/4-inch sieve and 100% retained on the 1/2-inch sieve.

GROUT SEAL: The procedure for filling the annular space shall consist of creating an effective seal over the rock packing. Seal shall consist of a three-foot layer No. 10M fine aggregate, a three-foot layer of sand, and a four-foot layer of neat cement. Each layer shall be carefully hand shoveled and probed with a rigid rod or pipe for effectiveness. The grout seal shall be topped with a two-foot layer of concrete mix with 3/4-inch maximum aggregate and allowed 24 hours to set. The integrity of the seal shall be tested by probing and approved by the Engineer.

CEMENT-GROUTING THE ANNULAR SPACE: The annular space between the outside casing and the wall of the drilled hole shall be cement-grouted by tremie pipe to the depths as ordered by the Engineer. The bottom two feet of the cement grouting shall be poured and cured overnight. The remaining annular space shall be cement-grouted in one continuous operation or as ordered by the Engineer.

Cement grout shall consist of one part Portland cement, one part rock sand and not more than six gallons of water per sack of cement to form a consistency such that the grout may be placed. The amount of water to be added shall be subject to the Engineer's approval.

The grout shall be placed in the annular space by pumping it through a one-inch minimum inside diameter grout pipe or by alternate methods approved by the Engineer. It is essential that the entire annular space around the grouted section of the casing specified above be completely filled with grout. The
Contractor shall be responsible for placing grout in the annular space in a manner that will not distort or collapse the casing and not get cement into the aquifer section of the well.

MEASUREMENT AND PAYMENT: Acceptable filling of the annular space which includes cement-grouting, grout seal and rock-packing will be measured and paid for separately at the respective contract unit price for:

Item No. 9, "Cement-grouting the annular space including Grout Seal."

Item No. 10, "Rock-packing the annular space,"
as the case may be, which respective prices shall include full compensation for furnishing and placing the crushed rock in the annular space; for furnishing, mixing, placing and curing the cement grout; for capping the top of the casing; and for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work as specified herein and shown on the Plans.

SECTION 5.12 TESTING FOR YIELD, DRAWDOWN AND SUSTAINED PUMPING:

DESCRIPTION: Testing of the well shall consist of pumping tests to determine yield, drawdown, recovery, and quality of water at various rates of pumping. The equipment and methods shall be as specified below and as directed by the Engineer.

PUMPING TEST EQUIPMENT AND MATERIALS: The Contractor shall furnish and install a test pump assembly capable of discharging at various sustained rates varying 200 to 500 gallons of water per minute from the basal water level to the ground surface. The test pump assembly shall be capable of pumping at any constant rate in the above specified range for a period of at least 150 continuous hours. The Contractor shall also furnish and install all other equipment and material, except as specified herein, and shall supply the power required to perform the pumping test of the well as directed by the Engineer. All Contractor-furnished equipment and appurtenances shall be in good operating condition. Before proceeding with the delivery to the project site of the test pump and driver required by this section, the Contractor must submit in writing to the Engineer the description, pump characteristics, curves and specifications of the test pump and driver, including the size and total length of the pump and the size of the discharge column. With this data, the Engineer will determine the top of pump bowl and airline setting.

The rate of discharge from the well shall be controlled by an appropriate valve and measured with an appropriate water meter to be furnished by the Contractor. The Contractor shall furnish any and all other equipment and materials that may be required to measure the rate of discharge and it shall be the Contractor’s responsibility to determine and provide the necessary and proper fittings to connect the water meter. The Contractor shall also provide the necessary facilities and make arrangements for the proper disposal of the
well water as directed by the Engineer. The Contractor shall provide adequate lighting for safe night operation of all the test equipment in and outside of the housed working area.

Water level measurements during the pumping test shall be determined by the airline method. The Department shall furnish an air pressure gage for measuring the air pressure of the Contractor furnished airline assembly. The Contractor shall furnish an airline assembly consisting entirely of 1/4-inch nominal inside diameter ANSI Schedule 40, galvanized pipe complete with a needle type control valve and all fittings and appurtenances necessary to connect the pressure gage furnished by the Department, including air tank and pressure regulator, to measured water levels in a manner acceptable to the Engineer. The airline shall be securely fastened to the discharge column.

The airline assembly shall be tested for leakage in the presence of the Engineer by subjecting it to a pressure equal to the submergence of the airline below static water level. At the required test pressure, the airline pressure shall not drop more than 0.1 foot of water during period of five minutes.

INSTALLATION OF THE TEST PUMP: When a pumping test is ordered in writing by the Engineer the Contractor shall clean the well by bailing to the satisfaction of the Engineer prior to the installation of the test pump. The Contractor shall satisfy himself that the well is adequately prepared for the proper installation and operation of the test pump assembly. After the test pump has been installed and ready for use, the Contractor shall develop the well by pumping and surging as specified.

The well shall be intermittently pump-surged at a rate of 500 gpm or greater until the well is free of drill cuttings, cave-ins, and other loose materials and the pumped water shows a turbidity of less than 10 on the silica scale described in Standard Methods of Water Analysis.

The development of the well shall be considered complete and satisfactory if the well and pumped water remains free of drill cuttings, cave-ins and other loose materials after 30 minutes of continuous pumping at the specified rate.

The cost of all development operations shall be incidental to the project and shall be included in the various items bid.

PUMPING TEST: The pumping test equipment shall be acceptably installed and tested for proper operation in the presence of the Engineer. The pumping test shall be scheduled to begin only on a Monday during daylight hours at the time designated by the Engineer. The Contractor shall notify the Engineer of his readiness to begin the pumping test at least by Wednesday prior to the scheduled test. The Engineer will provide necessary personnel for directing the pumping test. The Contractor shall not begin the pumping test until the Engineer is present at the site and the Engineer orders the test to begin.
The pumping test procedure shall be prescribed by the Engineer during the course of the testing. The pumping shall be started, regulated and stopped as directed by the Engineer. The testing shall include measuring the rate of discharge and drawdown at the various pumping rates and the rate of recovery. If deemed necessary, the Engineer may order a long-term continuous pumping test under his direction. Testing will be conducted during the night, and possibly on Saturdays, Sundays, and National and State holidays as required by the Engineer. Records will be kept throughout all tests showing the pumping rates, corresponding water levels in the well, and the quality of water being discharged.

During the entire testing period, the Contractor shall have at least one man available at the well site to operate and maintain the test pump and appurtenant equipment and to assist the Engineer in performing other incidental work required for the pumping test. The Contractor shall be responsible for efficient continuous operation and maintenance of the pumping unit and measuring devices during the tests. The Department will not pay for any damages to the pumping test equipment for any cause.

NOISE CONTROL: The operating schedule of large horsepower heavy equipment shall be planned to have the least impact upon nearby residents. Night operations shall be curtailed or eliminated when disturbances will be created in urban or built-up areas.

MEASUREMENT: The installation and removal of pumping test equipment and material to be paid for shall be considered complete when the complete unit has been satisfactorily tested and accepted by the Engineer and when the removal has been completed to the satisfaction of the Engineer.

The pumping test time to be paid for will be the actual number of hours that the pump is operated under the direction and to the satisfaction of the Engineer measured to the nearest half-hour. The measurement of time will begin after the Engineer orders the pumping test begun and shall end when the Engineer orders the pumping test to be terminated. Time lost due to any failure, inability to meet specification requirements, or inefficient operation of the pumping equipment or measuring devices will not be measured for payment.

PAYMENT: Installing and removing equipment for testing the well will be paid for at the contract lump sum price for:

Item No. 7, "Furnishing, installing and subsequent removal of pumping test equipment. One at 1st level, one at 2nd level."

which price shall be full compensation for cleaning the well by bailing; furnishing, hauling and installing test pump, power unit, power supply discharge column, airline assembly, measuring devices, pipeline and materials necessary for the proper disposal of the water, and all other equipment
necessary to conduct the test; for all delays necessitated by the nature of the work or as specified above; for the subsequent removal and hauling of the units listed above; and for all labor, equipment, tools, materials, and incidentals necessary to test the well.