
 GENERAL SERVICES



 COUNTY OF SANTA CRUZ

GOVERNMENTAL CENTER
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 ROY K. HOLMBERG
 DIRECTOR

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May 7, 1998

Agenda: 5/19/98

**Board of Supervisors
 County of Santa Cruz
 701 Ocean Street
 Santa Cruz, CA 95060**

**REQUEST TO ADVERTISE PROJECT--WELL PUMP WATER
 SYSTEM AT POLO GROUNDS COUNTY PARK SITE, #96C1-027R**

Dear Members of the Board:

On June 17, 1997, bids were received for the Well Pump Water System at the the Polo Grounds Project. The low bid exceeded the funding which was available for the project and therefore on August 5, 1997, your Board rejected all bids and directed the Parks, Open Space and Cultural Services Department to reconfigure the project.

The Parks, Open Space and Cultural Services Department made some minor improvements to the existing system and managed to provide water to the fields last year. These improvements were not the optimum solution and with the proposal to construct the three new ballfields and a third soccer field, the Department reevaluated their options and would like to use the original design of a various speed pump at the Polo Grounds. The variable speed pump system provides the optimum ability to do the various watering tasks required at the parks sites.

Due to unexpected revenues received this fiscal year in the Aptos Park Dedication Account adequate funds are now available and the Department is recommending the use of the original design which is before your Board today. Construction plans and specifications for the Well Pump Water System at Polo Grounds County Park Site project have been prepared by Freitas and Freitas, Engineering and Planning Consultants for the Department of Parks, Open Space and Cultural Services Department.

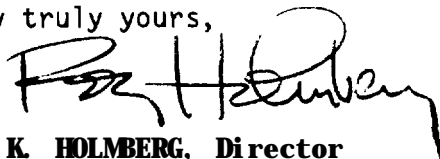
**REQUEST TO ADVERTISE WELL PUMP
WATER SYSTEM AT POLO GROUNDS, #96C1-027R
May 7, 1998
Page 2**

These items and associated documents relating to the project must be approved by your Board prior to solicitation of written proposals. The engineer's estimate for this project is \$80,000.

It is therefore recommended that your Board take the following actions:

- 1. Approve the plans and specifications on file with the Clerk of the Board for the construction of a well pump water system at Polo Grounds County Park site, #96C1-027R; and**
- 2. Direct the General Services Department to advertise for bids; and**
- 3. Set the bid opening for 10:45 a.m on June 16, 1998.**

Very truly yours,



ROY K. HOLMBERG, Director

RH:1jr/well0507

RECOMMENDED:



**SUSAN A. MAURIELLO
County Administrative Officer**

cc: Parks, Open Space and Cultural Services Department

CONSTRUCTION DOCUMENTS

FOR

**Project: WELL PUMP WATER SYSTEM FOR POLO GROUNDS COUNTY PARK
COUNTY OF SANTA CRUZ, CALIFORNIA**

**For use in connection with Santa Cruz County standards
and the 1995 Uniform Building Code.**

BIDS OPEN: June 16, 1998

Proposal No. 96C1-027R

County of Santa Cruz

PROJECT: WELL PUMP WATER SYSTEM FOR POLO GROUNDS COUNTY PARKTABLE OF CONTENTS

Notice to Contractors

Division A - General Provisions

- Section
1. Definitions and Terms
 2. Proposal Requirements and Conditions
 3. Award and Execution of Contract
 4. Beginning of Work, Time of Completion, and Liquidated Damages
 5. General
 6. Legal Relations and Responsibility

Division B - Special Conditions

Division C - Technical Specifications

Division D - Proposal Forms

Proposal

Bidder's Bond

Statement of Compliance

Agreement

Guaranty

Specifications approved as to form

Marie Costa 5-6-98
 County Counsel Date

COUNTY OF SANTA CRUZ

5/19/98

NOTICE TO CONTRACTORS 96C1-027R
WELL PUMP WATER SYSTEM FOR POLO GROUNDS COUNTY PARK

Sealed proposals shall be delivered to the Purchasing Agent of Santa Cruz County, 701 Ocean Street, Santa Cruz, California, 95060, Room 330, no later than 10:00 a.m. on June 16, 1998 and at 10:45 a.m., or soon after, they will be publicly opened and read in the Supervisor's Hearing Room, Room 525, Government Center, 701 Ocean Street, Santa Cruz, California, for a licensed contractor to install vertical turbine well pump, pressure tanks, electrical controls, miscellaneous appurtenances and site work to convert an existing well system to an on-demand system using a Variable Frequency Drive Unit in accordance with the Specifications and Drawings therefor, to which special reference is made as follows: WELL PUMP WATER SYSTEM FOR POLO GROUNDS COUNTY PARK.

Bids are required for the entire work as described on the plans and specifications prepared by County of Santa Cruz and Freitas + Freitas, Engineering and Planning Consultants.

Plans, Specifications and Proposal forms to be used for bidding on' this project can only be obtained at the Office of the Purchasing Agent, 701 Ocean Street, Room 330, Santa Cruz, California, 95060. A non-refundable fee of \$20.00 is required per set of bid documents. Mailing costs will be charged extra at \$5.00 per set. Any request for bid documents must be accompanied by a check for the correct charges.

Prospective bidders must be fully qualified, licensed, certified and insured to perform the work requested. All work performed must meet all current State and local laws and regulations.

Prior to bidding, interested contractors should attend a pre-bid conference and review of the work site conducted by the Engineer. Prospective bidders should meet at the work site, Polo Grounds County Park Site, 2255 Huntington Drive Aptos, California--north of the parking lot at the existing well head by the electrical power pole at 10:00 a.m. on June 4, 1998 for the pre-bid conference. All pre-bid questions should be directed to Gretchen Iliff, Park Superintendent, at (408)462-8306.

No bid will be considered unless it is made on the form furnished by the Purchasing Agent and is made in accordance with the provisions of the specifications.

County will be the sole judge as to the technical acceptability of any proposals and any award will be as determined most advantageous to the County considering such factors as completeness and responsiveness to Request for Proposal, experience, references and anticipated costs. The County reserves the right to reject any or all proposals or parts thereof and to waive any informality or irregularity in any proposal.

Bids shall be accompanied by cash or a certified or cashier's check payable to the order of the County of Santa Cruz, in the amount of ten percent (10%) of the bid, or by a bid bond in that amount signed by a corporate surety. The cash or check shall be forfeited or the bond shall become payable to the County in case the bidder does not enter into a contract with the County within ten (10) days, not including Sundays and legal holidays, after written notice that the contract has been awarded to him

Pursuant to Section 1770 of the Labor Code, the Director of the Department of Industrial Relations, State of California, has ascertained the general prevailing rate of per diem wages applicable to the work to be performed, which rates are filed in the Office of the Purchasing Agent, and copies of which are available to any interested parties on request.

Any bid proposal, or other response to a solicitation for bid or proposal which proposes or calls for the use of any tropical hardwood or wood product in performance of the contract shall be deemed nonresponsive pursuant to County Code Section 2.37.107.

COUNTY OF SANTA CRUZ
 DIVISION A. General Provisions

TABLE OF CONTENTS

Section

1. Definitions and Terms page 3

2. Proposal Requirements and Conditions page 4

 2.01 Examination of Plans, Specifications,
 Contract, and Site of-Work

 2.02 Proposal Forms

 2.03 Rejection of Proposals

 2.04 Proposal Guaranty

 2.05 Withdrawal of Proposals

 2.06. Public Opening of Proposals

 2.07 Effective Time of Proposals

 2.08 Relief of Bidders

 2.09 Disqualification of Bidders

 2.10 Competency of Bidders

3. Award and Execution of Contract page 6

 3.01 Award of Contract

 3.02 Contract Bonds

 3.03 Execution of Contract

 3.04 Failure to Execute Contract

 3.05 Return of Proposal Guarantees

4. Beginning of Work, Time of Completion,
 and Liquidated Damages page 7

 4.01 Beginning of Work

 4.02 Time of Completion

 4.03 Liquidated Damages

 4.04 Construction Schedule

5. General page 8

 5.01 Intent of Plans and Specifications

 5.02 Final Cleaning Up

 5.03 Changes

 5.04 Assignment

- 5.05 Procedure and Protest
 - 5.06 Changes in Character of Work
 - 5.07 Extra Work
 - 5.08 Differing Site Conditions
 - 5.09 Notice and Service-Thereof
 - 5.10 Insurance
 - 5.11 Payment to Contractor
 - 5.12 County's Right to Terminate Contract
 - 5.13 Acceptance of Contract
 - 5.14 Project Plan Interpretation
 - 5.15 Contract Administration and Inspection
 - 5.16 Materials
 - 5.17 Substitutions
6. Legal Relations and Responsibility . . . page 19
- 6.01 Laws to be Observed
 - 6.02 Hours of Labor
 - 6.03 Nondiscrimination Clause
 - 6.04 Wage Rates
 - 6.05 Record of Wages Paid: Inspection
 - 6.06 Contractor's Licensing Laws
 - 6.07 Apprentices
 - 6.08 Fair Labor Standards Act
 - 6.09 Workers Compensation Insurance
 - 6.10 Payment of Taxes
 - 6.11 Permits and Licenses
 - 6.12 Subcontracting
 - 6.13 Patents
 - 6.14 Safety Provisions
 - 6.15 Safety Program
 - 6.16 Material Safety Data Sheets
 - 6.17 Responsibility for Damage
 - 6.18 Contractor's Supervision
 - 6.19 Personal Liability
 - 6.20 Sanitary Facilities
 - 6.21 Tropical Hardwoods

SECTION 1. Definitions and Terms

The following terms shall be interpreted as follows:

Board of Supervisors Board of Supervisors of the County
of Santa Cruz, California

State of California,
County or Owner County of Santa Cruz, California

County Clerk County Clerk of the County of
Santa Cruz, California

County Counsel County Counsel of the County of
Santa Cruz, California

General Services Department,
Purchasing Agent General Services Department and
Purchasing Agent of the County of
Santa Cruz, California

Engineer, Architect, Consultant The Director of the General Services
Department of the County of Santa Cruz,
or his designated representative

SECTION 2. Proposal Requirements and Conditions

The bidder must observe the following requirements and conditions in the Preparation of the proposal form and the Submission of the bid:

2.01 Examination of Plans, Specifications, Contract, and Site of Work. The bidder shall examine carefully the area of the work contemplated, the plans and specifications, and the proposal and contract forms therefor. The submission of a bid shall be conclusive evidence that the bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality and scope of work to be performed, the quantities of materials to be furnished and as to the requirements of the proposal, plans, specifications, and the contract. The misplacement, addition or omission of any letter, word or punctuation mark shall in no way damage the true spirit, intent or meaning of the specifications, and shall be brought to the immediate attention of the Engineer.

2.02 Proposal Forms. The department will furnish to each bidder a standard proposal form, which when filled out and executed may be submitted as his bid. Bids not presented on forms so furnished will be disregarded.

The Proposal form is in detached form in an envelope as part of the construction documents package. The proposal shall set forth for each item of work, in clearly legible figures, a total for the item in the respective spaces provided, and shall be signed by the bidder, who shall fill out all blanks in the proposal form as therein required. For reference during the bidding process, a copy of the Proposal form is bound in the construction documents together with the notice to contractors, specifications, and contract.

The proposal shall be submitted as directed in the "Notice to Bidders" under sealed cover plainly marked as a proposal, and identifying the Project to which the proposal relates and the date of the bid opening therefor. Proposals which are not properly marked may be disregarded by the Purchasing Agent.

2.03 Rejection of Proposals. Proposals may be rejected if they show any alteration of form, additions not called for, conditional bids, incomplete bids, erasures, or irregularities of any kind.

When proposals are signed by an agent, other than the officer or officers of a corporation authorized to sign contracts on its behalf or a member of a partnership, a "Power of Attorney" must be on file with the General Services Department prior to opening bids or shall be submitted with the Proposal; otherwise the proposal will be rejected as irregular and unauthorized.

2.04 Proposal Guaranty. All bids shall be presented under sealed cover and accompanied by one of the following forms of bidder's security:

- a. Cash, a cashier's check, a certified check, or a bidder's bond executed by an admitted surety insurer, payable to the County of Santa Cruz.

The surety shall be in an amount equal to at least ten (10) percent of the amount bid. A bid will not be considered unless one of the forms of bidders security is enclosed with it.

The form of Bidder's Bond will be found following the signature page of the proposal attached hereto.

2.05 Withdrawal of Proposals. Any bid may be withdrawn at any time prior to the time fixed in the public notice for the opening of bids only by written request for the withdrawal of the bid filed with the Purchasing Agent. The request shall be executed by the bidder or his duly authorized representative. The withdrawal of a bid does not prejudice the right of the bidder to file a new bid. Whether or not bids are opened exactly at the time fixed in the public notice for opening bids, a bid will not be received after the time specified for receipt of bids; a bid may not be withdrawn after the time fixed in the public notice for the opening of bids.

2.06 Public Opening of Proposals. Proposals will be opened and read publicly at the time and place indicated in the "Notice to Bidders." Bidders or their authorized agents are invited to be present.

2.07 Effective Time of Proposals. Once proposals have been opened, they shall remain in effect for ninety (90) days. Reference Section 3.01.

2.08 Relief of Bidders. Attention is directed to the provisions of Public Contract Code Section 5101 through 5107 concerning relief of bidders, and in particular to the requirement of Section 5103(b) therein, that the bidder give written notice of the mistake within five (5) days after the opening of the bids of the alleged mistake, specifying in the notice in detail how the mistake occurred.

2.09 Disqualification of bidders. More than one proposal from an individual, firm, partnership, corporation, or combination thereof under the same or different names will not be considered. Reasonable grounds for believing that any individual, firm, partnership, corporation or combination thereof is interested in more than one proposal for the work contemplated may cause the rejection of all proposals in which such individual, firm, partnership, corporation or combination thereof is interested. If there is reason for believing that collusion exists among the bidders, any or all proposals may be rejected. Proposals in which the prices obviously are unbalanced may be rejected.

2.10 Competency of Bidders. Attention is directed to the "Contractor's Licensing Laws," and the requirements relating to the licensing of Contractors. (See Section 6.06).

No bid will be accepted from, nor a contract awarded to, any bidder to whom a proposal form has not been issued by the County.

SECTION 3. Award and Execution of Contract

3.01 Award of Contract. The right is reserved to reject any and all proposals.

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 sixty (60) days after the opening of the proposals. If the lowest responsible bidder refuses or fails to execute the contract, the County may award the contract to the second lowest responsible bidder. Such award, if made, will be made within seventy-five (75) days after the opening of proposals.

If the second lowest bidder refuses or fails to execute the contract, the County may award the contract to the third lowest responsible bidder. Such award, if made, will be made within ninety (90) days after the opening of the proposals. The periods of time specified above within which the award of contract may be made shall be subject to extension for such further period as may be agreed upon in writing between the County and the bidder concerned.

3.02 Contract Bonds. A Faithful Performance Bond in the amount of 100% of the amount bid, and a Labor and Materials Bond in the amount of 50% of the amount bid shall be provided by the Contractor to the County of Santa Cruz.

3.03 Execution of Contract. The contract shall be signed by the successful bidder and returned, together with the contract bonds, within ten (10) days, not including Saturday, Sundays, and legal holidays, after the bidder has received notice that the contract has been awarded.

3.04 Failure to Execute Contract. Failure of the lowest responsible bidder, the second lowest responsible bidder, or the third lowest responsible bidder to execute the contract and file acceptable bonds as provided herein within ten (10) days, not including Saturday, Sundays and legal holidays, after such bidder has received notice that the contract has been awarded to him/her, shall be just cause for the annulment of the award and the forfeiture of the proposal guaranty. The successful bidder may file with the Purchasing Agent, a written notice, signed by the bidder or his/her authorized representative specifying that the bidder will refuse to execute the contract if presented to him/her. The filing of such notice shall have the same force and effect as the failure of the bidder to execute the contract and furnish acceptable bonds within the time hereinbefore prescribed.

3.05 Return of Proposal Guarantees. Within twelve (12) working days after the award of the contract to the lowest responsible bidder, the Purchasing Agent will return the Proposal guaranties, other than bidders' bonds, accompanying such of the Proposals as are not to be further

considered in making the award. Retained proposal guaranties will be held until the contract has been finally executed, after which all proposal guaranties, except bidders' bonds and any guaranties which have been forfeited, will be returned to the respective bidders whose proposals they accompany.

SECTION 4. Beginning of Work, Time of Completion
and Liquidated Damages

4.01 Beginning of Work. The Contractor shall begin work within ten (10) days after receiving Notice to Proceed, and shall diligently prosecute the same to completion within the number of calendar days set forth in the Special Conditions.

Should the Contractor begin work in advance of the contractor receiving the Notice to Proceed as above provided, any work performed by him/her in advance of the said date shall be considered as having been done by him/her at his/her own risk and as a volunteer unless said contract is so approved.

4.02 Time of Completion. The Contractor shall complete all or any designated portion of the work called for under the contract in all parts and requirements within the time set forth in the Special Conditions.

A calendar day is defined as any day, including Saturdays, Sundays and legal holidays.

4.03 Liquidated Damages. Time is of the essence in this contract. It is agreed by the parties to the contract that in case all the work called for under the contract in all parts and requirements is not finished or completed within the number of calendar days as set forth in the Special Conditions, damage will be sustained by the County, and that it is and will be impracticable and extremely difficult to ascertain and determine the actual damage which the County will sustain in the event of and by reason of such delay: and it is therefore agreed that the Contractor will pay to the County the sum set forth below per day for each and every calendar day's delay in finishing the work in excess of the number of calendar days prescribed; and the Contractor agrees to pay said liquidated damages herein provided for, and further agrees that the County may deduct the amount thereof from any moneys due or that may become due the Contractor under the contract.

It is further agreed that in the event the Contractor fails to complete work and all requirements under this Agreement within the number of calendar days specified, the County shall have the right (but not the obligation) to increase the number of calendar days, as the County may in its sole discretion deem best to serve its interests.

The Contractor will be granted an extension of time and will not be assessed with liquidated damages for any portion of the delay in completion of the work beyond the time named in the Special Conditions for the completion of the work caused by acts of God or of the public enemy, fire,

storms, floods, tidal waves, earthquakes, shortage of materials and freight embargoes, provided that the Contractor shall notify the Engineer in writing of the causes of delay within fifteen (15) days from the beginning of any such delay. The Engineer shall ascertain the facts and the extent of the delay, and his findings thereon shall be final and conclusive.

4.04 Construction Schedule and Pre-Construction Meeting. Prior to the first work day of the contract, the County will schedule a pre-construction meeting to review the project with the contractor, engineer, and all parties responsible for the execution of the work. At the time of the meeting, the construction schedule, four (4) copies of which shall have been presented to the County within ten (10) working days after the Notice of Award, shall be reviewed and any approved changes made. Schedules shall be adhered to throughout the contract period.

SECTION 5. General

5.01 Intent of Plans and Specifications. The intent of the plans and specifications is to prescribe the details for the construction and completion of the work which the Contractor undertakes to perform in accordance with the terms of the contract. Where the plans or specifications describe portions of the work in general terms, but not in complete detail, it is understood that only the best general practice is to prevail and that only materials and workmanship of the first quality are to be used. Unless otherwise specified, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals, and do all the work involved in executing the contract in a satisfactory and workmanlike manner.

5.02 Final Cleaning Up. Before final inspection of the work, the Contractor shall clean the material sites, and all work areas occupied by him/her in connection with the work, of all rubbish, excess materials, false-work, temporary structures, and equipment. All parts of the work shall be left in a neat and presentable condition. Full compensation for final cleaning up will be considered as included in the prices paid for the various contract items of work, and no separate payment will be made therefor.

5.03 Changes. The County reserves the right to make such alterations, deviations, additions to or omissions from the plans and specifications, including the right to increase or decrease the quantity of any item or portion of the work or to omit any item or portion of the work, as may be deemed by the Engineer to be necessary or advisable and to require such extra work as may be determined by the Engineer to be required for the proper completion or construction of the whole work contemplated.

Any such changes will be set forth in a written contract order which will specify, in addition to the work to be done in connection with the change made, adjustment of contract time, if any, and the basis of compensation for such work. A contract change order will not become effective until approved in writing by the Engineer.

Upon receipt of an approved contract change order, the Contractor shall Proceed with the ordered work. If ordered in writing by the Engineer, the Contractor shall proceed with the work so ordered prior to actual receipt of an approved contract change order therefor. In such cases, the Engineer will, as soon as practicable, issue an approved contract change order for such work and the provisions in Section 5.05, "Procedure and Protest," shall be fully applicable to such subsequently issued contract change order.

5.04 Assignment. Contractor shall not assign this contract or any part thereof without prior written consent of the County. Any assignment of money due or to become due under this contract shall be subject to a prior lien for services rendered or material supplied for Performance of work called for under said contract in favor of all persons, firms, or corporations rendering such services or supplying such materials to the extent that claims are filed pursuant to the Civil Code and shall also be subject to deductions for liquidated damages if liquidated damages have been assessed as specified in Section 4.03 herein.

5.05 Procedure and Protest. A contract change order approved by the Engineer may be issued to the Contractor at any time. Should the Contractor disagree with any terms or conditions set forth in an approved contract change order which he has not executed, he shall submit a written protest to the Engineer within fifteen (15) days after the receipt of such approved contract change order. The protest shall state the points of disagreement and, if possible, the contract specification references, quantities, and costs involved. If a written protest is not submitted, payment will be made as set forth in the approved contract change order, and such payment shall constitute full compensation for all work included therein or required thereby. Such unprotested approved contract change orders will be considered as executed contract change orders.

Claims of \$375,000 or less will be resolved under the procedure set forth in Public Contract Code Section 20104, which requires (in summary) that:

- a. The claim shall be in writing and include the documents necessary to substantiate the claim, and must be filed before final payment;
- b. The County will endeavor to respond in writing within 45 days (for claims of less than \$50,000) or within 60 days (for claims between \$50,000 and \$375,000);
- c. If the Contractor disputes the County's written response, it may so notify the County and demand an informal conference to meet and confer for settlement of the issues in dispute;
- d. If the claim remains in dispute after the meet and confer conference, the Contractor may file a claim pursuant to Government Code Section 910 et seq.;

- e. If a civil action is filed to resolve the claim, the matter will be submitted to nonbinding mediation;
- f. If the matter is not resolved at mediation, the case shall be submitted to judicial arbitration pursuant to Code of Civil Procedure Section 1141.10 et seq., and the Civil Discovery Act of 1986 shall apply, and the arbitrator shall be experience in construction law;
- g. Any party who, after receiving an arbitration award requests a trial de novo but does not obtain a more favorable judgement shall, in addition to payment of costs and fees, pay the other party's attorney's fees arising out of the trial de novo.

Where the protest concerning an approved contract change order relates to the adjustment of contract time for the completion of the work, the time to be allowed **therefor** will be determined as provided in Section 4.03, "Liquidated Damages."

Proposed contract change orders may be presented to the Contractor for his consideration prior to approval by the Engineer. If the Contractor signifies his/her acceptance of the terms and conditions of such proposed contract change order by the Engineer and issued to the Contractor, payment in accordance with the provisions as to compensation therein set forth shall constitute full compensation for all work included therein or required thereby. A contract change order executed by the Contractor and approved by the Engineer is an executed change order. An approved contract change order shall supersede a proposed, but unapproved contract change order covering the same work.

5.06 Changes in Character of Work. If an ordered change in the plans or specifications materially changes the character of the work of a contract item from that on which the Contractor based his bid price, and if the change increases or decreases the actual unit cost of performing the work of said item in accordance with the plans and specifications originally applicable thereto, in the absence of an executed contract change order specifying the compensation payable, an adjustment in compensation therefore will be made in accordance with the following:

The basis of such adjustment in compensation will be the difference between the actual unit cost to perform the work of said item or portion thereof involved in the change as originally planned and the actual unit cost of performing the work of said item or portion thereof involved in the change, as changed. Actual unit costs will be determined as agreed to by the Contractor and the Engineer. Any such adjustment will apply only to the portion of the work of said item actually changed in character.

Failure of the Engineer to recognize a change in character of the work at the time the approved contract change order is issued shall in no way be construed as relieving the Contractor of his duty and responsibility of filing a written protest within the fifteen (15) day limit as provided in Section 5.05, "Procedure and Protest."

5.07 Extra Work. New and unforeseen work will be classed as extra work when determined by the Engineer that such work is not covered by any of the various items for which there is a bid price or by combinations of such items. In the event portions of such work are determined by the Engineer to be covered by some of the various items for which there is a bid price or combinations of such items, the remaining portion of such work will be classed as extra work.

The Contractor shall do such extra work and furnish labor, material, and equipment **therefor** upon receipt of an approved written contract change order or other written order of the Engineer.

5.08 Differing Site Conditions.

- a. The Contractor shall promptly, and before the conditions are disturbed, notify the County, in writing, of any:
 1. Material that the Contractor believes may be hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with the provisions of existing law;
 2. Subsurface or latent physical conditions at the site differing from those indicated; or
 3. Unknown physical conditions at the site of any unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the contract.
- b. The County shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the work, shall issue a change order under the procedures described in the contract.
- c. In the event that a dispute arises between the County and the Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the Contractor's cost of, or time required for, performance of any part of the work, the Contractor shall not be excused for any scheduled completion date provided for by the contract, but shall proceed with all work to be performed under the contract. The Contractor shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protest between the contracting parties.

5.09 Notice and Service Thereof. Any notice from one party to the other under the contract shall be in writing and shall be dated and signed

by party giving such notice or by duly authorized representative of such party. Any such notice shall not be effective for any purpose whatsoever unless served in one the following manners:

- a. If notice is given to the County by personal delivery thereof to the County, or by depositing same in United States mails, enclosed in a sealed envelope, addressed to the County, postage will be prepaid and registered.
- b. If notice is given to Contractor by personal delivery thereof to said Contractor or his foreman at site of project, or by depositing same, in United States mails, enclosed in a sealed envelope addressed to said Contractor at his regular place of business or at such other address as may have been established for the conduct of work under this contract, postage will be prepaid and registered.
- c. If notice is given to surety or other person by personal delivery to such surety or other person or by depositing same in the United States mails, enclosed in a sealed envelope, addressed to such surety or person at the address of such surety or person, last communicated by him/her to party giving notice, postage will be prepaid and registered.

5.10 INSURANCE. CONTRACTOR, at its sole cost and expense, for the full term of this Contract (and any extensions thereof), shall obtain and maintain at minimum all of the following insurance coverage. Such insurance coverage shall be primary coverage as respects COUNTY and any insurance or self-insurance maintained by COUNTY shall be excess of CONTRACTOR'S insurance coverage and shall not contribute to it. CONTRACTOR agrees to forward copy of these insurance requirements to respective insurance brokers for review and compliance.

a. Types of Insurance and Minimum Limits.

1. CONTRACTOR'S vehicles used in the performance of this Contract, including owned, non-owned (e.g. owned by CONTRACTOR'S employees), leased or hired vehicles, shall each be covered with Automobile Liability Insurance in the minimum amount of \$500,000.00 combined single limit per accident for bodily injury and property damage.
2. CONTRACTOR shall obtain and maintain Comprehensive or Commercial General Liability Insurance coverage in the minimum amount of \$1,000,000.00 combined single limit, including bodily injury, personal injury, and broad form property damage. Such insurance coverage shall include, without limitation, contractual liability coverage.

b. Other Insurance Provisions.

1. As to all insurance coverage required herein, any deductible or self-insured retention exceeding one percent (1%) of a company's annual gross earnings or \$5,000.00 (whichever is greater) for an individual shall be disclosed to and be subject to approval by COUNTY Risk Manager, prior to the effective date of this contract.
2. If any insurance coverage required hereunder is provided on a "claims made" rather than "occurrence" form, CONTRACTOR shall maintain such insurance coverage with an effective date earlier or equal to the effective date of the contract and continue coverage for a period of three years after the expiration of the contract and any extensions thereof. In lieu of maintaining post-contract expiration coverage as specified above, CONTRACTOR may satisfy this provision by purchasing tail coverage for the claims made policy. Such tail coverage shall, at a minimum, provide coverage for claims received and reported three years after the expiration date of this contract.
3. All required Automobile Liability Insurance, Comprehensive or Commercial General Liability Insurance shall contain the following endorsement as a part of each policy:

"The County of Santa Cruz, its officers and employees, are hereby added as an additional insured, as respects the operations of the named insured."
4. All the insurance required herein shall contain the following clause:

"It is agreed that this insurance shall not be cancelled until thirty (30) days after the COUNTY shall have received written notice of such cancellation." Such notice shall be sent to:

Department of General Services
701 Ocean Street, Room 330
Santa Cruz, CA 95060
5. CONTRACTOR agrees to provide COUNTY at or before the effective date of this Contract with a certificate of insurance of the coverage required. The Certificate shall be sent to:

Department of General Services
701 Ocean Street, Room 330
Santa Cruz, CA 95060
6. Certificates of insurance shall state in particular those

insured, extent of insurance, location and operation to which insurance applies, expiration date, and cancellation and reduction notice.

5.11 Payment to Contractor.

- a. The County shall make periodic progress payments to the Contractor on the basis of a duly certified and approved estimate of the work performed under this contract, but to insure the proper performance of this contract, the County shall retain ten (10) percent of the amount of each estimate until final completion and acceptance of all work covered by this contract; provided that the County, at any time after fifty percent (50%) of the work has been completed, if it finds that satisfactory progress is being made, may make any of the remaining progress payment in full; provided, further, that on completion and acceptance of each separate building, public work, or other division of the contract, on which the price is stated separately in the contract, Payment may be made in full, including retained percentages thereon, less authorized deductions.
- b. At the request and expense of the Contractor, the Contractor may substitute securities for any monies withheld by the County of Santa Cruz to insure Performance under the contract. The securities to be substituted shall be equivalent to the amount withheld and shall be deposited with the County or with a State or federally chartered bank as the escrow agent, who shall pay such monies to the Contractor upon satisfactory completion of the contract. Securities eligible for substitution under this provision shall include those listed in Section 16430 of the California Government Code or bank or savings and loan certificates of deposit. The Contractor shall be the beneficial owner of any securities substituted for monies withheld and shall receive any interest thereon.
- c. In preparing estimates the material delivered on the site and preparatory work done may be taken into consideration.
- d. All material and work covered by partial payments made shall thereupon become the sole property of the County, but this provision shall not be construed as relieving the Contractor from the sole responsibility for the care and protection of materials and work upon which Payments have been made or the restoration of any damaged work, or as a waiver of the right of the County to require the fulfillment of all of the terms of the contract.
- e. County's Right to Withhold Certain Amounts and Take Application Thereof: The Contractor agrees to indemnify and save the County harmless from all claims growing out of the lawful demands of **subcontractors, laborers, workmen, mechanics, material-men, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the furtherance of the performance of this contract.** The Contractor shall, at the County's request, furnish satisfactory evidence that all obligations of the nature hereinabove designated have

been paid, discharged, or waived. If the Contractor fails so to do, then the County may, after having served written notice on the said Contractor, either pay unpaid bills, of which the County has written notice, direct, or withhold from the Contractor unpaid compensation sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged, whereupon payment to the Contractor shall be resumed, in accordance with the terms of this contract, but in no event shall the provisions of this sentence be construed to impose any obligations upon the County to either the Contractor or his/her Surety. In paying any unpaid bills of the Contractor, the County shall be deemed the agent of the Contractor, and any payment so made by the County shall be considered as a payment made under the contract by the County to the Contractor and the County shall not be liable to the Contractor for any such payment made in good faith.

- f. Stop Notices and Affidavits: Neither the final payment nor any part of the retained percentage shall become due until the Contractor shall deliver to the County a complete release of all stop notices arising out of the contract or receipts marked paid in full in lieu thereof. In addition, the Contractor shall furnish an affidavit to the County that so far as she/he has knowledge or information, the release or receipts include all labor and materials for which a stop notice could be filed. If any stop notice remains unsatisfied after all payments are made, the Contractor shall refund to the County all monies that the latter may be compelled to pay in discharging such a stop notice, including all costs and reasonable attorney's fees.

5.12 County's Right to Terminate Contract. If the Contractor refuses to or fails to prosecute the work or any separable part thereof with such diligence as will insure its completion within the time specified or any extension thereof, or fails to complete said work within such time, or becomes disabled from prosecuting the work, or if she/he should persistently or repeatedly refuse or should fail, except in case for which extension of time is provided, to supply enough properly skilled workmen or proper materials to complete the work in time specified, or if she/he should fail to make a prompt payment to subcontractors or for material or labor, or persistently disregards laws, ordinances or instructions of the County, or otherwise be guilty of a substantial violation of any provision of the contract, or if she/he or his/her subcontractors should violate any of the provisions of this contract, then the County may, without prejudice to any other right or remedy, serve written notice upon him/her and his/her surety of its intention to terminate this contract, such notice to contain the reasons for such intention to terminate, and unless within ten days after the service of such notice such condition shall cease or such violation shall cease and satisfactory arrangements for the correction thereof be made, this contract shall, upon the expiration of said ten (10) days, cease and terminate. In such case, Contractor shall not be entitled to receive any further Payment until work is finished. In the event of any

such termination, the County shall immediately serve written notice thereof upon Surety and Contractor, and Surety shall have the right to take over and perform this contract, provided, however, that if Surety within fifteen (15) days after service upon it of said notice of termination does not give the County written notice of its intention to take over and perform this contract or does not commence performance thereof within thirty (30) days from date of serving such notice, the County may take over the work and prosecute same to completion by contract or by any other method it may deem advisable for the account and at the expense of the Contractor, and she/he and his Surety shall be liable to the County thereby. The County may, without liability for doing so, take possession of and utilize in completing the work such materials, appliances, plant, and other property belonging to the Contractor as may be on the site of the work and necessary therefor.

The Contractor shall be considered disabled from prosecuting the work under this contract upon the appointment of a receiver for Contractor or if Contractor makes an assignment for the benefit of creditors or commits any act of insolvency and, in such event, County may terminate this contract upon giving forty-eight (48) hours written notice and may avail itself of all remedies provided for in this preceding paragraph. Contractor's rights under this contract are not terminated or modified solely by the filing of a voluntary or involuntary petition for relief under the United States Bankruptcy Code by or against the Contractor. However, Contractor agrees that it shall promptly notify County in writing of the filing of the bankruptcy petition within twenty-four (24) hours of the filing date of such bankruptcy petition ("Petition Date") and shall, at the same time, notify County in writing whether Contractor intends to assume or reject this contract. Should Contractor intend to assume this contract, Contractor agrees to promptly file a motion for and obtain Bankruptcy Court approval of Contractor's assumption of this contract within their (30) days of the Petition Date and Contractor further agrees that pending Bankruptcy Court approval of Contractor's assumption of this contract, Contractor shall perform all obligations under this contract which become due after the Petition Date as such performance becomes due, promptly cure all defaults, and provide adequate assurance of Contractor's ability to continue performance under this contract. In the event (1) Contractor notifies County that Contractor intends to reject this contract, (2) Contractor fails to timely notify County of the filing of the bankruptcy petition or of Contractor's intent to assume or reject this contract, or (3) Contractor notifies County that Contractor intends to assume this contract but fails to timely perform under this contract, to promptly cure all defaults, to provide adequate assurance of Contractor's ability to continue performance under this contract, or to obtain Bankruptcy Court approval of Contractor's assumption within thirty (30) days of the Petition Date, County may terminate this contract upon giving forty-eight (48) hours written notice and may avail itself of all remedies provided for in the preceding paragraph. Contractor agrees and acknowledges that County will suffer irreparable damage to County's interest under this contract if County is delayed in its remedy to terminate this contract in the event of Contractor's failure to perform under this contract. Contractor agrees and consents that the County may be relieved by the Bankruptcy Court from the

bankruptcy stay to pursue County's remedies under this contract, on an expedited basis, upon twenty-four (24) hours notice, without the necessity for a hearing, pursuant to 11 U.S.C. Section 362(f).

If unpaid balance of contract price shall exceed expense of finishing work, including compensation for additional architectural, managerial, and administrative services, such excess shall be paid to Contractor. If such expense shall exceed such unpaid balance, Contractor shall pay difference to the County. Expense incurred by the County is herein provided, and damage incurred through Contractor's default shall be certified by Engineer.

The foregoing provisions are in addition to and not in limitation of any other rights or remedies available to the County.

5.13 Acceptance of Contract. When the Engineer has made the final inspection and determines that the contract work had been completed in all respects in accordance with the plans and specifications, and when the Contractor has approved in writing the Final Estimate of the total amount payable for the performance of the contract, the Engineer will recommend that the Board of Supervisors formally accept the contract, and immediately upon and after such acceptance by the Board of Supervisors, the Contractor will be relieved of the duty of maintaining and protecting the work as a whole, and he will not be required to perform any further work thereon; and the Contractor shall be relieved of his responsibility for injury to the persons or property or damage to the work which occurs after the formal acceptance by the Board of Supervisors.

After the Engineer has made the final inspection, he will make a Proposed Final Estimate in writing of the total amount payable to the Contractor, including therein an itemization of said amount, segregated as to contract item quantities extra work, and any other basis for payment, and shall show therein all deductions made or to be made for prior payments and amounts to be kept or retained under the provisions of the contract. All prior estimates and payments shall be subject to correction in the Proposed Final Estimate. Within thirty (30) days after said Proposed Final Estimate has been submitted to him/her, the Contractor shall submit to the Engineer his written approval of said Proposed Final Estimate or a written statement of all claims she/he has arising under or by virtue of the contract. No claim will be considered that was not included in said written statement of claims, nor will any claim be allowed as to which a notice or protest is required under the provisions in Sections 5.03, "Changes," 4.02, "Time of Completion," 4.03, "Liquidated Damages," unless the Contractor has complied with the notice or protest requirements of said Sections.

On the Contractor's approval, or if he files no claim within thirty (30) days, the Engineer will issue a Final Estimate in writing in accordance with the Proposed Final Estimate submitted to the Contractor and will recommend that the Board of Supervisors accept the work and file the Notice of Completion. The Notice of Completion is filed with the County

Recorder, usually within two (2) days of said acceptance by the Board of Supervisors and final Payment is made to the Contractor thirty-five (35) days after filing the Notice of Completion.

If the Contractor within thirty (30) days files claims, they shall be in sufficient detail to enable the Engineer to ascertain the basis and amount of said claims. The Engineer will consider and determine the Contractor's claims, and it will be the responsibility of the Contractor to furnish within a reasonable time such further information and details as may be required by the Engineer to determine the facts or contentions involved in his claims. Failure to submit such information and details will be sufficient for denying the claims.

Upon final determination of the claims, the Engineer shall then make and issue his Final Estimate in writing and will recommend that the Board of Supervisors accept the work and file the Notice of Completion. The filing of the Notice of Completion and the making of the final payment will follow the schedule set forth above.

5.14 Project Plan Interpretation. Questions relating to interpretation of the plans or specifications prior to bid opening shall be referred to the Engineer.

5.15 Contract Administration and Inspection. The project will be inspected by an engineer who is a representative of the County who will be responsible for contract administration, who shall at all times have access to the work, whether it is in preparation or progress. All questions or comments relating to this project after award of contract shall be directed to said engineer.

5.16 Materials. Except as otherwise specifically stated in this contract, Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, superintendence, temporary constructions of every nature, and all other services and facilities of every nature whatsoever necessary to execute and complete this contract within specified time.

Unless otherwise specified, all materials shall be new and both workmanship and materials shall be of good quality.

Materials shall be furnished in ample quantities and at such times as to ensure uninterrupted progress of work and shall be stored properly and protected as required. Contractor shall be entirely responsible for damage or loss by weather or other causes to materials or work under this contract.

No materials, supplies, or equipment for work under this contract shall be purchased subject to any chattel mortgage, or under a conditional sale or other agreement by which an interest therein, or in any part thereof, is retained by seller or supplier. Contractor warrants good title to all material, supplies and equipment installed or incorporated in work and agrees upon completion of all work to deliver premises, together with

all improvements and appurtenances constructed or placed thereon by him/her, to County free from any claim, liens or charges. She/he further agrees that neither he nor any person, firm or corporation furnishing any materials or labor for any work covered by this contract shall have any right to lien upon premises or any improvement or appurtenances thereon except that Contractor may install metering devices or other equipment of utility companies or of political subdivisions, title to which is commonly retained by utility company or political subdivision. In the event of installation of any such metering device or equipment, Contractor shall advise County as to owner thereof. Nothing contained in this article, however, shall defeat or impair right of persons furnishing material or labor under any bond given by Contractor for their protection, or any rights under any law permitting such persons to look to funds due Contractor in hands of County, and this provision shall be inserted in all subcontracts and material contracts, and notice of its provisions shall be given to all persons furnishing material for work when no formal contract is entered into for such materials.

5.17 Substitutions. Whenever in specifications any materials, process, or article is indicated or specified by grade., patents or proprietary name or by name of manufacturer, such specification shall be deemed to be used for the purpose of facilitating description of material, process or article desired and shall be deemed to be followed by the words "or equal" and Contractor may, unless otherwise stated, offer any material, process or article which shall be substantially equal or better in every respect to that so indicated or specified. If material process or article offered by Contractor is not, in opinion of the Engineer, substantially equal or better in every respect to that specified, then Contractor shall furnish material, process or article specified. Burden of proof as to equality of any material, process or article shall rest with Contractor. Contractor shall submit request together with substantiating data for substitution of any "or equal" item within thirty five (35) days after award of contract. Provision authorizing submissions of "or equal" justification data shall in no way authorize an extension of time for performance of this contract.

In the event Contractor furnished material, process or article more expensive than that specified, difference in cost of such material, process or article so furnished shall be borne by Contractor.

SECTION 6. Legal Relations and Responsibility

6.01 Laws to be Observed.

- a. The Contractor shall keep himself/herself fully informed of all existing and future State and Federal laws and county and municipal ordinances and regulations which in any manner affect those engaged or employed in the work, or the materials used in the work, or which in any way affect the conduct the work, and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. She/he shall at all times observe and comply with, and shall cause all his agents and

employees to observe and comply with all such existing and future laws, ordinances, regulations, orders, and decrees of bodies or tribunals having any jurisdiction or authority over the work; and shall protect and indemnify the County of Santa Cruz, and all officers and employees thereof connected with the work against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, whether by himself/herself or his/her employees. If any discrepancy or inconsistency is discovered in the plans, drawings, specifications, or contract for the work in relation to any such law, ordinance, regulation, order or decree, the Contractor shall forthwith report the same to the Engineer in writing.

- b. "Material Breach" - Failure to Comply with all County's Ordinances, Regulations:

The Contractor shall keep himself/herself fully informed of all existing and future ordinances and regulations which in any manner affect the conduct of the work. This includes the following State and County laws, ordinances, and regulations, but is not limited to only the following laws, ordinances, and regulations: grading, zoning, building, riparian corridor, Coastal Zone requirements, erosion control, sensitive habitat protection, tropical hardwoods, and Native American cultural sites.

Failure to fully and promptly comply with all applicable County ordinances and regulations shall be considered a material breach of this agreement.

The Contractor understands he may be liable for any violations, and may incur any of the penalties specified in the County Code or State law for such violations including prosecution or assessment of civil penalties. The Contractor shall be required to promptly take all necessary corrective measures to stay in compliance with all ordinances and regulations. Failure to comply with an official order to comply with applicable laws will result in payments being halted until such time as all existing violations are corrected.

6.02 Hours of Labor. Eight hours labor constitutes a legal day's work. The Contractor shall forfeit, as a penalty to the County of Santa Cruz, \$25 for each worker employed in the execution of the contract by the Contractor or any sub-contractor under him/her for each calendar day during which such worker is required or permitted to work more than 8 hours in any one calendar day' and 40 hours in a one calendar week in violation of the provisions of the Labor Code, and in particular, Section 1810 to Section 1815, thereof, inclusive, except that work performed by employees of Contractors in excess of 8 hours per day, and 40 hours during any one week, shall be permitted upon compensation for all hours worked in excess of 8 hours per day at not less than one and one-half times the basic rate of pay as provided in said Section 1815.

6.03 Nondiscrimination Clause.

- a. The CONTRACTOR will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, ancestry, physical or mental disability, medical condition (cancer related), marital status, sex, sexual orientation, age (over 40), veteran status or any other non-merit factor unrelated to job duties. Such action shall include, but not be limited to recruitment or recruitment advertising, employment, upgrading, demotion, transfer, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The CONTRACTOR agrees to post in conspicuous places, available to employees and applicants for employment, notice setting forth the provisions of this non-discrimination clause. Contractors and subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Government Code, Section 12900 et seq.) and the applicable regulations promulgated thereunder (California Administrative Code, Title 2, Section 7285.0 et seq). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code, Section 12990, set forth in Chapter 5 of Division 4 of Title 2 of the California Administrative Code are incorporated into this contract by reference and made a part hereof as if set forth in full. Contractor and its subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.
- b. The CONTRACTOR will, in all solicitations or advertisements for employees placed by or on behalf of the CONTRACTOR, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, age, national origin, or physical or mental disability.
- c. The CONTRACTOR will cause the foregoing provisions to be inserted in all subcontracts for any work covered by this Agreement, provided that the foregoing provisions shall not apply to contracts or subcontracts for standard commercial supplies or raw materials.

6.04 Wage Rates. Pursuant to the provisions of Article 2 (commencing at Section 1770), Chapter 1, Part 7, Division 2 of the Labor Code of California, the County has obtained from the Director of the Department of Industrial Relations the general prevailing rate of per diem wages and the prevailing rate for holiday and overtime work in the locality in which the work is to be performed for each craft, classification or type of worker needed to execute the contract. Holiday shall be as defined in the collective bargaining agreement applicable to each particular craft, classification or type of worker employed under the contract.

Per diem wages shall be deemed to include employer payments for health and welfare, pensions, vacation, travel time and subsistence pay as provided in Section 1773.8 of the California Labor Code, apprenticeship or other training programs authorized by Section 3093 of the California Labor Code, and similar purposes when the term "Per diem wages" is used herein.

If during the period this bid is required to remain open, the Director of Industrial Relations determines that there has been a change in any prevailing rate of per diem wages in the locality in which the work under the contract is to be performed, he/she shall make the change available to the County, but the change shall not affect the Request for Bids or the contract consequently awarded.

Holiday and overtime work, when permitted by law, shall be paid for at the rate of at least one and one-half (1-1/2) times the above specified rate of per diem wages, unless otherwise specified.

There shall be paid each worker of the Contractor, or any of his subcontractors engaged in work on the project, not less than the general prevailing wage rate regardless of any contractual relationship which may be alleged to exist between the Contractor or any subcontractor and such worker.

The Contractor shall, as a penalty to the County, forfeit twenty-five dollars (\$25.00) for each calendar day, or portion thereof, for each worker paid less than the prevailing rates as determined by the director for such work or craft in which such worker is employed for any public work done under the contract by him/her or by any subcontractor under him/her. The difference between such prevailing wage rates and the amount paid to each worker for each calendar day, or portion thereof, for which each worker was paid less than the prevailing wage rate shall be paid to each worker by the Contractor.

The Contractor shall post, at appropriate conspicuous points on the site of the project, a schedule showing all determined general prevailing wage rates.

The County will not recognize any claim for additional compensation because of the payment by the Contractor of any wage rate in excess of the prevailing wage rate set forth in the contract. The possibility of wage increases is one of the elements to be considered by the Contractor in determining his/her bid and will not under any circumstances be considered as the basis of a claim against the County on the contract.

6.05 Record of Wages Paid: Inspection. Each contractor and subcontractor shall keep an accurate payroll record and make it available for inspection as required in Section 1776 of the Labor Code.

6.06 Contractor's Licensing Laws. Attention is directed to the provisions of Chapter 9 of Division 3 of the Business and Professions Code concerning the licensing of contractors.

All bidders and contractors shall be licensed in accordance with the laws of this State, and any bidder or contractor not so licensed is subject to the penalties imposed by such laws.

6.07 Apprentices. Attention is directed to the provisions in Sections 1777 and 1777.6 (and Section 3070 et seq.) of the Labor Code concerning the employment of apprentices by the Contractor or any subcontractor under him/her. The Contractor and any subcontractor under him/her shall comply with the requirements of said sections in the employment of apprentices.

Information relative to apprenticeship standards, wage schedules, and other requirements may be obtained from the Director of Industrial Relations, ex-officio the Administrator of Apprenticeship, San Francisco, California, or from the Division of Apprenticeship Standards and its branch offices.

It is County policy to encourage the employment and training of apprentices public works contracts as may be permitted under local apprenticeship standards

6.08 Fair Labor Standards Act. The attention of bidders is invited to the fact that the County of Santa Cruz has been advised by the Wage and Hour Division, U.S. Department of Labor, that contractors are required to meet the provisions of the Fair Labor Standards Act of 1933 and as amended. (12 Stat. 10600.)

6.09 Worker's Compensation Insurance. The Contractor shall provide, during the life of this contract, worker's compensation insurance for all of his employees engaged in work under this contract on or at the site of the project, and, in case any of his work is sublet, the Contractor shall require the subcontractor similarly to provide worker's compensation insurance for all the latter employees. Any class of employee or employees not covered by a subcontractor's insurance shall be covered by the Contractor's insurance. In case any class of employees engaged in work under this contract, on or at the site of the project, is not protected under the Worker's Compensation Statute, the Contractor shall provide or shall cause a subcontractor to provide adequate insurance coverage for the protection of such employees not otherwise protected. The Contractor shall file with the County certificates of his insurance protecting workers. Contractor is required to secure payment of compensation to his -employees in accordance with the provisions of Section 3700 of the Labor Code.

6.10 Payment of Taxes. The contract prices paid for the work shall include full compensation for all taxes which the Contractor is required to pay, whether imposed by Federal, State or local government, including, without being limited Federal excise tax. No tax exemption certificate nor any document designed to exempt the Contractor from payment of any tax will be furnished to the Contractor to any tax on labor, services, materials, transportation, or any other items furnished pursuant to the contract.

6.11 Permits and Licenses. The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incident to due and lawful prosecution of the work, except as otherwise provided in the Special Conditions.

6.12 Subcontracting.

- a. The Contractor agrees to bind every subcontractor by terms of the contract as far as such terms are applicable to subcontractor's work. If Contractor shall subcontract any part of this contract, Contractor shall be as fully responsible to the County for acts and omissions of his subcontractor and of persons, either directly or indirectly, employed by his subcontractor, as he is for acts and omissions of persons directly employed by himself/herself. Nothing contained in contract documents shall create any contractual relation between any subcontractor and the County.
- b. County's consent to or approval of any subcontractor under this contract shall not in **any way** relieve Contractor of his obligation under this contract, and no such consent or approval shall be deemed to waive any provision of this contract.
- c. Substitution or addition of subcontractors shall be permitted only as authorized in Chapter 2 (commencing at Section 4101), Division 5, Title 1 of the California Government Code.

6.13 Patents. The Contractor shall assume all costs arising from the use of patented materials, equipment, devices, or processes used on or incorporated in the work, and agrees to indemnify and save harmless the County of Santa Cruz, and all officers and employees connected with the work and their duly authorized representatives, from all suits at law, or actions of every nature for, or on account of, the use of any patented materials, equipment, devices or Processes.

6.14 Safety Provisions. The Contractor shall conform to the rules and regulations pertaining to safety established by the California Division of Industrial Safety.

6.15 Safety Program. When requested by County, Contractor shall submit a proposed safety program which outlines the precautions to be taken by contractor to insure the safety of County employees and the public.

6.16 Material Safety Data Sheets.

- a. Contractor shall provide the County with copies of current Material Safety Data Sheets (MSDS) on all products subject to the requirements of California Code Section 5144. The MSDS submittals will be required prior to the issue of a Notice to Proceed.

- b. Contractor shall conduct operations in such a way as to comply with manufacturers' recommendations contained in Material Safety Data Sheets.

6.17 Responsibility for Damage. The County of Santa Cruz and all officers and employees thereof connected with the work shall not be answerable or accountable in any manner for any loss or damage to any of the materials or other items used or employed in performing the work; for injury to or death of any person, either workers or the public; or for damage to property from any cause which might have been prevented by the Contractor, or his workers, or anyone employed by him/her.

The Contractor shall be responsible for any liability imposed by law and for injuries to or death of any person or damage to property resulting from defects, obstructions or from any cause whatsoever during the progress of the work or at any time before its completion and final acceptance.

The Contractor shall indemnify and save harmless the County of Santa Cruz and all officers and employees thereof connected with work from all claims, suits or actions of every name, kind and description brought for, or on account of, injuries to or death of any person or damage to property resulting from the construction of the work or by or in consequence of any negligence in guarding the work; use of improper materials in construction of the work; or by or on account of any act or omission by the Contractor or his agents during the progress of the work at any time before its completion and final acceptance.

The duty of the Contractor to indemnify and save harmless as set forth here shall include the duty to defend, as set forth in Section 2778 of the Civil Code; provided, however, that nothing herein shall be construed to require the Contractor to indemnify the County against any responsibility or liability in contravention Section 2732 of the Civil Code, including any loss arising from a design defect which is the result of the sole negligence of the County.

6.18 Contractor's Supervision. Unless personally present on premises (including both the site and the plant) where work is being done, Contractor shall keep on the work, during its progress, a competent Construction Superintendent satisfactory to the County. The Construction Superintendent shall not be changed except with consent of the County, unless the Construction Superintendent proves to be unsatisfactory to Contractor and ceases to be in his employ.

The Construction Superintendent shall represent Contractor in his absence, and all directions given to him/her shall be so confirmed on written request in each case.

The Contractor shall give efficient supervision to work using his best skill and attention. He shall carefully study and compare all drawings, specifications, and other instructions and shall at once report to engineer

any error, inconsistency or omission which he may discover, but he shall not be liable to the County for any damage resulting from any errors or deficiencies in contract documents or other instructions by engineer.

6.19 Personal Liability. Neither the Board of Supervisors nor any other officer or authorized employee of the County of Santa Cruz, nor any officer or employee of any county, city or district shall be personally responsible for any liability arising under or by virtue of the contract.

6.20 Sanitary Facilities. The Contractor shall provide a sanitary temporary toilet building as directed by the engineer for the use of all workmen. The building shall be maintained in a sanitary condition at all times and shall be left at the site until removal is directed by the engineer.

6.21 Tropical Hardwoods. The Contractor shall not provide any items in performance of this contract which contain tropical hardwoods or tropical hardwood products. Use of tropical hardwoods or tropical wood products shall constitute a material breach of contract.

6/96

WELL PUMP WATER SYSTEM FOR POLO GROUNDS COUNTY PARK

DIVISION B - SPECIAL CONDITIONS

Section 1. Time of Completion and Liquidated Damages

- 1.01 Time of Completion.** The Contractor shall complete all or any designated portions of the work called for under the contract in all parts and requirements within one hundred (100) calendar days from receipt of Notice to Proceed. Reference is made to Section 4.02 of the General Provisions.

It is the intent of the County to minimize disruptions to ongoing County operations during construction projects. A total of one hundred (100) calendar days have been allowed for this project. This time period will be divided into a mobilization phase and a construction phase. The mobilization phase shall consist of time necessary to secure all materials, receive approval of submittals and all other operations necessary prior to start of construction. The Contractor shall not begin demolition or carry out any other operations during the mobilization phase which would interrupt County operations. The mobilization phase shall consist of seventy (70) calendar days.

The second phase of the contract shall consist of the construction phase. All construction operations shall be carried out during this period. The Contractor may shorten the time period of the mobilization phase, subject to approval of the construction schedule by the County. However, a reduction of the mobilization phase will not allow an increase in the number of days allowed for the construction phase. The construction phase shall consist of thirty (30) calendar days.

For the purpose of computing liquidated damages all days in excess of the allowed number of construction days, that the contract is in the construction phase, shall be considered in excess of the allowed number of calendar days for the overall project.

- 1.02 Liquidated Damages.** The Contractor shall pay to the County of Santa Cruz a sum of ~~\$100.00~~ per day for each and every calendar day's delay in finishing the work in excess of the number of calendar days prescribed in the Time of Completion. Reference is made to Section 4.03 of the General Conditions.

In the event the contractor fails to comply with any of the provisions of County Code Section 2.37.107, which prohibits the use of tropical hardwoods or tropical wood products, the contractor shall be liable for liquidated damages in an amount equal to the contractor's net profit under the contract, or five percent (5%) of the total amount of the contract dollars, whichever is greater.

- 1.03 Proposal shall be valid for at least ninety (90) calendar days after date on which bids are opened. Reference Sections 2.07 and 3.01 of the General Conditions.
- 1.04 Should any discrepancy exist between terms or conditions contained in Division A, General Conditions, and Division C, Technical Specifications, the more stringent requirement shall govern.

Section 2 - Specifications-Examination of Site and Protection

- 2.01 Standard Specifications: The term "Caltrans Specification," or "State Specifications" where found in the Technical Specifications, shall refer to the current edition of the "Standard Specification" of the State of California Department of Public Works, Division of Highways (excepting application to payment). Other Standard Specifications include current editions of the County of Santa Cruz Design Standards, UBC, UPC and UMC.
- 2.02 Examination of Site: The contractor will be held to have examined the site and to have compared it with the drawings and Specifications, to have carefully examined all of the Contract Documents and to have satisfied himself as to the conditions under which the work is to be performed before entering into this contract, and no allowance shall subsequently be made on behalf of the Contractor on account of any error on his part or his negligence of failure to acquaint himself with the conditions of the site or of the streets or roads approaching the site.
- 2.03 Start of Work: Start of construction without a written report to the County's Representative of any discrepancies, assumes acceptance of the site conditions by the Contractor.
- 2.04 Safety Conditions: The Contractor shall take all reasonable measures to insure public safety during construction of this project. This shall include signage, barricades, fencing and other warning devices necessary to protect the public from injuries.
- 2.05 Existing improvements, adjacent property, utility, irrigation and other facilities that are not to be removed shall be protected from damage. The Contractor shall repair all damage so caused by his work, at his expense and in a manner satisfactory to the County which may include replacement of the turf on the soccer fields with sod for failure of the well pump water system to supply water to keep the turf in a good, healthy condition of active growth.

Section 3 - Change Over of Pumping Systems

- 3.01 Disruption of Water for Irrigation: The Contractor shall notify the County at least 72 hours in advance of shutting down the exiting well pump supplying water to the irrigation system

It is the intent of the County to minimize disruption to the on-going operation of irrigating the new soccer fields. A total of four (4) consecutive days have been allowed for the change over of the pumping systems and for the soccer field irrigation system to be out of operating. The well shall be considered in service when it is producing at least 100 GPM of water at 90 P.S. I. and supplying it to the soccer fields irrigation system on a daily basis.

- 3.02 Existing Pump Equipment:** The Contractor shall remove the existing pump, 4-inch discharge pipe, electrical cable from the existing well and provide the existing pump, shut off controls and air release valve to the County Parks Department. Contractor shall legally dispose of the existing 4-inch discharge pipe, electrical cable and other items being replaced under this contract, which are not to be provided to the County Parks Department.

Section 4 - Use of Well Prior to Completion of Contract

- 4.01** The use of the well by the County shall not be construed as, and will not constitute acceptance in any sense, of any portion of the work of the Contractor.
- 4.02** All necessary repairs, renewals, changes, or modifications in the work or any portion thereof as used, not due to ordinary wear and tear, but due to defective materials or workmanship, the operations of the Contractor, or any other cause, shall be made at the expense of the Contractor.
- 4.03** The use of the well by the County shall not relieve the Contractor of his responsibilities or liabilities under the contractor nor constitute a waiver by the County of any conditions thereof.

TECHNICAL SPECIFICATIONS

for the

WELLPUMPWATERSYSTEM POLOGROUNDSCOUNTYPARK

TABLE OF CONTENTS

Special Provisions

1.01 Description of Work	1
1.02 Required Permits	1
1.03 Surveying	1
1.04 Disposal of Water	1
1.05 Personnel and Equipment	1
1.06 Required Shop Drawings and Submittals	1
1.07 Operating and Maintenance Instructions	2
1.08 Contractor's Utilities	3
1.09 List of Drawings	3
1.10 Site Preparation	3
1.11 Existing Utilities	3
1.12 Factory Training	4

Technical Provisions

2.01 Demolition, Clearing and Grubbing	5
2.02 Site Excavation and Embankment	5
2.03 Concrete Structures	5
2.04 Piping and Valves	5
2.05 Submersible Vertical Turbine Pump	8
2.06 Painting	10
2.07 Pressure Tank	11
2.08 Chain Link Fence	11
2.09 Electrical and Control System	11
Appendix A - Well Pump Efficiency Test	20

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Well Pump Water System
Polo Grounds County Park

SPECIAL PROVISIONS

1.01 Description of Work

The work consists of furnishing of all labor, materials, transportation, tools, supplies, plant equipment, and appurtenances necessary for the complete and satisfactory construction of well pump water system modifications including submersible vertical turbine well pump, piping, pressure tanks, site development, electrical, control, and miscellaneous appurtenances in complete operating condition to the satisfaction of the Santa Cruz County Parks, Open Space and Cultural Services Department.

1.02 Required Permits

The Owner will obtain permits from and the Contractor shall comply with all the requirements of the following agencies:

Santa Cruz County Health Department.

The Owner will pay all fees for these permits.

The Contractor shall comply with all provisions of these permits and shall obtain and pay for all other required permits.

1.03 Surveying

All construction surveying shall be provided by and paid for by the Contractor.

1.04 Disposal of Water

The Contractor shall be responsible for disposal of all water produced in the pump test pumping. The Contractor shall provide the necessary piping from the pump to the disposal system provided by the Contractor. The Contractor shall be responsible for providing piping and erosion control measures to the surface discharge points for the water.

1.05 Personnel and Equipment

The Contractor shall have a valid Contractor's license from the State of California. The Contractor shall perform this work in a safe manner and shall comply with Health Department regulations and the requirements of the Industrial Safety Orders of the State of California.

The Contractor shall furnish all labor, material, tools, supplies, power, equipment, permits, licenses, and services required.

1.06 Required Shop Drawings and Submittals

For all equipment items, the Contractor shall submit for written approval to the Owner five copies of manufacturers **scaled**, dimensioned shop drawings complete with all information required to describe the item and demonstrate compliance with the contract drawings and these specifications. Neither fabrication nor on site preparation shall be started before receipt of written review of the Owner.

Each shop drawing submitted shall be sequentially numbered and labeled with the following required information:

Well Pump Water System
Polo Grounds County Park

Well Pump Water System
Polo Grounds County Park
Aptos, California
Date: _____
Freitas + Freitas, Engineering and Planning Consultants
Identification: _____
Drawing No. : _____
Specification Section: _____
Submittal No. : _____

This document has been detail checked for accuracy of content and for compliance with the contract documents. The information contained herein has been coordinated with all involved subcontractors.

Contractor: _____
Signed: _____

The Contractor's responsibility for errors, omissions, and' deviations from requirements of the contract documents in submittals is not relieved by the Owner's review..

The Owner will require at least two weeks for review of submittals.

1.07 Operating and Maintenance Instructions

Before receiving payment for more than 60% of the total contract amount, the Contractor shall deliver to the Owner five sets of acceptable manufacturer's operating and maintenance instructions covering each item of equipment assembly provided under this contract. For the purpose of this section, "equipment" shall mean any mechanical, electrical, or instrumentation device and other items with one or more moving parts. Manufacturer's standard brochures or manuals shall be modified to reflect only the model or series of equipment installed on this project. All extraneous material shall be crossed out or otherwise altered as acceptable to the City.

The operating and maintenance instructions shall include, as a minimum, the following data on a separate sheet of paper for each item of equipment:

- A. Name and location of the manufacturer, the manufacturer's local representative, the nearest supplier, and spare parts warehouse.
- B. Accepted submittal information applicable to operation and maintenance.
- C. Recommended installation, adjustment, startup, calibration, and troubleshooting procedures.
- D. Recommended lubrication and an estimate of yearly quantity needed.
- E. Complete internal and connection wiring diagrams.
- F. Complete spare parts lists, by generic title and identification number, with exploded view of each assembly.
- G. Recommended spare parts.
- H. Disassembly, overhaul, and reassembly instructions.

Before final acceptance of the work, the Contractor shall assemble five complete sets of the information required in five appropriately labeled three ring binders. Each completed binder shall contain only that material which can be held in a nonexpanded position. A complete table of contents listing all items and their location in the binder shall be included. For ready reference, the Contractor shall compile a complete list of manufacturer's local representatives for each item provided.

1.08 Contractor's Utilities

A. ~~Power~~ Contractor shall provide any construction power used at the site. The Contractor shall make all arrangements for power takeoff points, voltage and phasing requirements, transformers, and metering and shall pay all costs and fees arising therefrom. It shall be the Contractor's responsibility to provide all special connections required for this work.

B. Water: Contractor shall provide the potable and construction water needed for the work. The Contractor shall provide water for testing. Testing water not incorporated into the final work shall be disposed of by the Contractor.

C. Sanitary Facilities: The Contractor shall make arrangements for use of adequate toilet facilities at or near the work site. The Contractor shall maintain the sanitary facilities in acceptable condition from the beginning of the work until completion. At completion, the Contractor shall remove the facilities and disinfect the premises. All portions of the work area shall be left in a clean and sanitary condition.

1.09 List of Drawings

The following drawings are included with these specifications:

1. Cover Sheet, Location Map & Site Plan

1.10 Site Preparation

The site shall be disturbed to the minimum extent possible. All areas disturbed, except those where permanent facilities are installed, shall be graded to drain at the end of construction and surfaced with 6 inches of 3/4 inch rock compacted to 90%. Portions of the site may be used for equipment storage with approval of the Owner.

1.11 Existing Utilities

The locations of existing major utilities as provided by the serving agencies are shown on the drawings. Minor lines, such as water, gas, and sewer services, may not be shown. It shall be the sole responsibility of the Contractor to determine the exact location and depth of all major utilities shown on the drawings, and all minor lines, whether shown or not.

The Contractor shall call Underground Service Alert (USA), Phone number 1-800-642-2444 at least 2 full working days prior to construction to mark underground utilities in the work areas.

If existing major utilities are not shown on the drawings or not found to be within reasonable proximity as shown on the drawings, the Contractor shall take all precautionary measures to protect existing facilities and notify the Owner of these findings.

The Contractor shall bear full responsibility for all damages and costs of repairs to existing utilities. Should any such utility be damaged during construction, all expenses of whatever nature arising from the restoration

of the utility to its original service shall be born by the Contractor, and no additional compensation will be allowed.

Unless otherwise shown on the drawings or specified herein, the Contractor shall maintain all water, gas, and sewer lines; lighting, power, and telephone conduits; structures; house connection lines and other surface or subsurface structures of any nature that may be affected by the work. If the Contractor fails to maintain and protect such facilities, the Owner reserves the right, if requested by the Utility, to permit the Utility to move or maintain the utility at the Contractor's expense.

Should it become necessary in the performance of the work to disconnect or reroute any underground utility due to a direct conflict with the new work, disconnection or rerouting will be paid for as extra work unless otherwise specified on the drawings or specifications.

1.12 Factory Training

The Contractor shall provide at least eight hours of on site factory training from manufacturers of the following equipment:

1. Pump Control System
2. Submersible Turbine Pump

Well Pump Water System
Polo Grounds County Park

TECHNICAL PROVISIONS

2.01 Demolition, Clearing and Grubbing

Demolition, clearing and grubbing for the work site shall conform to Section 15 and Section 16 of the Caltrans Specifications. All demolished, cleared and grubbed materials shall be removed from the Owner's property and disposed of by the Contractor at an approved dump.

2.02 Site Excavation and Embankment

All site excavation and embankment shall conform to Section 19 of the Caltrans Specifications. All embankment material shall be on site material from excavation, free of organic material and rocks or approved imported material. All materials shall be compacted to a relative compaction of not less than 95%.

All soils shall be moisture conditioned so that the moisture content is 1% to 3% over their optimum moisture content at the time of compaction. The percent of relative dry density attained shall be based on the maximum dry density obtained from a laboratory compaction curve run in accordance with the procedure set forth in ASTM #D 1557-70 Test Procedure. This test will also establish the optimum moisture content of the material.

2.03 Concrete Structures

All concrete materials and construction for the pump structure shall be Class A concrete in accordance with Section 5 1 of the Caltrans Specifications.

Excavation and backfill shall conform to Section 19-3 of the Caltrans Specifications. Steel rebar material and construction shall be grade 60 and conform to Section 52 of the Caltrans Specifications.

2.04 Piping and Valves

A. Buried and Exposed Piping

Buried Piping shall be PVC conforming to AWWA C-900, 150 psi working stress. Fittings shall be ductile iron. Joints shall be rubber gasketed bell and spigot type with concrete thrust blocks at all fittings.

All exposed water pipe at the well pump station shall be Class 50 Ductile Iron conforming to ANSI A21.50, or Seamless Wrought Steel Pipe, Schedule 40, conforming to ANSI B36.10. Pipe shall be cement mortar lined and the exterior epoxy painted. Fittings shall be of the same material as the pipe. Joints shall be rubber gasketed and flanged.

B. Flowmeter

The flowmeter shall be a line sized propeller meter Water Specialties Model ML-8 150 psi. or equal. The flowmeter shall indicate flow in gallons per minute, totalize flows and transmit a 4-20 ma signal proportional to the flowrate.

C. Pressure Gauge

Pressure gauge assemblies shall be furnished and installed as shown on the drawings. Dials shall be nominal 4-1/2 inch diameter. Gauges shall have a shut off valve and pulsation damper between the gage and the line. Gauge shall be graduated from zero to 200 psi with an accuracy of 2%. Gauges shall be manufactured by Marsh, Ashcroft or equal.

Well Pump Water System
Polo, Grounds County Park

D. Check Valve

The check valve shall be a line sized flanged horizontal check valve, class 150, Stockham Figure B-342 or equal.

E. Air Relief Valves

Air relief valve shall be a 1" Apco Model #144 or equal,

F. Gate Valves

All small gate valves of a size less than 3 inches shall be Crane Company #438 low pressure gate valve with wedge disc and non-rising stem and screwed ends.

Flanged gate valves 3 inches and larger shall be AWWA C500, wheel actuated, outside screw and yoke, Clow model F-5072 standard all iron body with bronze trim or equal.

G. Pressure Relief Valve

The 1 1/2" and 3" pressure relief valves shall be a flanged angle type pressure valve, Cla-Val model 50A-01, 125 class, 125 psi relief pressure, or equal.

H. Y Filter

The y filter shall be flanged 4E Spin Clean Steel Filter manufactured by API Agricultural Products Inc. or equal.

I. Disinfection and Testing

The Contractor shall completely disinfect all pipelines and pay for all sampling tests required.

The following procedures apply primarily when mains are wholly or partially dewatered. After the appropriated procedures have been completed, the main may be returned to service prior to completion of bacteriological testing in order to minimize the time customers are out of water. Leaks or breaks that are repaired with clamping devices while the mains remain full of pressurized water present little danger of contamination and require no disinfection.

1. Trench Treatment - When an old main is opened, either by accident or by design, the excavation will likely be wet and may be badly contaminated from nearby sewers. Liberal quantities of hypochlorite applied to open trench areas will lessen the danger from such pollution. Tablets have the advantage in such a situation because they dissolve slowly and continue to release hypochlorite as water is pumped from the excavation.
2. Swabbing with Hypochlorite Solution - The interiors of all pipe and fittings (particularly couplings and sleeves) used in making the repair shall be swabbed or sprayed with a 1 percent hypochlorite solution before they are installed,
3. Flushing - Thorough flushing is the most practical means of removing contamination introduced during repairs. If valve and hydrant locations permit, flushing toward the work location from both directions is recommended. Flushing shall be started as soon as the repairs are completed and shall be continued until discolored water is eliminated.

Well Pump Water System
Polo Grounds County Park

4. Sampling - Bacteriological samples shall be taken after repairs are completed to provide a record of determining the procedure's effectiveness. If the direction of flow is unknown, samples shall be taken on each side of the main break. If positive bacteriological samples are recorded, the situation shall be evaluated by a qualified engineer who can determine corrective action, and daily sampling shall be continued until two consecutive negative samples are recorded.

J. Hydrostatic Tests

1. Pipe to be Tested - All pipe including the services shall be tested. This may be accomplished by testing the main line and the service at the same time or by testing the main line and visually inspecting the services after connection. The entire system need not be tested at the same time. Portions of any valved section may be tested separately as approved by the Engineer.
2. Method of Test - Unless otherwise specified by the Engineer, two hydrostatic tests shall be made; one is referred to as a pressure test, and-the other is referred to as a leakage test.

The pressure test consists of applying a specified pressure to the new water main and maintaining this pressure for a specified period of time. The purpose of this test is to locate any defective material or pipe which may have been used in the work. Unless otherwise specified, the pressure applied shall be 150 psi. The period of time the pressure is to be held is one hour.

The leakage test consists of measuring the amount of water lost through leakage at the joints when the main is subjected to a given pressure for a specified period of time. The purpose of this test is to determine the water tightness of the pipeline. Unless otherwise specified, the average pressure applied shall be 160 psi. The period of time the pressure is to be applied is two hours.

The leakage test shall be conducted as follows: The line shall be completely filled with water at least 24 hours before testing. The pressure shall be built up by means of a pump to 160 psi. The pressure shall be allowed to drop to 140 psi. The pressures, at the start and end of the test shall be 160 psi. The pump, pipe connection and all necessary apparatus shall be furnished by the Contractor and no extra compensation shall be allowed therefor. The Engineer may, at his option, supply any pressure gauges required in making the test. The Contractor shall supply all adapters required to install the Engineer's gauges on the Contractor's apparatus.

3. Expelling Air Before Test - Before applying the specified test pressure, all air shall be expelled from the pipe. To accomplish this, taps shall be made, if necessary, at points of highest elevation and afterward tightly plugged and no extra compensation shall be-allowed therefor.
4. Permissible Leakage - No pipe installed will be accepted if the leakage for individual joints is greater than 0.0736 gallons per inch diameter per joint, per 24 hours at 150 psi. Tests shall be made only after completion of partial backfill. The pipe joints shall remain exposed until completion of the hydrostatic test. Test shall include all services to property line. Should any test of a section of pipe line disclose joint leakage greater than that permitted, the Contractor shall, at his own expense, locate and repair the defective joints until the leakage is within permitted allowance.
5. Leakage Defined - Leakage is defined as the quantity of water pumped into the section of pipe being tested to maintain the specified test pressure. Leakage shall be measured by pumping from a calibrated tank.
6. Disinfection of Water Storage Facilities - All water storage facilities shall be disinfected in accordance with AWWA Standard C 652-86 or latest revision.

Well Pump Water System
Polo Grounds County Park

2.05 Submersible **Vertical Turbine Pump**

The Contractor shall furnish and install one multistage deep well submersible turbine pump that conforms to Part B Sections of AWWA E101. The pump for the well shall have the general characteristics and be suitable for installation at the setting shown below:

Pump Performance

Speed:	3500	Flow Rate (gpm):	150	200	250
Fluid:	Potable Water	TDH (ft):	660	560	450
S.G.	1.0	Max NPSHR (ft):	14	16	19
Viscosity:	1.2x10 ⁻⁵ sq. ft.	Min Eff. (%):	62	69	69

Pump Construction

Type :	Deep Well Turbine - Submersible
Impeller Type:	Enclosed
Column Size:	3" ID
Column Length:	300 feet
Case or Bowls:	Bronze

Motor

Type:	Submersible
Voltage:	480 Volt, 60 Hz
Horsepower:	40 HP
Ambient Temp:	40 Degrees C
Phase:	3
Sync. Speed	3500 rpm
Altitude:	250 feet
S.F.:	1.15

The pump shall be a Grundfos Model 2253400-15 stage 40 hp pump or equal.

The Contractor shall submit performance curves, shop and assembly drawings. The drawings shall show the dimensions, rating, component parts, arrangements, and materials of construction for all items covered under this specification. The performance curves shall be based on data secured during actual tests run at the factory on the model pump proposed for installation and signed by a representative of the manufacturer. The curves shall show model, size and trim of the impeller, and the developed head, brake, horsepower, NPSH, and efficiency at intervals of 50 gpm in capacity for the pump operating at the specified speed over the operating range of the pump.

No pump equipment shall be shipped until the required drawings and curves have been submitted to and approved by the Owner.

All manufactured items provided shall be **new**, of current manufacture, latest design, and shall be the products of reputable manufacturers specializing in the manufacture of such products; such manufacturers shall have not less than 5 years of experience in such manufacturer and shall upon request, furnish the names of not less than 5 successful installations of their equipment of comparable nature to that offered under this contract.

Well Pump Water System
Polo Grounds County Park

The pump shall be designed for pumping clear, cool ground water, The pump characteristics shall be such that the motor name plate rating is not exceeded at any point on the operating curve of the pump.

The pump shall be stainless steel or bronze fitted, deep well type, submersible turbine pump.

Anchor bolts, discharge head, and discharge support framing required to support the pump and adapt to the conditions shown on the drawings, shall be furnished by the Contractor.

The discharge column assembly shall conform to the following requirements:

1. Discharge Pipe: The total length of the discharge column pipe shall be of the thickness class specified in AWWA E101 Section B4.5.
2. Pump Bearings: Pump bearings shall be stainless steel, located directly above each impeller
3. Pump Shaft: Pump shaft shall be bronze type 410 or 416.

The bowl assembly shall conform to the following requirements:

1. Pump Bowls: Pump bowls shall be bronze and shall be free from faults. The bowls shall be accurately machined and fitted to close dimensions. The bowls shall be of suitable thickness to withstand the pressure developed at shut off head.
2. Pump Impeller: Pump impeller shall be bronze of the open, semi-open, or closed impeller type. The impellers shall be hydraulically and dynamically balanced. All exterior surfaces shall be machined.

Interior surface of water ways shall be hand finished. The impeller shall be accurately balanced and locked to the shaft with a tapered lock bushing.

3. Interconnector Screen: The interconnector screen shall have a net inlet opening area of not less than 4 times the area of the eye of the impeller, The screen shall be made of stainless steel.
4. Check Valve: The pump shall contain an integral, stainless steel, full flow, non-slamming check valve.

Electric Motors

1. General: The pump manufacturer shall be responsible for the proper selection of a submersible motor for the given application, torque, and thrust developed by the pump under the operating conditions. The horsepower rating shall be sufficient to drive the pump at all points on the head discharge curve. Motor material, workmanship, and tests shall conform with the requirements of NEMA, IEEE, and ANSI. Motor shall be specifically designed for operation submersed in well water. It shall be self-contained so as to minimize the exchange of internal and external fluids. Internal fluids shall be oil or water and the fluid reservoir must have expansion means designed to keep the internal pressure at or above the surrounding well water.

2. Operating Characteristics: The motor shall be suitable for across the line starting or reduced voltage starting providing standard starting torque with a minimum inrush current. The motor shall drive the pumps continuously under the specified operating conditions without exceeding allowable temperature for the class of insulation used. Efficiency and power factor at the rated load, speed, and frequency shall be as

Well Pump Water System
Polo Grounds County Park

high as possible for the motor size. Guarantee values of efficiency and power factor at full, 3/4 and 1/2 load shall be supplied.

3. **Motor Construction Details:** The motor shall conform to the following requirements. Exterior housing shall be of stainless steel. All exposed shaft and fasteners shall be stainless steel. Shaft seal shall be of the mechanical type suitable for vertical operation. A sand slinger shall be provided on the shaft. Thrust bearings shall utilize self-equalizing segmented shoes to assure uniform thrust distribution and shall be capable of handling all thrust conditions imposed by the pump plus the dead weight of the rotating parts. The motor manufacturer shall specify the bearing rating under continuous operating conditions at the rated speed. Two sleeve type guide bearings shall be used. The motor shall have a bearing or thrust collar capable of handling momentary up thrust conditions as specified by the pump manufacturer. The motor shall be suitable for rotation in either direction.

The motor windings shall be protected against the environment in which they are operating. Water filled motors must have windings protected by a sealant, the dielectric quality of which shall not be affected by prolonged soaking in water. The motor shall have a short circuit test. The motor power leads shall be flexible elastomer covered type impervious to water and sealed against entrance of moisture where they emerge from the motor housing. Leads shall contain water block features such that moisture in external leads cannot enter the motor. A plug-in type motor lead incorporating the water block feature shall be furnished.

Leads furnished with the motor shall be of **sufficient** length to allow splice to main power cables above the pump bowls,

Pump cable shall be 600 volt insulated and jacketed. Cable shall meet AWWA E-100 specifications. The cable shall be furnished approximately 10 feet longer than the length from motor to the top of the well and shall be clamped to the pump column at 10 foot intervals.

The pump shall be installed and tested in accordance with the approved procedures shown on the shop and assembly drawings. The equipment shall be tested in the presence of the Owner by an authorized pump manufacture representative who shall certify, in writing, that the pump is operating in compliance with these specifications and free of binding, scraping, vibration, or other defects. The pump shall be run and monitored for a minimum duration of 4 continuous hours during a test period and an efficiency test in accordance with Appendix A shall be performed. Five copies of the efficiency test results shall be supplied on the form included as Appendix A.

The Contractor shall furnish any necessary oil and grease as recommended by the manufacturer for initial operation.

The Contractor shall completely disinfect the pump, well, and pipeline in accordance with applicable requirements of the DOHS and AWWA A100 prior to the acceptance of the work by the Owner. The Contractor shall submit the proposed method of disinfection to the Owner no later than 20 days after award of the contract. Sampling and bacteriological analysis will be completed and paid for by the Owner.

The pump and column pipe shall be steam cleaned to assure that no residue of oils or solvents remain which could contaminate samples being tested for volatile organic chemicals. The Contractor shall supply written verification that cleaning has been accomplished.

2.06 Painting

All exposed piping, valves, and metal appurtenances shall be painted. Surfaces to be painted shall be clean, dry, and all **foreign** materials shall be removed from the surface. Iron and steel surfaces shall be prepared in accordance with the surface preparation specifications of the Steel Structures Painting Council (SSPC).

Well Pump Water System
Polo Grounds County Park

Galvanized surfaces shall be solvent cleaned, washed with a 10% muriatic acid, and washed with fresh water. A pretreatment primer shall be immediately applied after washing.

Ferrous metal surfaces shall have a prime coat of phenolic primer at least 1.6 mills thick, followed by two coats of alkyd paint at least 1.5 mills thick each.

Galvanized surfaces shall have a prime coat of a passivator at least 0.5 mills thick, followed by two coats of vinyl/enamel at least 1.5 mills thick each.

Code required labels or equipment identification, performance ratings, name or nomenclature plates shall not be painted.

Prior to painting, the Contractor shall submit a color chart and complete manufacturer's information on the painting system and manufacturer selected. Paint shall be as manufactured by Sherwin-Williams Company, Koppers Company Inc., Tnemec Company Inc., or equal.

2.07 Pressure Tanks

Two Model WX350 Amtrol captive air bladder tanks, or equal, shall be furnished and installed as shown on the drawings. Tanks shall be ASME rated for at least 125 psi. Bladder tank system operating pressure shall be between 60 psi and 115 psi. The tanks shall be installed with individual unions and gate valves for each tank. An analog liquid filled pressure gauge shall be installed on branch piping with a 1 inch pressure relief valve set a 125 psi. The tanks shall be secured to the concrete slab as recommended by the manufacturer.

2.08 Chain Link Fencing

The Contractor shall furnish all labor, materials, equipment and incidentals necessary for construction of 6 foot high chain link fencing and gates as shown on the drawings and specified.

Submittals will be required for all materials in this Section.

Fencing and gates shall be heavy gauge (9 gauge). Fencing and gates shall have a top rail and three strands of barbed wire along the top. Fencing and gates shall conform to Section 80-4 of the State Specifications.

Fencing and gates shall be constructed in accordance with Section 80-4 of the State Specifications.

2.09 Electrical and Control Systems

A. General

The Contractor shall construct a completely integrated electrical and control system all in strict accordance with the National Electrical Code and local revisions,

The drawings are generally diagrammatic and the location of outlets and equipment terminals are approximate unless detailed for dimensions. The exact locations and routing of cables and conduits shall be governed by structural conditions, physical interferences, and the locations of electrical terminations on equipment.

The Contractor shall examine the plans and shop drawings for the various pieces of equipment in order to determine exact routing and final terminations for all conduits and cables. Conduits shall be stubbed up as near as possible to equipment terminals.

Well Pump Water System
Polo Grounds County Park

All equipment shall be located and installed so that it will be readily accessible for operating and maintenance. The Engineer reserves the right to require minor changes in location of outlets or equipment, prior to roughing in, without incurring any additional costs or charges.

Electrical work shall be performed in cooperation with all other trades in order to secure the best arrangements of the work as a whole. No changes in the work shall be made without the written approval of the Engineer.

Allowance has been made in the design for the number of conduits, cables, and conductors which the Engineer considers adequate for feeding the various drives and equipment. These circuits are based on available data pertaining to a particular design of equipment. If the Contractor provides equipment which differs in connection requirements from the unit shown, the Engineer's acceptance of his substitution does not relieve the Contractor of his obligation to provide the necessary diagrams, services, and connections to the equipment at no additional cost to the Owner.

The Contractor shall not install any electrical equipment or devices in any newly constructed areas without permission by the Engineer. All operations involving grinding of concrete, sweeping, and similar activities shall have been completed prior to installation of the electrical equipment or the installation shall be made under controlled conditions of ventilation and other protection as may be required to protect the equipment from contamination by cement dust and any other particles.

B. Permits and Fees

The Owner will apply for and pay for all permits, inspections and other costs to provide electrical service for the pump station.

The Owner will pay all costs incident to obtaining and connection PG&E Company power service on the new location. The Owner will pay the cost of all testing and commissioning power.

C. Materials and Installation

All electrical work shall be furnished and installed in accordance with the latest provisions of the National Electrical Code and/or codes of the agencies having jurisdiction.

All conduit shall be PVC or rigid galvanized. Conduit embedded in concrete may be pvc in accordance with the NEC. Electrical conduit where specified or required shall be made by American Brass Co., Seal-Tite, Type U.A., Bulletins S-542, with fittings as recommended by the manufacturer, or approved equal. All buried conduit shall be provided with a wrapping, equal to Pabco-Wrap. Wire shall be copper code grade THW, THHN or as noted on the plans. All wiring materials, devices, apparatus, and parts shall be a standard catalog product of reputable manufacture. No spliced leads shall be made in the conduit.

D. Motor Control Center

The existing PG&E meter section shall be modified as shown on the drawings. A 125 amp, 3 pole, 3 phase 480 volt quick trip circuit breaker shall be installed as a main disconnect switch. A service ground shall be installed.

The motor control center shall be furnished in a pad mounted NEMA 3R enclosure which will contain the 480 volt, 3 phase, 4 wire busway; combination starter with variable frequency drive unit for the well pump; a Subtrol Pump Protector unit, # KVA 480 v to 120/240 volt transformer, an 8 circuit distribution panel; and the control panel. All equipment shall be for operation at 480 volts, 3 phase, 60 cycle. Starter shall be equipped with "Hand-Off-Automatic" selector switch and quick-trip overload relays in each phase. Pump required lights, pump running lights, and elapsed time hour meters shall be provided on each starter.

Well Pump Water System
Polo Grounds County Park

A Subtrol Plus motor protector manufactured by Franklin Electric Company shall be installed to protect the new well pump.

Each device or piece of equipment shall be identified with a permanent name plate.

The well pump starter shall be equipped with a Variable Frequency Drive (VFD). The VFD shall be of sufficient capacity and provide a quality of output waveform so as to achieve full rated output of the pump motors at full rating. In addition, the VFD will include the following ratings and parameters:

1. Minimum VFD efficiency - 96% at 100% speed and 96% at 60% speed.
2. Rated input voltage - 480 volts plus/minus 10%.
3. Ambient temperature range -10 1/2 C to +40 1/2 C.
4. Elevation - Less than 3000 feet above MSL.
5. Service Factor - 1.0.
6. Power Unit rating basis --100% rated current continuous.

The VFD shall incorporate an input motor circuit protector such that:

1. The protector shall be sized to provide a short circuit interrupting capacity of at least 14,000 symmetrical amps or as determined by the short circuit calculations.
2. The input protector shall be mechanically interlocked with the power unit enclosure door.

The VFD shall be solid state design utilizing transistorized power electronics and microprocessor-based control circuits. The operating system of the VFD shall employ sine wave pulse-width modulation producing adjustable voltage and frequency through a two step process.

1. AC power shall be converted to a fixed DC voltage utilizing a full-wave diode bridge. This shall be done to provide an input displacement power factor of 0.95 or greater throughout the entire speed range. VFD's employing a phase-controlled front end will not be acceptable due to the inherent reduction of power factor with speed change (with possible utility power factor penalty) as well as power line notching considerations.

2. The second step shall convert the fixed DC bus voltage to a three-phase adjustable voltage, adjustable frequency output utilizing power transistors in the inverter circuit for high reliability.

The VFD shall be capable of operating at 460 volts, 60 hz...

The VFD shall automatically compensate for power line fluctuations from -15% to +10% of nominal. The drive shall be capable of rated operation in an ambient temperature of -10 degrees C to +50 degrees C; with a relative humidity of 0 to 95% (non-condensing) and at an altitude of 3300 ft. elevation. Altitude derating shall be no more than 3% per thousand feet altitude above 3300 ft. The VFD shall be capable of attaining efficiencies of greater than 96% throughout 10% to 100% of the rated motor load range. The VFD shall be capable of providing an over current capacity of 150% for one minute. The frequency resolution shall be +0.5% at 77 degrees F. The VFD shall offer regeneration braking torque of approximately 20% of rated motor torque and be capable of operating in an environment of 0.5 G vibration.

The VFD shall contain the following features:

1. Control functions shall be capable of

Well Pump Water System
Polo Grounds County Park

- signals.
- a. Receiving input reference analog control signals of 0-5 VDC, 0-10 VDC of 4-20mA
 - b. Variable timed linear acceleration/deceleration adjustable from 1 to 150 seconds.
 - c. Dynamic braking
 - d. Start/Stop and speed-setting available on inverter chassis.
 - e. Reduced voltage/frequency pattern selectable for energy savings.
 - f. "Soft-Torque" operation on variable torque loads.
 - g. Forward/Reverse operation

2. Stall prevention. The VFD shall have stall prevention circuitry which utilizes current foldback in the following sequence:

In an operations mode, whenever the output current exceeds 150% of the rated VFD current, the VFD microprocessor stops increasing the output frequency and decreases it according to the set acceleration ramp until the output current is reduced below 150%. The inverter then resumes normal operation and the output frequency increases to set frequency.

3. Diagnostics. The VFD shall have the following built-in fault indicators:

- a. Electronic thermal overload relay to protect the motor at reduced speeds.
- b. Electronic over current trip for instantaneous overload protection.
- c. Over-temperature protection.
- d. Surge protection from input line voltage
- e. Electrical isolation between power and logic circuits.
- f. Ability to withstand output line-to-line short circuit without VFD component failure.
- g. Each variable speed shall be protected by a separate disconnect circuit breaker.

Each FVNR line voltage bypass starter and each transfer contactor shall be protected by a separate Westinghouse MCP Motor Protector disconnect. The combination Variable speed/Full speed system for each pump shall be compartmentalized with two disconnects interlocked through the door for operator safety and redundant backup.

4. Input surge isolation shall be through the use of isolation transformers specifically designed for this application or a suppression module specifically designed for protecting drive inverters. These units shall be standard catalog items of the inverter supplier which are tested and guaranteed to be matched and compatible with the inverter.

The A-C power units shall be enclosed in a sheet metal housing of NEMA 3R construction. The door of each power unit shall include:

1. Input circuit breaker handle.
2. One Manual speed control potentiometer.
3. One three-position mode selector switch, marked as follows:
MANUAL -OFF-AUTOMATIC.
4. A "POWER ON" light.
5. A speed indicating meter.

The following conditions will cause an orderly drive shutdown and restart after time delay:

1. Loss of input power.
2. Undervoltage.

Well Pump Water System
Polo Grounds County Park

3. Sustained gradual overload.
4. Instantaneous severe overload.
5. Overvoltage.
6. Blown fuses.
7. Logic power supply failure.

For each occurrence condition 1 through 5, the VFD will automatically attempt to restart. Two unsuccessful restarts will result in permanent shutdown and alarm.

The VFD will be tested with the systems logic and given complete factory tests including simulated operation, After operational tests are complete, the complete VFD system will be heat tested with "Power On" in a heat room maintained at 50 1/2C. Length of the heat test will be 50 hours. The VFD unit will contain certification that the heat tests have been completed.

The VFD shall be Type FR-A240-22K manufactured by Mitsubishi Electronics America, Inc., Eaton Cutler Hammer Model AF-95 or equal.

Complete shop drawings shall be submitted for all equipment and wiring included in the motor control center. All equipment shall be identified with the name, model number, and manufacturer.

The electrical contractor shall determine the maximum short circuit available at all points of the system and shall provide busses, motor circuit protectors, switches, circuit breakers and fuses which have **sufficient** amps interrupting capacity (AIC) to protect all equipment. A copy of the short circuit calculations shall be submitted to the Engineer with the shop drawing submittals.

E. Pressure Control System

The Contractor shall supply a completely integrated PID control system which shall perform the following functions:

1. Control well pump running at variable speeds to maintain a constant pressure.

The control system supplier shall supply all necessary level sensors and pressure transducers.

The variable speed pump operation logic shall be as follows:

As system pressure decreases, well pump starts and ramps to minimum speed. As pressure continues to decrease, pump increases speed to maintain pressure until the pump is running at full speed..

On increase in system pressure, the procedure reverses, the pump speed slows to minimum speed and shuts down after a time delay with no flow.

The controller shall have a high pressure alarm redundant off and a low pressure alarm.

Control unit shall be programmed to maintain a pressure of 110 psi.

The supplier of this equipment shall be regularly engaged in the manufacture of these complete systems and shall maintain average stock levels of more than 10 units in a northern California maintenance shop. All metal work for the complete switchboard shall be fabricated and finished after complete fabrication by one factory who assumes complete responsibility for the system.

Well Pump Water System
Polo Grounds County Park

The complete system shall be warranted for factory defects for 5 years and guaranteed for 1 year from date of contract completion.

The complete system shall be the product of one manufacturer who shall have maintenance personnel that are factory trained to service and repair all components supplied. Due to the complexity of these systems, the guarantee period shall be for 5 years from the date of contract completion. Guarantee shall include on the job repair and maintenance that cannot be performed by plant personnel.

The unit shall be an all solid state PID programmable controller capable of being programmed and operated by personnel with little or no programming experience. All program and control functions shall be accomplished using a front panel mounted keyboard having clearly legible legends. The controller shall provide the following electrical interfaces:

1. Accept 10 transducer inputs.
2. Provide 10 pump, purge, and alarm outputs.
3. Accept up to 10 contact closure status indications.
4. Provide up to 10, 4-20 MA or 0 to 5 volt analog outputs.
5. Provide a contact closure indicating controller power failure, memory failure or program failure.

Program and elapsed running time data shall be stored in solid state memory such that loss of power for up to 10 years will not alter memory contents. Memory shall accommodate at least 2,900 program steps. It shall be possible to examine any program element, setpoint, level, timer, or counter, using a simple key sequence and six digit, 0.5 inch LED digital readout with the unit running. In addition, all input and output status functions, alarms and unit operating modes shall be continuously displayed using individual LED's. It shall be possible to enter or alter programs, turn outputs on or off, or initiate the running of an entire program or any single statement or a program by a simple key sequence following entry of a unique keyword to inhibit unauthorized control.

Alarms shall be resettable. Memory error detection and correction shall be provided and diagnostics for memory errors or programming errors are displayed. Transducer inputs and analog outputs shall employ digital calibration rather than potentiometers, and shall be calibrated in engineering units (feet, degrees, etc.). A simple key sequence shall enable a front panel test potentiometer to replace any transducer input or analog output for program checkout and other test purposes.

Motor elapsed time counters, time of day timers, and general purpose timers, registers and status bits shall be provided for program use. Arithmetic, comparison, branching, and logical functions shall be provided.

Outputs shall be optically isolated, with AC outputs having zero crossing detectors, and 4 amp continuous and 30 amp peak capability. Transducer input and analog output accuracy shall be better than 0.1% over the operating temperature range of -40 1/2F to +200 1/2F. The controller shall be compatible with 120 VAC or 12 VDC operation.

All devices, functions, and indicators shall be clearly and permanently labeled. Replacement units shall be stocked in California. This unit shall be capable of interfacing directly with telemetry recording systems for monitoring any function. The controller manufacturer shall offer an optional 12 VDC standby power source.

The system shall include selector and speed controls. Set point and gain adjustments shall be standard and capable of setting speed control range to any pressure level of 0-350 psi with a 4-20 MA input signal. Accelerate and decelerate ramp adjustments, torque limit adjustments, six SCR convertor, six SCR inverter, minimum and maximum speed adjustments, shall all be standard features.

Well Pump Water System
Polo Grounds County Park

On the control panel shall be an annunciator panel which shall indicate the following alarms or operating conditions:

- Pump Run (light)
- Distribution System Pressure (LED)
- Pump Flow GPM (LED)
- Total Flow GPM (LED) and MG (LED)
- Pump Fail (light)

The annunciator panel shall contain contacts for each of the **annuciated** items for telemetry, acknowledge, and test functions. Complete electronic equipment shall be provided to convert signals to the appropriate units and properly display them.

Each 4-20 ma signal shall contain a signal isolater to block out interference from the variable frequency drive units.

The control units shall be L2000 manufactured by Tesco, Sacramento, California., or equal.

F. Electrical Svstem Tests

After electrical installation is complete, the Contractor shall make tests to demonstrate that the entire system is in proper working order and in accordance with drawings and specifications.

The tests shall be no less than those outlined hereafter, unless requested in writing and approved. Tests are in addition to, and not a substitution for, tests of individual items at manufacturer's plant. Make insulation and ground resistance tests before operating tests. Determine proper rotation of motors before permanent connections are made.

The Contractor shall replace wiring and equipment found defective, or failing to meet specified requirements, without charge, unless written acceptance for repair is given by County.

The Contractor shall furnish three copies of all test results to County.

The County will supply electric current necessary for tests.

The Contractor shall furnish suitable electrical instruments including voltmeters, ammeters, wattmeters, tachometers and all other equipment necessary to perform tests specified.

The Contractor shall make necessary openings in circuits for testing instruments and place and connect all instruments, equipment and devices, necessary for the tests. Upon completion of tests, remove instruments and instrument connections and restore all circuits to permanent condition.

The Contractor shall coordinate activities and cooperate with others on project, to ensure that systems are energized when required, loads applied and other requirements are carried out on a timely, coordinated basis.

The Contractor shall conduct tests in presence of Engineer, notify Engineer seven calendar days or more in advance when any test is to be performed and do not start tests without Engineer's permission.

The Contractor shall make up no connections at service entrance permanently until correct phase rotation of all equipment is determined. The Contractor shall install and insulate these connections temporarily, if necessary, while determining proper rotation. The Contractor shall make permanent connections after proper rotation has been established and subsequent to completion of insulation resistance and dielectric tests.

Well Pump Water System
Polo Grounds County Park

The following tests shall be performed:

1. Insulation Resistance Tests of Circuits

- a. Do not subject conductors rated 600 volts and below to high potential dielectric tests. Test each complete feeder and branch circuit of 600 volts or below with everything but power supply and power-consuming equipment, connected thereto and have an insulation resistance between conductors and between each conductor and ground of not less than 10,000,000 ohms, unless otherwise accepted by City.
- b. Determine insulation resistance values with all switchboards, panelboards, fuseholders, switches, receptacles and overcurrent devices in place.
- c. Use megohmmeter having output of at least 500 volts to determine insulation resistance value of 600 volt rated conductors.
- d. List each circuit and measured resistance as test data.
- e. Maintain record of **all** insulation resistance values. Identify conductor, or equipment, date that value was taken and resistance value. Arrange information in suitable neat tabular form and return to City in triplicate.

2. Insulation Resistance Tests for Motors

After installation, test windings of all 3 phase motors with megohmmeter in accordance with, and meeting the requirements of, IEEE Standard No. 43.

3. Ground Resistance

- a. Test each ground rod in accordance with IEEE Standard 142, and submit tabulation of results to City. Include identification of electrode, date of reading and ground resistance value in results.
- b. Test each entire grounding system for continuity of connections and for resistance. Ensure that ground resistance of conduits, equipment cases and supporting frames does not vary appreciably from that of system as a whole and does not exceed 5 Ohms.

4. Operating Tests

- a. Operate each motor and associated equipment, as nearly as possible, under normal operating conditions for as long as feasible and for the length of time **sufficient** to demonstrate correct alignment, temperature rise, speed and satisfactory operation. Load motors to **full** capacity, or as near as possible.
- b. Operate switches, circuit breakers and control devices to show correct and satisfactory operation.
- c. Associated equipment includes instruments, meters, relays, circuit breakers, switches and other devices in substations, switchgear, motor control centers, panelboards, control and instrumentation panels, etc., related to motor being tested.

Well Pump Water System
Polo Grounds County Park

- d. Where tests of any of the above-referenced equipment are included in other Sections of specifications, coordinate testing, as directed by City, to avoid duplication and conflict between tests.
- e. Perform above tests in addition to, and not in substitution for required manufacturer's factory tests of individual items.

**APPENDIX A
PUMP EFFICIENCY TEST**

Well Pump Station
Polo Grounds County Park

Date _____

A. NAME PLATE DATA:

Power Meter: _____ Make _____ Type _____

Serial No. _____ Amps _____ Volts _____ Phase _____

Wires _____ Kh (Disk constant) _____

Km (meter installation constant) _____

2. Motor: _____ Make _____ H.P. _____ Voltage _____

Full Load Amps _____ Phase _____ Meg. Reading (cold) _____

B. TEST DATA

1. Normal Load (run 30 minutes at normal load)

A. Water

1. Pump Flow _____ Gallons

2. Water Level (not pumping) _____ P. S. I.

3. Water Level (pumping) _____ P. S. I.

4. Discharge Pressure : _____ P. S. I.

B. Electrical

1. Motor Amps L1 _____ L2 _____ L3 _____

2. Motor Volts L1-L2 _____ L1-L3/L2-L3 _____

3. Power Meter Disk Revolutions _____

4. Meg. Reading (hot) _____

2. Shut-off Load (run one [1] minute at shut-off load)

A. Water

1. Water Level _____ P. S. I.

2. Discharge Pressure _____ P . S . I .

- B. Electrical _____
1. Motor Amps L1 _____ L2 _____ L3 _____
2. Motor Volts L 1 -L2 _____ L1-L3 _____ L2-L3 _____

C Remarks (condition, etc.) _____

D . Calculation

1. Input electrical HP = Disk RPM x Kh x Km

12.45
2. Reactive input Electrical HP = Amps x Volts

431
3. Power Factor % = #1/#2 x 100 = _____
4. Water HP =
GPM (water level running = Discharge Pressure x 2.3 1)

3960
= _____
5. Overall Plant Eff. % = #4/#1 x 100 =
= _____

Water Test by _____

Electrical Test by _____

Calculation by _____

APPROVED BY _____

DIVISION D. PROPOSAL FORMS

void if detached P-1
PROPOSAL NUMBER: 96C1-027R

PROPOSAL

PROPOSAL TO THE COUNTY OF SANTA CRUZ, CALIFORNIA.

Name of Bidder _____

Business Address _____

Place of Residence _____

Telephone Number: Area Code () _____

LOCATION

The work to be done and referred to herein is in SANTA CRUZ COUNTY, Polo Grounds County Park Site, 2255 Huntington Drive, Aptos, California.

The work to be done is described and shown in the document entitled:

WELL PUMP WATER SYSTEM FOR POLO GROUNDS COUNTY PARK

I have received the above referenced document prepared by County of Santa Cruz and Freitas + Freitas. Engineering and Planning Consultants.

The undersigned, as bidder, declares that the only persons or parties interested in this proposal as principals are those named herein; that this proposal is made without collusion.

If this proposal shall be accepted and the undersigned shall fail to contract as aforesaid and to give the two bonds in the sums to be determined as aforesaid, with surety satisfactory to the COUNTY OF SANTA CRUZ, within ten (10) days, not including Sundays Saturdays and legal holidays, after the bidder has received notice from the Purchasing Agent that the contract has been awarded, the COUNTY OF SANTA CRUZ may, at its option, determine that the bidder has abandoned the contract, and thereupon this proposal and the acceptance thereof shall be null and void and the forfeiture of such security accompanying this proposal shall operate and the same shall be the property of the COUNTY OF SANTA CRUZ.

void if detached P-Z
96C1-027R

In submitting this bid, I agree:

1. To hold my bid open for the time stipulated in the specifications.
2. To accept the provisions of the specifications regarding the disposition of Proposal Guarantee (Bidder's Bond).
3. To enter into and execute a contract, if awarded on the basis of this bid, and to furnish the bonds in accordance with the specifications.
4. To accomplish the work in accordance with the contract documents and plans.
5. To complete the work by the time stipulated.
6. To furnish the required guaranty.

Bids are required for all portions of the entire work. Failure to bid on any item shall be reason for rejection of the entire bid. For comparison purposes, the amount of the bid will be the total lump sum price.

BID: I will perform the total work of the project as set forth in these specifications and related documents for the Lump Sum price(s) as shown on the bid schedule on page P-3 of this proposal.

Bid Deposit: License Numbers

Accompanying this proposal is _____ in the amount equal to at least ten (10%) per cent of the total of the bid.

(NOTICE: Insert above the words "bidder's bond," "cash," "cashier's check" or "certified check" as the case may be.)

Licensed in accordance with an act providing for the registration of Contractors, License No. _____

Company Name: _____

Name & Title of Person signing as Bidder

Signature of Bidder

Date

void if detached P-3
96C1-027R

BID SCHEDULE

I will perform the total work of the project as set forth in these specifications and related documents in accordance with the following lump sum prices:

ITEM DESCRIPTION	AMOUNT
Installation of vertical turbine well pump pressure tanks, electrical controls, miscellaneous appurtenances	_____
TOTAL LUMP SUM BID AMOUNT \$ _____	

Receipt of addendum(s) is hereby acknowledged:

Addendum # _____	_____	_____
	Signature	Date
Addendum # _____	_____	_____
	Signature	Date
Addendum # _____	_____	_____
	Signature	Date

AUTHORIZED SIGNATURE OF BIDDER: _____

DATE: _____

NOTE: Where quantities are shown they are engineers estimated quantities. Variations may occur between actual quantities and engineers estimated quantities. Bidder is responsible to calculate quantities when preparing bid. Payment will be based on lump sum bid amount(s) and no allowance will be made for variations between actual quantities and engineers estimated quantities.

void if detached P-4
96C1-027R

STATEMENT OF BIDDER'S QUALIFICATIONS

Name and Address of Bidder

A Corporation tion A Co-Partnership ship An Individual

How many years has your organization been in business?

As a general contractor? As a subcontractor?

How many years has it been in business under its present name? _____

If a Corporation: Date of Incorp _____ State of Incorp _____

Date, Title and Address of all Partners or Principals:

If a Co-Partnership: Date of Organization _____

Date, Title and Address of all Partners:

Bidder can presently comply with insurance requirements of Section 5.09 of General Conditions of this Request: (check one) Yes No

If insurance requirements are not presently met, bidder shall state what insurance is currently in place; state whether additional insurance can be obtained to meet specifications; and what cost, if any, there would be to the County for obtaining the additional insurance.

Bonding Company _____

Have you ever refused to sign a contract of your original bid? _____

Have you ever defaulted on a contract? _____ If so, attach separate statement listing location, owner circumstances.

Bidder may be required to submit financial information at Owner's request.

Remarks _____

Bidder's Qualifications, cont'd

void if detached P-5
96C1-027R

List 3 projects of similar size and character your organization has completed within the past 5 years:

Project Name _____

Address _____

Owner Name _____

Address _____

Phone _____

Architect _____

Phone _____

Contract _____

Amount _____

Date of Completion _____

Completed on Time(Yes/No) _____

Wrk Done w/Own Force (% of Wrk Trades) _____

(Attach more sheets if necessary to describe qualifications for this work.)

Name and experience of key personnel to be associated with this project:

	Name	Experience (years)
1. Person in Charge:	_____	_____
2. Superintendent:	_____	_____
3. Foremen:	_____	_____

=====

State of _____)
 County of _____) ss:

being duly sworn deposes and says
that he/she is the _____ of

and that answers to the foregoing questions and all statements therein contained are true and correct.

Sworn to me this _____ day of

Notary Public:

My Commission expires:

void if detached P-6
96C1-027R

PROPOSAL

LIST OF SUBCONTRACTORS

In conformance with the provisions of Section 4100, et seq, of the California Government Code, the following is a list of subcontractors which will be doing work on this project:

	<u>Function</u>	<u>Subcontractor</u>	<u>Address</u>
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____
8.	_____	_____	_____
9.	_____	_____	_____

void if detached P-7
96C1-027R

BIDDER'S BOND

Know All Persons by These Presents,
That we, _____

_____, As PRINCIPAL, and _____

_____,
as SURETY, are held and firmly bound unto the County of Santa Cruz of the State of California, hereinafter called the County, in the penal sum of TEN PERCENT (10%) OF THE TOTAL AMOUNT OF THE BID of the Principal above named, submitted by said Principal to the County for the work described below for the payment of such sum in lawful money of the United States, well and truly to be made, and we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents. In no case shall the liability of the surety exceed the sum of _____ (\$ _____) Dollars.

THE CONDITION OF THIS OBLIGATION IS SUCH, That whereas the Principal has submitted the above mentioned bid to the County for certain construction specifically described as follows: WELL PUMP WATER SYSTEM FOR POLO GROUNDS COUNTY PARK for which bids are to be opened at Santa Cruz, California on June 16, 1998;

NOW THEREFORE, If the aforesaid Principal is awarded the contract and, within .the time and manner required under the specifications, after the prescribed forms are presented' to him for signature, enters into a written contract, in the prescribed form in accordance with the bid, and files two bonds with the Purchasing Agent, one to guarantee faithful performance and the other to guarantee payment for labor and materials, as required by law, then this obligation shall be null and void; or should the aforementioned contract be awarded to other than the herein named Principal, then this obligation shall be null and void; otherwise, it shall be and remain in full force and virtue.

IN WITNESS WHEREOF, We have hereunto set our hands and seals on this _____ day of _____ A. D. 19- -

_____ (SEAL)	_____ (SEAL)
_____ (SEAL)	_____ (SEAL)
_____ (SEAL)	_____ (SEAL)
Surety	Principal

Address (Note: Signatures of those executing for the Surety must be properly acknowledged.)

void if detached P-8
96C1-027R

STATEMENT OF COMPLIANCE

_____ (hereinafter referred to as "prospective
(Company name)

contractor") hereby certifies, unless specifically exempted, compliance with California Government Code Section 12990 and California Administrative Code, Title II, Division 4, Chapter 5, in matters relating to the development, implementation and maintenance of a nondiscrimination program. The CONTRACTOR will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, ancestry, disability, medical condition (cancer related), marital status, sex, sexual orientation, age (over 40), veteran status, or any other non-merit factor unrelated to job duties. Such action shall include, but not be limited to recruitment or recruitment advertising, employment, upgrading, demotion, transfer, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The CONTRACTOR agrees to post in conspicuous places, available to employees and applicants for employment, notice setting forth the provisions of this non-discrimination clause.

The contractor will comply with all provisions of executive order 11246, as amended, and of the rules, regulations and orders of the Secretary of Labor, which include furnishing required information and reports.

In the event of the contractor's non-compliance with the non-discrimination clauses of this contract or with any of the said rules, regulations, or orders, this contractor may be declared ineligible for further contracts with the County.

I, _____, hereby swear that I am
(Name of Official)

duly authorized to legally bind the prospective contractor to the above described certification. I am fully aware that this certification executed on _____, 19____, in the County of _____ is made under the penalty of perjury under the laws of the State of California.

Signature

Title

void- if detached P-9

COUNTY OF SANTA CRUZ

MINORITY WOMEN DISABLED OWNED BUSINESS (M/WDBE) QUESTIONNAIRE

CONSTRUCTION/PROCUREMENT/PERSONAL SERVICES CONTRACTS

THIS QUESTIONNAIRE MUST BE COMPLETED AND SUBMITTED AS PART OF THE BID PROPOSAL OR AGREEMENT for Construction, Procurement, or Professional Services Contractors. The County of Santa Cruz is committed to ensuring that contractors use good faith efforts to encourage minority, women, and disabled business enterprises/programs (M/WDBE) participation in the bidding process. This Questionnaire will be used for informational purposes only. See definitions attached to this document.

SECTION A: 'TO BE COMPLETED BY PROSPECTIVE CONTRACTOR

- 1. Name of Contractor: _____
- 2. Address of Contractor: _____
- 3. Contractor Tax ID#: |__|__|_|_|_|_|_|_|_|_|_|_|_|_|
- 4. Contractor's License #: _____ Type: _____
- 5. Contractor does business as a: Individual Partnership
 Corporation Government Fiduciary Other
- 6. Contractor has a business office in Santa Cruz County? Y N
Contractor is incorporated in the State of California? Y N
- 7. Is the firm authorized to do business in the State of California? Y N
- 8. Is the firm a State of California registered small business? Y N
- 9. | Disadvantaged Business Enterprise (DBE) status as it applies to your |
| firm: |
| Composition of Ownership (see definition attached to this document) |
| Please indicate percentage of ownership: ___% Disabled ___% Women |
| ___% Black ___% Hispanic ___% Asian American ___% Native American |
- 10. Is the firm certified as a woman owned business? Y N
If yes, name agency: _____

void if detached P-10

11. Is the firm certified as a minority firm by any public agency? Y N

* If yes, name of agency: _____

Name of certifying officer: _____ Phone # _____

12. If the Disadvantage Business Enterprise (DBE) status applies to your firm list the Owners of the firm

13. Annual sales volume: _____

14. Net worth of business: _____

15. Does the Contract Include sub-contractors? Y* N

If yes, list sub-contractors names: NOTE; SUB-CONTRACTOR(S) MUST ALSO COMPLETE COPY OF THIS FORM In the case of CONSTRUCTION CONTRACTS, the successful bidder must have all sub-contractors complete this form prior to the notice to proceed being issued.

16. Did you advertise for M/DBE sub-contractors? (check applicable categories)

- Newspapers - Direct Phone Solicitations - Direct Mail
- Workshop ___Used County Vendor List - Trade Papers

___Other Sources (list) _____

17. List names of newspapers, trade papers or other sources used for advertisement for M/DBE sub-contractors:

void if detached P-11

18. Were follow up contacts made with potential M/DBE firms which expressed interest in this contract? Y* N If yes, list the following:

Business Name	Date of Contact	Person Contacted
<hr/>		
<hr/>		

19. Did you conduct any pre-bid workshops for potential M/DBE sub-contractors? Y N

20. Does the firm employ at least 15 employees? Y N

I hereby declare under penalty of perjury, that the foregoing information is true and correct under the laws of the State of California. Executed in _____, California on _____

Contractor/Sub-Contractor Name: _____

Title: _____

void if detached P-12

SECTION B: TO BE COMPLETED BY COUNTY DEPARTMENT

- 1. Name of Department issuing contract/award_____
- 2. Name of Contract/Project_____
- 3. Bid Price_____
- 4. Contract/Bid Awarded to this contractor? Y N
- 5. Contract Involves State or Federal Funds with MWBE Requirements? Y N
- 6. If Contract Involves such requirements, identify applicable State or Federal requirements.

7. Identify County representative monitoring compliance with Federal/ State MWBE requirements: _____

8. What outreach efforts were made regarding this contract/project?

9. Must contractor submit EEOC Report PER4012 ? Y N

NOTE: Form PER4012 must be submitted by the awarded contractor if the contractor employs at least 15 employees and the contract awarded is in excess of \$50,000.00

void if detached P-13

SANTA CRUZ COUNTY CONTRACT COMPLIANCE DEFINITIONS AND PROVISIONS

The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, ancestry, physical or mental disability, medical condition (cancer related), marital status, sex, sexual orientation, age (over 40), veteran status or any other non-merit factor unrelated to job duties. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection of training including apprenticeship. The Contractor agrees to post in conspicuous places available to employees and applicants for employment, notices setting forth the provisions of this non-discrimination clause.

In the event of the contractor's non-compliance with the non-discriminations clauses of this contract or with any of the said rules, regulations or orders, this contractor may be declared ineligible for further contracts with the County.

For all contracts in excess of \$50,000 where the Contractor employs at least 15 employees, the department will require the inclusion of the following equal opportunity clauses as a condition of the contract:

The Contractor will state that they are an equal opportunity employer in all solicitations or advertisements for employees placed by or on behalf of the Contractor, and ensure that all qualified applicants will receive consideration for employment without regard to race, color, religion, national origin, ancestry, physical or mental disability, medical condition (cancer related), marital status, sex, sexual orientation, age (over 40), veteran status or any other non-merit factor unrelated to job duties.

If applicable according to the contract funding source, the Contractor will comply with all provisions of Executive Order 11246, as amended, and of the rules, regulations and orders of the Secretary of Labor, which include furnishing required information and report.

In the event of the contractor's non-compliance with the non-discriminations clauses of this contract or with any of the said rules, regulations or orders, this contractor may be declared ineligible for further contracts with the County.

The Contractor shall furnish information and reports in the prescribed reporting format (PER4012) identifying the sex, race, disability and job classification of its employees to the Affirmative Action Division of Personnel.

void if detached P-14

The department in solicitation for goods or services will make a good faith effort to consider Minority/Women/Disabled Owned Business Enterprises.

Standard Definitions For Minority/Women/Disabled Business Enterprise for the purposes of Santa Cruz County contract compliance procedures shall be as follows:

1. A Minority Business Enterprise (MBE) is a small business owned and controlled by one or more minorities or women. Owned and controlled means that:
 - a. at least 51 percent of the small business concern is owned and controlled by one or more minorities or women or, in the case of a publicly owned business, at least 51 percent of the stock of which is owned by one or more minorities or women; and
 - b. whose management and daily business operations are controlled by one or more such individuals.
2. A Women Business Enterprise (WBE) is a small business, owned and controlled by one or more women. Owned and controlled means that:
 - a. at least 51 percent of the small business concern is owned by one or more women; and
 - b. whose management and daily business operations are controlled by one or more women who own it.
3. A Disabled Owned Business Enterprise (DOBE) is a small business owned and controlled by one or more disabled persons. Owned and controlled means that:
 - a. at least 51 percent of the small business concern is owned by one or more disabled persons; and
 - b. whose management and daily business operations are controlled by one or more disabled persons who own it.

NOTE: Certain projects conducted under state and federal oversight may have additional definitions and requirements.

Where sub-contractors will be used, the contractor shall furnish to the County Affirmative Action Officer the names, dates and methods of advertisement and direct solicitation efforts made to contract with minority/women/disabled business enterprises.

Agreement No. _____

A G R E E M E N T

This Agreement, made and concluded this _____ day of _____, 19___, by and between _____, and the COUNTY OF SANTA CRUZ, hereinafter called CONTRACTOR and COUNTY, respectively.

WTNESSETH:

WHEREAS, the Board of Supervisors of said County has awarded a Contract to Contractor for performing the work hereinafter mentioned in accordance with the sealed proposal of said Contractor.

NOW THEREFORE, it is agreed as follows:

1. **Scope of Work.** Contractor shall perform all the work and furnish all the labor, materials, equipment, and all utility and transportation services required to complete all of the work for **WELL PUMP WATER SYSTEM FOR POLO GROUNDS COUNTY PARK** in Santa Cruz County, in accordance with the Notice to Bidders, Specifications and Plans, Special Provisions, and Bidder's Proposal; the items and quantities of which are more particularly set forth in Contractor's Proposal, therefor, on file in the Office of the County Clerk.
2. **Time for Performance.** The Contractor shall begin the work within **ten (10) calendar days** after receiving the "Notice to Proceed," and shall diligently prosecute the same to completion before the expiration of **one hundred (100)calendar days** from the date of said "Notice to Proceed. "
3. **Independent Contractor Status.** CONTRACTOR and COUNTY have reviewed and considered the principal test and secondary factors below and agree that CONTRACTOR is an independent contractor and not an employee of COUNTY. CONTRACTOR is responsible for all insurance (workers compensation, unemployment, etc.) and all payroll related taxes. CONTRACTOR is not entitled to any employee benefits. COUNTY agrees that CONTRACTOR shall have the right to control the manner and means of accomplishing the result contracted for herein.

Principal Test. The CONTRACTOR rather than COUNTY has the right to control the manner and means of accomplishing the result contracted for.

Agreement No. _____

Secondary Factors. (a) The extent of control which, by agreement, COUNTY may exercise over the details of the work is slight rather than substantial; (b) CONTRACTOR is engaged in a distinct occupation or business; (c) In the locality, the work to be done by CONTRACTOR is usually done by a specialist without supervision, rather than under the direction of an employer; (d) The skill required in the particular occupation is substantial rather than slight; (e) The CONTRACTOR rather than the COUNTY supplies the instrumentalities, tools and workplace; (f) The length of time for which CONTRACTOR is engaged is of limited duration rather than indefinite; (g) The method of payment of CONTRACTOR is by the job rather than by the time; (h) The work is part of a special or permissive activity, program or project, rather than part of the regular business of COUNTY; (i) CONTRACTOR and COUNTY believe they are creating an independent contractor relationship rather than an employer-employee relationship; and (j) The COUNTY conducts public business.

It is recognized that it is not necessary that all secondary factors support creation of an independent contractor relationship, but rather that overall there are significant secondary factors which indicate that CONTRACTOR is an independent contractor.

4. **Component Parts.** This Contract shall consist of the following documents, each of which is on file with the Santa Cruz County Clerk of the Board, and all of which are incorporated herein, and made a part hereof by reference thereto:
 - a. This Agreement and Guarantees
 - b. Notice to Bidders, inviting sealed proposals
 - c. Specifications entitled:
WELL PUMP WATER SYSTEM FOR POLO GROUNDS COUNTY PARK
 - d. Plans entitled:
WELL PUMP WATER SYSTEM FOR POLO GROUNDS COUNTY PARK
 - e. Bidder's Bond
 - f. Accepted Proposal
 - g. Performance Bond
 - h. Payment Bond
 - i. Certificate of Worker's Compensation Insurance
 - j. Certificate of General Liability Insurance
 - k. Certificate of Auto Liability Insurance
5. County shall pay and Contractor shall accept, in full consideration for the performance of the Contract, subject to additions and deductions as provided therein, the sum of \$ _____.
6. Pursuant to County Code Section 2.37.107, any bid, proposal, or other response to a solicitation for bid or proposal which proposes or calls for the use of any tropical hardwood or wood product in performance of the contract shall be deemed nonresponsive. The contractor shall not

Agreement No. _____

provide any items in performance of this contract which are tropical hardwoods or tropical hardwood products. The County of Santa Cruz urges companies not to import, purchase, obtain, or use for any purpose, any tropical hardwood or tropical hardwood product. In the event any bidder or contractor fails to comply in good faith with any of the provisions of County Code Section 2.37.107, the bidder or contractor shall be liable for liquidated damages in an amount equal to the bidder's or contractor's net profit under the contract, or five (5) percent of the total amount of the contract dollars, whichever is greater. The contractor acknowledges and agrees that the liquidated damages assessed shall be payable to the County upon demand and may be set off against any monies due to the bidder or contractor from any contract with the County.

IN WITNESS WHEREOF, County has caused these presents to be executed by its officers thereunto duly authorized and Contractor has subscribed same, all on the day and year first above written.

Contractor Name

By _____

Title _____

ATTEST:

COUNTY OF SANTA CRUZ

Clerk, Board of Supervisors

By _____

APPROVED AS TO FORM

Marie Costa

County Counsel

May 5, 1998

Date

Agreement No. _____

GUARANTY

TO THE COUNTY OF SANTA CRUZ

The undersigned, as prime Contractor, guarantees the construction and installation of the following work included in this project:

WELL PUMP WATER SYSTEM FOR POLO GROUNDS COUNTY PARK

Should any of the materials or equipment prove defective, due to faulty workmanship, material furnished or methods of installation or should the work or any part thereof fail to operate properly as originally intended and in accordance with the plans and specifications, due to any of the above causes, all within one (1) year after the date on which this contract work is accepted by the County, the undersigned agrees to reimburse the County, upon demand, for County's expenses incurred in restoring said work to the condition contemplated in said project, including the cost of any such equipment or materials replaced and the cost of removing and replacing any other work necessary to make such replacement or repairs, or, upon demand by the County, to replace any such material and to repair said work completely without cost to the County so that said work will function successfully as originally contemplated. (Ordinary wear and tear and unusual abuse or neglect excepted.)

The County shall have the unqualified option to make any needed replacement or repairs itself or to have such replacements or repairs done by the undersigned. In the event the County elects to have said work performed by the undersigned, the undersigned agrees that the repairs shall be made and such materials as are necessary shall be furnished and installed within a reasonable time after the receipt of demand from the County. If the undersigned shall fail or refuse to comply with his obligations under this guaranty, the County shall be entitled to all costs and expenses, including attorney's fees, reasonably incurred by reason of said failure or refusal.

Contractor, Name and Address

Date

By _____
Signature of Principal