A. Construction shall be in conformance with the requirements of all applicable building codes and regulations of local, state, and federal agencies, including the Uniform Building Code, National Electric Code, and Uniform Plumbing Code.

B. Accessibility Requirements: Construction shall be in conformance with all applicable Department of the State Architect, Title 24 Guidelines for Handicapped Accessibility.

1.05 OCCUPATIONAL SAFETY AND HEALTH ACT REQUIREMENTS

A. During the entire construction period, it shall be the responsibility of the Contractor to maintain conditions at the project site so as to meet in all respects the requirements of the California Code of Regulations, Title 8, Industrial Relations, Chapter 4, Division of Industrial Safety, Safety Orders CAL/OSHA. This provision shall cover the Contractor's employees and all other persons working upon or visiting the site. To this end, the Contractor shall inform himself and his representatives of CAL/OSHA standards.

B. Accessibility Requirements: Construction shall be in conformance with all applicable codes per the Department of the State Architect, Title 24 Guidelines for Handicapped Accessibility.

1.06 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

A. Regulatory

1. NPDES Permit
   a. All construction activities will be subject to regulation of Agency's Municipal NPDES Permit (CAS0108758) for Colorado River Region San Diego Region. Agency's staff will conduct routine inspections to ensure compliance.
   b. In addition, most activities will be subject to the State General Construction Permit (CAS000002). San Diego's Regional Water Quality Control Board will conduct periodic inspections to ensure compliance with the General Permit.

2. State General Construction Permit

   a. Construction activity which disturbs one acre or greater of soil, or is part of a larger common plan which disturbs one acre or greater is subject to the General Construction Permit.
   b. Owner must file a Notice of Intent (NOI) application with State Water Resources Control Board (SWRCB) along with the annual fee (approximately $800) and vicinity map. A Waste Discharger Identification (WDID) number will be issues to within 10 business days after SWRCB receives a complete NOI package (original signed NOI, vicinity map, and check).
   c. Major elements of State General Permit Compliance include, but is not limited to, NOI submittal, development of Storm Water Pollution Prevention Plan (SWPPP), implementation of BMPs to protect water quality, self-inspections and documentation, modifying BMPs as

deemed necessary by contractor or Agency, and being subject to inspection by Regional Water Quality Control Board.

d. Before a start of work notice is issued Agency must be provided with a Waste Discharge Identification number from the SWRCB.

B. IMPLEMENTATION

1. Storm Water Pollution Prevention Plan (SWPPP)

a. Contractor must implement all elements of SWPPP during construction activity including, but not limited to, completing inspection checklists and monitoring records pursuant to General Permit; and must submit list of Contractors and Subcontractors.

b. Deviations from erosion control plan must be approved by Agency and documented in the SWPPP.

2. Best Management Practices (BMPs)

a. Materials used for storm water BMPs must be of a class, grade, and type needed to eliminate or reduce pollutant discharge to the Maximum Extent Practicable.

C. COSTS

Costs associated with administering the State General Permit and SWPPP, and implementation and maintenance of BMPs throughout the durations of the project shall be included in the lump sum bid items for storm water BMPs.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01010

SECTION 01300

ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.01 SUBMITTALS

A. PROCEDURES

1. The Contractor shall coordinate each submittal with the Parks Representative as directed within these project specifications having to do with fabrication, purchasing, requests for substitutions, testing, delivery, shop drawings, trench safety plans, construction related activities that require sequential activity and other miscellaneous work related submittals.

2. Contract time extensions will not be authorized due to the Contractor's failure to provide the Parks Representative with the required submittals in advance of the work to permit processing. It is recommended that the Contractor immediately supply the Parks Representative with project submittals as soon as they become available as all submittals may not be approved by the Parks Representative.

3. The Parks Representative will not accept submittals from sources other than the Prime Contractor.

4. The Contractor shall identify all deviations from the Contract Documents, and explain in a cover letter why the deviations must occur with the submittal if deviations exist.

5. If resubmitting for approval, the Contractor must include the entire submittal package. Submittal packages will only be approved as an entire package. Partial submittal approval will not be given.

6. Submittals that are related to, or affect each other shall be provided simultaneously as a package to facilitate a coordinated review. Uncoordinated submittals will be rejected. Do not combine unrelated materials in the same submittal.

7. The Parks Representative reserves the right to require submittals in addition to those called for in individual sections.

8. Submittals shall be submitted to the Parks Representative unless otherwise directed by the Parks Representative by one of the two options below.

   a. By email to the Parks Representative.

   b. The Contractor can also submit three (3) hard copies of each submittal. All submittals shall be mailed to the Parks Representative's attention to the following address:

      Riverside County Parks Department

      4600 Crestmore Rd

      Riverside, Ca 92509

B. All submittals shall have a permanent label or title block on each submittal for identification. Provide a 4-inch by 5-inch space on the label or beside the title block to record review and approval markings and action taken. Include the following information on the label:

1. Project name.
2. Date.
3. Name and address of Contractor.
4. Name and address of subcontractor or supplier.
5. Number and title of appropriate Specification Section.
6. Signed shop drawings from a registered Civil Engineer (if applicable).

C. The Parks Representative will review and approve/reject each submittal within five (5) business days of receiving it from the Contractor. The Parks Representative will verify that the project specifications have been met and that the submittal adheres to the guidelines, permits, etc. for the project. One (1) copy of the submittal will be returned to the contractor with an approval stamp, or will have a rejection stamp with comments. Compliance with specified requirements remains the Contractor's responsibility.

1.02 CONSTRUCTION SCHEDULE:

A. PROCEDURES

1. The Contractor shall submit a Cost Loaded Critical Path Project Construction Schedule within 10 days after date established for commencement of the work. Distribute copies to Owner, Parks Representative, Subcontractors, and parties required to comply with dates.
2. The Critical Path Project Construction Schedule will provide a basis for determining the progress status of the project relative to the completion time, specific dates, and for determining the acceptability of the Contractor's progress payment estimates. No progress payments will be made until the Parks Representative has accepted the Contractor's construction schedule.
3. The schedule shall depict all significant construction activities and all items of work listed in the Bid Schedule. Assigned values for each part of the work shall be indicated. The dependencies between activities shall be indicated so that it may be established what effect the progress of any one activity has on the schedule.
4. No activity on the schedule shall have durations longer that 14 days except activities comprising only of fabrication and delivery may extend for more than 14 days. Activities which exceed this limit shall be divided into more detailed components. The scheduled duration of each activity shall be based on the normal 40-hour work week with allowances made for legal holidays and normal weather conditions.
5. The project schedule shall be revised after each meeting or activity where revisions have been made and approved of by the Parks Representative. Distribute revised copies to Owner, Parks Representative, Subcontractors, and parties required to comply with dates.

B. Comparable Product Submittal:

1. Submit three (3) copies of each request for approval of product as comparable to basis-of-design products. Submit requests in time to permit processing of request and subsequent submittals, if any, sufficiently in advance of when materials are required to perform the work. The contractor shall provide complete documentation showing compliance of proposed

product with applicable requirements, including a full comparison with the specified product.

PART 2 - PRODUCTS

2.01 ACTION SUBMITTALS

A. PRODUCT DATA

Mark each copy to show applicable choices and options. Include the following:

1. Data indicating compliance with specified standards and requirements.
2. Notation of coordination requirements.
3. For equipment data, include rated capacities, dimensions, weights, required clearances, and furnished specialties and accessories.

B. SHOP DRAWINGS

Submit project-specific information drawn to scale. The Contractor shall not base Shop Drawings on reproductions of the Contract Documents or standard printed data. All Shop Drawing submittals shall include one (1) reproducible print and one (1) blue-line or black-line print on sheets at least 8-1/2 by 11 inches but no larger than 24 x 36 inches. The Parks Representative will return the reproducible print to the Contractor with an approval stamp or rejection comments. All Shop Drawing shall include the following:

1. Dimensions, profiles, methods of attachment, large scale details, and other information, as appropriate for the Work.
2. Identification of products and materials.
3. Notation of coordination requirements.
4. Notation of dimensions established by field measurement.

C. SAMPLES

The Contractor shall submit product samples identical to the material being proposed, if different from what has been specified in the Contract Documents. Where variations are inherent in the material, submit sufficient units to show full range of the variations. The Contractor shall include the name of manufacturer and product name on the submittal label.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01300

SECTION 01400
QUALITY REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION REQUIREMENTS

A. TESTING AND INSPECTING

Testing and inspecting services are required to verify compliance with requirements specified or as indicated in the Contract Documents.

1. The Contractor shall provide material testing, at their expense, where specified and as required to complete the work. The Contractor is responsible for submitting all testing results to the Parks Representative for approval.
2. The Parks Representative will act as the general inspector for the project. The Contractor is responsible for scheduling all general inspections with the Parks Representative a minimum of three (3) business days in advance of the proposed inspection. The Parks Representative will supply the Contractor with a list of items that are required for general inspection that may be above and beyond what is mentioned in the Contract Documents.
3. The Contractor shall incur all costs for special inspections to be performed by a registered professional engineer specializing in what is to be inspected (i.e. Geotechnical, Structural, etc...), if special inspections are required per these Contract Documents. The Contractor shall coordinate all special inspections with the Parks Representative, as the Parks Representative must be present for all special inspections.
4. The Contractor shall pay for any re-testing and re-inspecting costs, direct or indirect, that may be incurred as a result of failed tests and inspections resulting in non-compliance per the Contract Documents.

B. PERFORMANCE AND DESIGN CRITERIA:

Where design services or certifications by a professional engineer are required by the Contract Documents, the Contractor shall provide products and systems complying with the specific performance and design criteria as indicated.

1. If the criteria indicated within the Contract Documents are not sufficient to perform services or certifications as required, the Contractor shall submit a written request for additional information (RFI) to the Parks Representative a minimum of 10 business days prior to the scheduled date of the work to be performed.
2. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where the project is located and who is experienced in providing engineering services of the kind indicated.

C. SUBMITTALS:

It is the responsibility of the Contractor to provide all testing results to the Parks Representative. The testing agency shall submit a certified written report of each inspection and test to the Contractor, who shall then provide the information to the Parks Representative, and to authorities having jurisdiction when authorities so direct, unless otherwise directed by the Parks Representative. Reports of each inspection, test, or similar service, at a minimum, shall include the following:

1. Name, address, and telephone number of testing agency.

2. Project title and testing agency's project number.
3. Date of report and designation (number).
4. Dates and locations where samples were taken or inspections and field tests made.
5. Ambient conditions at the time of sample taking and inspecting or field testing.
6. Names of individuals taking the sample or making the inspection or test.
7. Product and test method.
8. Inspection or test data including interpretation of test results and comments or professional opinion on whether inspected or tested work complies with requirements.
9. Recommendations on re-testing or re-inspection.
10. Name and signature of professional laboratory inspector.

D. TESTING AGENCY QUALIFICATIONS:

Testing agencies shall specialize in the types of inspections and tests to be performed. Testing agencies must be acceptable to the Parks Representative and authorities having jurisdiction.

E. TESTING AGENCY RESPONSIBILITIES:

Testing agencies shall cooperate with the Parks Representative, authorities having jurisdiction, and the Contractor in performing its duties and shall provide qualified personnel to perform inspections and tests.

1. Agency shall promptly notify the Parks Representative and Contractor of deficiencies in the work observed during performance of its services.
2. Agency shall not release, revoke, alter, or enlarge requirements of the Contract Documents nor approve or accept any portion of the work.
3. Agency shall not perform duties of the Contractor.

F. AUXILIARY SERVICES:

The Contractor, at their expense, shall cooperate with all testing and inspection agencies, including the Parks Representative, and provide auxiliary services as requested, including, but not limited to the following:

1. Access to the Work.
2. Incidental labor and facilities to assist with inspections and tests.
3. Adequate quantities of materials for testing, and assistance in taking samples.
4. Facilities for storing and curing test samples.
5. Security and protection for samples and test equipment.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01400

SECTION 01725
PRESERVATION OF PROPERTY

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Work under this section includes protecting from harm or damage, all existing improvements and facilities that are not to be removed, including providing suitable safeguards during the construction activities.

PART 2- PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 PRESERVATION OF PROPERTY

A. The Contractor shall protect existing structures, pavements, light standards, utilities, fences, and all other appurtenances that are not indicated for removal. The Contractor shall promptly notify the Parks Representative of any damage to existing facilities not indicated for removal. The Parks Representative will direct the Contractor how to proceed repairing the damage at the expense of the Contractor. Damage shall be corrected to the satisfaction of the Parks Representative. It is highly recommended that the Contractor take pictures and/or video of the project site and surrounding areas prior to construction in order to protect themselves against damage claims that may arise.

B. In performing the work, the Contractor shall exercise due care and caution necessary to avoid damage to or impairment of the use of any existing utility lines, wet or dry, which may be above or below grade, intended to remain in service. Any damage inflicted on existing utility lines resulting from the Contractor's operations shall be immediately repaired to original condition and appearance at the Contractor's expense. The Parks Representative shall be immediately notified and inspection of the repaired utility lines shall take place prior to backfilling, if applicable. Prior to commencement of work, it is recommended that the Contractor contact the Underground Service Alert (USA) at 811 or 1-(800)-227-2600 to verify underground utility placement.

C. Existing vegetation that are not to be removed and are injured or damaged by reason of the Contractor's operations shall be replaced by the Contractor at the Contractor's expense.

D. Damaged or injured plants shall be removed and disposed of outside the project limits in accordance with the provisions in Section 5-1.36B of the State of California Department of Transportation Standard Specifications. At the option of the Contractor, removed trees and shrubs may be reduced to chips.

E. Replacement planting shall be completed not less than twenty one (21) calendar days prior to the project end date per the Standard Agreement Form (STD 213) or the scheduled final walkthrough project acceptance date and agreed to by the Contractor and the Parks Representative. Replacement plants shall be watered as necessary to maintain the plants in a healthy condition.

END OF SECTION 01725

DIVISION 2 – SITE CONSTRUCTION

SECTION 2501: BOREHOLE DRILLING

1.1 SCOPE

Work under this bid items will consist of the Contractor drilling a 26-inch diameter conductor borehole and 16-inch diameter borehole by the direct (mud) rotary method in accordance with these Plans and Specifications. Borehole shall extend from the bottom of the surface conductor casing. The new well shall be located no closer than 25 Feet from existing Well #2. New well setbacks shall conform to Section 15 of Riverside County Ordinance No. 682 and applicable California Department of Water Resources (DWR) standards contained in Bulletin NO 74-81 and Bulletin NO 74-90 (Supplement to Bulletin 74-81).

1.2 METHOD

1.2.1 Drilling Fluid Properties

Only potable water shall be used in the drilling fluid. All water used during drilling shall meet California State Department of Public Health standards for drinking water. The drilling fluid shall possess such characteristics as are required to adequately maintain the walls of the borehole to prevent caving of the wall as drilling progresses and to permit recovery of representative samples of the drill cuttings. The drilling fluid shall also possess such characteristics that it can be readily removed from the borehole during the placement of the gravel pack and during development of each well.

Drilling fluid additives shall consist of a bentonite additive, such as Quick Gel or similar. The properties specified below are to be maintained to the satisfaction of the County's Representative. The Contractor is advised that excessive water loss in clay zones can lead to swelling, loss of shear strength, substantial caving, and borehole stability problems. The drilling fluid to be utilized should contain properties to minimize these possibilities.

The Contractor must possess sufficient fluid tank volume to effectively separate cuttings and to keep sand and solids contents below their specified amounts. If drilling fluid conditions as outlined below are exceeded, the Contractor will be required to immediately suspend further drilling until corrected.

Excavated mud pits shall not be used. Portable mud tanks with internal baffles, which allow drill cuttings to settle, are required. Sediment shall be removed periodically from the tank(s) in order to maintain tank volume and to keep drilling fluid properties within specifications.

At the completion of drilling operations, drilling fluids are to be removed from the site and properly disposed of by the Contractor at his expense. Under no circumstances are drilling fluids, drill cuttings, and/or drilling mud permitted to flow uncontrolled onsite, offsite or into nearby streets or storm drains.

1.2.2 Drift Survey

In order to ensure that each borehole has been drilled in a nearly vertical alignment and that it exhibits little deviation upon completion, the Contractor shall furnish and employ a self-checking mechanical drift indicator (Eastman Drift Survey, or equivalent) to measure borehole deflection. Drift indications shall be taken at 50-foot intervals immediately after each 50-foot increment of borehole is drilled. The drift survey shall begin at a depth of 100 ft below ground surface. The drift from vertical shall not be more than one half of one (1) degree. The Contractor, at no additional expense to the County, shall correct any deviation during drilling.

1.3 RECORDS

The Contractor must keep records providing the following information to the County and DEH-Indio Office:

1) A log of drilling bit types and depths of changes.
2) A record of drilling fluid properties at 4-hour intervals. The record shall show mud weights, Marsh funnel viscosity, sand content, solids content, water loss, water additions, and any mud additives used.
3) The driller's log for the completed well, amongst other data, shall provide the following: borehole diameter, wall thickness, depths, and quantities of blank and screened casing installed; cemented sections; gradation of gravel envelope; any other pertinent details deemed necessary for the County or DEH. Data collected by geophysical surveying will be used by the Engineer to determine the final depth for mid-segment of the blank casing shown on the attached plans.
5) All measurements for depths shall be referenced to existing ground surface at well site.
6) In addition to Contractor recording own geologic observations per DWR standards and County Ordinance No. 682, Contractor shall provide the Hydrogeologist with representative samples of drill cuttings at intervals not to exceed 50' in depth. Contractor shall place cutting samples in zip-lock plastic bags. All bags shall be labeled to indicate the depth interval, date, and well number of the collected sample. The samples shall be properly stored by the Contractor in a manner as to prevent breakage or loss until the samples are accepted by the Hydrogeologist. Samples of the collected drill cuttings shall be selected by the Hydrogeologist for sieve analysis and porosity and submitted to a laboratory suitable for conducting such analyses. Using the results of the sieve analysis and porosity, the Hydrogeologist shall specify the final gradation of the Tacna gravel pack (as per Note # 3 on the plans), as well as, flow rate for pumping development testing.

END OF SECTION

SECTION 2502
CONDUCTOR (SURFACE) CASING

1.1 SCOPE

Work under this bid item will consist of the Contractor installing a surface conductor casing as shown in the attached Plans, and as specified herein. The Contractor shall bore a minimum 26-inch diameter borehole from ground surface to a depth of 50 ft below ground surface. The conductor casing will provide near-surface borehole stability and conduct drilling fluids and cuttings safely to the surface.

The Contractor shall notify and arrange for a County of Riverside Department of Environmental Health (DEH) inspector to be onsite to observe and approve this cement seal around the conductor casing. Should the installation of the conductor casing not meet with the approval of the DEH inspector, the Contractor shall correct any deficiencies, as noted by the DEH inspector and at the Contractor's expense, in order to obtain an installation satisfactory to the inspector.

1.2 MATERIAL AND METHOD

The conductor casing shall be a minimum 20-inches OD low carbon steel pipe having a wall thickness of not less than 3/16-inch and a length of not less than 50 ft. Conductor casing shall be manufactured in accordance with ASTM A-139, Grade B, without copper or equivalent. All joints in the conductor casing shall be securely welded and shall be watertight. Field joints shall be either collared or butt-welded. Centering guides shall be welded to the conductor casing with a minimum of two sets of guides (one set 10 ft from the bottom and one set 10 ft from the top). Each set shall consist of three guides equally spaced circumferentially.

After the conductor casing has been installed, the annular space between the borehole and the conductor casing shall be filled and sealed by means of tremie pipe and pumping cement into the annular space around the conductor casing. The cement shall consist, at a minimum, of a 10-sack mix with ASTM C150 Type II Portland Cement.

There shall be not more than two parts by weight of sand to one part by weight of cement. The water-cement ratio shall be about 7 gallons per sack of cement (94 pounds). All onsite water additions shall be metered. Up to 5 percent bentonite gel and 2 percent calcium chloride may be added if deemed necessary. Upon completion of grouting, the cement shall be visible above the surface of the ground outside the conductor casing. After grouting operations are completed, the cement shall be left undisturbed for a period of not less than 24 hours before drilling is resumed.

END OF SECTION

SECTION 2503
WELL CASING AND LOUVERS

1.1 SCOPE

As specified per the attached Plans and these Specifications, the Contractor shall furnish and install blank and louvered well casing, a cellar pipe and cap, gravel feed tube, and an air vent tube. The estimated well casing (excluding the accessory tubes) shall extend to the following approximate depth:

The types of casing, and their approximate depth settings, diameters, wall thicknesses, and total lengths for the well are shown on the Plans. Additionally, the top of the well casing (including the accessory tubes) shall extend (stick up) approximately 1 ft above the ground surface.

1.2 MATERIALS

All casing materials shall meet NSF 61 standards.

1.2.1 Blank Casing

The blank casing shall consist of Type 304L stainless steel and shall be 8-inches inside diameter (ID) and manufactured in accordance with ASTM Standard A778, with the following additions:

- The steel from which the well casing is to be manufactured shall be Type 304L stainless steel.
- The well casing shall have a minimum 0.188-inch (3/16") wall thickness +/- five (5) percent.
- Welding shall be by the submerged gas tungsten-arc process using at least one pass on the inside and one pass on the outside (internal and external weld).
- There shall be no more than one (1) single seam per 40 ft length of well casing.
- Casing section lengths shall be in increments of 5, 10, 20 and 40 ft (random, odd lengths of casing will not be permitted).
- Casing shall have fully welded collars.

The blank well casing shall be installed, per attached Plans to 1 ft above ground surface. The final depth for the 10-foot med-segment shall be determined by the Engineer based on data collected in geophysical survey.

1.2.2 Louvered Screen Well Casing

The screen casing shall be Roscoe Moss Ful-flo louvers, Type 304L stainless steel and shall be 8-inches inside diameter (ID) and manufactured in accordance with ASTM Standard A778, with the following additions:

- The steel from which the well casing is to be manufactured shall be Type 304L stainless steel.
- The well casing shall have a minimum 0.188-inch (3/16") wall thickness +/- five (5) percent.
- Welding shall be by the submerged gas tungsten-arc process using at least one pass on the inside and one pass on the outside (internal and external weld).
- There shall be no more than one (1) single seam per 40 ft length of well casing.
- Casing section lengths shall be in increments of 5, 10, 20 and 40 ft (Random odd lengths of casing will not be permitted).
- Casing shall have fully welded collars.
- Slot opening width shall be as shown on the attached plans.

1.2.3 End Cap

The bottom of the blank casing (cellar pipe) shall be fitted with a Type 304L stainless steel plate or cap, welded in place.

1.2.4 Accessory Tubes

The following accessory tubes will be constructed of to the following specifications:

- 3-inch ID, Schedule 40, Low Carbon Steel, Permanent Gravel Feed Tube to a depth of 50 ft below ground surface
- 2-inch ID, Schedule 40 Type 304L Stainless Steel , Water Level Sounding/Pressure Transducer Tube to a depth of 225 ft below ground surface, and slotted (machine-cut) between the depths as specified, with slot size openings of 0.050-inches
- 1 1/2-inch ID, Schedule 40, Type 304L Stainless Steel, Air Vent Tube to a depth of 2 ft below ground surface

The accessory tubes shall extend from 1 ft above ground surface. The tops of these accessory tubes shall be capped with a minimum ¼ inch thick steel plate. These plates shall be completely welded in place and cut to fit the outside diameter of the respective accessory tube.

1.3 METHODS

Each well casing shall be plumb and shall be centered in the borehole. The well casing shall be suspended in tension from the surface by means of an appropriate hanger or clamp. The use of float plugs to land and set the well casing will not be permitted. The bottom of the well casing shall be at a sufficient distance above the bottom of the

borehole, as shown on the plans, so that none of the well casing will be supported from the bottom of the borehole.

Prior to the installation of any casing, the Contractor shall inspect for and remove any tags, labels, or other deleterious matter attached to the interior or exterior of the pipe and louvered sections delivered to the job site.

Three Type 304L stainless steel centralizers with 120-degree spacing are to be attached directly to the casing by welding onto the casing at each depth where placed. Casing centralizers shall be placed at the bottom and top of the louvered interval only, when they occur within those intervals. The maximum amount of separation between the centralizers shall be 80 ft.

1.3.2 Blank and Louvered Well Casing

The Contractor shall install the blank and louvered well casing at intervals as, as shown on the Plans, except of the med-blank segment, which shall be determined by the Engineer based on the geological survey and sieve analysis supplied by the Contractor and the Hydrogeologist.

1.3.3 Accessory Tubes

Permanent Gravel Feed Tube

The bottom of the 3-inch low carbon steel permanent gravel feed tube may be lowered prior to installation of the well casing and shall be placed such that the temporary tremie pipe will not interfere with the gravel feed tube. This tube shall remain open during well casing installation, gravel packing, and placement of the cement grout annular seal. Following completion of the cement grout annular seal, the tube will be filled to the surface with gravel pack material. The top of the gravel feed tube shall be equipped with compatible steel cap.

Water Level Sounding/Pressure Transducer Tube

The 2-inch ID Type 304L Stainless Steel water level sounding/pressure transducer tube shall be placed such that the temporary tremie pipe will not interfere with the tube. The tube shall be placed between 90- to 180-degrees from the permanent gravel feed line. A 2-feet long tube entry port into the well casing shall be securely welded to the blank casing at depth equal to final depth of the pump, as determined by the Engineer. The tube shall remain open during well casing installation, gravel packing, and placement of the cement grout annular seal. The top of the level sounding/pressure transducer tube shall be equipped with compatible steel cap.

AirVent Tube

The Contractor shall install the 3-inch Type 304L stainless steel air vent tube any time following the placement of the cement annular seal. The air vent tube shall be installed

to a depth of 2 ft and shall have an angle of entry into the well casing of approximately 30 degrees from the vertical. The top of the air vent tube shall be equipped with compatible steel cap.

1.3.4 Temporary Capping and Determination of Openness of Well Casing & Tubes

Following well casing installation, the top of the well casing and accessory tubes shall be provided with secure caps at all times when personnel are not on the site.

1.3.5 Field Welding Procedures

All field welding shall be performed in accordance with the American Welding Society Standards by a certified welder. The welders used shall be certified in accordance with AWS 010.9-80 for level AR-1 and shall be qualified in the 2G and 5G positions or the 6G position. The following field welding procedures shall apply:

a) A length of well casing shall be lowered in the borehole with the collar facing upward. b) The plain end of the following well casing length shall be inserted into the collar. True

contact of the two joints must be verified by observation through the three (3) ¾-inch

diameter, equally spaced, inspection holes.

c) Spot welds shall be placed through the three holes in order to hold the contact position.

d) All field joints on the blank and louvered well casing and accessory tubes shall be properly lap-welded or butt-welded during well installation.

e) A fillet type weld shall be made covering the top edge of the collar continuously for the entire circumference. Two passes or welds shall be applied to joints in 5/16-inch and thicker wall material, otherwise for wall thicknesses ¼-inch of thinner only one pass is necessary.

f) The inspection holes on blank well casing sections shall be sealed (welded) to assure a leak proof connection.

The following electrodes shall be utilized for various blank and louvered well casing materials, as appropriate (shading indicates the type of electrode to be used for the well casing specified herein):

Electrode Type To Be Used

Well Casing Material	Electrode No.
Mild (Carbon) Steel	E-6011 or E-7018
Copper Bearing Steel	E-6011 or E-7018
Low Alloy Steel (ASTM A 242 or equivalent)	E-7018
Stainless Steel (Type	E-308L-1(

Stainless Steel (Type 316L)	E-316L-16

Depending on wall thickness, the following electrode sizes shall apply:

Electrode Size To Be Used

Wall Thickness	Electrode Size
1/8-inch	1/8 inch
3/16- to 1/4-inch	5/32- to 3/16-inch
Over 1/4-inch	3/16- to 1/4-inch

1.3.6 Well Replacement /Repair Conditions

If, for any reason, the casing cannot be landed in the correct position or at a depth acceptable to the County, the Contractor shall abandon the borehole and construct another well. This replacement well will be located near the original well location, and the Contractor shall drill and construct this new well in accordance with the Specifications at no additional cost to the County. The abandoned borehole shall be sealed and destroyed in accordance with directions from the County and in accordance with any laws/regulations/ordinances pertaining to proper well destruction, all at no additional cost to the County.

If any damage should be done to the well casings and accessory tubings during well construction, development or testing operations, by actions of the Contractor, or due to collapse of the borehole, and if it is deemed feasible by the Contractor that the damage can be successfully and properly repaired, then the Contractor may repair the well, if the process appears feasible to the County. The repair work must be agreed upon beforehand by the County, and the County reserves the right to reject any repair work performed on the well, if that repair work is not performed to its satisfaction. All work required repairing the well and all additional materials, labor and equipment required, shall be furnished by the Contractor at the expense of the Contractor and no additional compensation shall be made or allowed.

If any of the casings should collapse prior to well completion, they shall be withdrawn and replaced at the Contractor's expense. If the casing cannot be withdrawn or removed then the well will be destroyed in accordance with the State Department of Water Resources (DWR) and/or DEH guidelines, and the Contractor will be required to move to another position designated by the County and drill and construct a new well. All new work required replacing the well and all additional materials, labor and equipment required, shall be furnished by the Contractor at the expense of the Contractor and no additional compensation shall be made or allowed by the County.

END OF SECTION

SECTION 2504
GRAVEL PACK

1.1 SCOPE

Work consists of installing an engineered Tacna gravel pack, or equivalent, in the annulus of the borehole adjacent to the blank well casing and louver, in accordance with the attached Plans, and as specified herein.

Prior to the installation of any casing, the Engineer will assess the well casing for compatibility with the gravel pack. Any deviation unacceptable to the Engineer may be cause to reject the well casing and/or gravel pack.

1.2 MATERIALS

Tacna gravel pack, or equivalent, shall be in the annulus of the borehole, forming the gravel envelope, installed, as shown on the Plans. The 1/4 X 16 gradation for gravel pack, shown on the Plans, is preliminary. Final pack gradation design shall be prepared by Contractor's' Hydrogeologist, based on sieve analysis, and approved the Engineer. The gravel pack gradation must be compatible with the formation sediments encountered and the 0.090-inch slot size opening for the louvered casing being considered for use. The gravel used for packing shall be hard, water worn, and washed clean of silt, fine sand, dirt, and foreign matter. Crushed gravel shall not be accepted. The gravel shall be well rounded and graded, and subject to the approval of the Engineer.

All gravel must be brought to and stored at the site in closed containers (e.g., "supersacks"). A description and current sieve analysis of the actual gravel packing materials to be delivered to the site must be submitted for approval to the Engineer at least 48 hours prior to the anticipated placement of the material in each well. The Engineer may elect to have a certified testing laboratory perform a sieve analysis to verify conformance with the approved sample. Failure to meet gradation of the approved sample shall be grounds for rejection. While in the supersacks at the well site, the gravel pack shall be protected and kept free of all foreign matter.

All materials shall meet NSF 61 standards.

1.3 METHODS

The gravel pack, as specified, shall be installed in the annular space between the borehole and the well casing through a temporary $2^{7}/_{8}$-inch OD tremie pipe. A circulating system with one or more positive displacement pumps utilizing fresh water shall be used for the purpose of introducing the gravel into the annular space. The gravel pack shall be placed by pumping through the bottom of the temporary tremie pipe which shall be extended a maximum of no greater than 35 ft above the top of the gravel being placed at any time.

As gravel pack installation progresses, the temporary tremie pipe shall be gradually withdrawn from the annular space. During the entire gravel packing operation, clean or clarified water shall be circulated through the annular space between the wall of the borehole and well casing. The use of that water displaced during installation of the casing, gravel pack and cement seal is allowed, provided it is clarified by settling and/or using a flocculent, until it has a low turbidity. After the gravel is installed, a swab shall be carefully worked opposite all louvered sections of casing. As the gravel settles in the annular space, more gravel shall be added via the tremie pipe. This operation shall be continued until there is no further measurable settlement of the gravel pack.

Near the end of gravel packing, the Contractor shall place 5 ft of No. 30 (plaster) sand on top of the gravel pack within the annulus, to aid in preventing cement filtrate from seeping downward into the underlying gravel pack.

END OF SECTION

SECTION 2505
ANNULAR GROUT SEAL AND WELLHEAD SLAB

1.1 SCOPE

Work under this section shall consist of providing and installing a sand-cement grout in the annular space from the top of the plaster sand (which directly overlies the gravel pack) to the ground surface, as specified herein and the attached Plans.

1.2 MATERIALS

The annular grout seal shall be a 10.3-sack mix sand-cement grout. Grout used for the seal shall be Portland cement conforming to ASTM C150, Type II. There shall be not more than two parts by weight of sand to one part by weight of cement. The water-cement ratio shall be about 7 gallons per sack of cement (94 pounds). All onsite water additions shall be metered. Up to 5 percent bentonite gel and 2 percent calcium chloride may be added if deemed necessary.

1.3 METHODS

The grout shall be emplaced in the annular space in lifts, between the well casing and the borehole walls, from bottom to top by means of a temporary $2^{7}/_{8}$- inch OD tremie pipe, or similar device. The grout shall be placed by a positive displacement method using pumping.

Following placement of the annular grout seal, no further work shall be performed in the well for a minimum of 24 hours. No standby time will be paid while the grout seal is setting.

1.4 WELLHEAD SLAB

A well slab shall be constructed as follows:

1) A steel reinforced (#4 rebar at 6"x6") concrete well slab shall be constructed on the ground surface around the top of the well casing and shall be free from cracks or other defects likely to detract from its water tightness. The slab shall be monolithically poured on thoroughly compacted native earth and shall be a minimum thickness of six (6) inches, extending four (4) inches above and two (2) inches below surrounding ground level, and shall extend at least four (4) feet in all directions from the well casing.
2) The surface of the slab shall be smooth, troweled and shall be graded away from the well casing in all directions with sufficient fall to drain water away from the well casing.
3) The slab shall be poured in contact with the sealant material in the annular space. Prior to placement of the slab, the annular seal shall be thoroughly cleaned to

assure a tight bond between the annular seal and the slab.

4) The top of the well casing or approved adapter shall extend at least twelve (12) inches above finished grade.

END OF SECTION

SECTION 2506
MECHANICAL WELL DEVELOPMENT

1.1 SCOPE

Mechanical well development shall be conducted under this section as specified herein, for a total of 60 hours, unless otherwise directed by the County. Mechanical well development is to be initiated within 24 hours following the end of the 24-hour set-up time period required for the annular cement seal, and shall consist of surging the well within the perforated casing intervals in order to wash drilling fluids and cuttings from the gravel pack and well bore and then to remove these materials from the well by simultaneous airlift pumping. Temporary storage tanks shall be used to contain the fluids, as necessary. The Contractor is reminded that particular care must be exercised during all mechanical development operations, when using the swabbing tools, to preclude damage to any portion of the entire well casing and its perforations.

1.2 METHOD

First
Stage

The use of an open-ended, single-swab block tool attached to the end of the drill pipe shall be the initial step in the development process. The purpose of this first phase is to clean out the majority of the heavy fluids and sediment from the well casing. This tool shall be moved up and down 4 or 5 times in each 20-foot section of perforations during airlifting. After working the tool to the bottom of the well, all sediment in the bottom of the well casing shall be removed by airlifting.

Second
Stage

This stage of mechanical development shall be performed with a double-swab tool consisting of a rubber packer assembly near each end of an approximately 20-foot long perforated tube which is to function as the intake zone for fluids and sediment. The outside diameter of the swabs shall be not less than 1-inch smaller than the inside diameter of the perforated sections of casing, and the downhole end of the perforated tube shall be capped.

Development shall begin at the uppermost perforated section of the casing with simultaneous swabbing and airlifting, and shall continue to each successively lower 20-foot long section of perforated well casing until the discharge has a turbidity not greater than 300 Nephelometric Turbidity Units (NTUs), or a clarity as approved by the County. Following such determination, the assembly shall be lowered to the next 20-foot interval

of perforations, and the procedure repeated until all screened or perforated sections of the well casing have been mechanically developed.

While in each 20-foot perforated section, the Kelly bar shall be used to move the tool assembly up and down 4 or 5 times within shorter sections of the respective 20-foot perforated zone. Following this, tool movement shall then cease for approximately 10 to 15 minutes while continuing to airlift water from the well. When the discharge again clears, the tool assembly shall again be moved up and down while continuing to airlift. The process shall be repeated until water produced from the 20-foot perforated section has cleared sufficiently to permit moving the entire tool assembly to the next 20-foot section, and then repeating the process.

The Contractor shall provide adequate air compressor capacity in both volume (CFM) and pressure (PSI) to maintain the proper relationships between air pressure/air volume capacity and diameters and lengths of both drill pipe and air tubing in order to maintain airlifting efficiency during mechanical development.

During mechanical development, potable water shall be allowed to flow down into the gravel feed tube through a garden hose. However, if water is unable to flow through this tube, then the Contractor shall take action to clear the tube until there is an adequate flow of water (the rate at which the garden hose flows).

Upon completion of mechanical development, the well shall be accurately measured to determine the level of accumulated sediment in the bottom of the well casing. The sediment level shall be recorded in the driller's daily log. If the sediment fill level is more than 10 ft below the bottom of the lowermost section of perforations, the Contractor may proceed with installation of the development test pump. If the sediment fill in the bottom of the casing lies within any portion of the lowermost perforated interval, this fill shall be removed by bailing prior to installation of the test pump.

Mechanical development fluids shall be directed to onsite temporary fluid storage tanks where the sediment will be allowed to settle to the bottom of the tank. The tanks shall be discharged to an onsite discharge pond or to an offsite discharge point, if feasible.

1.3 DISCHARGE WATER

Discharge water shall be conveyed from the pump to the point of discharge at the onsite discharge point. It is imperative to ensure that no damage by flooding or erosion is caused to the offsite discharge point by the pumped groundwater. Modifications may need to be performed by the Contractor to the offsite discharge point, in order to accommodate the anticipated discharge volumes. The Contractor shall provide all discharge piping and other equipment to the onsite discharge point.

1.4 MEASUREMENT AND PAYMENT

Mechanical well development shall be paid at the unit price per hour. The price shall constitute full compensation for all labor, material, equipment, and incidentals required to develop the well for a period of 60 hours, complete per Plans and Specifications. No partial payment will be allowed unless all work has been completed and accepted.

The County will pay for a maximum of 60 hours of mechanical well development. The Contractor shall continue the development until the conditions stated in Section 1.2 above are satisfied. Additional or fewer hours for development, as deemed necessary and as approved by the County, shall be paid for at the same unit hourly rates for this bid item.

END OF SECTION

SECTION 2507
COLOR VIDEO SURVEY

1.1 SCOPE

The work under this section entails the performance of one (1) color video survey, as deemed necessary and if requested by the County. The video survey at the well shall be performed following completion of mechanical development operations to check the condition of the perforations following mechanical development.

1.2 METHOD

The camera shall have both vertical- and sideway-viewing capabilities. As the camera probe surveys the full casing interval, a digital depth record shall be recorded on the videotape for reference using the sideway viewing lens set to zero at ground surface. Camera shall be disinfected prior to lowering into the well.

Should any of the video surveys fail to produce a clear picture of the internal casing conditions throughout the total depth of the well, additional clear water preparations shall be instituted and additional video surveys conducted until a clear video record is obtained of all casing. This extra work, if needed, shall be accomplished at the Contractor's expense. Two (2) copies of each video survey in DVD format and one copy of the video survey report in paper and/or Adobe Acrobat PDF shall be provided to County and DEH's Representative.

Based on review of the first video survey log by the County's Representative, sediment fill or other debris occur within the louvered intervals of the well or in the cellar pipe, the Contractor shall remove this material at no additional expense to the County. Additionally, if review of the first video survey log reveals/shows louvers or sections of louvers that appear to be plugged and/or coated, indicating insufficient development, then the Contractor will be required to wire-brush those sections and to perform additional mechanical development and/or chemical development operations. Based on review of the second video survey log, if sediment fill or other debris occurs within the louvered sections of the well casing or in the cellar pipe, the Contractor shall remove this material at no additional expense to the County.

1.3 RECORDS

Video should have a title at the beginning indicating the well name, the date of the video survey, and the zero depth point (e.g. ground surface); these items should be captured on the video at the side-looking position. The video survey report should include, at a minimum, the name of the video company, name of the operator, camera/rig/van number, name of the well, location of the well (streets and/or GPS coordinates), arrival time, departure time, name of County's Representative (if on site), date of the video, type of video (static/non-pumping or pumping), zero depth reference point (e.g. top of casing), distance between side-view camera and downhole camera, distance between downhole camera and light source, casing/well diameter, depth (from side-view camera)

of top and bottom of each perforated interval, type of perforations, casing/louvers condition (including amount of sediments in louvers, if any), water entry/exit points/intervals (e.g., based on particle movement in water and/or clarity or cloudiness of the water), and total depth of the well/video (e.g., top of fill or bottom of well casing).

END OF SECTION

SECTION2508
PUMPING DEVELOPMENT

1.1 SCOPE

Pumping development will consist of operating a temporary deep well test pump to further remove fine-grained formation sediments and drilling fluids prior to conducting the well capacity test.

The Contractor shall also provide qualified personnel on a 24-hour basis during the pumping development, to assure proper operation of the pumping test equipment to monitor pumping rates, and to assist in water level monitoring, step drawdown testing and sand content testing.

1.2 PUMPING DEVELOPMENT PROCEDURES

Pumping development shall consist of intermittent pumping and surging of the well, beginning at an initial rate of 50 gpm, and shall continue at successively higher rates until the water is clear. Surging shall allow water to flow back through the bowls with free backspin and through the casing perforations. The pump shall then be started and stopped several times and then pumped at 50 gpm until the water is clear. The procedure shall be repeated at approximately 50 gpm increments up to the maximum rate recommended by the Contractor's Hydrogeologist.

Development at each rate shall continue until the following conditions have been met:

a) There shall be no settlement of the gravel pack.

b) The specific capacity (gallons per minute per foot of drawdown) shall have reached a relatively constant value over a period of at least 4 continuous hours. If this is not met, Hydrogeologist recommended flow rate shall be adjusted.

c) The sand content is no greater than 3 parts per million (ppm) measured 15 minutes after surging while pumping at the Hydrogeologist recommended rate.

During mechanical development, potable water shall be allowed to flow down into the gravel feed tube through a garden hose. However, if water is unable to flow through this tube, then the Contractor shall take action to clear the tube until there is an adequate flow of water (the rate at which the garden hose flows).

1.3 DISCHARGE WATER

Discharge water shall be conveyed from the pump to the point of discharge at the offsite discharge point. It is imperative to ensure that no damage by flooding or erosion is caused to the offsite discharge point by the pumped groundwater. Modifications may need to be performed by the Contractor to the offsite discharge point, in order to accommodate the anticipated discharge volumes. The Contractor shall provide all discharge piping and other equipment to the offsite discharge point.

1.4 MEASUREMENT AND PAYMENT

Pumping development shall be paid at the unit price per hour. The price shall constitute full compensation for all labor, material, equipment, and incidentals required to develop the well by pumping for a period of 60 hours, complete per Plans and Specifications. No partial payment will be allowed unless all work has been completed and accepted.

The County will pay for a maximum of 60 hours of pumping development. The Contractor shall continue pumping development until the conditions stated in Section 1.2 above are satisfied. Additional or fewer pumping hours for development, as deemed necessary and as approved by the County, shall be paid for at the same unit hourly rates for this bid item.

END OF SECTION

SECTION 2509
CONSTANT RATE PUMPING TEST

1.1 SCOPE

The Contractor shall test well by conducting a step drawdown test and a constant rate pumping test to determine the optimum rate of pumping and assist in collecting accurate water level measurements during testing operations. There shall be a period of at least 24 hours of non-pumping conditions following completion of mechanical development and pumping development, prior to the start of the step drawdown test.

The Contractor shall also provide qualified personnel on a 24-hour basis during the step drawdown and constant rate pumping tests to assure proper operation of the pumping test equipment to monitor pumping rates, and to assist in water level monitoring if requested by the County's Representative.

County field personnel reported that current flow rate for the existing Well #2 is running at 250 gpm at maximum pressure of 90 psi at ground surface. The completion report for existing Well # 2 shows an estimated yield of 300 gpm (report is included in the References section). It is imperative that Contractor's Hydrogeologist uses own data generated from own analysis and provide Contractor with flow rate for the purpose of testing specified in this section, subject to approval by the Engineer.

1.2 METHOD

Well capacity testing shall be performed in accordance to the California Code of Regulations, Title 22, Section 64554(f) and Riverside County Ordinance 682. As a minimum, the test shall consist of the following procedure:

1.2.1 Before Testing:

1) Before beginning any well yield pump test, the driller's well log shall be reviewed by Contractor's Hydrogeologist to verify that well is in an alluvial aquifer;
2) Contractor's Hydrogeologist shall recommend a suitable pump test discharge rate, to be approved by the Engineer;
3) There shall be a period of at least 24 hours of non-pumping conditions following development work prior to the start of the constant rate pumping test;
4) Contractor shall ensure that the pumping test can be continued for a minimum of 8 hours;
5) Testing pump shall be set at depth near the center of the mid-segment blank casing.
6) Contactor shall ensure discharge from the pump is piped far enough away to avoid recharge.

1.2.2 Conducting the Testing:

1) An initial water level measurement (static water level) shall be taken;
2) Contractor shall pump the well continuously, maintaining the pump discharge rate recommended by the Contractor's Hydrogeologist;
3) Contractor shall measure the drawdown carefully in the pumping well, taking drawdown readings at a frequency no less than once every hour;
4) Contractor shall plot the drawdown data versus the time data on semi-logarithmic graph paper, with the time intervals on the horizontal logarithm axis and the drawdown data on the vertical axis;
5) Steady-state is indicated if the last four hours of drawdown measurements and the elapsed time yield a straight line in the plot above. If steady-state is not achieved, the pump discharge rate shall be continued for a longer period of time or adjusted, with (3) and (4) above repeated, until steady-state is achieved.

1.2.3 Recovery Data:

Recovery data shall be collected and recorded after termination of pumping, as follows:

1) Immediately after discontinuing pumping, Contractor shall take measurements of the water level drawdown at a minimum of every 15 minutes for the first two hours and every hour thereafter for at least six hours.
2) The data must indicate that, within a length of time not exceeding the duration of the pumping time of the well capacity test, the well has recovered to within two feet of the static water level measured at the beginning of the test or to a minimum of ninety-five percent of the total drawdown measured during the test, whichever is more stringent.

1.2,3 Well Capacity:

The capacity of the well will be the pumping discharge rate used during the test.

1.2.4 Final Sand Content Testing:

During the constant rate pumping test, the Contractor shall conduct the final sand content testing using a Rossum Sand Tester. The sand content shall be determined by averaging the results of samples collected at the following times during the final pumping test:

1) Five minutes after start of the test;
2) After 1/4 of the total planned test time has elapsed;
3) After 1/2 of the time has elapsed;
4) After 3/4 of the time has elapsed;
5) Near the end of the pumping test

1.3 ABORTED TESTS

Whenever continuous pumping at a uniform rate has been specified, failure of pumping operations for a period greater than one percent of the elapsed pumping time shall require suspension of the test until the water level in the pumped well has recovered to its original level. Such tests are invalid and will not be construed as a test.

Recovery shall be considered "complete" after the well has been allowed to rest for a period at least equal to the elapsed pumping time of the aborted test, except that if any three successive water level measurements spaced at least 20 minutes apart show no further rise in the water level in the pumped well, the test may be resumed immediately. The County's Representative shall be the sole judge as to whether this latter condition exists. The Contractor will not be paid for any re-testing done if the specified time or recovery requirements of the County's Representative for the aborted test are not first met.

1.4 DISCHARGE WATER

Discharge water shall be conveyed from the pump to the designated point of discharge. It is imperative to ensure that no damage by flooding and/or erosion is caused to the discharge point by the pumped groundwater. Modifications may need to be performed by the Contractor to the discharge point, in order to accommodate the anticipated discharge volumes. The Contractor shall provide all discharge piping and other equipment to discharge the pumped water, as necessary.

1.6 RECORDS

The Contractor shall keep accurate records of the pumping tests and furnish copies of all records to the County and DEH's Representative upon completion of the test. For each test, the records shall include physical data describing the construction features such as, but not limited to:

- Well depth, casing diameter, and length(s) of the well screen(s).
- Pump depth setting.
- A description of the reference measuring point for water levels and its measured height above ground surface.
- The methods used in measuring water levels and pumping rates.
- Actual water level, pumping rate, and sand measurements collected by the Contractor during the testing periods.
- Plot of the results as described in Section 1.2.2 above.
- Estimated well capacity.
- Sand content test results in Section 1.2.4.

1.7 MEASUREMENT AND PAYMENT

The constant rate pumping test shall be paid at the unit price per hour. The price shall constitute full compensation for all labor, material, equipment, and incidentals required to test each well for a maximum test period of 8 hours. Additional or fewer pumping hours as recommended or approved by the County will be paid for at the same hourly rate as shown for this bid item.

END OF SECTION

SECTION 2510
WELL DISINFECTION, CAPPING & WATER QUALITY ANALYSIS

1.1 SCOPE

The Contractor shall disinfect well against bacteria following completion of the final video survey of the fully constructed, developed, and tested well. The well and accessory tubes at each site will then be securely capped, following disinfection, in order to prevent entry by unauthorized personnel or animals.

1.2 DISINFECTANTS

Chlorine approved by state or local regulatory agencies shall be used as disinfectant. The disinfectant shall be delivered to the work site in original closed containers bearing the original label indicating the percentage of available chlorine. Dry, granular, 65% calcium hypochlorite ($Ca[ClO]_2$) is considered an acceptable disinfectant. A 12.5% solution of liquid sodium hypochlorite (NaClO) shall be used instead of calcium hypochlorite if the Langelier Saturation Index of groundwater from the well exceeds 0.5. The disinfectant shall have been purchased within 30 days of use. Chlorine compounds in dry form shall not be stored for more than one year. During storage, disinfectants shall not be exposed to the atmosphere or to direct sunlight.

1.3 QUANTITIES

Unless superseded by governmental regulation, the quantity of chlorine compounds used for disinfection shall be sufficient to produce a minimum of 200 parts per million (ppm) chlorine solution, when mixed with the total volume of water in the well. A dosage of approximately 2.5 pounds of $Ca(ClO)_2$ per 1,000 gallons of water filled casing and screen is considered an acceptable method of estimating the amount of disinfectant needed.

1.4 DISINFECTION METHODS

The disinfecting agent shall be uniformly applied throughout the entire water depth of the well. This may be accomplished by using a perforated, capped container (basket) containing the dry chemical and lowering and raising the container by cable throughout the full column of water in the well for a minimum of two (2) hours. If sodium hypochlorite is used, the solution must reach all parts of the well. To accomplish this, a tube shall be suspended in the well so that it reaches the bottom of the casing. After the tube has been extended to the casing bottom, it shall be withdrawn as the sodium hypochlorite solution is pumped through the tube. Dispersion of the disinfectant shall be assisted by pouring into the well a volume of water equal to the volume of water contained in the well, after the disinfectant has been emplaced. This will cause the disinfectant to flow out of the well into the area adjacent to the screen.

1.5 BACTERIOLOGICAL TESTING

A testing firm shall perform bacteriological sampling and testing of the disinfected well. The testing methodology employed shall be in accordance with AWA 651/652 and

State standards. The Certified Laboratory shall analyze the samples for the presence of coliform bacteria and heterotrophic-type bacteria (heterotrophic plate count). The evaluation criteria a passing test sample is as follows:

1. Coliform bacteria: no positive sample
2. Heterotrophic plate count (HPC): 500 colony forming units/ml or less

1.6 WATER QUALITY TESTING

Water from all new, repaired, and reconstructed community water supply wells, shall be tested for and meet the standards for constituents required in the California Code of Regulations, Title 22, Domestic Water Quality and Monitoring. In addition to the microbiological standards required in Section 18 of County Ordinance 682, well shall be tested for nitrates, nitrites, fluoride, manganese, sulfate, total dissolved solids, specific conductance, turbidity, dissolved oxygen, and pH. Additional tests may be required by DEH, at their discretion.

Copies of bacteriologic and water quality field-test and laboratory analytical results of all samples collected shall be provided to the County and DEH.

1.6 WELL CAPPING

The well casing and accessory tubes shall each be capped upon completion of the final video survey to prevent later entry into the well casing or accessory tubes by unauthorized personnel or animals. The conductor casing, well casing, pressure transducer tube, gravel feed tube, and air vent tube shall each extend 1 ft above ground surface prior to capping. The caps shall consist of at least 1/4-inch thick Type 304L stainless steel, and shall completely seal and cover the opening to the top of the well casing and accessory tubes. The caps shall be properly welded, with the weld extending completely around each cap.

END OF SECTION

SECTION 2511
WELL ABANDONMENT AND DESTRUCTION

1.1 SCOPE

The section shall apply to abandoning existing well #2 after new well is placed in operation, as well as, in the case where the new well is deemed unacceptable, where Contractor, based on his actions, or at the specific request of the County, may be required to abandon the borehole or destroy the well(s). Destruction of existing Well #2 shall not commence until after the New Well is fully operational.

Well destruction shall be accomplished in accordance with County Ordinance 682 and DWR Well Standards (Bulletin 74-81 and Bulletin 74-90).

1.2 QUANTITY

For bidding purposes, the depth of the existing well shall be assumed to be 420 ft.

1.3 MATERIAL

The borehole shall be completely filled with gravel, per with bentonite and/or cement, in accordance with applicable State and County Standards for permanent destruction. As a minimum the upper 20 feet of the well shall be sealed with suitable impervious materials and the remainder of the well shall be filled with suitable gravel pack. (Refer to Figure 9A, of DWR Bulletin 74- 81.)

1.4 METHODS

The well shall be filled from the bottom of the well up. Sealing material shall be placed in the interval or intervals to be sealed by methods that prevent free fall, dilution, and/or separation of aggregate from cementing materials. Where neat cement grout, sand-cement grout, or concrete is used, it shall be poured in one continuous operation.

Existing casing shall be perforated or punctured opposite the area to be sealed. The sealing material shall then be placed within the casing, completely filling the portion adjacent to the area to be sealed and then forced out under pressure into the gravel envelope. When pressure is applied to force sealing material into the annular space, the pressure shall be maintained for a length of time sufficient for the cementing mixture to set.

To assure that the well is filled and there has been no jamming or "bridging" of the material, verification shall be made that the volume of material placed in the well installation at least equals the volume of the empty hole.

During periods when no work is being done on the well, such as overnight or while waiting for sealing material to set, the well and surrounding excavation, if any, shall be covered. The cover shall be sufficiently strong and well enough anchored to prevent the introduction of foreign material into the well and to protect the public from a potentially hazardous situation.

1.5 ABANDONMENT NEW WELL

1.51 Abandonment Due to Actions of Contractor

If abandonment of the new borehole is by reason of any actions of Contractor, including but not limited to such causes as losing tools, damaging the well, misalignment, or any other cause attributed to careless or poor workmanship, the borehole shall be completely filled in accordance with applicable State and County Standards for such destruction. No payment will be made for drilling and filling the abandoned borehole, or for mobilization and demobilization, and the Contractor shall drill a new borehole within fifty (50) feet of the same location.

1.5.2 Abandonment at Request of the County

If abandonment of the pilot borehole is specifically requested by the County secluding, but not limited to such causes as total lack of potential aquifers, insufficient number of potential aquifers, or unacceptable quality, the borehole shall be completely filled in accordance with applicable State and County Standards for such destruction. In this event, the Contractor will be paid for mobilization and demobilization at this site, as well as for the footage of drilling completed. The Contractor may then be requested to re-mobilize at a second test site selected by the County. No payment for stand-by time while awaiting a second well site will be made.

Abandonment hereunder shall also include payment for abandonment of any remaining or unused portion of the borehole that is not being used for final well completion.

END OF SECTION

SECTION 2512
SUBMERSIBLE PUMP

1.0 GENERAL

1.01 SCOPE

County intends to reuse the existing pump for the new well. County however, may chose to replace the existing pump. The existing pump flow rate has been as reported by County field personnel as being 250 gpm at 90 psi pressure at ground surface. Replacement of the pump may become necessary, if the well yield test results in lower yield than the pump rating. Regardless of whether existing or new pump is installed, Contractor shall furnish and install new pump assembly, including pump column pipes, power cable assembly and surface plate, and shall provide testing for the pump.

1.02 REFERENCES

ASTM A48 Standard Specification for Gray Iron Castings
ASTM A582 Standard Specification for Free-Machining Stainless Steel Bars
HIS Hydraulic Institute Standards
ICEA Insulated Cable Engineers Association
NEMA National Electric Manufacturer's Association NEC National Electric Code
NSF/ANSI 61 Drinking Water System Components

1.03 SUBMITTALS

A. Basic Data: Prior to preparation of shop drawings, the Contractor shall submit the following information for the pump specified under this Section.

1. Pump curve indicating total dynamic head, flow rate, brake horsepower, shutoff head, and efficiency

2. Motor data, including the manufacturer; the minimum guaranteed efficiency and power factor at full load, ¾ load, and ½ load; locked motor current in amps; full load current in amps; the motor speed in rpm; and the mounting details.

B. Shop Drawings: After the above equipment submittals have been approved, drawings, specifications, and other data required to be submitted hereunder shall include, but shall not be limited to, the following:

1. Complete fabrication, assembly, foundation, and installation drawings, together with detailed specifications and data covering materials of construction, weight of the pump, power drive assembly, parts, devices, wiring diagrams, and other accessories forming a part of the equipment furnished.

2. Materials of pump construction including impellers, shafts, bearings, castings, and pump discharge head.

3. Electric motor data including size, make, type, designation, and mounting details.

4. Manufacturer's Installation instructions

C. Test Reports: Provide Certified Test Reports as required in Part 3 herein.

D. Guarantee: Provide warranty as required herein under "Quality Assurance".

1.04 QUALITY ASSURANCE

A. General: All pumping equipment furnished under this section shall be of a design and manufacture that has been used in similar applications and be demonstrated to the satisfaction of the Owner that the quality is equal to equipment made by those manufacturers specifically named herein.

B. Pump Guarantee: Contractor shall warrant the units being supplied to the owner against defects in workmanship and material for a period of three (3) years under normal use, operation and service after the date of acceptance. The warranty shall be in printed form and apply to all similar units. The warranty shall be presented to the owner in written form and shall bear the appropriate pump serial numbers.

1.05 PUMP OPERATING CONDITIONS

Submersible pump shall be capable of providing current flow of 250 gpm, at a total dynamic head of 150 ft, or as determined by the Contractors' Hydrogeologist.

2.0 MATERIALS

All casing materials shall meet NSF 61 standards.

2.01 SUBMERSIBLE WATER PUMPS

A. General: Each piece of equipment furnished shall be of the most recent proven design as approved by the purchaser. The pump shall be a submersible turbine type multi-stage in series design, with closed impellers.

B. Materials: As a minimum, the pump bowl assembly shall be furnished in materials based on the material Table 4 in the ANSI/AWWA E101-88 standard. All materials used and not specified herein shall be the best available of the purpose intended as dictated by the best engineering practice and shall be within this limitation conform to the latest Standard of the American Society for Testing Materials, so far as practical. All materials used shall be described in the bidder proposal including references to ASTM numbers. Should the bidder desire to use materials other than specified, he shall submit with his bid a request for the approval by the purchaser for such deviations. A full explanation and justification for the substitution and the advantages shall accompany the request to the purchaser.

C. Pump Shaft: The pump shaft shall be pickled, annealed, turned, ground, and polished corrosion resistant 416 Stainless Steel or better. The shaft, as a minimum, shall be based on a diameter as listed in the standards of ANSI/AWWA E101-88 and the requirements of ASTM-A582.

D. Impellers: Impellers shall be of the closed type, made of cast iron or bronze ASTM B584-C903 material or better. The impellers shall be mounted to the pump shaft and held rigidly in place with either tapered collets or split rings and keys. Impellers shall be accurately machined and dynamically balanced to a minimum of ISO 1940 grade G6.3. The outer tips of the impeller blades shall not be feathered and shall be of sufficient thickness to withstand considerable wear before affecting performance of the pump

E. Pump Bowl Assembly: The pump bowls shall be made of cast iron or better. The castings shall be smooth, sound, fine grained, high density, and free of sand pockets, blowholes, and all other detrimental flaws and defects.

The pump cases shall be machined to a close fit and shall be designed so they can easily be disassembled and reassembled.

F. Check Valve: An integrated check valve shall be provided with the pump. Check valve shall be positive seal, stainless steel, threaded check valve.

G. Pump Bearings: Each pump bowl shall include its own shaft sleeve bearing, stainless steel backed and rubber flutted. The pump suction / strainer body shall also have a bearing in it. Bearing material shall be bronze ASTM B584-844.

H. Pump to Motor Adaptation: The pump suction or strainer body with adapter bracket and suction case shall be of the same material or better as specified for the pump series cases. The pump to motor adaptation shall be a 1 piece system (adapter bracket and strainer-body) to insure easy pump to motor adaptation. The shaft coupling shall consist of a solid rigid coupling and be capable of transferring the pump thrust to the motor up and down thrust bearings.

I. Submersible Motor: The motor shall be new and unused of the submersible type and be of the proper rating to drive the specified pump continuously over the complete operating range of head and capacity without the pump load exceeding the motor nameplate rating.

The rotor shall be statically and dynamically balanced. Rotor bars shall be copper. Aluminum rotor bars are not acceptable.

The rotor shaft shall be sealed with a single mechanical shaft seal. An expansion bellows shall be installed in the bottom of the motor to equalize the pressure inside the motor with the external pressure exerted on the outside of the motor by hydrostatic forces.

The motor design shall include the capability to carry continuously, the total sum of the weight of the rotating components of the pump and motor, and the hydraulic thrust that the pump may develop in both the up and down direction.

Rotor Radial bearings will be of carbon graphite or cutless rubber design.

J. Power Cable Assembly: The pump/motor manufacturer shall supply, in addition to the pump units, a power cable assembly of appropriate size and construction to meet the service intended. The power cable assembly shall be furnished in the proper length to extend from the motor terminals to the junction box mounted at the surface plate.

The power cable shall be based on three (3) conductors of stranded copper. The cable shall be supplied with PVC, EPR or EPDM Insulation. Power cable is also to include an integral ground lead of appropriate size as determined by the National Electric Code (NEC). Power cables are to include an overall PVC, TPE, CPE or Tyrin jacket.

K. Surface Plate: The pump/motor manufacturer shall furnish the surface plate assembly. This assembly shall consist of a heavy-duty support plate designed to support the total weight of the pump/motor, and discharge column pipe when liquid filled. The surface plate assembly shall also include a long radius, 90 elbow with a 150-lb. slip-on, flat faced ANSI B16.5 flanged outlet. A stick-down pipe nipple shall also be provided of not less than 12" long. The stick-down pipe shall be of the same size and rating as the discharge elbow. The stick-down nipple shall be provided with a threaded end connection. The surface plate shall be as identified on the Plans. The surface plate shall also incorporate two lifting lugs capable of supporting the entire combined weight of the pump/motor, and discharge column assembly.

L. Pump Discharge and Suction Case: The discharge and suction case shall be Type 304 stainless steel or approved better.

M. Column Assembly: The discharge column assembly shall be composed of a discharge pipe column.

1. Pipe Column: The pipe column shall be Type 304 stainless steel or approved better with a minimum ¼-inch wall thickness and shall be connected by threaded sleeve type couplings. Pipe column section shall be of such a design and construction that accurate alignment will be automatically obtained when the column is assembled. The maximum length of any section shall be 10 feet or less.

2.02 SPACERS

Contractor shall install pipe spacers for portion of piping that is within the well.

2.03 ACCEPTABLE MANUFACTURERS

The acceptable pumps shall be Grundfos SP, or Approved Equivalent.

3.0 METHODS

3.01 INSTALLATION AND START-UP

The Contractor shall arrange to have the pump manufacturer or supplier of the equipment furnished under this section provide competent factory-trained personnel to supervise the installation and initial operation.

3.02 FIELD TESTING

A. Perform tests on pumps, drivers, and equipment, including visual equipment checks to ensure compliance with approved detail drawings; pump start-run to ensure proper operation and to detect leakage of piping, valves, and fittings; sequence of operation check; verification that required pump accessories have been provided; test of pump alarm devices; and additional inspections and tests necessary to ensure that the entire pump installation is correct, complete, and ready for operation. Pump test water should be pumped to waste into a permitted point of discharge, and the Contractor is responsible for obtaining a NPDES discharge permit for any groundwater extraction discharge.

B. In the event any of the pumping equipment fails to meet the above test requirements, it shall be modified and retested in accordance with the requirements of these Specifications at no additional cost to the Owner.

3.03 OPERATOR TRAINING

The Contractor shall provide the services of a representative of the manufacturers to instruct the Owner's operating personnel in the use and maintenance of the equipment.

3.04 POWER AND CONTROL REQUIREMENTS

The Contractor shall connect the pump to existing well power source and control panel. Controls will include "Hand/Auto/Off" switch. The "Auto" Switch shall be timer/clock based.

The Contractor shall provide automatic shutoff protection per manufacturer's recommendations for the following situations:

- High motor temperature
- Over- and Under-Voltage
- Overcurrent (overload and short circuit current)
- Loss of Phase

END OF SECTION

SECTION 2513
SURFACE APPURTENANCES

1.0 GENERAL

1.01 SCOPE

Contractor shall furnish and install all surface construction devices and elements identified in Section 17 of the Riverside County Ordinance 682, including check valve, sample spigot, disinfection pipe, flow meter, air-relief vent and an approved backflow prevention assembly. At own discretion, Contractor may salvage and reinstall any of the system's existing surface construction devices. Contractor shall connect the new well's discharge pipe to the existing water pressure tank. This section includes flexible gasketed sleeve-type compression pipe couplings, air gaps, check valves and gate valves for steel pipes. Not all couplings identified in this section are necessarily required.

1.02 REFERENCES

ANSI B16.1 Cast Iron Pipe Flanges and Flanged Fittings Class 25, 125, 250, and 800
ANSI B16.5 Pipe Flanges and Flanged Fittings
ASTM A36 Standard Specification for Carbon Structural Steel
ASTM A47 Standard Specification for Ferritic Malleable Iron Castings
ASTM A53 Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
ASTM A108 Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished
ASTM A126 Standard Specification for Gray Iron Castings for Valves, Flanges and Pipe Fittings
ASTM A193 Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service
ASTM A194 Standard Specification for Carbon and Alloy Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both

ASTM A276 Standard Specification for Stainless Steel Bars and Shapes
ASTM A283 Standard Specification for Low and Intermediate Tensile Strength
Carbon Steel Plates
ASTM A285 Standard Specification for Pressure Vessel Plates, Carbon Steel, Low- and Intermediate-Tensile Strength
ASTM A307 Standard Specification for Carbon Steel Bolts and Studs, 60,000
PSI Tensile Strength
ASTM A510 Standard Specification for General Requirements for Wire Rods and Course Round Wire, Carbon Steel
ASTM A512 Standard Specification for Cold-Drawn Buttweld Carbon Steel
Mechanical Tubing
ASTM A536 Standard Specification for Ductile Iron Castings
ASTM B16 Standard Specification for Free-Cutting Brass Rod, Bar and Shapes
for Use in Screw Machines
ASTM B62 Standard Specification for Composition Bronze or Ounce Metal
Castings
ASTM D429 Standard Test Methods for Rubber Property-Adhesion to Rigid
Substrates
ASTM D2000 Standard Classification System for Rubber Products in Automotive
Applications
AWWA C105 American National Standard for Polyethylene encasement for
Ductile-Iron Pipe Systems
AWWA C110 American National Standard for Ductile-Iron and Gray-Iron
Fittings for Water
AWWA C153 Ductile-Iron Pipe and Fittings
AWWA C210 Liquid-Epoxy Coating Systems for the Interior and Exterior of
Steel Water Pipelines
AWWA C213 Fusion Bonded Epoxy Coating for the Interior and Exterior of
Steel Water Pipelines
AWWA C509 Resilient Seated Gate Valves for Water Supply Service
AWWA C550 Protective Interior Coatings for Valves and Hydrants

AWWA C606 Grooved and Shouldered Joints
AWWA M11 Steel Water Pipe: A Guide for Design and Installation
NSF/ANSI 61 Drinking Water System Components

1.03 **SUBMITTALS**

A. Submit manufacturer's catalog data for each coupling, adaptor, gate valve, or other appurtenance. Include manufacturer's model or figure number for each type of coupling or joint for each type of pipe material for which couplings are used.

B. Show materials of construction by ASTM reference and grade. Show coatings and provide dimensions.

C. Submit installation instructions including manufacturer's recommended torques to which the coupling bolts shall be tightened.

2.0 MATERIALS

All casing materials shall meet NSF 61 standards.

2.01 **STEEL FLEXIBLE PIPE COUPLINGS**

A. Steel couplings shall have middle rings made of steel conforming to ASTM A36, A53 (Type E or S), or A512 having a minimum yield strength of 30,000 psi. Follower rings shall be malleable iron (ASTM A47, Grade 32510), ductile iron (ASTM A536), or steel (ASTM A108, Grade 1018, or ASTM A510, Grades 1018 or 1021). Minimum middle ring length shall be 5 inches for pipe sizes 3/4 inch through 4-1/2 inches, and 7 inches for pipe sizes 5 inches through
24 inches.

B. Sleeve bolts shall have a minimum yield strength of 40,000 psi and an ultimate strength of 60,000 psi. Nuts and bolts shall be 316 Series stainless steel, regardless of location.

C. Steel follower rings shall be cast, forged, or hot rolled in one piece. Do not use rings fabricated from two or more shapes.

D. Wall thickness of sleeve shall be at least that for the existing size of pipe in which the coupling is to be used.

2.02 FLEXIBLE PIPE COUPLINGS FOR PLAIN END STEEL PIPE

A. Flexible pipe couplings for steel pipe shall be steel, Dresser Style 38, Smith- Blair Type 411, Romac Style 400, Baker Series 200, or approved equivalent.

2.03 FLANGED COUPLING-ADAPTERS FOR STEEL PIPE

Flanged coupling adapters for steel pipe shall be steel: Dresser Style 128, Smith-Blair Type 913, Romac FC400, Baker 602, or approved equivalent. Flange ends shall match the flange of the connecting pipe.

2.04 AIR GAP

Contractor shall furnish and install air gap connection.

2.05 GATE VALVES

A. Valves shall be in conformance with AWWA C509, unless noted otherwise.

B. Valves shall be complete with operating handwheels, levers, chainwheels, pipe stands, gear actuators, operating nuts, chains, and wrenches required for operation. Valves shall have the name of the manufacturer and the size of the valve cast or molded onto the valve body or bonnet or shown on a permanently attached plate.

C. Provide open stem and yoke operator with handwheel. Minimum handwheel diameter shall be 12 inches. Valve operators shall open by turning counterclockwise.

D. Contractor to coordinate the drilling pattern between flanges. Gaskets, bolts, nuts, and washers for flanged valves shall be in accordance with the requirements for the adjacent pipe.

E. Pressure Rating: Gate valves shall be resilient-seated gate valves with a minimum rated working pressure of 200 psi. Valve shall be bubble tight at the rated working pressure.

F. General: Valve shall have a smooth unobstructed waterway free from any pockets that would allow sediments to gather.

G. Valve Bodies, Operating Nuts, Bonnet, Seal: Cast iron ASTM A126 class B

or ductile iron ASTM A536, grade 65-45-12.

H. Valve Ends: Furnish valve with flanged ends. Flanged ends shall be class 125, ANSI B16.1.

I. Valve Wedge: Cast iron ASTM A126, class B or Ductile iron ASTM A536, Grade 65-45-12 with Buna N rubber encapsulation, ASTM D2000.

J. Valve Stems: Brass ASTM B16 or Bronze ASTM B62. Stem guide shall be made of materials that will not bind with the stem.

K. Stem Seals: Synthetic rubber ASTM D2000, O-ring seal type with three rings located in stem.

L. Bonnet and Seal Nuts and Bolts:

Above ground installations – cadmium plated carbon steel ASTM A307, Grade B cadmium plated or stainless steel A193 and A194, Type 316 Grade B8 or Grade 8.

M. Bronze Parts: All internal working parts (unless otherwise noted above) shall be all bronze containing not more than 2 percent aluminum or more than 5 percent zinc.

N. All internal and external ferrous surfaces of the valve body and bonnet shall have a fusion bonded epoxy coating, a minimum of 8 mils Dry Film Thickness, in compliance with AWWA C550, applied electrostatically by the manufacturer prior to assembly.

O. Finish coat valves located above ground in the field in accordance with "Painting and Coating" subsection of this Specification, below. Finish coat shall match the color of the adjacent piping. Coat handwheels the same as valves.

P. Acceptable valve manufacturers: American Flow Control, Mueller, or approved equal.

2.06 PIPE SUPPORTS

Contractor shall provide supports for all valves and tees and elevated pipe.

2.07 BOLTS, NUTS AND WASHERS

Bolts and nuts for above ground applications shall be Type 304 stainless steel. Fit shall be classes 2A and 2B per ANSI B1.1 when connecting to valves with body bolt holes.

3.0 METHODS

3.01 INSTALLATION OF FLEXIBLE PIPE COUPLINGS

A. Clean oil, scale, rust, and dirt from pipe ends. Clean gaskets in flexible pipe couplings before installing.

B. Lubricate bolt threads with graphite and oil prior to installation.

3.02 PAINTING AND COATING

A. Coat flexible pipe couplings, transition couplings, and flanged coupling adapters located indoors, in vaults and structures, and above ground with the same coating system as specified for the adjacent pipe. Prime coat shall be applied at the factory. Color shall match the color of the connecting pipe.

B. Line flexible pipe couplings with 12-mils fusion bonded epoxy.

END OF SECTION

SECTION 2514
CLEANING AND DISINFECTION OF PRESSURE TANK, FILTERS AND WATER DISTRIBUTION SYSTEM

1.0 GENERAL

1.01 DESCRIPTION

This section describes requirements for inspecting, cleaning and disinfection by chlorination of the entire potable water system to be serviced by the new well, including the pressure tank, Yardney filters, all pipes and pipe appurtenances.

1.02 REFERENCED STANDARDS

The publications listed below form part of this specification to the extent referenced and are referred to in the text by the basic designation only. Reference shall be made to the latest edition of said standards unless otherwise called for:

AWWA B301	Standard for Liquid Chlorine
AWWA C651	Disinfecting Water Main
AWWA C652	Tank Disinfection

1.03 RELATED WORK SPECIFIED ELSEWHERE

AWWA Standard Methods for the Examination of Water and Waste

1.04 SERVICE APPLICATION

A. All water pipes, appurtenances and components, connecting new well to the existing pressure tank.

B. The existing pressure tank and all its components.

C. All existing water distribution system, including pipes, Yardney filters, appurtenances and other components.

1.05 SUBMITTALS

A. A written disinfection and de-chlorination plan signed by a certified chlorinator shall be submitted to the County for review and approval

prior to starting disinfection operations. Plan shall include method of shutting off and securing the water storage and distribution system during cleaning and disinfection.

B. A Record of Disinfection shall be provided to the County prior to sampling. The Record of Disinfection shall include the time of injection, time length of injection and log of disinfection. Disinfection must be completed by a properly licensed and certified contractor.

C. A bacteriological testing report of water samples collected and analyzed by a California State certified drinking water laboratory, with a certificate of compliance confirming that system tested met the AWWA C651 and AWWA C652 requirements and State standards, for safe drinking water.

1.06 DELIVERY, STORAGE AND HANDLING

Chlorination and dechlorination shall be performed by competent individuals knowledgeable and experienced in the operation of the necessary application and safety equipment in accordance with applicable Federal, State and Local laws and regulations. The transport, storage and handling of these materials shall be performed in accordance with Code of Federal Regulations (CFR), and the California Occupational and Health Administration (Cal-OSHA) - California Code of Regulations (CCR), Title 8.

1.07 CONNECTION TO THE NEW WELL

Prior to connection to the new well, disinfection and bacteriological testing shall be performed in accordance with this specification. County and DEH authorization for connection to the existing system shall be given only on the basis of acceptable hydrostatic, disinfection and bacteriological test results.

2.0 MATERIALS

2.01 SODIUM HYPOCHLORITE (LIQUID)

Sodium hypochlorite is available in liquid form in glass or plastic containers, ranging in size from1 qt. to 5 Gal. The solution contains approximately 10% to 15% available chlorine.

2.02 GRANULAR HYPOCHLORITE

Granular hypochlorite may be used when mixed into a solution containing approximately 10% to 15% available chlorine. When using granular hypochlorite in solution, follow the procedure for sodium hypochlorite solution in this section

3.0 METHODS

3.01 GENERAL

A. Disinfection of pipelines shall not proceed until all new pipes, appurtenances and any necessary sample ports have been installed.

B. Every effort shall be made to keep the new pipes and its appurtenances clean and dry during the installation process.

C. All piping, valves, fittings, and appurtenances which become contaminated during installation shall be cleaned, rinsed with potable water, and then sprayed or swabbed with a 5% sodium hypochlorite disinfecting solution prior to installation.

D. Disinfection of pipelines shall not proceed until all the Yardney filters have been serviced and the pressure tank has been cleaned and flushed, per these specifications.

3.02 METHODS

A. System Inspection

1. Contractor shall inspect the entire water storage and distribution system and identify parts requiring upgrades or repair.

2. Contractor shall identify existing or potential sources of cross connections and backflow and recommend prevention measures.

3. Contactor shall perform water hydrostatic testing, per AWWA standards, to identify any leaks in the system.

.

B. Servicing of the Yardney Filters

1. Filtering media shall be inspected for physical obstructions, chemical incrustation and biological or oil contamination. Contractor shall clean or replace media, per manufacturer specifications.

2. Media opening gaskets shall be replaced.

3. Contractor shall inspect filtering system valves for proper operation, and shall performing operational testing on the filtering system, including backwashing.

C. Sodium Hypochlorite Solution (Liquid)

1. Sodium hypochlorite solution shall be used for cleaning and swabbing new piping and appurtenances immediately prior to installation.

2. For disinfecting the entire water distribution system, Sodium hypochlorite solution shall be applied at a terminus of the system using an injector which can adjust the amount of solution being injected into the piping system. The solution shall be injected at the appropriate concentration to achieve the specified concentration range of chlorine throughout the entire piping system. Where pumping equipment is used in conjunction with an injector, an integral backflow prevention device shall be installed and connected to the potable water supply.

3. Pumping equipment, piping, appurtenances and all other equipment in contact with potable water shall be disinfected prior to use. Water trucks shall not be used for disinfection of pipelines.

4. Sodium hypochlorite solution may also be used to increase the total chlorine residual if the concentration from the initial chlorination of the system is found to be low. The solution shall be added to the system in sufficient amounts at appropriate locations to ensure that the disinfecting solution is present at a concentration within the specified range throughout the piping system.

3.03 PROCEDURE FOR DISINFECTING WATER MAINS AND APPURTENANCES

A. The pipeline shall be filled at a rate not to exceed existing system flow rate of 250 GPM at maximum pressure of 90 psi (to be verified by the Contractor), or a velocity of 1 foot per second, whichever is less.

B. Disinfection shall result in an initial total chlorine concentration of 50 ppm to 150 ppm. This concentration shall be evenly distributed throughout the system to be disinfected.

C. All valves shall be operated with the disinfection solution present in the pipeline. All appurtenances such as air-vacuum relief valves, blowoffs, backflow prevention devices, and water service laterals shall be flushed with the treated water for a sufficient length of time to ensure a chlorine concentration within the specified range in all components of each appurtenance.

D. The Contractor shall verify the presence of the disinfection solution throughout the system by sampling and testing for acceptable chlorine concentrations at the various appurtenances and/or at the test ports provided by the Contractor. Areas of the system found to be below the specified chlorine concentration level shall receive additional flushing as noted above and/or additional disinfection solution as necessary.

E. The chlorinated water shall be retained in the system for a minimum of 24 hours. The system shall contain a total chlorine residual of not less than 80% of the initial total chlorine residual before the 24-hour soaking period began. If the total chlorine residual has decreased more than 20%, the system shall be soaked for an additional 24-hour period. If the total chlorine residual has not deceased after this additional 24-hour period, the system shall be flushed in accordance with the procedure detailed herein. If the total chlorine residual has decreased, the system shall be flushed in accordance with the procedure detailed herein, and shall be re-disinfected.

F. Following a successful retention period, the chlorinated water shall be flushed from the system at its extremities and at each appurtenance, using potable water from the new well. The minimum water velocity during flushing shall be 3 feet per second. Flushing shall continue until the replacement water in the system meet State standards for drinking water.

G. Contractor shall retain a California State certified drinking water laboratory to collect water samples and perform bacteriological testing, in accordance with paragraph 3.05 below, and provide a certificate of compliance to the County that the unit tested met the AWWA C651 requirements and State standards.

3.04 DISINFECTION OF Pressure Tank

Disinfection of water storage facilities shall be done in accordance with AWWA – C652. Contractor shall clean and flush the tank thoroughly prior to disinfection.

3.05 DISCHARGE OF CHLORINATED WATER

A. Indiscriminate onsite disposal or discharge to sewer systems, storm drains, drainage courses or surface waters of chlorinated water is prohibited.

B. The environment to which the chlorinated water is to be discharged shall be examined by the Contractor, Certified Chlorinator, and DEH inspector. Any discharge of chlorinated water to the environment shall require the neutralizing of the chlorine residual by means of a reducing agent in accordance with AWWA C651, applicable Colorado River Regional Water Quality Control Board BMPs, local sewer agency, and the requirements of this specification.

C. A chlorine reducing agent shall be applied to the water prior to exiting the piping system. The Certified Chlorinator shall monitor the chlorine residual during the discharge operations. Total residual chlorine limits shall meet requirements of the Colorado River Regional Water Quality Control Board.

3.06 BACTERIOLOGICAL TESTING

A. A testing firm shall perform bacteriological sampling and testing of the disinfected system. The testing methodology employed shall be in accordance with AWA 651/652 and State standards. The Certified Laboratory shall analyze the samples for the presence of coliform bacteria and heterotrophic-type bacteria (heterotrophic plate count).

B. The evaluation criteria a passing test sample is as follows:

1. Coliform bacteria: no positive sample
2. Heterotrophic plate count (HPC): 500 colony forming units/mi or less.

3.07 RE-DISINFECTION

If the initial disinfection fails to produce satisfactory bacteriological test results, the pipeline system shall be re-flushed and re-sampled. If the second set of samples does not produce satisfactory results, the pipeline system shall be re-chlorinated, flushed, and re-sampled. The chlorination, flushing, and sampling procedure shall continue until satisfactory results are obtained. Re-disinfection and retesting shall be at the Contractor's expense.

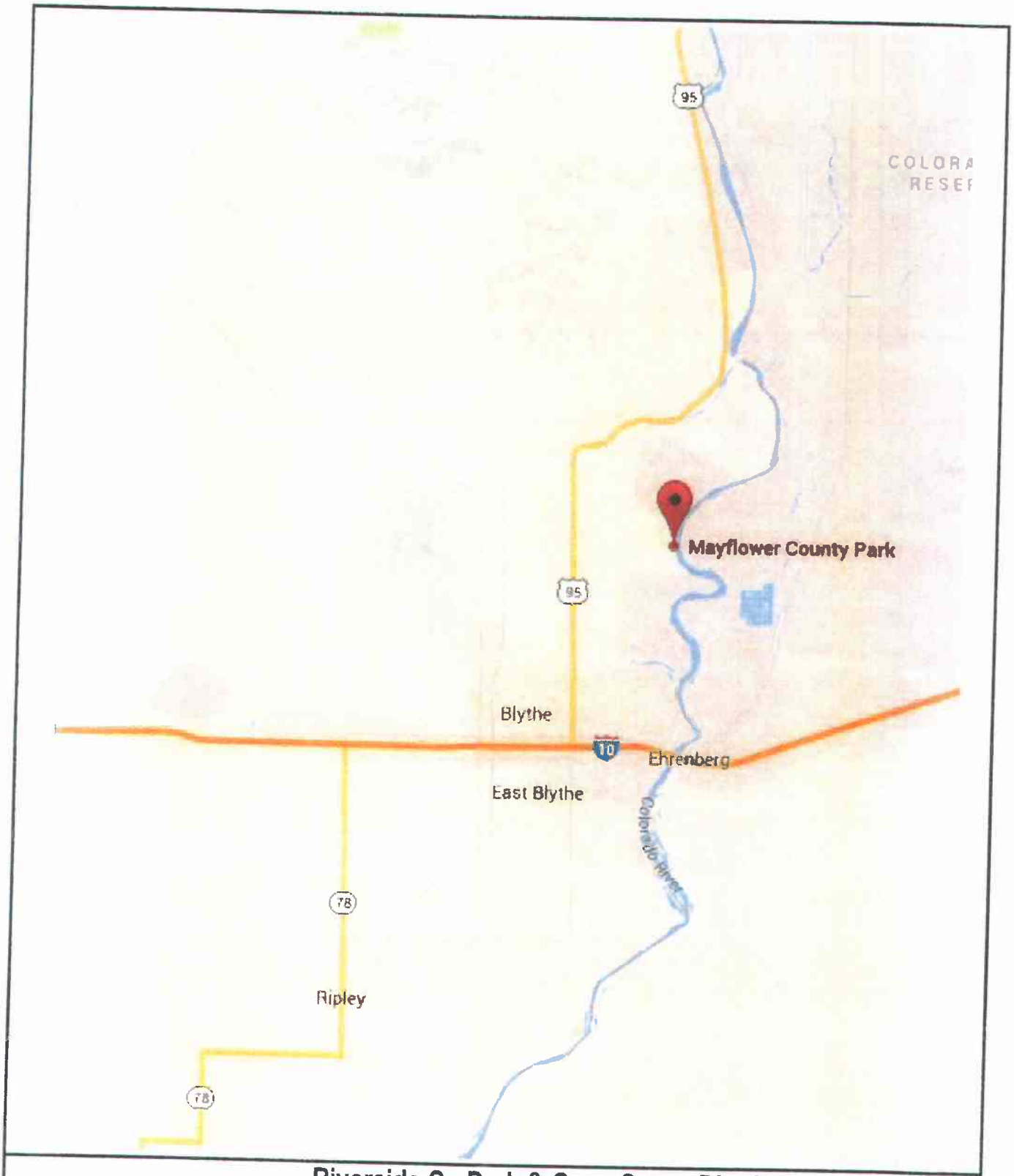
END OF SECTION

END OF TECHNICAL SPECIFICATIONS

EXHIBITS

EXHIBIT 1

Mayflower Park Boat Vicinity Map



Riverside Co Park & Open Space District

Notes:

1. Not to Scale

Mayflower Park, Blythe, CA

Vicinity Map

Well #2 Replacement

Figure 1

EXHIBIT 2

Mayflower Park Location Map

Riverside Co Park & Open Space District

Notes:

Mayflower Park, Blythe, CA

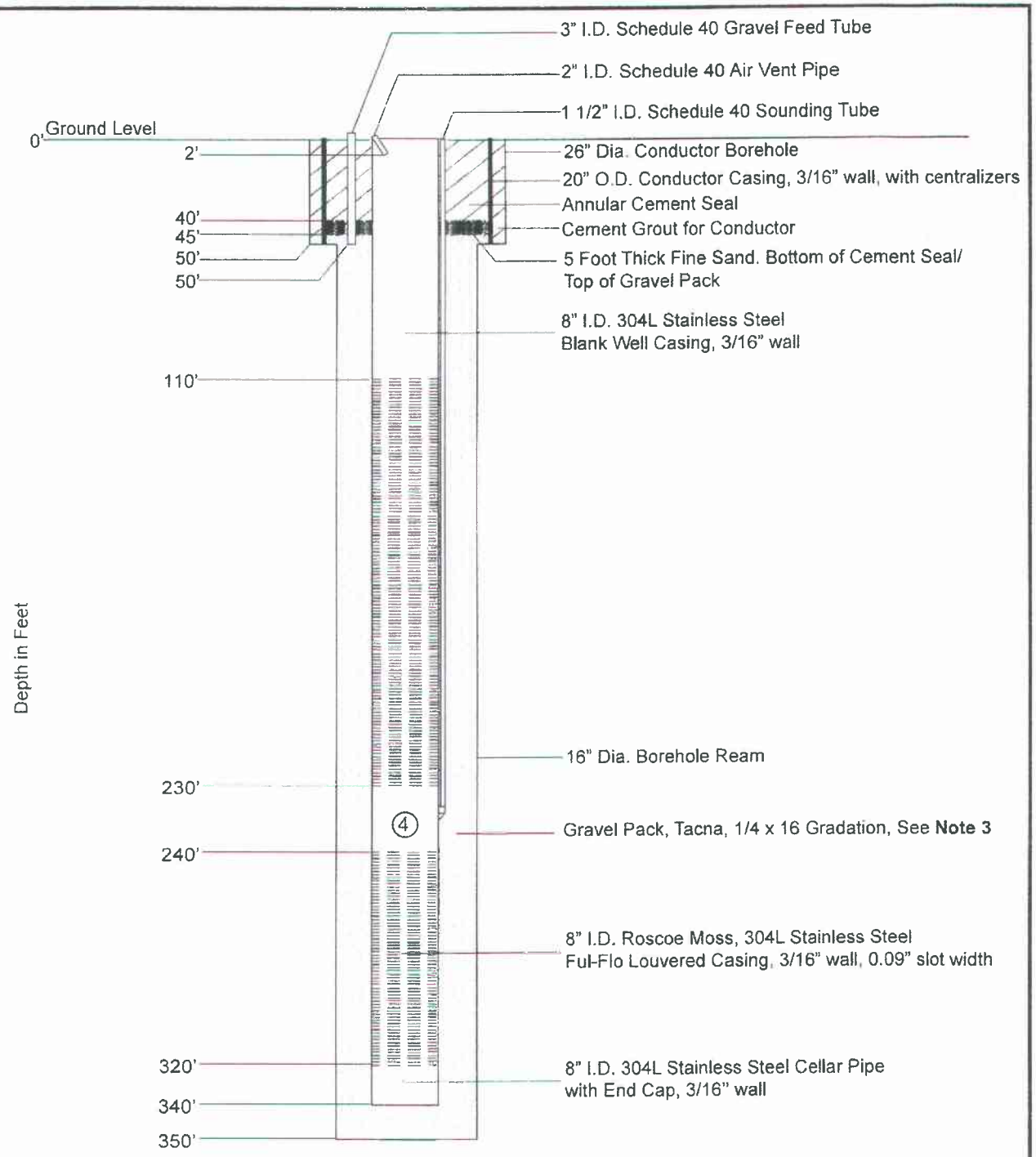
Well Location

Well #2 Replacement

Figure 2

EXHIBIT 3

Mayflower Park
New Well Construction Schematic



Riverside Co Park & Open Space District

Notes:

1. Not to Scale
2. Casing centralizers to be installed every 80 ft (min)
3. Final gravel pack gradation shall be determined by Contractor's hydrogeologist, based on analysis of observed aquifer soil formation & specified slot width of 0.09"
4. Final pump deph & corresponding 10' blank casing shall be determined by the Engineer, based on actual aquifer geophysical data collected during drilling

Mayflower Park, Blythe, CA

Construction Schematic:

Well #2 Replacement

Figure 3

ATTACHED REFERENCES

ATTACHED REFERENCE

Mayflower Park Existing Well Completion Report
October – 2010

ORIGINAL
File with DWR

Page 1 of 1

Owner's Well No. 1

Date Work Began 10-7-10, Ended 11-18-2010

Local Permit Agency Riverside County Dept Environmental Health

Permit No. 9-29-2010 Permit Date WP0021168

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 0962203

DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Rotary FLUID Mud

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	60	Med to Fine Sand
60	510	Coarse to Med Sand
510	520	Brn Clay

TOTAL DEPTH OF BORING 520 (Feet)

TOTAL DEPTH OF COMPLETED WELL 520 (Feet)

WELL OWNER

Name Riverside County Parks Dept.

Mailing Address 4600 Crestmore Rd.

City Riverside State CA Zip 92509

WELL LOCATION

Address 4980 Colorado River Rd.

City Blythe

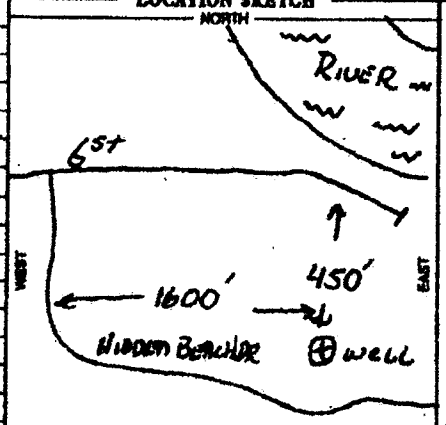
County Riverside

APN Book ___ Page ___ Parcel 833-070-008

Township 6S Range 23E Section 12

Lat ___ DEG. ___ MIN. ___ SEC. N Long ___ DEG. ___ MIN. ___ SEC. W

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

X NEW WELL

MODIFICATION/REPAIR

___ Deepen

___ Other (Specify)

___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

USES (✓)

WATER SUPPLY

___ Domestic X Public

___ Irrigation ___ Industrial

MONITORING ___

TEST WELL ___

CATHODIC PROTECTION ___

HEAT EXCHANGE ___

DIRECT PUSH ___

INJECTION ___

VAPOR EXTRACTION ___

SPARGING ___

REMEDIATION ___

OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 20 (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 20 (Ft.) & DATE MEASURED 11-18-2010

ESTIMATED YIELD* 300 (GPM) & TEST TYPE Submersible

TEST LENGTH N/A (Hrs.) TOTAL DRAWDOWN N/A (Ft.)

** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	GRAVEL PACK	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	120	15	X				C.STEEL	8	.250	
120	520	15		X			C.STEEL	8	.250	.060

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	55	X			103 sack
55	520			X	8 X 16

ATTACHMENTS (✓)

___ Geologic Log

___ Well Construction Diagram

___ Geophysical Log(s)

___ Soil/Water Chemical Analyses

___ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Palm Springs Pump Inc.
PERSON, FIRM, OR CORPORATION (TYPED OR PRINTED)

83-651 Dr. Carreon Blvd. Indio CA 92201
ADDRESS CITY STATE ZIP

Signed [signature]
C-57 LICENSED WATER WELL CONTRACTOR

DATE SIGNED

749713
C-57 LICENSE NUMBER

DWR 188 REV. 95-03

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

OSP 03 78836

ATTACHED REFERENCE

Mayflower Park Existing Well DWR Water Systems

ATTACHMENT #2 ADDENDUM #3

USGS science for a changing world

Water Boards

Well Owner Report

Detected constituents only

Station ID **334011114320103** ***Gama ID*** **COLOR-16**

Station Name **006S023E12M032S** ***Sample Date*** **12/10/2007 @ 1200**

Owner: **Riverside, County of** ***Well Name:*** **Mayflower Well 1**

Parameter Code	*Parameter Name*	*Value*	*Units*	*Threshold Value*	*Threshold Type*
82303	Radon-222	[illegible]	pCi/L	[illegible]	Proposed MCLs-US

E, estimated value; V, value may be affected by contamination; A, averaged value; M, value rounds to 0 using standard USGS rounding rules.

Preliminary, subject to revision

ATTACHMENT #2 ADDENDUM #3

USGS science for a changing world

Water Boards

Well Owner Report

Detected constituents only

Station ID 334011114320103

Station Name 006S023E12M032S

Owner: Riverside, County of

Gama ID COLOR-16

Sample Date 12/10/2007 @ 1200

Well Name: Mayflower Well 1

Parameter Code	*Parameter Name*	*Value*	*Units*	*Threshold Value*	*Threshold Type*
01010	Beryllium	[illegible]	µg/L	[illegible]	MCL-US
01020	Boron	[illegible]	µg/L	[illegible]	NL-CA
01030	Chromium	[illegible]	µg/L	[illegible]	MCL-CA
01035	Cobalt	[illegible]	µg/L		
01046	Iron	[illegible]	µg/L	[illegible]	SMCL-CA
01130	Lithium	[illegible]	µg/L		
01056	Manganese	[illegible]	µg/L	[illegible]	SMCL-CA
01060	Molybdenum	[illegible]	µg/L	[illegible]	HAL-US
01065	Nickel	[illegible]	µg/L	[illegible]	MCL-CA
01145	Selenium	[illegible]	µg/L	[illegible]	MCL-US
01080	Strontium	[illegible]	µg/L	[illegible]	HAL-US
01155	Tungsten	[illegible]	µg/L		
22703	Uranium	[illegible]	µg/L	[illegible]	MCL-US
01085	Vanadium	[illegible]	µg/L	[illegible]	NL-CA

E, estimated value; V, value may be affected by contamination; A, averaged value; M, value rounds to 0 using standard USGS rounding rules.

Preliminary, subject to revision

ATTACHMENT #2 ADDENDUM #3

USGS science for a changing world

Water Boards

Well Owner Report

Detected constituents only

Station ID 334011114320103

Station Name 006S023E12M032S

Owner: Riverside, County of

Gama ID COLOR-16

Sample Date 12/10/2007 @ 1200

Well Name: Mayflower Well 1

Parameter Code	Parameter Name	Value	Units	Threshold Value	Threshold Type
00915	Calcium	[illegible]	mg/L		
00925	Magnesium	[illegible]	mg/L		
00935	Potassium	[illegible]	mg/L		
00930	Sodium	[illegible]	mg/L		
71870	Bromide	[illegible]	mg/L		
00940	Chloride	[illegible]	mg/L	[illegible]	SMCL-CA
00950	Fluoride	[illegible]	mg/L	[illegible]	MCL-CA
71865	Iodide	[illegible]	mg/L		
00955	Silica	[illegible]	mg/L		
00945	Sulfate	[illegible]	mg/L	[illegible]	SMCL-CA
70300	Total dissolved solids (TDS)	[illegible]	mg/L	[illegible]	SMCL-CA
01106	Aluminum	[illegible]	µg/L	1000	MCL-CA
01000	Arsenic	[illegible]	µg/L	10	MCL-US
01005	Barium	[illegible]	µg/L	1000	MCL-CA

E, estimated value; V, value may be affected by contamination; A, averaged value; M, value rounds to 0 using standard USGS rounding rules.

Preliminary, subject to revision

ATTACHMENT #2 ADDENDUM #3

USGS science for a changing world

Water Boards

Well Owner Report

Detected constituents only

Station ID 334011114320103

Station Name 006S023E12M032S

Owner: Riverside, County of

Gama ID COLOR-16

Sample Date 12/10/2007 @ 1200

Well Name: Mayflower Well 1

Parameter Code	Parameter Name	Value	Units	Threshold Value	Threshold Type
00010	Water Temperature	[illegible]	deg Celsius		
00095	Specific Conductance, field	[illegible]	µS/cm	[illegible]	SMCL-CA
00400	pH, field	[illegible]	standard units	[illegible]	SMCL-US
00403	pH, laboratory	[illegible]	standard units	[illegible]	SMCL-US
00300	Dissolved Oxygen	[illegible]	mg/L		
63676	Turbidity	[illegible]	NTU		
29802	Alkalinity (CaCO3), field	[illegible]	mg/L		
63788	Bicarbonate (HCO3)	[illegible]	mg/L		
63788	Carbonate (CO3)	[illegible]	mg/L		
29801	Alkalinity (CaCO3), laboratory	[illegible]	mg/L		
00900	Hardness	[illegible]	mg/L as CaCO3		
00608	Ammonia, as nitrogen	[illegible]	mg/L	[illegible]	HAL-US
62854	Total nitrogen (ammonia, nitrite, nitrate, organic nitrogen)	[illegible]	mg/L		
00671	Orthophosphate, as phosphorus	[illegible]	mg/L		

E, estimated value; V, value may be affected by contamination; A, averaged value; M, value rounds to 0 using standard USGS rounding rules.

Preliminary, subject to revision

ATTACHED REFERENCE

Well Drillers Logs for Two (2) City of Blythe Wells

TABLE 13.—*Modified drillers' logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Rio Mesa Ranch well 1S/24E-15E2—Continued		
Fanglomerate—Continued		
Clay with gravel embedded	8	1,368
Clay, sandy	7	1,375
Clay, hard	11	1,386
U.S. Citrus Corp. well 5S/22E-28C1 [SW¼NE¼NW¼ sec. 28, T. 5 S., R. 22 E., San Bernardino base line and meridian]		
Colorado River alluvium:		
Sand, tight and fine, and gravel mixed	79	79
Sand, fine; with sandy clay streaks	78	157
Sand, fine tight	80	237
Sand, fine to coarse, and some gravel	5	242
Sand, fine to medium	5	247
Sand, fine and tight	21	268
Sand, fine, and small gravel, mixed	89	357
Clay, sandy; with gravel streaks	11	368
Clay, sandy, and fine sand	23	391
Gravel	3	394
Sand, coarse to fine; with clay streaks	64	458
Sand, fine to coarse; with clay and shale streaks	44	502
Sand, fine to coarse, and gravel mixed	16	518
Bouse Formation:		
Clay with mixed gravel and sand streaks	45	563
Gravel and fine sand (tight) with shale streaks	21	584
Sand, fine, to gravel (fine) with shale streaks	23	607
Clay, gray, and shale	22	629
Clay, gray	36	665
Shale	4	669
Shale with gravel streaks	14	683
Clay, blue, and shale	26	709
Clay, blue, and shale with blue sandstone streaks	46	755
Gravel	2	757
Clay, blue, and shale	35	792
Clay, soft and sandy (blue)	10	802
Clay, blue, and shale	24	826
Clay, blue; with fine sand streaks	14	840
Clay, blue; with gravel streaks	9	849
Clay, soft sandy	19	868
Clay, blue, and shale	27	895
Sand, medium and fine	6	901
Clay, gray; with shale streaks	38	939
Clay, gray	45	984
Clay, gray, and shale	19	1,003
Shale, hard, with a metallic color	3	1,006
Shale, gray	15	1,021
Shale, hard	7	1,028
Shale and clay	23	1,051
Shale, hard (brown)	17	1,068
Clay, sandy (brown)	6	1,074
Shale and clay (brown)	12	1,086
Shale, hard (brown)	10	1,096
Shale, greenish; with thin white quartz streaks	22	1,118

TABLE 13.—*Modified drillers' logs of wells*—Continued

	Thickness (feet)	Depth (feet)
City of Blythe well 11 (6S/23E-32E1) [NE¼SW¼NW¼ sec. 32, T. 6 S., R. 23 E., San Bernardino base line and meridian]		
Colorado River alluvium:		
Soil	4	4
Sand, fine, brown	38	42
Sand, fine, gray	32	74
Sand, fine, gray; with trace of clay	28	102
Clay and sand, fine; with trace of gravel	4	106
Sand, fine, to 4-in. rock	12	118
Sand, coarse, to 6-in. rock	32	150
Sand, coarse, to 1-in. gravel	8	158
Sand, fine, gray	8	166
Sand, coarse, to 1-in. gravel	16	182
Sand, fine, cemented	26	208
Clay, soft, blue	2	210
Clay, blue, and fine sand	4	214
Sand, fine, gray	28	242
Gravel, 1-in. to fine sand	4	246
Clay, brown, very hard	4	250
Sand, fine, gray	77	327
Sand, fine, gray, to ¾-in. gravel	2	329
Sand, fine, gray	25	354
Gravel, 1-in., to coarse sand	10	364
Sand, fine, gray; with trace of pea gravel	12	376
Sand, fine, gray	10	386
Sand, fine, gray; with broken gravel	7	393
Clay, brown	4	397
Silt, fine, and ¾-in. gravel	13	410
Sand, fine, to ¾-in. gravel 10 percent	1	411
Clay, hard, gray	8	419
Gravel, 1-in., clean; with coarse sand	3	422
Sand, fine, gray, to ¾-in. gravel 10 percent	28	450
Sand, fine, gray, to 1-in. gravel 20 percent; (wood)	5	455
Clay, blue, soft	4	459
Sand, fine, gray, to pea gravel 5 percent	35	494
Sand, fine, gray, to 1-in. gravel	12	506
Bouse Formation:		
Clay, blue, hard	13	519
Sand, fine, to ¾-in. gravel	3	522
Clay, blue, hard	30	552
Sandstone, soft	2	554
Clay, blue; with brittle streaks	30	584
Sandstone with trace of ¾-in. gravel	6	590
Clay, blue, hard	52	642
Sand, soft	9	651
Clay, blue, very hard	59	710
Clay, blue, very hard; with small sea shells	10	720
Clay, blue, very hard, brittle	5	725
Palo Verde Hospital well 2 (6S/23E-32G2) [NW¼SW¼NE¼ sec. 32, T. 6 S., R. 23 E., San Bernardino base line and meridian]		
Colorado River alluvium:		
Soil, sandy	4	4
Sand	50	54
Sand, clay, gravel	8	62

TABLE 13.—*Modified drillers' logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Palo Verde Hospital well 2(6S/23E-32G2)—Continued		
Colorado River alluvium—Continued		
Sand with trace of gravel	8	70
Sand, gravel, and wood	6	76
Sand and clay	24	100
Sand, fine, and pea gravel to 3-in. rock	4	104
Sand to 3-in. rock	12	116
Rock, 5-in., to coarse sand	48	164
Sand, coarse, and pea gravel	9	173
Sand, coarse, to 6-in. gravel	6	179
Sand	5	184
Sand and pea gravel	8	192
Sand, fine	24	216
Sand, coarse, and pea gravel to 2-in. gravel	20	236
Sand, coarse; with trace of pea gravel	12	248
Sand, fine, clay layers	22	270
Sand, fine, to 1½-in. gravel	10	280
Sand, coarse; pea gravel to 3-in. rock	8	288
Sand, coarse, and pea gravel	14	302
Sand, medium	35	337
Sand, coarse, to pea gravel (wood)	19	356
Clay, sand, and 1-in. gravel	48	404
Clay, fine sand; some gravel	88	492
Sand to 1½-in. gravel	8	500
Sand to 1-in. gravel	14	514
Gravel, cemented (hard-tight)	8	522
Gravel, pea, to 1½-in. gravel	6	528
Sand, coarse, to pea gravel	4	532
Gravel, 2-in., to sand; very good water gravel	28	560
Hard clay streaks with sand to 1-in. gravel	10	570
Clay, hard sandy	4	574
Sand to pea gravel	4	578
Sand to ¾-in. gravel	6	584
Sand, coarse, to 1½-in. gravel	4	588
Sand with trace of gravel	2	590
Bashas's well 3 (7S/21E-14H1)		
[SW¼SE¼NE¼ sec. 14, T. 7 S., R. 21 E., San Bernardino base line and meridian]		
Colorado River alluvium:		
Sand, fine; with clay streaks	88	88
Sand, medium to coarse, and gravel; with clay streaks	43	131
Sand, medium to coarse; with clay streaks	42	173
Sand, medium to fine; with clay	22	195
Sand, medium to fine; with clay streaks	90	285
Sand, medium to coarse	43	328
Sand, fine to medium	110	438
Sand, medium to coarse; with clay streaks	45	483
Sand, medium, and gravel; with clay streaks	44	527
Bouse Formation:		
Clay with sand	56	583
Clay with coarse sand streaks	23	606
Clay	79	685
Rock	21	706
Sand, coarse; with clay streaks	23	729
Clay and coarse sand	11	740

TABLE 13.—*Modified drillers' logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Bashas's well 3(7S/21E-14H1)—Continued		
Bouse Formation—Continued		
Sand, coarse; some clay streaks	54	794
Sand, medium; with clay streaks	51	845
Fanglomerate:		
Sand, medium, black; with red clay streaks	13	858
Sand, medium, and granite rocks	24	882
Sand, medium; with rock streaks	22	904
Sand, coarse; with clay streaks and rock	26	930
Sand, coarse; with clay streaks	10	940
Granite, decomposed; with small clay streaks	96	1,036
Granite, decomposed; with clay streaks	42	1,078
Clay and decomposed granite	22	1,100
Granite, decomposed; with clay streaks	66	1,166
Clay, red, and medium sand streaks	22	1,188
Clay with streaks of fine sand	179	1,367

TABLE 14.—*Lithologic logs of wells*

	Thickness (feet)	Depth (feet)
Well LCRP 22 ((B-2-22)16bba)		
[NE¼N W¼N W¼ sec. 16, T. 2 N., R. 22 W., Gila and Salt River base line and meridian]		
Younger alluvium:		
Gravel as much as 6 in. in diameter, commonly 1–3 in. in diameter, mostly subangular, some well-rounded; with 20 percent sand	48	48
Unit B of older alluviums:		
Sand, medium to fine, grayish-orange, fairly well sorted, round to well-rounded; few ½ to 1-in. thick sandstone streaks; few well-indurated clayballs	28	76
Sand, medium to fine, grayish-orange; about 20 percent, ¼–½ in. in diameter, rounded to well-rounded, and 2–3 in. in diameter, subangular gravel; few ½- to 1-in. thick sandstone streaks	12	88
Sand, medium to fine, grayish-orange; few ½–1-in. in diameter, subangular to rounded pebbles; few ½- to 1-in. thick sandstone streaks; few well-indurated clayballs	77	165
Sand, medium to coarse, grayish-orange; few light-green clayballs; subrounded gravel as much as 3 in. in diameter; few cemented streaks	18	183
Conglomerate, pebbles and cobbles subangular; pea-size well-rounded well-indurated yellow clayballs as much as 12 in. in diameter; fine to medium grayish-orange sand	16	199
Sand, fine to coarse, grayish-orange; 35 percent subangular to well-rounded gravel as much as 4 in. in diameter	14	213

ATTACHED REFERENCE

Mayflower Park Existing Well Water Quality Tests

Drinking Water Division

Water System Details

Links

- Water System Facilities
- Sample Schedules
- Coliform Sample Results
- Coliform Sample Summary Results
- Lead And Copper Sample Summary Results
- Non-Coliform Samples/Results
- Non-Coliform Samples/Results by Analyte
- Violations/Enforcement Actions
- Site Visits
- Milestones

Return Links

- Water Systems
- Water System Search
- County Map

Glossary

Water System No. :	CA3301568	**Federal Type :**	NC
Water System Name :	MAYFLOWER - RIV. COUNTY PARKS	**State Type :**	NC
Principal County Served :	RIVERSIDE	**Primary Source :**	GW
Status :	A	**Activity Date :**	04-29-2015

Water System Contacts

Type	Name & Address	Phone	Email - Web Address
Administrative Contact	DUANE _FORREST 4980 COLORADO RIVER RD BLYTHE, CA 92225	Business 760-922-4665	
Physical Location Contact	CA3301568-MAYFLOWER - RIV. COUNTY PARKS BLYTHE, CA 92225		

Division of Drinking Water District / County Health Dept. Info

Name	Phone	Email	Address
LPA63 - RIVERSIDE COUNTY			CA

Annual Operating Periods & Population Served

Start Month	Start Day	End Month	End Day	Population Type	Population Served
1	1	12	31	T	95

Service Connections

Type	Count	Meter Type	Meter Size Measure
CB	160	UN	0

Sources of Water

Name	Type Code	Status
WELL #2	WL	A

Service Areas

Code	Name
T	RECREATION AREA

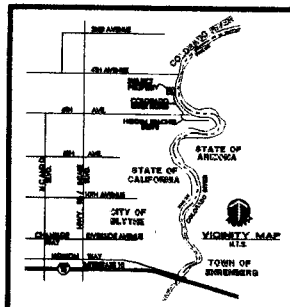
WELL #1	WL	I

Water Purchases

Seller Water System No.	Water System Name	Seller Facility Type	Seller State Asgn ID No.	Buyer Facility Type	Buyer State Asgn ID No.

ATTACHED REFERENCE

Mayflower Park Construction Plans for Existing Well and Storage System (2010)



COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

COLLIS MAYFLOWER PARK
PRIVATE WATER AND SEWER PLAN

APN 833-070-003, 004, 006, 008 BEING A PORTION OF
SECTION 12, TOWNSHIP 6 SOUTH RANGE 23 EAST
SAN BERNARDINO BASE AND MERIDIAN

PREPARED FOR:
RIVERSIDE COUNTY PARKS DEPARTMENT
4600 CRESTMORE ROAD
RIVERSIDE, CA 92509
(951) 955-4318

CONSTRUCTION NOTES

QUANTITY ESTIMATE
(FOR PERMIT PURPOSES ONLY)

①	INSTALL 8" PVC SDR-35 SEWER LINE	384 LF
②	INSTALL 48" PRECAST MANHOLE PER CITY OF BLYTHE STANDARD DRAWING NO. SS-402	3 EA
③	INSTALL 6" STANDARD CLEANOUT PER CITY OF BLYTHE STANDARD DRAWING NO. SS-406	1 EA
④	INSTALL 6" PVC SDR-35 SEWER PIPE	223 LF
⑤	INSTALL 8" SEWER CLEANOUT PER DETAIL SHEET 2	3 EA
⑥	INSTALL 6" X 45 PVC WYE	2 EA
㉚	INSTALL VALVE BOX PER DETAIL ON SHEET 2	13 EA
㉛	INSTALL 4" PVC FLANGE X SLIP-ON ADAPTOR	28 EA
㉜	PROTECT IN PLACE	N/A
㉝	INSTALL DROP INLET CLEAN-OUT LONG RADIUS BEND PER DETAIL SHEET 2	1 EA
㉞	UTILITY CROSSING	N/A
㉟	INSTALL 4" PVC BLIND FLANGE	4 EA
㊱	REMOVE AS NECESSARY FOR SEWER LINE INSTALLATION	N/A
㊲	INSTALL 4" x 2" SCHEDULE 40 PVC CROSS	4 EA

EXISTING
SYSTEM PLANS
For Information
Only

NOTE TO CONTRACTOR: QUANTITY ESTIMATE

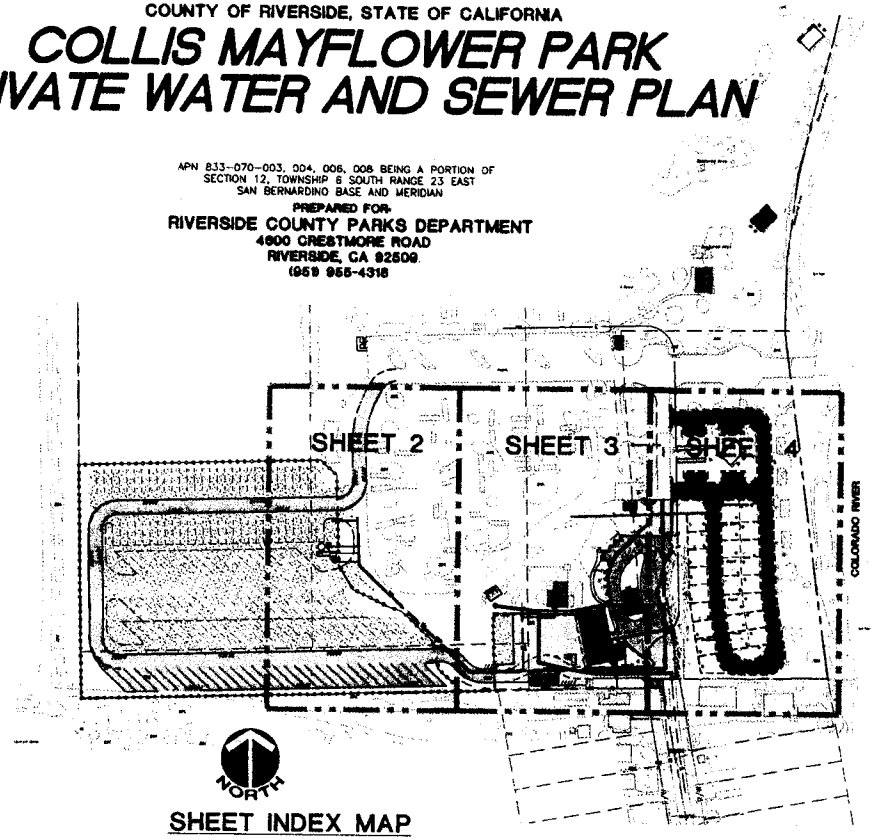
MSA CONSULTING, INC. MAKES NO REPRESENTATION CONCERNING THE ESTIMATED QUANTITIES ON THESE PLANS, EXCEPT THAT ALL SUCH FIGURES, INCLUDING ALL EARTHWORK QUANTITIES, ARE PRELIMINARY ESTIMATES AND FOR PERMIT PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PREPARE HIS OWN QUANTITY ESTIMATE FOR CONSTRUCTION OR COST PURPOSES. MSA CONSULTING, INC. SHALL NOT BE RESPONSIBLE FOR ANY DEVIATIONS BETWEEN ESTIMATED QUANTITIES AND ACTUAL QUANTITIES AT THE TIME OF CONSTRUCTION.

UTILITIES

IRRIGATION	PALO VERDE IRRIGATION DISTRICT
WATER	CITY OF BLYTHE (NOT AVAILABLE)
SEWER	CITY OF BLYTHE (NOT AVAILABLE)
ELECTRIC	SOUTHERN CALIFORNIA EDISON
GAS	THE GAS COMPANY (NOT AVAILABLE)
TELEPHONE	VERIZON
CABLE T.V.	TIME WARNER CABLE (NOT AVAILABLE)
USA	UNDERGROUND SERVICE ALERT

ON SITE UTILITIES

IRRIGATION	DAVE FOREST (PARK RANGER)
WATER	DAVE FOREST (PARK RANGER)
SEPTIC	DAVE FOREST (PARK RANGER)



SHEET INDEX MAP

LEGEND

PROP. STORM DRAIN
PROP. PRIVATE SEWER MAIN
PROP. PRIVATE WATER MAIN
PROP. FIRE HYDRANT ASSEMBLY
PROP. GATE VALVE OR BUTTERFLY VALVE
EX. WATER MAIN
EX. SEWER MAIN
EX. UTILITIES: GAS, TELEPHONE, TV, ETC.
PROP. WATER SERVICE
PROP. SEWER LATERAL
PROP. AIR/VACUUM RELIEF VALVE
PROP. DETECTOR CHECK
PROP. CLEAN OUT
PROP. MANHOLE
PROP. WATER SERVICE WITH BACKFLOW DEVICE
PROP. REDUCER VALVE AND BLOW-OFF ASSEMBLY
PROP. REDUCER
PROP. STORM DRAIN MANHOLE
BOUNDARY
CENTERLINE
PHASE LINE
CITY/COUNTY BOUNDARY LIMITS

ABBREVIATIONS

(E)	EAST	FG	FINISHED GRADE	R/W	RIGHT OF WAY
(N)	NORTH	FL	FLOWLINE	RED.	REDUCER
(S)	SOUTH	FS	FINISHED SURFACE	S.F.	SQUARE FEET
(W)	WEST	GB	GRADE BREAK	S/W	SIDEWALK
AC	ASPHALT CONCRETE	HC	HANDICAP	TB	TOP OF BERM
BC	BEGINNING OF CURVE	HP	HIGH POINT	TC	TOP OF CURB
BCR	BEGIN CURB RETURN	HZ	HORIZONTAL	TF	TOP OF FOOTING
BOC	BACK OF CURB	INV	INVERT	TOG	TOP OF GRATE
C/J	CURVE	LB	LINE	TP	TOP OF PAVEMENT
C/L	CENTERLINE	L.F.	LINEAL FEET	TRW	TOP OF RETAINING WALL
C&G	CURB AND GUTTER	LP	LOW POINT	TW	TOP OF WALL
C.B.	CATCH BASIN	MAX.	MAXIMUM	TYP.	TYPICAL
C.Y.	CUBIC YARDS	MIN.	MINIMUM	VERT	VERTICAL
D	DEPTH	MOC	MID-POINT OF CURVE	W	WIDTH
DB	DRAIN BOX	NG	NATURAL GROUND		
DWG.	DRAWING	N.T.S.	NOT TO SCALE		
DWY	DRIVEWAY	P/L	PROPERTY LINE		
EA	EACH	PCC	POINT OF COMPOUND CURVE		
EC	END OF CURVE	PE	PAD ELEVATION		
ECR	END CURB RETURN	PIG	POINT OF INTERSECTION/GUTTER FL		
ELEV	ELEVATION	POC	POINT ON CURVE		
EP	EDGE OF PAVEMENT	PRC	POINT OF REVERSE CURVE		
ESMT.	EASEMENT	PROP.	PROPOSED		
EX	EXISTING	PUE	PUBLIC UTILITY EASEMENT		
FF	FINISHED FLOOR	PVMT	PAVEMENT		

SHEET INDEX

COVER SHEET	SHEET 1
PRIVATE WATER AND SEWER SHEET	SHEET 2
PRIVATE WATER AND SEWER SHEET	SHEET 3
PRIVATE WATER AND SEWER SHEET	SHEET 4
DETAIL SHEET	SHEET 5

PRIVATE SEWER IMPROVEMENT PLANS

1. ALL WORKS SHALL CONFORM WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREEN BOOK) LATEST EDITION, A.W.W.A. STANDARDS, UNIFORM PLUMBING CODE LATEST EDITION AND THESE PLANS.
2. ALL SEWER MAINS 4" THRU 15" SHALL BE SDR 35 SEWER PIPE COLORED GREEN. SIZES AS INDICATED ON THE PLANS. AS MANUFACTURED BY JM EAGLE, PACIFIC-WESTERN MANUFACTURING COMPANY OR ENGINEER APPROVED EQUAL.
3. SEWER CLEAN-OUT SHALL BE INSTALLED PER DETAIL ON THE PLANS, AND IN CONFORMANCE WITH SSPWC.
4. SEWER MAIN LINE AND GRADE SHALL BE AS INDICATED ON THE PLANS.
5. SEWER SEPTIC TANK IS TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. INSTALLATION IS TO MEET OR EXCEED THE UPC PERFORMANCE REQUIREMENTS.
6. PRIVATE SEWER DISPOSAL FIELD - SEEPAGE PIT, TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. INSTALLATION IS TO MEET OR EXCEED THE UPC PERFORMANCE REQUIREMENTS.
7. ALL CONCRETE USED IN SEWER CONSTRUCTION, INCLUDING PRECAST MANHOLE SECTIONS AND MANHOLE BASES SHALL BE CLASS 600-C-4000, PORTLAND TYPE V CEMENT (7 SACKS, 4000 PSI). THE CONTRACTOR SHALL FURNISH A CERTIFICATE OF COMPLIANCE SHOWING THE CEMENT TYPE USED.
8. WYES AND LATERALS SHALL BE P.V.C. SDR 35 OR A.B.S. 1210 D.W.V. SCHEDULE 40 AND INSTALLED AT GRADES AS INDICATED ON PLAN.
9. SEPARATION BETWEEN PRIVATE WATER LINES AND PRIVATE SEWER LINES SHALL CONFORM TO UPC MINIMUM VERTICAL SEPARATION IS 1-FOOT AND MINIMUM HORIZONTAL SEPARATION IS 1-FOOT (BOTH MEASURED FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.)
10. FINAL TESTING FOR PIPELINE LEAKAGE SHALL BE MADE IN THE PRESENCE OF THE ENGINEER AFTER BACKFILL HAS BEEN INSPECTED AND APPROVED.
11. IT SHALL BE THE SEWER CONTRACTOR'S RESPONSIBILITY TO SET MANHOLE COVERS TO FINISH GRADE AFTER PAVING IN ACCORDANCE WITH COACHELLA VALLEY WATER DISTRICT STANDARD DRAWING S-1A OR S-1B AS APPLICABLE.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK AND SHALL MAINTAIN ALL FACILITIES COMPLETED AND UNCOMPLETED UNTIL ACCEPTED BY THE OWNER.
13. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY STANDARDS AND REVIEW THE PLANS IN DETAIL WITH THE ENGINEER PRIOR TO START OF CONSTRUCTION.
14. ALL ELEVATIONS SHOWN TO BE EXISTING WHERE FROM RECENT SURVEY OF THE ENGINEER AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
15. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 72 HOURS PRIOR TO STARTING ANY WORK. A PRE-CONSTRUCTION MEETING SHALL BE SET-UP WITH THE ENGINEER. THE CONTRACTOR, HIS SUBCONTRACTORS, AND A REPRESENTATIVE FROM EACH OF THE UNDERGROUND UTILITIES SHALL BE PRESENT.
16. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES AND NOTIFY COMPANIES 48 HOURS (2 WORKING DAYS) IN ADVANCE OF THE BEGINNING OF CONSTRUCTION AND CALL U.S.A. UNDERGROUND SERVICE ALERT AT 1-800-227-2600.
17. TREES TO BE PLANTED 10 MIN. FROM SEWER LATERALS.

PRIVATE WATER IMPROVEMENT PLANS

1. ALL WORKS SHALL CONFORM WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREEN BOOK) LATEST EDITION, A.W.W.A. STANDARDS, UNIFORM PLUMBING CODE LATEST EDITION AND THESE PLANS.
2. ALL WATER MAINS 4" THRU 12" SHALL BE C-900 CLASS 200, 14" AND LARGER SHALL BE C-905 CLASS 150. WATER PIPE SMALLER THAN 4" SHALL BE SCHEDULE 40 OR SCHEDULE 80 PVC OR CPVC WITH A PRESSURE RATING GREATER THAN 200 PSI UNLESS OTHERWISE INDICATED ON THE PLANS. SIZES AS INDICATED ON THE PLANS. AS MANUFACTURED BY JM EAGLE, PACIFIC-WESTERN MANUFACTURING COMPANY OR ENGINEER APPROVED EQUAL. PIPE
3. FIRE HYDRANTS SHALL BE 6" WET BARREL TYPE WITH ONE 4" OPENING AND TWO 2-1/2" OPENING PER CVWD STANDARD. FIRE HYDRANT SHALL BE JONES MODEL NO. J-3765 OR AVK MODEL CALIFORNIA 24-30 HP OR APPROVED EQUAL.
4. GATE VALVES 4" THRU 12" SHALL BE RESILIENT-SEATED WITH NON-RISING STEMS CONFORMING TO A.W.W.A. C-509-80. VALVES LARGER THAN 12" SHALL BE BUTTERFLY VALVES. VALVES SHALL BE FLANGED X FLANGED. AS MANUFACTURED BY AMERICAN AVK, CLOW, M&H, STOCKHAM, U.S. PIPE, OR ENGINEER APPROVED EQUAL.
5. BALL VALVE MATERIAL SHALL BE AS INDICATED ON PLAN. BALL VALVE MATERIAL TO BE EITHER BRONZE BODY OR PVC SCHEDULE 80. BRONZE VALVE SHALL HAVE NPT THREADS ON BOTH ENDS RATED AT 600 PSI AS MANUFACTURED BY CONBRACO INDUSTRIES OR ENGINEER APPROVED EQUAL. PVC VALVE SHALL HAVE NPT THREADS ON BOTH ENDS RATED AT 200 PSI AS MANUFACTURED BY SPEAR OR ENGINEER APPROVED EQUAL.
6. THE MINIMUM COVER FOR WATER MAINS AND WATER SERVICES SHALL BE 36 INCHES. STREET SHALL BE BROUGHT TO SUBGRADE AND SEWER MAIN SHALL BE INSTALLED BEFORE WATER MAIN LINE IS INSTALLED.
7. THE MINIMUM COVER FOR WATER MAINS AND WATER SERVICES SHALL BE 36 INCHES. STREET SHALL BE BROUGHT TO SUBGRADE AND SEWER MAIN SHALL BE INSTALLED BEFORE WATER MAIN LINE IS INSTALLED.
8. MINIMUM HORIZONTAL SEPARATION FROM PRIVATE WATER TO PRIVATE SEWER MAINS SHALL BE BY ONE 1-FOOT FROM OUTSIDE WALL TO OUTSIDE WALL. MINIMUM VERTICAL SEPARATION FOR WATER AND SEWER MAINS AT PERPENDICULAR CROSSING SHALL BE 1'-FOOT FROM OUTSIDE WALL TO OUTSIDE WALL OF PIPE PER U.P.C.
9. THE CONTRACTOR SHALL TEST AND CHLORINATE PROPOSED WATER MAINS AND SERVICES BACTERIOLOGICAL SAMPLES SHALL BE CLEARED BY A CERTIFIED TESTING LAB AND SHALL PROVIDE THE WRITTEN RESULTS TO THE ENGINEER. TESTS ON FIRE SYSTEM SHALL MEET FIRE DEPARTMENT REQUIREMENTS AND S.S.P.W.C.
10. TRENCH EXCAVATION, PIPE BEDDING AND BACKFILL SHALL BE CERTIFIED BY A REGISTERED SOILS ENGINEER PRIOR TO PLACEMENT OF A.C. OR CONCRETE.
11. IT SHALL BE THE WATER CONTRACTOR'S RESPONSIBILITY TO SET WATER VALVE RISER, FRAME AND COVER TO FINISH GRADE AFTER PAVING IN ACCORDANCE WITH CVWD STANDARD DRAWING NO. W-17A MODIFY VALVE COVER TO ONLY READ "WATER" OR "FIRE" AS APPROPRIATE.
12. ALL CONNECTIONS MADE TO EXISTING FACILITIES WILL BE AT CONTRACTOR'S EXPENSE.
13. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY STANDARDS AND REVIEW THE PLANS IN DETAIL WITH THE ENGINEER PRIOR TO START OF CONSTRUCTION.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK AND SHALL MAINTAIN ALL FACILITIES UNTIL PROJECT IS COMPLETED.
15. EXISTING UTILITIES MAY OR MAY NOT BE SHOWN ON THESE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY AND PROTECT ALL UTILITIES IN THE CONSTRUCTION AREA WHETHER SHOWN OR NOT SHOWN HEREON. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES AND NOTIFY COMPANIES 48 HOURS IN ADVANCE OF THE BEGINNING OF CONSTRUCTION AND CALL U.S.A. UNDERGROUND SERVICE ALERT AT 1-800-227-2600
16. ALL FITTINGS SHALL BE DUCTILE IRON PUSH-ON BY PUSH-ON EQUIPPED WITH "TYTON" PUSH-ON OR MECHANICAL JOINTS UNLESS OTHERWISE NOTED ON PLANS. JOINT RESTRAINT SHALL BE "MEGA LUG" BY EBAA IRON WORKS, SERIES 1600 BELL RESTRAINT HARNESS, OR ENGINEER APPROVED EQUAL.
17. LENGTH OF RESTRAINED PIPE SHALL BE A MINIMUM OF 54-LINEAL FEET IN EACH DIRECTION OF FITTING AND BRANCH OF TEE OR AS INDICATED ON PLAN.
18. ALL NUTS, WASHERS AND BOLTS SHALL BE STAINLESS STEEL.
19. BLUE DOT MARKERS SHALL BE PLACED ADJACENT TO FIRE HYDRANTS LOCATED ON THE CENTERLINE OF THE STREET OR DRIVEWAY.
20. THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.

NOTE TO CONTRACTOR: SITE CONDITIONS

CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITION DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT APPLIES CONTINUOUSLY AND IS NOT LIMITED TO NORMAL WORKING HOURS.
THE CONTRACTOR ALSO AGREES TO DEFEND, INDEMNIFY, AND HOLD THE OWNER AND THE MSA CONSULTING, INC., HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR MSA CONSULTING, INC.

NOTE TO CONTRACTOR: EXISTING UTILITIES

THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN ON THE PLANS WERE OBTAINED FROM A REVIEW OF AVAILABLE RECORD DATA. WHILE DUE CARE WAS TAKEN IN PREPARATION OF THIS INFORMATION, MSA CONSULTING, INC. CANNOT AND DOES NOT GUARANTEE THE ACCURACY NOR THE COMPLETENESS OF THE INFORMATION. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK.
THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES, WHICH RESULT FROM HIS FAILURE TO LOCATE EXACTLY AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL POTHOLE PROPOSED CROSSINGS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION AND SHALL VERIFY THEIR HORIZONTAL AND VERTICAL LOCATIONS. IN THE EVENT, DURING CONSTRUCTION, THAT UNKNOWN UTILITIES OR UNKNOWN STRUCTURES ARE FOUND AT UNEXPECTED ELEVATIONS OR LOCATIONS, MSA CONSULTING, INC. IS TO BE NOTIFIED OF SUCH CONDITION AT ONCE. MSA CONSULTING, INC. WILL MAKE REQUIRED DESIGN CHANGES AND THE CONTRACTOR AGREES TO COMPLETE ALL WORK, INCLUDING REPAIRS REQUIRED, IN AN EXPEDITIOUS MANNER. THE CONTRACTOR FURTHER AGREES TO PURSUE DILIGENTLY THE COMPLETION OF SAID WORK.
ANY DISCREPANCY BETWEEN THE PLANS AND FIELD SHALL BE BROUGHT TO THE ATTENTION OF MSA CONSULTING, INC. THE CONTRACTOR SHALL NOTIFY MSA CONSULTING, INC. PRIOR TO POTHOLING, IF NECESSARY. MSA CONSULTING, INC. SHALL REVISE THE PLANS. THE CONTRACTOR SHALL BEGIN CONSTRUCTION AFTER REVISIONS ARE APPROVED.

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE PRECISE LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE DESIGN HEREON. IN THE EVENT OF DISCREPANCIES ARISING AFTER COUNTY APPROVAL OR DURING CONSTRUCTION, THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE COUNTY.

MARK	BY	DATE	REVISIONS	APPR	DATE
ENGINEER				COUNTY	

DESIGNED BY J.S.J. DRAWN BY J.S.J. CHECKED BY P.B.S.

RECOMMENDED FOR APPROVAL
DATE
CHECKED BY
DATE

SEAL COUNTY

SEAL
C43880
Exp. 6-30-11

APPROVED BY: DATE
FOR TRANSPORTATION DEPT., RIVERSIDE COUNTY, CA
R.C.E. NO. EXP DATE
PREPARED UNDER THE SUPERVISION OF: DATE
SIGNATURE
R.C.E. NO. 43880 EXP DATE 6-30-11

MSA CONSULTING, INC.
PLANNING ■ CIVIL ENGINEERING ■ LAND SURVEYING
34200 BOB HOPE DRIVE ■ RANCHO MIRAGE ■ CA 92270
TELEPHONE (760) 320-9811 ■ FAX (760) 323-7893

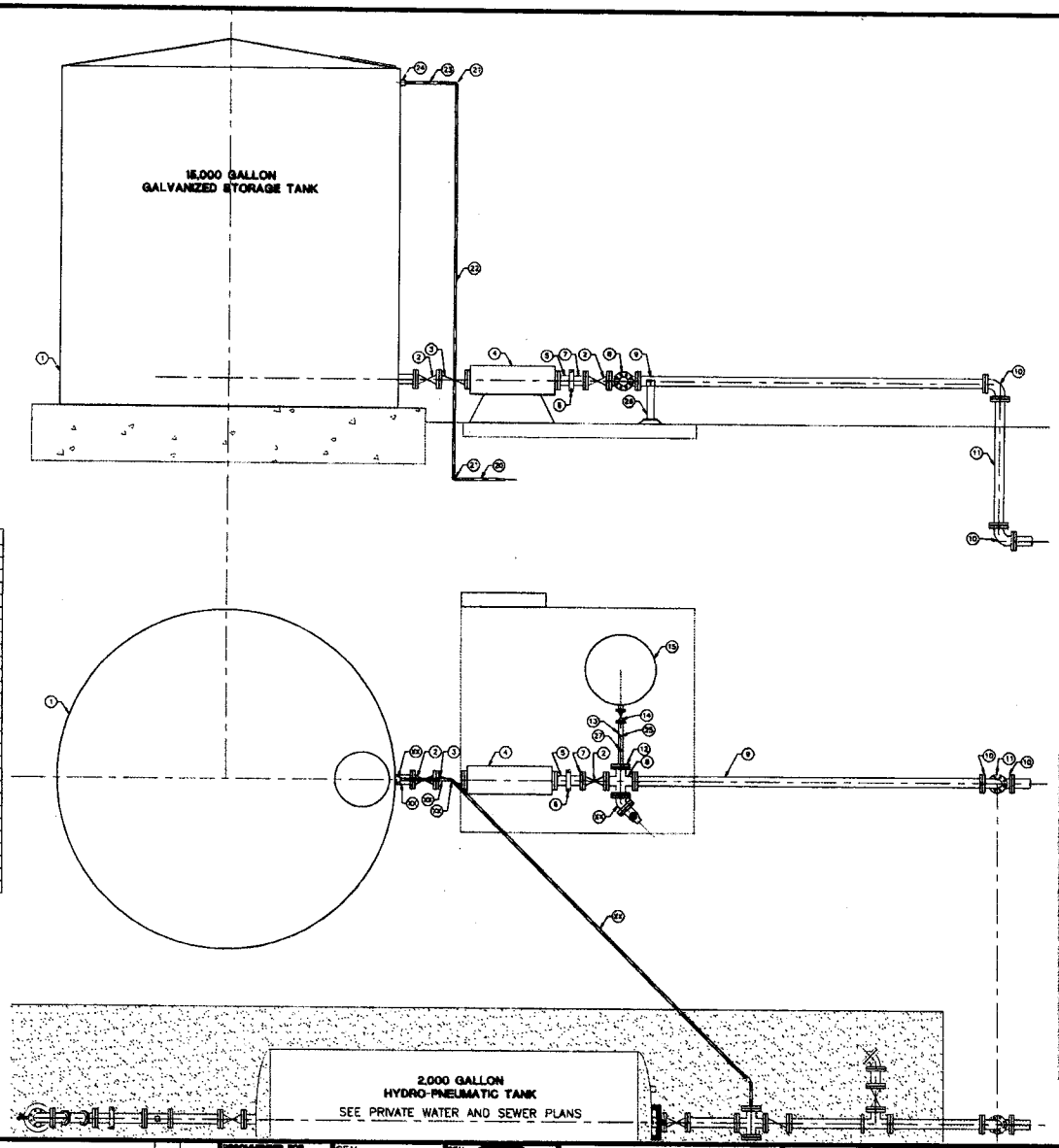
SCALE AS SHOWN
DATE 09-2010
BENCHMARK

COLLIS MAYFLOWER PARK
PRIVATE WATER AND SEWER PLAN

APN 833-070-003, 004, 006, 008 BEING A PORTION OF SEC. 12, T. 6 S., R. 23 E., S.B.M.

FOR: RIVERSIDE COUNTY PARKS DEPARTMENT

SHEET NO. 1
OF 5 SHTS



STRUCTURE:	BLDG	
LENGTH	76.00 FT	
WIDTH	48.33 FT	
HEIGHT	18.00 FT	
FLOOR AREA	3672.00 FT	
TOTAL VOLUME	66768.00 CU FT	
CONSTRUCTION CLASS NO.	1.0	(TYPE V= 1.0)
OCCUPANCY HAZARD	6	(HAZARD 7 = LOWEST, HAZARD 3= SEVERE)
EXPOSURE:	1.0	YES = 1.5 NO = 1.0
WATER SUPPLY VOLUME REQUIRED:	26,163 GAL	
IF SPRINKLERED, (50% CREDIT):	13,082 GAL	
ESTIMATED SPRINKLER FLOW (67% OF FLOOR):	245 GPM	0.2 DENSITY/AREA

LIST OF MATERIALS - WELL SITE

ITEM	DESCRIPTION	QUANTITY
1	15,000 GALLON GALVANIZED STORAGE TANK, GRAVEL RING, FLOAT, DEPTH INDICATOR	1
2	4" GATE VALVE (R/W) (FE X FE)	2
3	4" CHECK VALVE	1
4	FIRE PUMP - 250 GPM 80 PSI WITH MOTOR CONTROL CENTER - SEE SPECIFICATIONS	1
5	4" PIPE SCH 40 STEEL (FE X VICTAULIC)	1
6	4" VICTAULIC COUPLER	1
7	4" PIPE SCH 40 STEEL (FE X VICTAULIC)	1
8	4" CROSS SCHEDULE 40 STEEL (FE X FE)	1
9	4" PIPE SCH 40 STEEL (FE X FE)	1
10	4" X 90° BEND SCH 40 STEEL (FE X FE)	2
11	4" PIPE SCH 40 STEEL (FE X FE)	1
12	4" FLANGE WITH 2" NPT PORT	1
13	2" PIPE SCH 40 STEEL (NPT X FE)	1
14	2" BALL VALVE	1
15	70 GALLON HYDROPNEUMATIC (BLADDER TANK)	1
16	4" X 45° BEND SCH 40 STEEL (FE X FE)	1
17	4" X 4" NPT ADAPTOR FLANGE	1
18	4" SHORT NIPPLE (NPT)	1
19	4" JONES HEAD (2 1/2" FIRE HOSE CONNECTION) SET TO BE 36" ABOVE FINISHED SURFACE	1
20	1" PIPE SCH 40 STEEL (NPT) (TANK FILL LINE)	1
21	1" X 90° BEND SCH 40 STEEL (NPT)	2
22	1" PIPE SCH 40 STEEL (NPT) (TANK FILL LINE)	1
23	1" PIPE SCH 40 STEEL (NPT) (TANK FILL LINE)	1
24	1" FULL COUPLING STEEL (NPT) - WITH FLOAT VALVE	1
25	3/4" STEEL HALF COUPLING AND 4" DIAMETER FACE PRESSURE GAUGE 0-200 PSI	1
26	ADJUSTABLE PIPE SUPPORT GRANNELL FIG 264	1
27	3/4" STEEL HALF COUPLING FOR PRESSURE SENSING PUMP CONTROLLER	1

NORTH

0' 2' 4' 6' 8'
SCALE 1"=2'

EXISTING SYSTEM PLANS For Information Only

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE PRECISE LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE DESIGN WORK. IN THE EVENT OF DISCREPANCIES ARISING OVER COUNTY WORKING, OR DURING CONSTRUCTION, THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE COUNTY.

MARK	BY	DATE	REVISIONS	APPR	DATE

ENGINEER COUNTY
DESIGNED BY J.S.J. DRAWN BY J.S.J. CHECKED BY P.B.S.

RECOMMENDED FOR APPROVAL
NAME
SIGNED BY
DATE

SEAL COUNTY

SEAL: REGISTERED PROFESSIONAL ENGINEER PHILIP A. BE LA SOUD C43580 Exp. 6-30-11 CIVIL STATE OF CALIFORNIA

APPROVED BY: DATE
FOR TRANSPORTATION DEPT., RIVERSIDE COUNTY, CA
R.C.E. NO. EXP DATE
PREPARED UNDER THE SUPERVISION OF: DATE
SIGNATURE
R.C.E. NO. 43580 EXP DATE 6-30-11

MSA CONSULTING, INC.
PLANNING • CIVIL ENGINEERING • LAND SURVEYING
34940 BOB HOPE DRIVE • RANCHO MIRAGE • CA 92270
TELEPHONE (760) 320-9811 • FAX (760) 323-7970

SCALE AS SHOWN
DATE 02-2010
REVISIONS
J. BE SOUD
BLDG. SHEET SHEETS

COLLIS MAYFLOWER PARK
PRIVATE FIRE SERVICE PLANS

APN 833-070-003, 004, 005, 006 BEING A PORTION OF SEC. 12, T. 6 S., R. 3 E., S.B.M.

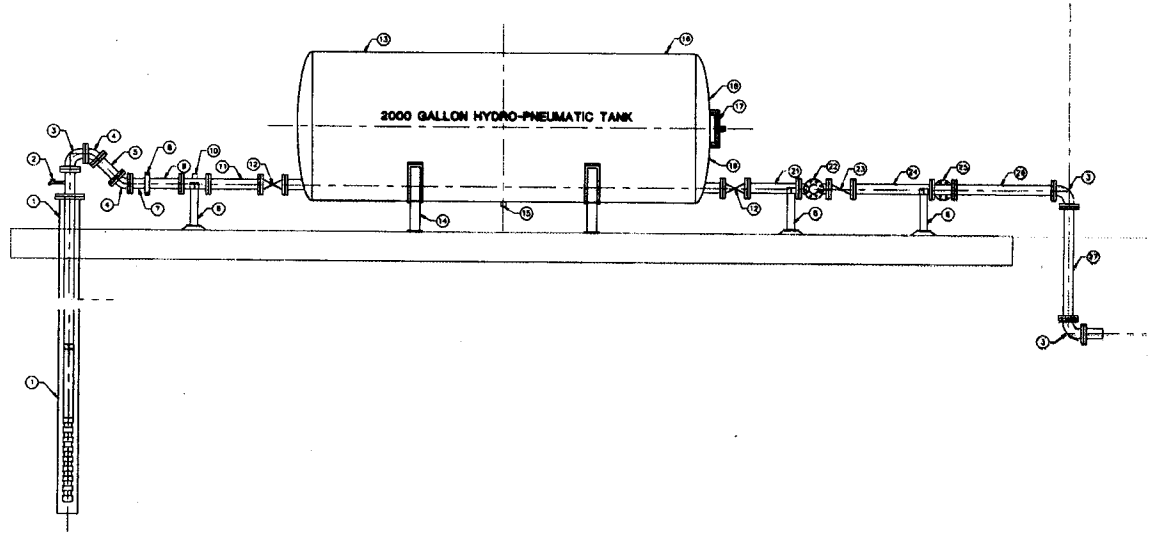
FOR: RIVERSIDE COUNTY PARKS DEPARTMENT

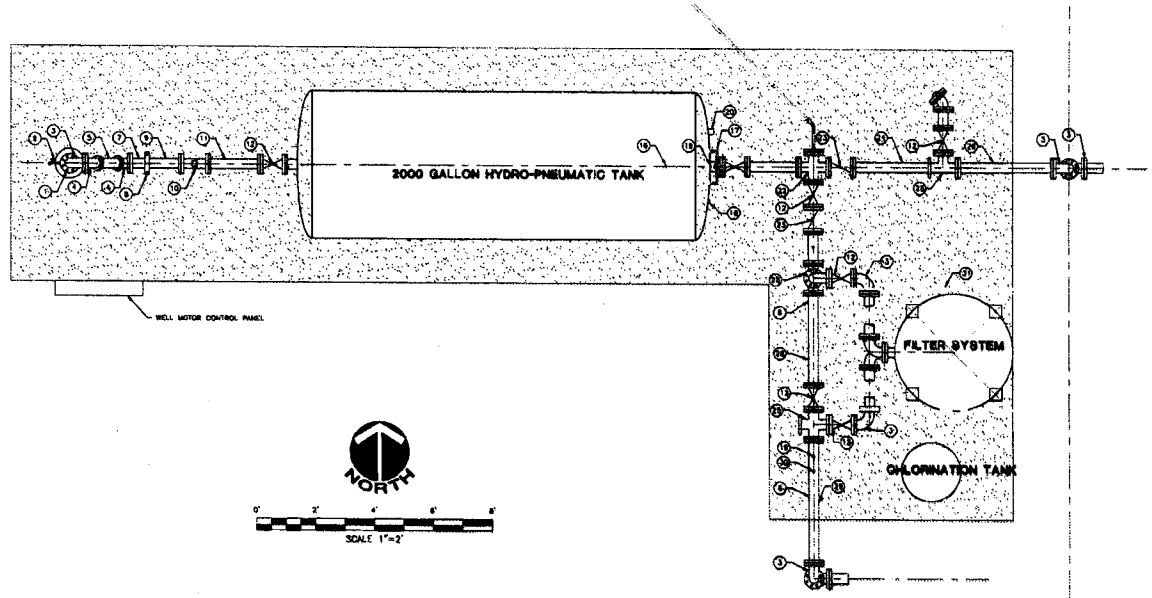
SHEET NO. 4 OF 4 SHTS

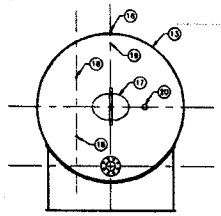
LIST OF MATERIALS - WELL SITE

ITEM	DESCRIPTION	QUANTITY
1	300-FOOT DEEP WELL FROM GROUND TO STATIC WATER LEVEL, 8" DIAMETER STEEL CASING MIN; 5 "STEEL WELL SCREEN, FROM STATIC WATER LEVEL TO BOTTOM OF WELL. GRAVEL PACK FROM 50-FEET TO BOTTOM OF WELL. 10 SACK GROUT PUMPED SANITARY SEAL FROM GROUND TO 50-FEET. 50 1HP PER 10" OF -STILL SLEEVE. WELL DEVELOPEMENT (I.E. AIRLIFTING, BAILING, CIRCULATION SCREEN). PUMP SYSTEM TO INCLUDE 3 PHASE PUMP AND MOTOR TO PRODUCE A MINIMUM OF 250 MINIMUM GALVANIZED DROP PIPE. CHECK VALVES. GATE VALVES, FLOATS, GPM AT 80 PSI. 4 "SWITCHES. CONTROL PANEL SIZED ACCORDING TO PUMPING SYSTEM. FLAT JACKETED SUBMERSIBLE WIRE SIZED TO MOTOR HP AND PUMP SETTING DEPTH, TORQUE ARRESTORS, CENTRALIZERS, PERMITS. -SEE SPECIFICATIONS	1
2	SAMPLING VALVE (NON THREADED)	1
3	4" X 90° BEND SCH 40 STEEL (FE X FE)	9
4	4" X 45° BEND SCH 40 STEEL (FE X FE)	3
5	4" PIPE SCH 40 STEEL (FE X FE)	1
6	ADJUSTABLE PIPE SUPPORT GRINNELL FIG 264	5
7	4" PIPE SCH 40 STEEL (FE X VICTAULIC)	1
8	4" VICTAULIC COUPLING	2
9	4" PIPE SCH 40 STEEL (FE X VICTAULIC)	1
10	4" FLOW METER (PROPELLER TYPE WITH TOTALIZER)	1
11	4" PIPE SCH 40 STEEL (FE X FE)	1
12	4" GATE VALVE (R/W) (FE X FE)	6
13	2000 GALLON HYDROPNEMATIC TANK (ASME NSF RATED)	1
14	TANK SUPPORTS - BY TANK MANUFACTURER - SIZE PER STRUCTURAL REQUIREMENTS BY TANK MFG.	2
15	2" BALL VALVE (TANK DRAIN)	1
16	1" STEEL HALF COUPLING AND AIR-FILL SYSTEM (COMPRESSOR, CHECK VALVE, AND PIPING)	1
17	ACCESS PORT	1
18	1/4" STEEL HALF COUPLING AND GAUGE GLASS - CRANE NO. 624	2
19	1/4" STEEL HALF COUPLING AND 6" DIAMETER FACE PRESSURE GAUGE 0 - 200 PSI	2
20	3" STEEL HALF COUPLING AND FLOAT SWITCH	1
21	4" PIPE SCH 40 STEEL (FE X FE)	1
22	4" CROSS SCH 40 STEEL (FE X FE)	1
23	4" CHECK VALVE	2
24	4" PIPE SCH 40 STEEL (FE X FE)	1
25	4" TEE SCH 40 STEEL (FE X FE)	3
26	4" PIPE SCH 40 STEEL (FE X FE)	1
27	4" PIPE SCH 40 STEEL (FE X FE)	1
28	4" PIPE SCH 40 STEEL (FE X FE)	1
29	4" PIPE SCH 40 STEEL (FE X FE)	1
30	1" STEEL HALF COUPLING AND CHLORINATION SYSTEM)	1
31	PIPING AS NECESSARY FOR WATER FILTER SYSTEM.	1

EXISTING SYSTEM PLANS
For Information Only







THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN BY AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE PRECISE LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. IN LIEU OF OCCASIONS BY HIS FAILURE TO CAREFULLY LOCATE AND PROTECT ANY AND ALL UNDERGROUND UTILITIES.

THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ADEQUACY OF THE DESIGN HEREON. IN THE EVENT OF DISCREPANCIES ARISING AFTER COUNTY APPROVAL OR DURING CONSTRUCTION, THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE COUNTY.

MARK	BY	DATE	REVISIONS	APPR	DATE

ENGINEER — COUNTY

DESIGNED BY J.S.J. DRAWN BY J.S.J. CHECKED BY P.R.S.

RECOMMENDED FOR APPROVAL — DATE — CHANGED BY — DATE

SEAL COUNTY

SEAL: REGISTERED PROFESSIONAL ENGINEER — PHILIP R. SO LA PORTA — C43880 — Exp. 6-30-11 — CIVIL — STATE OF CALIFORNIA

APPROVED BY: DATE
FOR TRANSPORTATION DEPT., RIVERSIDE COUNTY, CA
R.C.E. NO. EXP DATE
PREPARED UNDER THE SUPERVISION OF: DATE
SIGNATURE
R.C.E. NO. 43880 EXP DATE 6-30-11

MSA CONSULTING, INC.
PLANNERS • CIVIL ENGINEERS • LAND SURVEYORS
34500 DEL REY DRIVE • RANCHO MIRAGE • CA 92270
TELEPHONE (760) 324-6021 • FAX (760) 323-7600

SCALE: AS SHOWN
DATE: 06-30-10

BENCHMARK: J 150 RIVERSIDE ELEV. 599.54 NGVD 29
BASIS: 1.1 M WEST ALONG HIGHWAY 111 FROM THE JUNCTION OF U.S. HIGHWAY 10 IN BLYTHE, AT THE INTERSECTION OF HOBY DATE STREET, 30" N TOP OF THE NORTH CURB OF HIGHWAY 111 AS THE PRESENT TERMINUS OF THE INTERSECTION 38.8 FEET EAST OF THE CENTERLINE OF FIFTH STREET, 6.0 FEET SOUTHEAST OF A FIRE HYDRANT, THE HAVE 15 ABOVE LEVEL NOW THE DEVIDALL.

COLLIS MAYFLOWER PARK
PRIVATE WATER AND SEWER PLAN

APN 633-070-003, 004, 005, 006 BEING A PORTION OF SEC. 12, T. 6 S., R. 23 E., S.B.M.

FOR: RIVERSIDE COUNTY PARKS DEPARTMENT

SHEET NO. 5 OF 5 SHTS

OFFICE OF
CLERK OF THE BOARD OF SUPERVISORS
1st FLOOR, COUNTY ADMINISTRATIVE CENTER
P.O. BOX 1147, 4080 LEMON STREET
RIVERSIDE, CA 92502-1147
PHONE: (951) 955-1060
FAX: (951) 955-1071

KECIA HARPER-IHEM
Clerk of the Board of Supervisors

KIMBERLY A. RECTOR
Assistant Clerk of the Board

December 21, 2015

PALO VERDE VALLEY TIMES
ATTN: LEGALS
PO BOX 1159
BLYTHE, CA 92226

TEL: (760) 922-3181
E-MAIL: classifieds@paloverdevalleytimes.com

RE: NOTICE INVITING BIDS: NEW WATER WELL AND RELATED FACILITIES AT MAYFLOWER PARK

To Whom It May Concern:

Attached is a copy for publication in your newspaper for **TWO (2) TIMES: Wednesdays: December 23 and 30, 2015.**

We require your affidavit of publication immediately upon completion of the last publication.

Your invoice must be submitted to this office, WITH TWO CLIPPINGS OF THE PUBLICATION.

NOTE: PLEASE COMPOSE THIS PUBLICATION INTO A SINGLE COLUMN FORMAT.

Thank you in advance for your assistance and expertise.

Sincerely,

Cecilia Gil

Board Assistant to:
KECIA HARPER-IHEM, CLERK OF THE BOARD

Client:

Riv Co Board of Supervisors

Account # 34758 Ad # 431574

Phone: (951) 955-1060

Fax: (951) 955-1071

Address: PO BOX 1147

4080 LEMON ST

RIVERSIDE, CA 92502-1147

Sales Rep.:

3521 Carolyn Kribbs

Phone: (760) 922-3181

Fax:

Email: ckribbs@paloverdevalleytimes.com

Entry date: 12/21/2015 12:54 PM

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Requested By:

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NOTICE INVITING BIDS

The County of Riverside, on behalf of its Parks Department, (County) invites sealed bids for the location, drilling, construction, development and connections of a New Water Well and related facilities at Mayflower Park located at 4980 Colorado Road, Blythe, California 92225.

The proposed construction area is located in the eastern portion of the park's "dry storage area". The work in generally consists of but is not limited to: location, drilling, construction, development and connection of a new water well to the park's existing potable water and fire protection systems within the Park Department's. Mayflower Park, Blythe, California. The project will include but not limited to the all methods, activities, materials, labor and testing for a new deep water well as outline in the project manual and specifications.

The base bid construction is estimated to cost a total of Three Hundred and Twenty-Five Thousand Dollars ($325,000.00.)

The performance period for this project including all permits, project submittals, reviews, approvals, actual construction/well development and inspections will last for forty-five (45) working days, including project completion, punch list and issuance of the Notice of Completion.

Pay applications will be tied to the successful completion of all activities in both parts of the contract including the timely submission of all paperwork.

Contractors submitting a bid for this project shall have an "A" General Engineering License, or "C -57" "C" Class Specialty License in the State of California. All Contractors whether General Engineering, or "C" Class Specialty License proposed in this bid must be appropriately and cur-

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This project requires the payment of prevailing wages and certified payroll.

The awarded prime contractor shall post job site notices as prescribed by regulation starting as of January 1, 2016. Contractors and subcontractors shall furnish records specified in Labor Code Section 1776 to the Labor Commissioner.

Pursuant to Labor Code Section 1771.1, any contractors bidding and subcontractors to be listed on a bid proposal are subject to Public Contract Code Section 4104 and shall not be eligible to bid unless currently registered and qualified to perform public works pursuant to Labor Code section 1725.5. No contractor or subcontractor may enter into a contract without proof of current registration to perform public works.

The Bidder receiving the Award by the County is required to comply with the provisions of the California Labor Code, including, without limitation, the requirements of California Labor Code Section 1720 et seq. requiring the payment of prevailing wages, submittal of payroll records, the training of apprentices and compliance with other applicable requirements. In accordance with provisions of Section 1773 of the Labor Code, the Director of the Department of Industrial Relations has ascertained the general prevailing rate of wages and employer payments for health and welfare, pension, vacation, and similar purposes applicable to the particular craft, classification, or type of workers employed on the work. The wage determinations shall be included in the bid specifications. The Contractor shall post all pertinent wage determinations on the jobsite at all times.

THIS IS A PUBLIC WORKS PROJECT AND SUBJECT TO COMPLIANCE MONITORING AND ENFORCEMENT BY THE DEPARTMENT OF INDUSTRIAL RELATIONS. As a condition to receiving progress payments, final payment and payment of retention on any and all projects on which the

payment of prevailing wages is required, the contractor agrees to present to the County, along with its request for payment, all applicable and necessary certified payrolls and other required documents for the time period covering such payment request. The County shall withhold any portion of a payment, including the entire payment amount, until certified payroll forms and other required LCP documents are properly submitted. In the event that certified payroll forms do not comply with the requirements of Labor Code Section 1720 et seq., or wage violations are identified, the County may hold sufficient funds to cover estimated wages and penalties under the contract pursuant to CA Labor Code 1771.6.

Pursuant to SB854, effective 1/1/2016, all project contractors will be required to additionally submit their certified payrolls to the Labor Commissioner's online portal. Refer to the Labor Compliance Packet for additional information.

Additional information is available from the Department of Industrial Relations web link:
http://www.dir.ca.gov

Complete Bidding Documents are available through ARC Reprographics (ARC) at 4295 Main St, Riverside, CA 92501, 951-686-0530, or online at riverside.digiprint@e-arc.co. Contact ARC for your specific order request. A fee will be charged for any copies of the Bidding Documents furnished to a bidder. Free viewing of documents is available on the ARC website.

Issuance of this Request for Bids and the administration of any subsequent contract will be performed by the County. All inquiries regarding this Request for Bids must be in writing and faxed or emailed to:

Riverside County Parks Department
4600 Crestmore Road
Riverside, CA 92509
Attention:
Henry Robles Buyer II
Fax: 951-955-4473
hrobles@rivcoparks.org
See www.riversidecountyparks.org for County information.

A mandatory pre-bid meeting will be held on Wednesday, January 6, 2016 at 10:00 A.M. at the Mayflower Park. It is suggested the representative who attends the pre-bid meeting be an estimator, a project manager or a superintendent. Discussion will be held regarding the administration of this contract. It is important that potential contractors understand the unique requirements of this project, how those requirements will affect their ability to perform in a satisfactory manner and how this will affect the bid amount.

Meeting will be held at the park in the parking lot adjacent park entry kiosk. If you attend tell the staff at the entry kiosk that you are attending the pre-bid meeting for the Mayflower water well replacement project and ask them for directions to the meeting location. You will not be charged.

All questions regarding the documents should be directed to the County. Bids must be in accordance with the Contract Documents.

All bids are due no later **than 2:00 PM, Thursday, January 14, 2016,** and shall be publicly opened promptly after that time. **Bids must be filed with the Riverside County Clerk of the Board, located at 4080 Lemon Street, 1st Floor, Riverside, California, 92501. Bids must be received by the Clerk of the Board by the bid closing time.** Bids sent by fax or email will not be accepted.

Dated: December 21, 2015

Kecia Harper-Ihem
Clerk to the Board of Supervisors
By: Cecilia Gil, Board Assistant

Palo Verde Valley Times

www.paloverdevalleytimes.com
(760) 922-3181 x-6204

BILLING PERIOD	ADVERTISER/CLIENT NAME
12/01/15 - 12/31/15	Riv Co Board of Supervisors

TOTAL AMOUNT DUE	* UNAPPLIED AMOUNT	TERMS OF PAYMENT
467.34		DUE UPON RECEIPT

CURRENT NET AMOUNT DUE	30 DAYS	60 DAYS	90 DAYS
467.34	.00	.00	.00

INVOICE AND STATEMENT

PAGE #	BILLING DATE	BILLED ACCOUNT NAME AND ADDRESS	REMITTANCE ADDRESS
1	12/31/15	Clerk, Board of Supervisors Co Admin Cntr PO BOX 1147 RIVERSIDE CA 92502-1147	PALO VERDE VALLEY TIMES, INC. QUARTZSITE TIMES 153 S. BROADWAY P.O. BOX 1159 BLYTHE, CA 92225
BILLED ACCOUNT NUMBER			
34758			
ADV/CLIENT NUMBER			

PLEASE DETACH AND RETURN UPPER PORTION WITH YOUR REMITTANCE

DATE	NEWSPAPER REFERENCE	DESCRIPTION-OTHER COMMENTS/CHARGES	SAU SIZE BILLED UNITS	TIMES RUN RATE	GROSS/NET AMOUNT
11/30		BALANCE FORWARD			0.00
	PUBLICATION:	Palo Verde Valley Times - Full Zon			
12/23	711537	NOTICE INVITING BIDS The County of River 0050 431574	1x37.21 37.208I	1	233.67
12/30	711537	NOTICE INVITING BIDS The County of River 0050 431574	1x37.21 37.208I	1	233.67
		Publication Totals: $467.34			

RECEIVED RIVERSIDE COUNTY
CLERK/BOARD OF SUPERVISORS
2016 JAN 14 AM 11:40

Parks
13-1C of 12/08/15

STATEMENT OF ACCOUNT **AGING OF PAST DUE AMOUNTS** *** UNAPPLIED AMOUNTS ARE INCLUDED IN TOTAL AMOUNT DUE**

CURRENT NET AMOUNT DUE	30 DAYS	60 DAYS	OVER 90 DAYS	*UNAPPLIED AMT	TOTAL AMOUNT DUE
467.34	.00	.00	.00		467.34

PALO VERDE VALLEY TIMES - QUARTZSITE TIMES

STATEMENT#	ADVERTISER INFORMATION			
	BILLING PERIOD	ACCOUNT NUMBER	ADV/CLIENT#	ADVERTISER/CLIENT NAME
34758	12/01/15 - 12/31/15	34758		Riv Co Board of Supervisors

ROOF OF PUBLICATION
(2015.2 C.C.P.)

TE OF CALIFORNIA,

UNTY OF RIVERSIDE

a citizen of the United States and a resident e County Aforesaid; I am over the age of een years, and not a party to or interested in bove-entitled matter. I am the principal clerk e printer of the

Palo Verde Valley Times

wspaper of general circulation, printed

published **BI-WEEKLY**

e **CITY OF BLYTHE**

UNTY OF RIVERSIDE, and which news- r has been adjudged a newspaper of general lation by the Superior
t of the **COUNTY OF RIVERSIDE**,

of California, under the date of JUNE 20, , CASE NUMBER 54744; that the notice, of h the annexed has a printed copy (set in type smaller than nonpareil) has been published in regular and entire issue of said newspaper not in any supplement thereof on the wing dates, to-wit;

o.: Dec. 23, 30, 2015

tify (or declare) under penalty of perjury the foregoing is true and correct.

TED AT BLYTHE, CALIFORNIA 30, 2015

ature: Carolyn Kribbs

Carolyn Kribbs ~ *Classified Legal Clerk*

Palo Verde Valley Times

153 S. Broadway, Blythe, California 92225
P.O. Box 1159, Blythe, California 92226

This space is for County Clerk's Filing Stamp

PROOF OF PUBLICATION

RIVERSIDE COUNTY BOARD OF SUPERVISORS
NOTICE OF PUBLIC HEARING

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Pub:, Dec.23, 30, 2015