

DIVISION FIVE
SPECIAL PROVISIONS & TECHNICAL SPECIFICATIONS
FOR
TREASURE ISLAND MAIN REPLACEMENTS
PROJECT

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SECTION 500. DESCRIPTION OF WORK

The Contractor shall furnish, in accordance with the Soquel Creek Water District (SCWD) Standard Specifications and Standard Plans, these Special Provisions, and the Contract Documents, all labor, materials, tools, and equipment and perform all work required in:

- Installation of two thousand seven hundred seventy (2,770) \pm lineal feet (LF) of 6-inch PVC C900 Class 200 water main on Creek Dr. from Glen Dr. to the end of Creek Dr., Glen Dr. from Creek Dr. to Creek Dr., Forest Dr., from Spreckles Dr. to the end of Forest Dr., Spreckles Dr. from Treasure Island Ave. to Claus Ct., Claus Ct from Spreckles Dr. to the end of Claus Ct., and Treasure Island Ave, from Aptos Beach Dr. to the end of Treasure Island Ave.
- Replacement of sixty five (65) existing standard water services.
- Reconnection of three (3) existing standard water services.
- Installation of three (3) 1" air & vacuum release valves.
- Reconnection of three (3) existing 2-inch combination domestic water and fire services from the abandoned main to the new water main.
- Installation of five (5) 6-inch James Jones 3740 Steamer Fire Hydrants and all related valves and appurtenances.
- Tie-in to existing 6-inch AC water main at the intersection of Creek Dr. and Glen Dr. (South end)
- Tie-in to existing 6-inch AC water main at the intersection of Creek Dr. and Glen Dr. (North end)
- Tie-in to existing 6-inch AC water main at the intersection of Forest Dr. and Spreckles Dr.
- Tie-in to existing 8-inch AC water main at the intersection of Spreckles Dr. and Treasure Island Ave.
- Tie-in to existing 8-inch AC water main at the intersection of Treasure Island Ave. and Aptos Beach Dr.
- Tie-in to existing 4-inch AC water main at the intersection of Treasure Island Ave. and Aptos Beach Dr.
- Installation of four (4) Chlorination Taps.
- Application of twelve thousand (12,000) \pm square feet (SF) road width Type II Slurry Seal per Cal-Trans Standard Specifications, Section 37-2.
- All other incidental work.

The work site is located in Aptos, Santa Cruz County, CA.

SECTION 501. SPECIFICATIONS & PLANS

The Contractor shall perform the work specified herein in accordance with the SCWD Standard Specifications and Standard Plans adopted by the Board of Directors on August 2, 1994, Standard Specifications and Standard Plans of the California Department of Transportation and Standard Specifications & Standard Plans of the County of Santa Cruz, California.

SCWD Standard Specifications and Standard Plans are available for purchase at the SCWD Office for an additional \$25 per set. (For more information, please call 831-475-8500.)

In case of conflict between the SCWD Standard Specifications and Standard Plans and these special provisions, the special provisions shall take precedence and be used in lieu of such conflicting portions.

SECTION 502. CHECKLIST FOR BIDDERS

- Bid Opening is scheduled for October 28, 2003 at 2:00 PM in the SCWD Board Room, 5180 Soquel Drive, Soquel, CA 95073.
- **DO NOT REMOVE BID DOCUMENTS FROM THESE BOUND SPECIFICATIONS.** Unbound bid documents will result in immediate disqualification.
- **SIGN & INCLUDE ALL ADDENDUM(S) WITH THE BID DOCUMENTS.** Bid Documents with missing addendums will result in immediate disqualification.
- Include a bidder's bond, certified check, or cashier's check for the amount equal to 10% of the bid amount.
- Complete and Fill-Out the Yellow Sheets and Proposal in the Bid Documents. The lowest competitive bidder shall complete the green sheets after the project has been awarded.

If you have any questions, please contact the Engineering Department at 831-475-8500.

SECTION 503. BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES

It is estimated that a maximum of 30 days shall pass from the date

sealed bids are opened until the "Notice to Proceed" is issued.

The Contractor shall return the executed contract accompanied by bonds and insurance certificates following the award of the contract. The District shall issue a letter and Purchase Order authorizing the Contractor to begin construction. The Contractor shall begin work per the Start Date set on the "Notice to Proceed," unless the District has approved a time extension. The District may delay the start of work due to such factors as inclement weather, material availability, and other unforeseen factors.

SECTION 503.1 CONTRACT TIME OF COMPLETION

Contract Time of Completion shall be **55-working** days following the effective date of the Notice to Proceed.

The Contractor shall not perform work before 8:00 AM or after 5:00 PM each workday except for emergencies as defined in the SCWD Standard Specifications and Standard Plans. The Contractor shall not work on Saturdays, Sundays or holidays. For the purposes of this section the word "work" shall mean all noise producing activities including but not limited to starting of trucks or equipment, haulage, erection, construction, demolition, and transiting the access roads.

SECTION 503.2 LIQUIDATED DAMAGES

The District shall enforce Liquidated Damages per Section 108.09, "Assessment of Damages for Delay" of SCWD Standard Specifications if the Contractor fails to complete the in the time specified herewith.

SCHEDULE OF LIQUIDATED DAMAGES		
ORIGINAL AMOUNT OF CONTRACT		PER DIEM AMOUNT OF LIQUIDATED DAMAGES
FOR MORE THAN	UP TO AND INCLUDING	
\$0.00	\$100,000.00	\$250.00
\$100,000.00	\$500,000.00	\$500.00
\$500,000.00	\$1,000,000.00	\$750.00
\$1,000,000.00	\$2,000,000.00	\$1,000.00
OVER \$2,000,000.00		AS SPECIFIED

The Contractor should refer to Division One, Sections 101-108, "General Conditions," of the SCWD Specifications for additional provisions.

SECTION 503.3 PRECONSTRUCTION CONFERENCE

The Contractor shall meet with the District at the District Office following award of contract, but prior to commencement of site work. The

Contractor shall furnish to the District at the preconstruction meeting the following items:

- A list of names, titles, addresses and telephone numbers of the Contractor's personnel related to the project. Emergency and after-hours telephone numbers are to be included.
- A construction schedule setting forth the sequence in which construction will proceed. The schedule shall be a time-scale critical path type. Refer to Section 106.06, "Schedule" of SCWD Standard Specifications.
- Material submittals (5 copies minimum) per Section 107.10, "Submittals" of SCWD Standard Specifications.
- A Traffic Control Plan per Section 203, "Traffic Control" of SCWD Standard Specifications and these Special Provisions.
- A general notice describing the construction project and the expected impact on nearby residences. The Contractor shall also outline the Contractors' willingness to minimize inconveniences to local residences. The Contractor shall deliver (not mail) the notice to local businesses and residents in the area 5 days prior to the Start of Construction. The Contractor shall include on the notice the Contractor's telephone number and the contact person's name. The Contractor shall submit the notice to the District for approval prior to distribution.

SECTION 503.4 PUBLIC MEETING

The Contractor shall, if requested by the District, attend a public meeting prior to the start of construction. The time commitment for the public meeting shall be no more than 2 hours.

SECTION 503.5 INSURANCE REQUIREMENTS

The Contractor shall provide and maintain the following commercial general liability and automobile liability insurance:

Coverage

Coverage for commercial general liability and automobile liability insurance shall be at least as broad as the following:

1. Insurance Services Office (ISO) Commercial General Liability Coverage (Occurrence Form CG 0001)
2. Insurance Services Office (ISO) Business Auto Coverage (Form CA 0001), covering Symbol 1 (any auto)

Limits

The Contractor shall maintain limits no less than the following:

1. General Liability - One million dollars (\$1,000,000) per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit or products-completed operations aggregate limit is used, either the general aggregate limit shall apply separately to the project/location (with the ISO CG 2503, or ISO CG 2504, or insurer's equivalent endorsement provided to the Soquel Creek Water District) or the general aggregate limit and products-completed operations aggregate limit shall be twice the required occurrence limit.
2. Automobile Liability - One million dollars (\$1,000,000) for bodily injury and property damage each accident limit.

Required Provisions

The general liability and automobile liability policies are to contain, or be endorsed to contain, the following provisions:

1. The Soquel Creek Water District, its directors, officers, employees, and authorized volunteers are to be given insured status (via ISO endorsement CG 2010, CG 2033, or insurer's equivalent for general liability coverage) as respects: liability arising out of activities performed by or on behalf of the Contractors; products and completed operations of the Contractor; premises owned, occupied or used by the Contractor; and automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the Soquel Creek Water District, its directors, officers, employees, or authorized volunteers.
2. For any claims related to this project, the Contractor's insurance shall be primary insurance as respects the Soquel Creek Water District, its directors, officers, employees, or authorized volunteers. Any insurance, self-insurance, or other coverage maintained by the Soquel Creek Water District, its directors, officers, employees, or authorized volunteers shall not contribute to it.
3. Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to the Soquel Creek Water District, its directors, officers, employees, or authorized volunteers.

4. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
5. Each insurance policy required by this agreement shall state, or be endorsed to state, that the insurance carrier or the Contractor shall not cancel coverage, except after thirty (30) days (10 days for non-payment of premium) prior written notice by U.S. mail has been given to the Soquel Creek Water District.

Such liability insurance shall indemnify the Contractor and his/her sub-contractors against loss from liability imposed by law upon, or assumed under contract by, the Contractor or his/her sub-contractors for damages on account of such bodily injury (including death), property damage, personal injury, completed operations, and products liability.

The general liability policy shall cover bodily injury and property damage liability, owned and non-owned equipment, blanket contractual liability, completed operations liability, explosion, collapse, underground excavation, and removal of lateral support.

The automobile liability policy shall cover all owned, non-owned, and hired automobiles.

All of the insurance shall be provided on policy forms and through companies satisfactory to the Soquel Creek Water District.

Deductibles and Self-Insured Retentions

Any deductible or self-insured retention must be declared to and approved by the Soquel Creek Water District. At the option of the Soquel Creek Water District, the insurer shall either reduce or eliminate such deductibles or self-insured retentions.

Acceptability of Insurers

Insurance is to be placed with insurers having a current A.M. Best rating of no less than A:VII or equivalent or as otherwise approved by the Soquel Creek Water District.

Workers' Compensation and Employer's Liability Insurance

The Contractor and all sub-contractors shall insure (or be a qualified self-insured) under the applicable laws relating to workers' compensation insurance, all of their employees working on or about the construction site, in accordance with the "Workers' Compensation and Insurance Act", Division IV of the Labor Code of the State of California and any Acts amendatory thereof.

The Contractor shall provide employer's liability insurance with limits of no less than \$1,000,000 each accident, \$1,000,000 disease policy limit, and \$1,000,000 disease each employee.

Responsibility for Work

Until the completion and final acceptance by the Soquel Creek Water District of all the work under and implied by this agreement, the work shall be under the Contractor's responsible care and charge. The Contractor shall rebuild, repair, restore and make good all injuries, damages, re-erections, and repairs occasioned or rendered necessary by causes of any nature whatsoever.

The Contractor shall provide and maintain builder's risk insurance (or installation floater) covering all risks of direct physical loss, damage or destruction to the work in the amount specified in the General Conditions, to insure against such losses until final acceptance of the work by the Soquel Creek Water District. Such insurance shall insure at least against the perils of fire and extended coverage, theft, vandalism and malicious mischief, and collapse. The Soquel Creek Water District, its directors, officers, employees, and authorized volunteers shall be named insured on any such policy. The making of progress payments to the Contractor shall not be construed as creating an insurable interest by or for the Soquel Creek Water District or be construed as relieving the Contractor or his/her subcontractors of responsibility for loss from any direct physical loss, damage or destruction occurring prior to final acceptance of the work by the Soquel Creek Water District.

The Contractor shall waive all rights of subrogation against the Soquel Creek Water District, its directors, officers, employees, or authorized volunteers.

Evidences of Insurance

Prior to execution of the agreement, the Contractor shall file with the Soquel Creek Water District a certificate of insurance (Acord Form 25-S or equivalent) signed by the insurer's representative evidencing the coverage required by this agreement. Such evidence shall include an additional insured endorsement signed by the insurer's representative and evidence of waiver of rights of subrogation against the Soquel Creek Water District (if builder's risk insurance is applicable). Such evidence shall also include confirmation that coverage includes or has been modified to include Required Provisions 1-5.

The Contractor shall, upon demand of the Soquel Creek Water District, deliver to the Soquel Creek Water District such policy or policies of insurance and the receipts for payment of premiums thereon.

Continuation of Coverage

If any of the required coverages expire during the term of this agreement, the Contractor shall deliver the renewal certificate(s) including the general liability additional insured endorsement and evidence of waiver of rights of

subrogation against the Soquel Creek Water District (if builder's risk insurance is applicable) to the Soquel Creek Water District at least ten (10) days prior to the expiration date.

Sub-Contractors

In the event that the Contractor employs other contractors (sub-contractors) as part of the work covered by this agreement, it shall be the Contractor's responsibility to require and confirm that each sub-contractor meets the minimum insurance requirements specified above.

SECTION 503.6 HOLD HARMLESS AND INDEMNIFICATION

To the fullest extent permitted by law, Contractor shall indemnify and hold harmless and defend Soquel Creek Water District, its directors, officers, employees, or authorized volunteers, and each of them from and against:

- a. Any and all claims, demands, causes of action, damages, costs, expenses, losses or liabilities, in law or in equity, of every kind or nature whatsoever for, but not limited to, injury to or death of any person including Soquel Creek Water District and/or Contractor, or any directors, officers, employees, or authorized volunteers of Soquel Creek Water District or Contractor, and damages to or destruction of property of any person, including but not limited to, Soquel Creek Water District and/or Contractor or their directors, officers, employees, or authorized volunteers, arising out of or in any manner directly or indirectly connected with the work to be performed under this agreement, however caused, regardless of any negligence of Soquel Creek Water District or its directors, officers, employees, or authorized volunteers, except the sole negligence or willful misconduct or active negligence of Soquel Creek Water District or its directors, officers, employees, or authorized volunteers;
- b. Any and all actions, proceedings, damages, costs, expenses, penalties or liabilities, in law or equity, of every kind or nature whatsoever, arising out of, resulting from, or on account of the violation of any governmental law or regulation, compliance with which is the responsibility of Contractor;
- c. Any and all losses, expenses, damages (including damages to the work itself), attorneys' fees, and other costs, including all costs of defense, which any of them may incur with respect to the failure, neglect, or refusal of Contractor to faithfully perform the work and all of the Contractor's obligations under the agreement. Such costs, expenses, and damages shall include all costs, including attorneys' fees, incurred by the indemnified parties in any lawsuit to which they are a party.

Contractor shall defend, at Contractor's own cost, expense and risk, any and all such aforesaid suits, actions, or other legal proceedings of every kind that may be brought or instituted against Soquel Creek Water District or its directors, officers, employees, or authorized volunteers.

Contractor shall pay and satisfy any judgment, award or decree that may be rendered against Soquel Creek Water District or its directors, officers, employees, or authorized volunteers, in any and all such suits, actions, or other legal proceedings.

Contractor shall reimburse Soquel Creek Water District or its directors, officers, employees, or authorized volunteers, for any and all legal expenses and costs incurred by each of them in connection therewith or in enforcing the indemnity herein provided.

Contractor's obligation to indemnify shall not be restricted to insurance proceeds, if any, received by the Soquel Creek Water District, or its directors, officers, employees, or authorized volunteers.

SECTION 504. GENERAL CONSTRUCTION

SECTION 504.1 REFERENCED SPECIFICATIONS

The Contractor shall perform the work specified herein in accordance with Soquel Creek Water District Standard Specifications and Plans, adopted by the Board of Directors on August 2, 1994, periodic updates that have been approved by the Chief Engineer and distributed to Specification holders, applicable provisions of the State of California Standard Specifications (CALTRANS) current edition, and the current edition of the County of Santa Cruz Design Criteria Manual when applicable.

SECTION 504.2 ORDER OF WORK

The District reserves the right to determine, in sequential order of priority, the streets in which the Contractor shall replace the water mains.

SECTION 504.3 EXISTING CONDITIONS

Existing utilities, structures and natural features, where known, have been indicated at their approximate locations on the Contract Plans. The locations of such features are intended only as an aid to the Contractor and in no way relieves him of the responsibility of determining and verifying the size and locations of all potential conflicts which might be encountered in the performance of the work, whether indicated on the plans or not.

The Contractor shall restore drainage patterns and facilities to pre-existing conditions.

SECTION 504.4 COUNTY REQUIREMENTS

The District is in the process of securing a County Encroachment Permit. The Contractor shall review said permits prior to construction and shall comply with all requirements as stated in the permits. The District shall pay all fees associated with necessary permits for this project.

The District may not accept the contract work until the Contractor has submitted a written statement (specifically referencing relative compaction and road surface restoration requirements) issued by the County of Santa Cruz, advising that the Contractor has complied with all County requirements and that the completed work is acceptable.

SECTION 504.5 TRAFFIC CONTROL

Description

The Contractor shall provide the District with a traffic control plan 5 days prior to the start of construction. The District and County of Santa Cruz shall approve the plan prior to beginning construction. The Contractor shall provide a plan in compliance with the State of California, Department of Transportation “Manual of Traffic Controls for Construction and Maintenance Work Zones,” latest edition. The Contractor shall ensure the plan be in general conformance with the provisions of Standard Plan No. T12, “Traffic Control System for Lane Closure on Multilane Conventional Highways” and/or Standard Plan No. T13, “Traffic Control System for Lane Closure on Two Lane Conventional Highways” of the Cal-Trans Standard Plans.

The Contractor shall install “Construction Zone, Speed Limit 15 MPH” signs on semi-permanent posts prior to construction along the proposed construction area. The Contractor shall maintain the signs throughout construction of the project and shall not remove the signs until directed by the District. The Contractor shall cover other speed limit signs along the pipeline alignment. The Contractor shall ensure the covers remain until the “Construction Zone, Speed Limit 15 MPH” signs are removed.

The Contractor shall install informational warning signs and project signs on streets affected by the main installation and shall remain in place during the entire construction period. The Contractor shall maintain sign security and reinstall the signs if they fall or are knocked over.

The Contractor shall install the following signage along the pipeline alignment:

- Two (2) 30"x30" (C23) orange-background signs stating "ROAD WORK AHEAD."
- Two (2) 42"x18" (C14) rectangular orange-background signs stating "END ROAD WORK."

The Contractor shall be responsible for furnishing, mounting, installing, and maintaining all signage during duration of the project. The District Inspector shall determine the exact sign locations in the field. The Contractor shall install signs prior to the start of construction, and ensure the signs remain posted during the entire duration of the project.

The Contractor shall inspect traffic control signs, barricades, and delineators and shall maintain them in accordance with the approved traffic control plan throughout each workday.

The Contractor shall post "No Parking" signs as required 72 hours prior to construction at 50' maximum spacing. The Contractor shall check and maintain said signs on a daily basis. The Contractor shall ensure "No Parking" signs clearly state the enforced dates and shall update them as necessary.

Measurement and Payment

The Contractor shall include, in the contract unit or lump sum prices for other items of work, all costs associated with "Traffic Control." The District will not consider any additional compensation.

SECTION 504.6 DUST SUPPRESSION

The Contractor shall implement a dust suppression plan if requested by the District Engineer. If a mechanical broom sweeper is used, it shall be equipped with water nozzles to minimize dust. At the end of each workday, the Contractor shall clean construction debris from the roadway.

Measurement and Payment

The Contractor shall include, in the contract unit or lump sum prices for other items of work, all costs associated with "Dust Suppression." The District will not consider any additional compensation.

SECTION 504.7 PROTECTION OF PROPERTY & MATERIAL

Description

The Contractor shall contact each property and business owner having access along project corridor with a District approved letter (submitted to and approved by the District) and shall keep area residents informed of the plan of operation throughout the course of this contract.

The Contractor shall protect the road surface and shall restore said surface to an equivalent or better condition upon completion of all work. The Contractor shall make any interim repairs or maintenance that may be requested by the District Engineer or Inspector during the course of work.

The Contractor shall replace traffic striping and pavement markings destroyed or damaged during construction with temporary striping or markings acceptable to the District. The Contractor shall install temporary striping prior to reopening streets to traffic.

The Contractor shall permanently restore all traffic striping and pavement markings within seven days of final paving at the District's direction.

The Contractor shall protect in place or remove and replace all existing utilities and public or private improvements (whether they are specifically noted on the Contract Plans or not) including but not limited to all berms, curbs, gutters, walkways, sidewalks, driveways, trail-ways, storm drains, landscaping materials, landscape irrigation, landscape electrical systems, walls and fences in place. The Contractor shall correct or replace any damaged utilities or improvements as part of the contract work. No additional compensation will be considered.

The Contractor shall not disturb existing survey monuments or benchmarks. The Contractor shall contact a registered civil engineer or land surveyor to remove or replace monuments. The Contractor shall ensure monument ties be established prior to removal.

The Contractor shall replace complete concrete panels or between existing concrete joints during replacement of any concrete work. The Contractor shall replace colored concrete with colored concrete to match when concrete is removed.

Measurement and Payment

The Contractor shall include, in the contract unit or lump sum prices for other items of work, all costs associated with "Protection of Property and Materials." The District will not consider any additional compensation.

SECTION 504.8 SAFETY PLAN

Description

In carrying out his/her work, the Contractor shall at all times exercise all necessary precautions for the safety of employees appropriate to the nature of the work and the conditions under which the work is to be performed, and be in compliance with all applicable federal, state and local

statutory and regulatory requirements including California Department of Industrial Relations (Cal/OSHA) regulations; and the U.S. Department of Transportation Omnibus Transportation Employee Testing Act. The Contractor shall prepare a Safety Plan in accordance with the provisions of Section 202.03.02, "Safety Plan" of SCWD Standard Specifications. The Contractor shall include in the Safety Plan provisions for handling hazardous and toxic materials, and the protection of all persons having access, authorized or not, to the work site. Such plan shall be submitted to and accepted by SCWD prior to starting excavation.

Measurement and Payment

The Contractor shall include, in the contract unit or lump sum prices for other items of work, all costs associated with "Safety Plan." The District will not consider any additional compensation.

SECTION 504.9 HAZARDOUS MATERIAL HANDLING

Description

The Contractor shall be responsible for all safety issues related to this work including but not limited to site security, ventilation, lifesaving equipment, product security, and fire safety.

The Contractor shall be responsible for all hazardous and toxic material handling requirements of California Occupational Safety and Health Act (Cal-OSHA), the California Department of Environmental Quality, the United States Department of Environmental Protection, and local and state fire and health agencies. These provisions apply to the handling and disposal of all products used or created by the Contractor.

The Contractor shall provide a lockable storage facility on site for all hazardous materials.

Measurement and Payment

The Contractor shall include, in the contract unit or lump sum prices for other items of work, all costs associated with "Hazardous Material Handling." The District will not consider any additional compensation.

SECTION 504.10 UTILITIES

Description

Existing utility locations shown on Contract Plans are based on field survey and records furnished by utility companies. Where underground main conductors or conduits such as water, gas, sewer, telephone, electric power, or cable television are shown on the Contract Plans, the Contractor shall

assume that a service lateral from each conductor or conduit extends to every parcel or property whether or not a service lateral is shown.

The Contractor shall verify sewer invert elevations prior to the start of construction. In locations where the water main crosses over the existing sewer main, the Contractor shall ensure a minimum vertical clearance of one foot exists between pipes.

The Contractor shall contact Underground Service Alert and nonmember companies or utilities at least two (2) working days prior to excavating any segment of the work. The Contractor shall be prepared to produce USA ticket number at the request of the District.

The Contractor shall provide utility offsets after the first marking has occurred. The Contractor shall deliver one copy of offset markings to the District no later than seven days after first marking occurred.

The Contractor shall excavate, expose, and determine ("Pothole") the location and depth of each potential interference at least two (2) days in advance, or a minimum of 500 feet ahead of trenching. Changes or delays caused by the Contractor's failure to perform "Potholing" and interference location work shall not be eligible for extra work, compensation, or time extension.

The Contractor shall immediately notify the District Engineer in writing, upon learning of the existence or location of any utility facility omitted from or shown incorrectly on the Contract Plans, or improperly marked or otherwise indicated. The Contractor shall provide full details as to depth, location, size, and function of the utility.

The Contractor shall not interrupt or disturb any utility facility without authority from the utility or order from the District. The Contractor shall furnish and place the necessary protection around the utility when protection is called for on the Contract Plans, visible to the Contractor, or marked as such. The Contractor shall install the utility protection at no additional expense to the District.

The proposed pipeline will be constructed adjacent to existing utilities including gas lines, water lines, sewer lines, electrical conduit, telephone conduit, and TV cable. The District has no information about the depth or compaction of trench backfill for said utilities. The Contractor shall remove and replace the failing trench backfill, compact the new backfill to 95% Relative Compaction, remove and replace any asphalt concrete pavement and other existing improvements, as required at no additional expense to the District.

The Contractor shall construct pipelines to avoid existing utilities. The Contractor shall increase cover to a maximum of 60 inches for the distance required to eliminate high spots if the minimum pipeline cover conflicts with an existing utility. The Contractor shall notify the District Engineer in writing within two (2) days to schedule a meeting and discuss the extra cost necessary to install an air relief valve when high spots are unavoidable.

SECTION 505. TRENCHING, BACKFILL & PAVING

SECTION 505.1 GENERAL

The Contractor shall perform trenching, backfill & paving in compliance with the SCWD Standard Plans S-14, S-15, & S-22, the current edition of the County of Santa Cruz Standards and Specifications, and the project specific County of Santa Cruz Department of Public Works Encroachment Permit when work is performed within the county right-of-way.

In the event that archaeological remains are found during excavation, the Contractor shall stop excavation in that area and contact the District Inspector or the District Engineer immediately. In the event that human remains are discovered, the Contractor shall stop excavation at that location and mobilize to a different portion of the project. The District shall then notify the County Coroner at (831) 454-2520 and treat any remains according to applicable State Law, including California Health and Safety Code Section 7050.5 and Public Resources Code Section 5097. If there is doubt as to whether the remains are human or not, the District should first contact the Sheriff Dispatch office at (831) 471-1121 and request a Patrol Deputy be dispatched to the site to assess the remains. If needed, the Patrol Deputy will contact the County Coroner.

The Contractor shall install 4” minimum sand bedding beneath the pipe and 12” minimum sand cover above the pipe on all trenches. The Contractor shall install bedding as stated in Section 309.05.03 “Bedding” of SCWD Standard Specifications. The Contractor shall install 2-sack sand/cement slurry backfill for cross trenches.

The Contractor shall install 4” minimum sand bedding beneath the pipe and 12” minimum sand cover above the pipe on longitudinal trenches. The Contractor shall install sand or crushed aggregate backfill compacted to 95% Relative Compaction (RC) over the sand envelope. The Contractor should refer to SCWD Standard Plan S-14, “Longitudinal Trench Sand Backfill” for a graphical illustration.

The Contractor shall remove unacceptable trench backfill material and discard it at a legal disposal site at no additional expense to the District.

SECTION 505.2 TRENCHING

The Contractor shall perform pipeline excavations using open-cut trenches, unless otherwise shown on the Contract Plans or directed by the District. The Contractor shall install the minimum specified pipe cover and trench width as follows:

PIPE SIZE	MINIMUM PIPE COVER	TRENCH WIDTH
6" dia. pipe	36 inches	18 inches

The Contractor shall saw-cut the pavement to produce a straight vertical face. Jackhammers or wheel cutters will not be allowed. The Contractor shall cut concrete to the nearest score mark or expansion joint if trenching and/or installation of piping and appurtenances require removal of existing concrete.

The Contractor shall backfill trenches at the end of each day. The Contractor may use heavy steel plates to cover trenches if the District Inspector has granted prior approval. The Contractor shall adequately brace the steel plates and apply cold mix at plate joints and edges. The Contractor shall shim plate edges, if necessary, to prevent plates from rocking and shifting with vehicular traffic. The Contractor shall be responsible for providing plates capable of supporting vehicular traffic and with dimensions conforming to OSHA requirements.

SECTION 505.3 BACKFILL

The Contractor is advised that rock or unacceptable backfill material may be encountered during trenching operations. The Contractor shall furnish and install suitable bedding and backfill material in accordance with these contract documents when such material is encountered. The Contractor shall furnish and install bedding and backfill material at no additional expense to the District.

Sand Envelope

The Contractor shall install a sand envelope around the pipe per SCWD Standard Plans S-14 and S-15. The envelope shall include a minimum 4-inches of sand bedding with 12-inches of sand cover compacted to 95% RC. The Contractor shall compact backfill material to not less than 90% RC when the trench is located outside a paved area or a road right-of-way.

Lateral Trench Backfill

The Contractor shall install 2-sack sand/cement slurry over a 12-inch sand envelope while performing work on lateral trenches or when specified on the Contract Plans. The Contractor shall install backfill material in

accordance with SCWD Standard Plan S-15, "Trench Backfill-Lateral Trenches-Sand/Cement Slurry."

Longitudinal Trench Backfill

The Contractor shall install sand or crushed aggregate over a 12-inch sand envelope compacted to 95% RC while performing work on longitudinal trenches. The Contractor shall install backfill material in accordance with SCWD Standard Plan S-14, "Longitudinal Trench Sand Backfill" and Section 309.05.03, "Sand and Crushed Aggregate Backfill."

Compaction Testing

The District shall administer all compaction testing. The Contractor shall assist the District during compaction testing at no additional expense to the District.

If additional compaction testing is required due to failing tests, the additional testing expense will be charged to the Contractor. If the Contractor requests testing of native material, additional testing expenses will be charged to the Contractor. A soils engineer shall prepare the compaction report.

SECTION 505.4 PAVING

The Contractor shall refer to Section 310, "Paving" of SCWD Specifications and shall also comply with the County of Santa Cruz Department of Public Works Encroachment Permit. Pavement replacement shall be a minimum of 3" Type B asphalt concrete over 9" Class II aggregate base when work is performed within the County maintained right-of-way. Cross trench hot mix patch overlap shall be 36-inch minimum as indicated by the County of Santa Cruz Cross Trench Backfill Detail, Figure EP-2 (Rev 4/02) included in the appendix of these special provisions. Longitudinal trench hot mix patch overlap shall be 12-inch minimum as indicated by the County of Santa Cruz Longitudinal Trench Backfill Detail, Figure EP-1 (Rev 4/03) included in the appendix of these special provisions. Pavement replacement outside the County maintained right-of-way shall be in accordance with Standard Plan S-15.

The Contractor shall restore cross trenches and longitudinal trenches in accordance with the County of Santa Cruz Department of Public Works Figures EP-1 & EP-2, attached herein and made part of these Special Provisions, when construction occurs on county maintained road right-of-ways.

The Contractor is hereby notified that all of Spreckles Drive and Treasure Island Ave. between Spreckles and Aptos Beach Dr. are county maintained roads, and figures EP-1 & EP-2 shall apply.

The Contractor should refer to Figure EP-1 and Figure EP-2 of the County of Santa Cruz Specifications for minimum pavement T-Section distances for paving within the county maintained road right-of-way.

Fog Seal

The Contractor shall apply a fog seal in accordance with Section 311, “Fog Seal” of the Soquel Creek Water District Standard Specifications to all new paving outside the county maintained right-of-way. The Contractor shall apply fog seal SS-1 oil at the rate of 0.05 gallons per square yard. The extents of the fog seal shall be from outer most edges of repaved area.

Road Striping

The Contractor shall permanently restore all traffic striping and pavement markings destroyed or damaged during construction at the direction of the District. The Contractor should refer to Section 504, “Protection of Property and Material” of these Special Provisions.

Measurement and Payment

The Contractor shall include, in the contract unit or lump sum prices for other items of work, all costs associated with “Trenching, Backfill and Paving.” The District will not consider any additional compensation.

SECTION 506. SLURRY SEAL

General

The Contractor shall apply a Type II Slurry Seal per Section 37-2, “Slurry Seal” of the Cal-Trans Standard Specifications. Slurry Seal shall cover the repaved trench section and the adjacent street pavement resulting in an entire road width slurry seal along all of Spreckles Dr. and Treasure Island Ave. as shown on the contract plans. The Contractor shall restore all existing traffic striping damaged or removed during construction.

Measurement and Payment

The Contractor shall include, in the contract unit or lump sum prices for “Type II Slurry Seal,” all costs associated with “Application of 12,000 ± square feet entire road width Cal Trans Type II Slurry Seal.” Payment for slurry seal application shall include all costs required in restoring roadway to existing condition. The District will not consider any additional compensation.

SECTION 507. CONCRETE WORK

Description

The Contractor shall refer to Section 308, “Concrete Structures” of SCWD Specifications for direction of repaving trench areas within existing concrete surfaces.

Measurement and Payment

The Contractor shall include, in the contract unit or lump sum prices for other items of work, all costs associated with “Concrete Work.” The District will not consider any additional compensation.

SECTION 508. DISTRIBUTION PIPING AND APPURTENANCES

SECTION 508.1 GENERAL

The Contractor shall supply materials in accordance with the published Standard Specifications and Standard Plans of the Soquel Creek Water District and the American Water Works Association (AWWA).

SECTION 508.2 PIPING

The Contractor shall install 6-inch diameter C900 Poly Vinyl Chloride (PVC) pipe, pressure class 200 as distribution pipeline material. The Contractor shall provide material conforming to the requirements of AWWA C900 or substitute approved by the District Engineer in writing.

SECTION 508.3 FITTINGS

The Contractor shall furnish ductile iron fittings in accordance with AWWA C110 and C153.

SECTION 508.4 THRUST RESTRAINTS

Pipe Restraints

The Contractor shall install restraint harnesses bridging the push-on bell as the thrust restraint for PVC pipe. The Contractor shall use EBAA Iron Megalug[®] Series 1600 or approved substitute subject to prior written approval by the District Engineer.

Fittings

The Contractor shall install Mechanical Joint (MJ) fittings and replace the follower gland with a thrust restraining follower gland assembly. The Contractor shall refer to Section 304, “Thrust Restraint” of SCWD Standard Specifications for District approved materials and installation requirements.

PCC Thrust Blocks

The Contractor shall install Portland Concrete Cement (PCC) thrust blocks only to restrain fittings on existing pipelines. The Contractor shall refer to SCWD Standard Plan S-7, “Thrust Block Details” for graphical illustrations.

SECTION 508.5 INSTALLATION

General

The Contractor shall inspect pipe and accessories, prior to installation, for damage and defects in materials. The Contractor shall reject damaged and defective materials, mark as such, and remove items from the job site at no additional expense to the District.

The Contractor shall perform subsurface exploration regarding existing utility locations/depths and soil conditions. The Contractor shall expose all utilities at locations where proposed improvements are shown to cross, at all proposed connections, and at intervals not to exceed 250 LF along parallel utilities. The Contractor shall perform exploration in advance of construction operations such that the final location of the proposed improvements may be adjusted prior to construction.

The Contractor shall not be eligible for extra work, compensation, or time extensions caused by the Contractor's failure to perform "Potholing" and interference location work.

The Contractor shall use appropriate fittings to adjust for depth conflicts between the proposed main with other existing utilities. In locations where the water main crosses over the existing sewer main, the Contractor shall ensure a minimum vertical clearance of one foot exists between pipes.

The Contractor shall construct pipelines to have a continuous upgrade or downgrade in order to minimize high spots. The Contractor shall install air and vacuum release valves when specified on the Contract Plans.

The Contractor shall perform main line pressure testing prior to connecting to any existing District main unless noted on Contract Plans. The District will not allow water use of any kind until mains, services, and fire hydrants have passed pressure testing and have been chlorinated, flushed, and a bacteriological report has been approved in writing by the District Engineer.

The District shall operate existing valves for the Contractor and under no circumstances shall the Contractor operate existing system valves.

The Contractor shall raise valve boxes, install extensions, and remove disinfection points to allow the District to activate the system.

Locator Wire

The Contractor shall install a minimum of 12-gauge THW or THWN copper locating wire, continuous for the entire length of pipe laid. The

Contractor shall secure the wire to the pipe by tape at intervals not greater than 12 feet. The Contractor shall install the locator wire in accordance with Section 301.05.06, "Locator Wire" of SCWD Standard Specifications.

Bitumastic Coating

The Contractor shall field coat all buried nuts, bolts, flanges, and other exposed ferrous metal with a liberal coat of bitumastic type material.

Restrained Pipe Minimum

The Contractor shall install, as a minimum, 40 LF of restrained pipe on each side of a restrained fitting or joint. Areas that require additional restrained piping will be shown on the Contract Documents or referenced in other sections of these Special Provisions.

SECTION 508.6 AS-BUILT DRAWINGS

General

The Contractor shall provide a complete set of As-Built drawings at project completion. As-Built drawings shall include vertical and horizontal location to the nearest foot. As-Built drawings shall show locations of all valves, reductions, and any deviation from design plans.

Measurement and Payment

The Contractor shall include, in the contract unit or lump sum prices for other items of work, all costs associated with "As-Built Drawings." The District will not consider any additional compensation.

SECTION 508.7 TESTING AND DISINFECTION

Hydrostatic Pressure & Leakage Testing

The Contractor shall refer to Section, 301.05.07, "Hydrostatic Testing" of SCWD Standard Specifications.

The Contractor shall perform pressure testing in compliance with District requirements. The District Inspector shall be present during pressure testing. The Contractor shall notify the District two (2) days in advance of any pressure tests. Test pressure shall be a minimum of 150 psi or 150% of the service pressure for the pipeline, whichever is greater.

The Contractor shall perform all work necessary to locate and repair leaks to allowable levels as stated in Section 301.05.01(a), "Allowable Leakage" of SCWD Standard Specifications. Contractor shall perform repair work at no additional expense to the District. The Contractor shall also correct other defects discovered during such work. Thereafter, the Contractor shall repeat the pressure test until the pipelines meet specified requirements.

Chlorination and Bacteriological Testing

The District shall perform all disinfection procedures. The Contractor shall assist the District as necessary including, but not limited to, providing adequate size piping to the nearest discharge location, labor assistance, and water trucks.

Bacteriological testing shall occur no sooner than 24 hours after pipeline has been flushed of chlorinated water. The District shall take samples. The District laboratory will not accept samples after noon on Thursday of any workweek.

The Contractor shall perform the work necessary to clean the line of any debris or foreign material if the water sample fails the bacteriological test at no additional expense to the District. Thereafter, the Contractor shall provide assistance required for repeated testing, until the pipelines meet specified requirements.

The Contractor shall assist the District in dechlorination of chlorinated water discharged into local streams and storm drains. The District shall furnish all dechlorination equipment and chemicals.

The Contractor shall refer to Section, 301.05.08, "Disinfection" of the SCWD Specifications for further information.

Measurement and Payment

The Contractor shall include, in the contract unit or lump sum prices for "Distribution Piping and Fittings," all costs associated with "Installation of two thousand seven hundred seventy (2,770) ± lineal feet (LF) of 6-inch PVC C900 Class 200 water main on **Creek Drive, Glen Drive, Forest Dr., Spreckles Dr., Claus Ct., and Treasure Island Ave.**," "Installation of two (4) Chlorination Taps," and "Installation of four (4) 2" Permanent Blow-off Assemblies." Payment for pipeline installation shall include all related gate valves, fittings, and appurtenances as shown on the Contract Plans. The District will not consider any additional compensation.

SECTION 509. WATER SERVICES PIPING AND APPURTENANCES

SECTION 509.1 GENERAL

For purposes of this section and those of SCWD Standard Specifications, the following terms shall be defined:

Replacement

REPLACEMENT OF EXISTING DOMESTIC SERVICES shall include but not be limited to, tapping the new water main, installation of new polyethylene (PE) service line, reconnection of meters to the new service line, reconnection of customer plumbing to meter, installation of new meter box, and restoration of the area surrounding the meter box to a condition equal to or better than that prior to start of construction.

The Contractor shall relocate meters located outside the Right-of-Way to the Right-of-Way in accordance with the SCWD Standard Specifications and Standard Plans.

Services replaced shall include bringing the meter to the proper elevation in the meter box and making the necessary adjustments to reconnect the customer's plumbing to the meter.

Reconnection

RECONNECTION OF EXISTING DOMESTIC SERVICES shall include but not be limited to, tapping the new main and connecting the existing service line to the new service line. The Contractor shall install a new 2-inch tapping saddle and 2-inch AWWA Gate Valve when a 2-inch Combination Domestic and Fire Service reconnection is specified.

The Contractor should refer to Section 206.03, "Replace Existing Service" and Section 206.04, "Reconnect Existing Service", and Standard Plans S-3, S-4, S-18, and S-20 of SCWD Standard Specifications and Standard Plans for additional guidelines and materials.

SECTION 509.2 MATERIALS

Service Tubing

The Contractor shall install 1-inch diameter (Copper Tubing Size) PE tubing conforming to AWWA C901 for Pressure Class 200 and Dimension Ratio of 9 as the service pipe from the new main to the customer's water meter when replacing a 1" domestic service with a 5/8" x 3/4" meter or a 1" meter. The Contractor should refer to SCWD Standard Plan S-3 for graphical specifications.

The Contractor shall install 2-inch diameter (Copper Tubing Size) PE tubing conforming to AWWA C901 for Pressure Class 200 and Dimension Ratio of 9 as the service pipe from the new main to the customer's water meter when replacing a 2" fire and domestic combined service with two 5/8" x 3/4" meter. The Contractor should refer to SCWD Standard Plan S-20 for graphical specifications.

Service Piping

The Contractor shall install 2-inch diameter (Copper Tubing Size) PE tubing conforming to AWWA C901 for Pressure Class 200 and Dimension Ratio of 9 as the service pipe from the new main to the customer's water meter when replacing a 2" domestic service. Services larger than 2" in diameter, shall require Ductile Iron or PVC, Class 150 piping. The Contractor should refer to SCWD Standard Plan S-18 and S-20 for graphical specifications.

Customer Piping

The Contractor shall install Schedule 40 PVC Service Piping as the service line between the new meter and the reconnection point to the existing customer service line. The Contractor shall maintain a minimum of 18-inches of cover over the customer service piping.

Fittings

The Contractor shall install a Mueller H-10889 Meter Bushing when a 5/8" x 3/4" meter is installed.

The Contractor shall use fittings that comply with those listed in Section 302, "Service Pipe Materials" of SCWD Standard Specifications.

Meters, Boxes, and Lids

The District shall supply service meters and the Contractor shall install meters. The Contractor shall supply and install high density reinforced concrete Christy B-9 Utility Boxes (or approved equal) with fibrelite FL9D lids (or approved equal) on services with 5/8" x 3/4" meters. Contractor shall supply and install Christy B-16 Utility Boxes (or approved equal) with fibrelite FL16 B-16 lids (or approved equal) on services with 1" meters.

The Contractor shall install a 6-inch crushed rock base and cast iron covers for meter boxes located in shoulder or driveway.

SECTION 509.3 INSTALLATION GUIDELINES

The Contractor shall relocate meters located outside the Right-of Way to within the Right-of-Way or as directed by the District Inspector.

The Contractor shall install a new meter box for each service unless the District Inspector specifies otherwise. The Contractor shall remove and discard existing meter boxes.

The Contractor shall perform Service Installations in accordance with Section 302, "Service Pipe Materials", Section 206.03, "Replace Existing

Service” and Section 206.04, “Reconnect Existing Service” of SCWD Standard Specifications.

The Contractor should refer to the schematic requirements of service installations illustrated on SCWD Standard Plans S-3 and S-4. The Contractor shall be responsible for verifying all meter box service dimensions in the field. The Contractor shall install meter boxes in the sidewalk and replace the concrete sidewalk square from joint-to-joint on streets with a sidewalk.

Measurement and Payment

The Contractor shall include, in the contract unit or lump sum prices for “Water Services-Piping and Appurtenances,” all costs associated with “Replacement of sixty five (65) standard water service connections,” “Reconnection of three (3) domestic service connections from the abandoned main to the new water main,” “Installation of three (3) 1” Air & Vacuum Release Valves,” and “Reconnection of three (3) existing 2-inch combination Domestic and Fire Services from the abandoned main to the new water main.” The District will not consider any additional compensation.

SECTION 510. FIRE HYDRANT INSTALLATIONS

SECTION 510.1 GENERAL

The Contractor shall install 6-inch Steamer fire hydrants as shown on the Contract Plans. The Contractor shall install fire hydrants in conformance with installation requirements listed in Section 307.05, “Fire Hydrants” of SCWD Standard Specifications.

The Contractor shall supply James Jones model J-3740, wet barrel design fire hydrants, in accordance with AWWA C503. The Contractor shall provide bronze protector with a pentagonal nut. Plastic Caps will not be accepted.

The Contractor should refer to Section 307.05, “Fire Hydrants” of SCWD Standard Specifications and Standards S-9 and S-10 for additional installation specifications.

The Contractor shall install traffic barriers made of 4-inch diameter galvanized iron pipe to protect against traffic and break-off conditions when shown on the Contract Plans. Traffic barriers shall be 36 inches in height.

The District Inspector shall field locate fire hydrants and traffic barriers with the Contractor prior to installation.

SECTION 510.2 ABANDONMENT

The Contractor shall abandon existing wharf head fire hydrants as shown on the Contract Plans. Abandonment shall include removal of all existing hydrant materials including but not limited to, the barrel assembly, break away spool, hydrant bury, and any traffic barriers. Abandonment shall be in accordance with Section 206.08.04, "Fire Hydrant Abandonment" of the Soquel Creek Water District Standard Specifications.

Measurement and Payment

The Contractor shall include, in the contract unit or lump sum prices for "Fire Hydrant Installations", all costs associated with "Installation of five (5) new 6-inch James Jones 3740 Steamer Fire Hydrant and all related valves and appurtenances, including traffic bollards." Payment for fire hydrant installation shall include all related gate valves, fittings, and appurtenances as shown on the Contract Plans. The District will not consider any additional compensation.

SECTION 511. CONNECTIONS TO EXISTING MAINS

SECTION 511.1 GENERAL

The Contractor shall notify the District at least five (5) working days in advance of shutdowns that affect commercial areas. Non-Commercial and Residential areas require three (3) working days notice.

The District shall notify surrounding customers affected by the shutdown and operate all valves.

The Contractor shall perform connections per SCWD Standard Specifications and Standard Plans, these Special Provisions, and Contract Plans.

The Contractor shall also refer to Section 206.05, "Tie-Ins" of SCWD Standard Specifications and the Contract Documents for additional guidelines.

Measurement and Payment

The Contractor shall include, in the contract unit or lump sum prices for "Connections to Existing Mains", all costs associated with "Tie-in to existing 6-inch AC water main at the south intersection of Creek Dr. and Glen Dr., Tie-in to existing 6-inch AC water main at the north intersection of Creek Dr. and Glen Dr., Tie-in to existing 6-inch AC water main at the intersection of Forest Dr. and Spreckles Dr., Tie-in to existing 8-inch AC

water main at the intersection of Spreckles Dr. and Treasure Island Ave., Tie-in to existing 8-inch AC water main at the intersection of Treasure Island Ave. and Aptos Beach Dr.,” and “Tie-in to existing 4-inch AC water main at the intersection of Treasure Island Ave. and Aptos Beach Dr.” The District will not consider any additional compensation.

SECTION 512. ABANDONMENTS

SECTION 512.1 GENERAL

The Contractor shall perform abandonments as shown on the Contract Plans following the installation of all replacement piping.

Abandonments shall include, and not be limited to, water mains, services, valves, fire hydrants, and fittings. Work includes, but is not limited to, cutting and capping of abandoned mains.

The Contractor shall perform abandonments in accordance with Section 206.08, “Abandonment” of SCWD Standard Specifications.

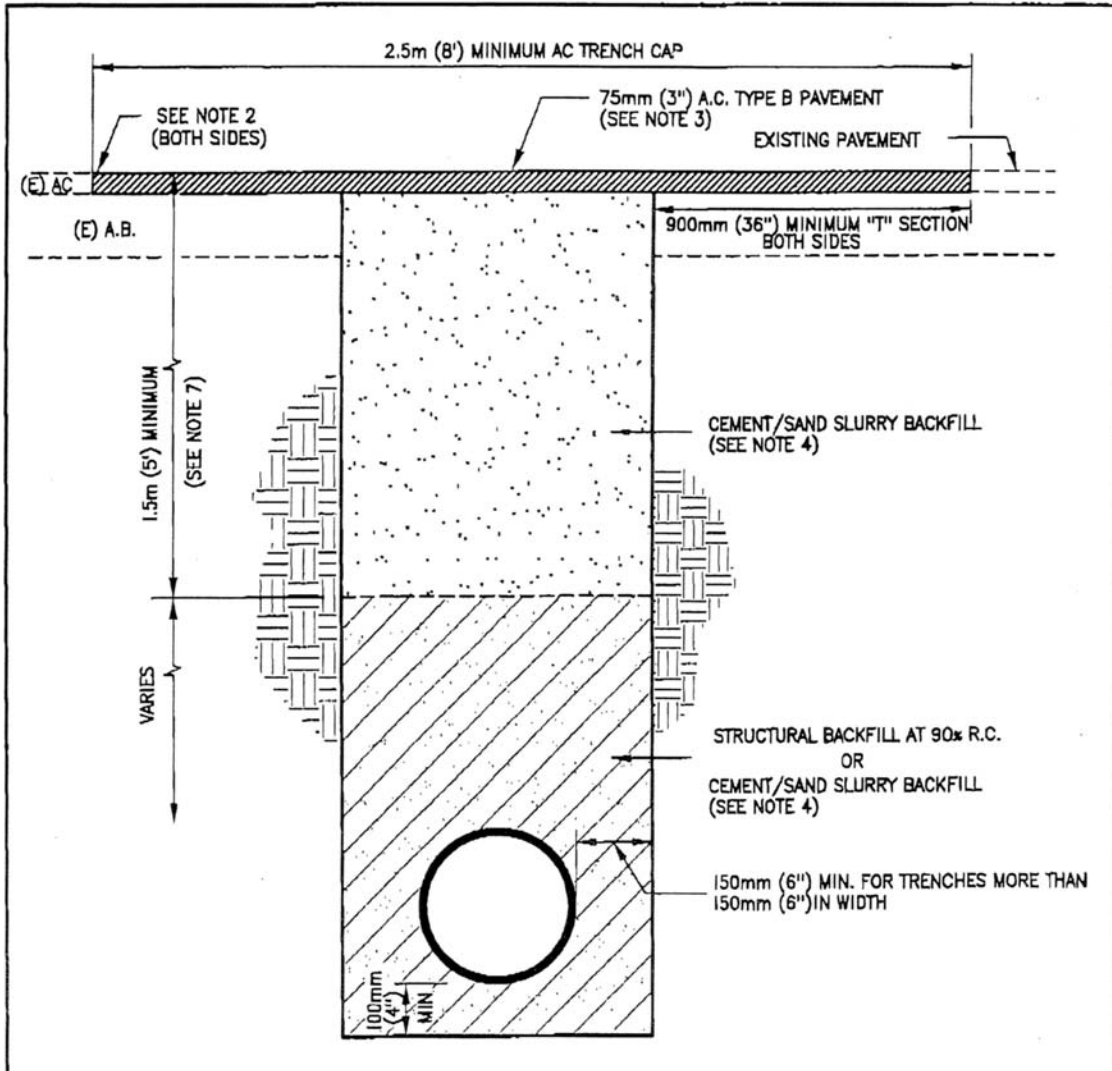
The Contractor shall restore pavement to pre-existing condition or better when abandoned main is in existing AC paved area. The Contractor shall remove and replace existing concrete from joint to joint when abandoned main is in PCC area. The Contractor shall provide dowels between new concrete and existing concrete area.

Measurement and Payment

The Contractor shall include, in the contract unit or lump sum prices, all costs associated with “Abandonments.” The Contractor shall include, in the contract unit or lump sum prices, all costs associated with “Abandonment of 2-inch steel main and valve boxes on Creek Dr., Glen Dr., Treasure Island Ave., Spreckles Dr., Claus Ct., and Forest Dr. as shown on project plans.” The District will not consider any additional compensation.

SECTION 513. APPENDIX

SECTION 513.2 COUNTY OF SANTA CRUZ DEPARTMENT OF PUBLIC WORKS CROSS TRENCH DETAIL, FIGURE EP-2, REV. 4/02



1. OTHER METHODS OF TRENCH BACKFILL MAY BE USED ONLY WITH WRITTEN PERMISSION FROM THE DIRECTOR OF PUBLIC WORKS.
2. CUT EXISTING PAVEMENT TO PRODUCE A STRAIGHT VERTICAL FACE AGAINST WHICH TO BUTT THE TRENCH PAVEMENT.
3. TRENCH SHALL BE CAPPED WITH 75mm (3") A.C. TYPE B MINIMUM. WHERE THE EXISTING PAVEMENT IS GREATER THAN 75mm (3") THICK, IT SHALL BE REPLACED IN KIND.
4. CEMENT/SAND SLURRY SHALL BE MIXED IN A TRANSIT MIXER (CERTIFICATION TAGS REQUIRED), SHALL CONSIST OF 110 kg OF CEMENT FOR EACH CUBIC METER OF MATERIAL (188 LBS/CY), AND SHALL HAVE A 175mm - 225mm (7-9 INCH) SLUMP.
5. PRECAUTION SHALL BE TAKEN TO AVOID FLOATING CONDUITS.
6. OPTIONAL: SHAPED BEDDING OR SAND CRADLE TO 150mm (6") ABOVE PIPE.
7. FOR TRENCHES LESS THAN 1.5m (5') DEEP, SLURRY BACKFILL SHALL EXTEND FROM 150mm (6") ABOVE TOP OF PIPE TO BOTTOM OF AC PAVEMENT.

CROSS TRENCH DETAIL

REV 4/02

FIG EP-2