

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

OFFICE ENGINEER

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April 11, 2011

04-Son-101-7.1/8.9

04-0A1844

Project ID 0400020004

Addendum No. 1

Dear Contractor:

This addendum is being issued to the contract for CONSTRUCTION ON STATE HIGHWAY IN SONOMA COUNTY IN AND NEAR PETALUMA FROM 0.5 MILE SOUTH OF OLD REDWOOD HIGHWAY OVERCROSSING TO 0.1 MILE NORTH OF PEPPER ROAD.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on Tuesday, April 19, 2011.

This addendum is being issued to revise the Project Plans, the Notice to Bidders and Special Provisions, the Bid book, and add to the Information Handout.

Project Plan Sheets 67, 77, 82, 90, 93, 94, 99, 104, 164, 167, 168, 175, 185, 186, 187, 188, 189, 191, 195 and 199 are revised. Copies of the revised sheets are attached for substitution for the like-numbered sheets.

Project Plan Sheets 105A and 105B are added. Copies of the added sheets are attached for addition to the project plans.

In the Notice to Bidders and Special Provisions, in the Registered Persons signature and seal sheet, the signature and seal sheet is revised as attached.

In the Special Provisions, Section 4, "BEGINNING OF WORK, TIME OF COMPLETION, AND LIQUIDATED DAMAGES," the first, second and third paragraphs are revised as follows:

"The 1st working day is the 15th day after contract approval.

Do not start work at the job site until the Engineer approves your submittal for:

1. Baseline Progress Schedule (Critical Path Method).
2. Notification of Dispute Resolution Advisor (DRA) or Dispute Review Board (DRB) nominee and disclosure statement as specified in Section 5-1.15, "Dispute Resolution," of the Standard Specifications.
3. Natural Resource Protection Plan.

04-Son-101-7.1/8.9
04-0A1844
Project ID 0400020004

You may enter the job site only to measure controlling field dimensions and locating utilities. Do not start other work activities until the all the submittals from the above list are approved and the following information is submitted:

1. Notice of Materials To Be Used.
2. Contingency plan for reopening closures to public traffic.
3. Written statement from the vendor that the order for the sign panels has been received and accepted by the vendor. The statement must show the dates that the materials will be shipped.
4. Written statement from the vendor that the order for electrical material has been received and accepted by the vendor. The statement must show the dates that the materials will be shipped.
5. Signed Conceptual Storm Water Pollution Prevention Plan."

In the Special Provisions, Section 5-1.11, "SUPPLEMENTAL PROJECT INFORMATION," the "Included in the Information Handout" row is revised as follows:

"Supplemental Project Information

Means	Description
Included in the Information Handout	<ol style="list-style-type: none">1. Summary of Materials Report for Highway 101 HOV Lane Project.2. Summary of Hazardous Materials/ Hazardous Waste Highway 101 Central HOV Lanes Project - Segment B.3. Foundation Report for Willow Brook Bridge (widen), Br. No. 20-0161.4. Storm Water Information Handout.5. Conceptual Stormwater Pollution Prevention Plan.

In the Special Provisions, Section 10-1.01, "ORDER OF WORK," the following paragraph is added after the first paragraph:

"A Conceptual Storm Water Pollution Prevention Plan (SWPPP) has been prepared for this Contract as described in "Supplemental Project Information," of these special provisions. The Contractor shall adhere to the Conceptual SWPPP for all construction activities planned for the first 60 days after contract approval, or until the Contractor's SWPPP as required in "Water Pollution Control," of these special provisions is approved by the Engineer. The Contractor's SWPPP shall supersede the Conceptual SWPPP upon Engineer's approval."

In the Special Provisions, Section 10-1.02, "WATER POLLUTION CONTROL," subsection "GENERAL," is revised as attached.

In the Special Provisions, Section 10-1.325, "RELOCATE WATER LINE," is added as attached.

Addendum No. 1
Page 3
April 11, 2011

04-Son-101-7.1/8.9
04-0A1844
Project ID 0400020004

In the Special Provisions, Section 10-1.51, "RUBBERIZED HOT MIX ASPHALT (GAP GRADED)," subsection "GENERAL," the following paragraph is added after the second paragraph:

"If you request in writing, the Engineer verifies RHMA-G quality requirements within 7 business days of sampling."

In the Special Provisions, Section 10-1.56, "SOUND WALL," subsection "SOUND WALL (MASONRY BLOCK)," the sixth paragraph is revised as follows:

"The masonry units shall be nominal size and texture and of uniform color. The color shall be grey precision, slate, and gold, selected from the manufacturer's standards. The masonry units shall match the color of the reference sample that is available for review by prospective bidders at the Department of Transportation, District 04, Office of Landscape Architecture, 111 Grand Avenue, Oakland, CA 94612."

In the Special Provisions, Section 10-2.01, "GENERAL," subsection "COST BREAK-DOWN," is revised as attached.

In the Bid book, in the "Bid Item List," Item 115 is revised, Items 164 and 165 are added and Item 163 is deleted as attached.

To Bid book holders:

Replace page 8 and 11 of the "Bid Item List" in the Bid book with the attached revised pages 8 and 11 of the Bid Item List. The revised Bid Item List is to be used in the bid.

Attached is a copy of the Information Handout Agreement Conceptual Storm Water Pollution Prevention Plan.

Inquiries or questions in regard to this addendum must be communicated as a bidder inquiry and must be made as noted in the Notice to Bidders section of the Notice to Bidders and Special Provisions.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the Bid book.

Submit bids in the Bid book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

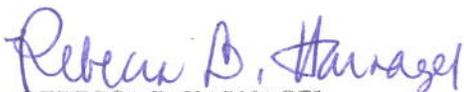
Inform subcontractors and suppliers as necessary.

This addendum and attachments are available for the Contractors' download on the Web site:

http://www.dot.ca.gov/hq/esc/oc/project_ads_addenda/04/04-0A1844

If you are not a Bid book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,



REBECCA D. HARNAGEL
Chief, Office of Plans, Specifications & Estimates
Office Engineer
Division of Engineering Services

Attachments

Contract No. 04-0A1844

DESIGN OVERSIGHT APPROVAL	REGISTRATION NO.	DATE
JONATHAN LEE <i>Jonathan Lee</i>	47520	12/31/11

Complete for projects prepared by consultants or local agencies only.

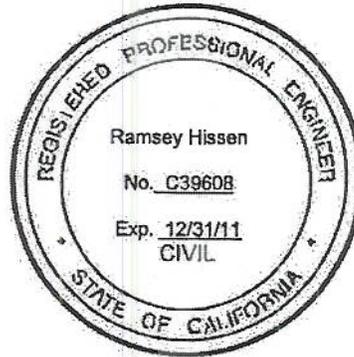
Approved as to impact on State facilities and conformance with applicable State standards and practices as described in the A & E Consultant Services Manual.

The special provisions contained herein have been prepared by or under the direction of the following Registered Persons.

ROADWAY



REGISTERED CIVIL ENGINEER



STRUCTURES



REGISTERED CIVIL ENGINEER



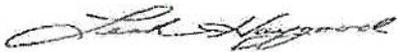
ELECTRICAL



REGISTERED ELECTRICAL ENGINEER



LANDSCAPE



REGISTERED LANDSCAPE ARCHITECTURE



10-1.02 WATER POLLUTION CONTROL

GENERAL

Summary

Discharges of storm water from the project must comply with NPDES General Permit for "Storm Water Discharges Associated with Construction and Land Disturbance Activities" (Order No. 2009-0009-DWQ, NPDES No. CAS000002) hereinafter called the "Permit." Manage work activities to reduce the discharge of pollutants to surface waters, groundwater, or municipal separate storm sewer systems including work items shown in the Bid Item List for:

1. Prepare Storm Water Pollution Prevention Plan. SWPPP preparation includes obtaining SWPPP approval, amending the SWPPP, preparing a CSMP and a SAP, and monitoring and inspecting WPC practices at the job site.
2. Storm Water Annual Report. Storm Water Annual Report preparation includes certifications, monitoring and inspection results, and obtaining Storm Water Annual Report acceptance.
3. Storm Water Sampling and Analysis Day. Storm Water Sampling and Analysis Day includes reporting of storm water quality per qualifying rain event. If specified for the risk level, the work includes preparation, collection, analysis, and reporting of storm water samples for turbidity, pH, and other constituents.
4. Rain Event Action Plan. If specified for the project risk level, REAP preparation includes preparing and submitting REAP forms and monitoring weather forecasts.

The CSWPPP measures pertains to the construction work to be carried out starting 15 days after contract approval for work in the median and to allow work around Willow Brook Creek between June 15 to October 15. The construction work will include clearing and grubbing, excavation, grading, pavement construction, barrier rail, Willow Brook (Widen) Bridge Construction and placement of drainage facilities. The construction for the remainder of the work will be covered in the Contractor's SWPPP.

Implement Conceptual SWPPP until:

1. SWPPP is approved.
2. WDID is issued.
3. SWPPP review requirements have been fulfilled. If the RWQCB requires time for SWPPP review, allow 30 days for the RWQCB to review the SWPPP as specified under "Submittals" of these special provisions.

This project is Risk Level 2.

Definitions and Abbreviations

active and inactive areas: (1) Active areas have soil disturbing work activities occurring at least once within 14 days, and (2) Inactive areas are areas that have not been disturbed for at least 15 days.

BMPs: Best Management Practices are water pollution control practices.

construction phase: Construction phases are (1) Highway Construction including work activities for building roads and structures, (2) Plant Establishment including maintenance on vegetation installed for final stabilization, and (3) Suspension where work activities are suspended and areas are inactive.

CSMP: Construction Site Monitoring Program.

NAL: Numeric Action Level.

NEL: Numeric Effluent Limit.

NPDES: National Pollutant Discharge Elimination System.

NOI: Notice of Intent.

normal working hours: The hours you normally work on this project.

Preparation Manual: The Department's "Storm Water Pollution Prevention Plan and Water Pollution Control Program Preparation Manual."

QSD: Qualified SWPPP Developer.

QSP: Qualified SWPPP Practitioner.

qualified rain event: A qualified rain event is a storm that produces at least 0.5 inch of precipitation with a 48 hour or greater period between storms.

REAP: Rain Event Action Plan.

RWQCB: Regional Water Quality Control Board.

SAP: Sampling and Analysis Plan.

SSC: Suspended Sediment Concentration.

SWRCB: State Water Resources Control Board.

SWPPP: Storm Water Pollution Prevention Plan.

WDID: Waste Discharge Identification Number.

WPC: Water Pollution Control.

WPC Manager: Water Pollution Control Manager. The WPC Manager implements water pollution control work described in the SWPPP and oversees revisions and amendments to the SWPPP.

Submittals

Within 20 days after contract approval, start the following process for SWPPP approval:

1. Submit 3 copies of the SWPPP and allow 20 days for the Engineer's review. If revisions are required, the Engineer provides comments and specifies the date that the review stopped.
2. Change and resubmit the SWPPP within 15 days of receipt of the Engineer's comments. The Engineer's review resumes when the complete SWPPP is resubmitted. Allow 5 days for the Engineer's second review.
3. If additional comments are provided by the Engineer, the SWPPP shall be revised and resubmitted within 5 days of the Engineer's second review.
4. When the Engineer approves the SWPPP, submit an electronic and 4 printed copies of the approved SWPPP.
5. If the RWQCB reviews the approved SWPPP, the Engineer submits one copy of the approved SWPPP to the RWQCB for their review and comment. RWQCBs requiring time to review SWPPPs include:
 - 5.1. Lahontan for projects in the Lake Tahoe Hydrologic Unit and the Mammoth Lakes Hydrologic Unit
 - 5.2. San Francisco Bay Region 2
6. If the Engineer requests changes to the SWPPP based on RWQCB comments, amend the SWPPP within 10 days. The Contractor shall submit four (4) copies of the final SWPPP upon notification of final approval.

If the Engineer fails to complete the review within the time allowed and if, in the opinion of the Engineer, completion of the work is delayed or interfered with because of the Engineer's or RWQCB's review, the Department pays you for resulting losses, and grants an extension of time.

Submit:

1. Storm water training records including training dates and subjects for employees and subcontractors. Include dates and subjects for ongoing training, including tailgate meetings.
2. Employee training records:
 - 2.1. Within 5 days of SWPPP approval for existing employees
 - 2.2. Within 5 days of training for new employees
 - 2.3. At least 5 days before subcontractors start work for subcontractor's employees

Prepare a Storm Water Annual Report for the reporting period from July 1st to June 30th. For the prior reporting period, submit the report no later than July 15th if construction occurs from July 1st through June 30th or within 15 days after contract acceptance if construction ends before June 30th.

Submit the Storm Water Annual Report as follows:

1. Submit 2 copies of the Storm Water Annual Report and allow 10 days for the Engineer's review. If revisions are required, the Engineer provides comments and specifies the date that the review stopped.
2. Change and resubmit the Storm Water Annual Report within 5 days of receipt of the Engineer's comments. The Engineer's review resumes when the complete Storm Water Annual Report is resubmitted.
3. When the Engineer accepts the Storm Water Annual Report, insert the WPC Manager's signed certification and the Engineer's signed certification.

Submit one electronic copy and 2 printed copies of the accepted Storm Water Annual Report.
Submit as required:

1. NAL Exceedance Reports
2. NEL Exceedance Reports
3. Visual Monitoring Reports
4. Inspection Reports
5. BMP Status Report

At least 5 days before operating any construction support facility, submit:

1. A plan showing the location and quantity of WPC practices associated with the construction support facility
2. A copy of the NOI approved by the RWQCB and the SWPPP approved by the RWQCB if you will be operating a batch plant or a crushing plant under the General Industrial Permit

Quality Control and Assurance

Training

Provide storm water training for:

1. Project managers
2. Supervisory personnel
3. Employees involved with WPC work

Train all employees, including subcontractor's employees, in the following subjects:

1. WPC rules and regulations
2. Implementation and maintenance for:
 - 2.1. Temporary Soil Stabilization
 - 2.2. Temporary Sediment Control
 - 2.3. Tracking Control
 - 2.4. Wind Erosion Control
 - 2.5. Material pollution prevention and control
 - 2.6. Waste management
 - 2.7. Non-storm water management
 - 2.8. Identifying and handling hazardous substances
 - 2.9. Potential dangers to humans and the environment from spills and leaks or exposure to toxic or hazardous substances

Employees must receive initial WPC training before working on the job site.
Conduct weekly training meetings covering:

1. WPC BMP deficiencies and corrective actions
2. BMPs that are required for work activities during the week
3. Spill prevention and control
4. Material delivery, storage, use, and disposal
5. Waste management
6. Non-storm water management procedures

Training for personnel to collect water quality samples must include:

1. SAP review
2. Health and safety review
3. Sampling simulations

A Storm Water Information Handout and a Conceptual SWPPP have been prepared for this contract and is available as described in "Supplemental Project Information" of these special provisions.

If you operate construction support facilities, protect storm water systems or receiving waters from the discharge of potential pollutants by using WPC practices.

Construction support facilities include:

1. Staging areas
2. Storage yards for equipment and materials
3. Mobile operations
4. Batch plants for PCC and HMA
5. Crushing plants for rock and aggregate
6. Other facilities installed for your convenience such as haul roads

If you operate a batch plant to manufacture PCC, HMA, or other material; or a crushing plant to produce rock or aggregate; obtain coverage under the General Industrial General Permit. You must be covered under the General Industrial Permit for batch plants and crushing plants located:

1. Outside of the job site
2. Within the job site that serve one or more contracts

Discharges from manufacturing facilities such as batch plants must comply with the general waste discharge requirements for Order No. 97-03-DWQ, NPDES General Permit No. CAS000001, issued by the SWRCB for "Discharge of Stormwater Associated with Industrial Activities Excluding Construction Activities." For the General Industrial Permit, go to:

<http://www.waterboards.ca.gov/>

You may obtain copies of the Preparation Manual from the Publication Distribution Unit. The mailing address for the Publication Distribution Unit is:

State of California
Department of Transportation
Publication Distribution Unit
1900 Royal Oaks Drive
Sacramento, California 95815
Telephone: (916) 445-3520

The Preparation Manual and other WPC references are available at the Department's "Construction Storm Water and Water Pollution Control" Web site. For the Web site, go to:

<http://www.dot.ca.gov/hq/construc/stormwater/stormwater1.htm>

Water Pollution Control Manager

Assign one WPC Manager to implement the SWPPP. The WPC Manager must comply with the Permit qualifications for a QSP and a QSD. You may assign a different QSD to prepare the SWPPP.

The QSD must have the following qualifications:

1. Department approved storm water management training described in the Department's "Construction Storm Water and Water Pollution Control" web site
2. Registration or certification described in the Permit

The QSP must meet the qualifications of the QSD or have the following certifications:

1. Department approved storm water management training described in the Department's "Construction Storm Water and Water Pollution Control" web site
2. Certification described in the Permit

At the job site, the WPC Manager must:

1. Be responsible for WPC work
2. Be the primary contact for WPC work
3. Oversee the maintenance of WPC practices
4. Oversee and enforce hazardous waste management practices
5. Have the authority to mobilize crews to make immediate repairs to WPC practices
6. Ensure that all employees have current water pollution control training
7. Implement the approved SWPPP and amend the SWPPP when required

WPC Manager must oversee:

1. Inspections of WPC practices identified in the SWPPP
2. Inspections and reports for visual monitoring
3. Preparation and implementation of REAPs
4. Sampling and analysis
5. Preparation and submittal of:
 - 5.1. NAL exceedance reports
 - 5.2. NEL exceedance reports
 - 5.3. SWPPP annual certification
 - 5.4. Annual reports
 - 5.5. BMP status reports

10-1.325 RELOCATE WATER LINE

GENERAL

The work includes removal of existing water line and connections to existing main, and furnishing and installing water lines, fittings, valves, casings, and service connections, complete for an operating system, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer. The Contractor shall be responsible for coordinating all work with the Engineer and shall not disconnect or operate any existing water valves without written approval by the Engineer.

Submittals

Hydrostatic Testing Plans
Flushing and Disinfection Plans

WATER SYSTEM

Water Main Materials

Polyvinyl chloride (PVC) pipe shall be new pipe, minimum Class 200 pressure rated, as shown on the plans and conforming to the requirements of DR 14, AWWA C900-97 & C905-97, "Standard for Polyvinyl Chloride Pressure rated Pipe," and shall be furnished with either bell ends or couplings designed to effect an elastomeric pressure seal.

Asbestos cement pipe shall not be installed under any circumstances.

All cutting, handling, and disposal of the existing asbestos cement pipe shall be done in compliance with the Contractor's State Licensing Law and all applicable laws and regulations.

Contractor is prohibited from operating gate valves or fire hydrants on the City system. Only City Department of Water Resources and Conservation personnel shall operate valves on existing water mains or water services. Contractor shall make arrangements with the Engineer to handle this matter.

Removal of asbestos containing pipe shall be performed in accordance with Section "Removal of Asbestos Containing Materials – Bridges and Non-Building Structures," of these Special Provisions.

EXCAVATION AND BACKFILL

All excavation, backfill, and resurfacing required for installation of water system facilities shall be as shown on the plans entitled Trench Details.

Surplus excavated material not designated as hazardous waste due to acrially deposited lead shall become the property of the Contractor and shall be disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications. The top soil removed from the trench shall be placed in the trench for planting.

Prior to disposal of any materials or operation of any equipment on sites provided by the Contractor for disposal of excess trench excavation, the Contractor shall submit to the Engineer written authorization for such disposal of materials and entry permission. The document shall be signed by the owners of the disposal site.

The Contractor shall not excavate within 6 feet of any City valve, tie-down, thrust block, or fire hydrant without prior approval of the Engineer.

Bedding material is aggregate subbase or equivalent and shall be compacted to 90% (RC) relative compaction.

At the Contractor's option, controlled density fill (CDF) Mix No. 1500 manufactured by Shamrock material Inc. may be used instead of CI 3 AB and/or trench backfill.

WATER MAIN COVER

The depth of cover over the pipe shall be determined by the elevation of the pipes that need to be connected to but shall not be less than 36 inches.

THRUST BLOCKING

Tees, bends, and plugs shall be provided with thrust blocking as shown on the plans.

Portland Cement Concrete shall contain 675 min, 800 max pounds cementitious material/CY.

Safe bearing load of soil for horizontal thrust shall not be exceeded.

Concrete thrust blocking, cast-in-place, to extend from bells of fittings to undisturbed soil and entire bearing area must be against undisturbed soil.

End of casing must be sealed water tight using a heat shrink wrap around seal such as manufactured by pipeline seal and insulator ltd or approved equal. Bands shall be type 316 stainless.

SPECIAL CONDITIONS

Abandon water mains and services as specified below:

1. Unused service lines shall be removed as indicated on the plans at the water main unless specifically indicated otherwise on the plans.
2. Valve boxes for abandoned valves shall be removed
3. Abandoned mains, valves, and risers shall be removed.
4. Unused water mains shall be cut and plugged as specified in these special provisions. A closed gate valve is not acceptable as a permanent cap or plug on a live main or service.

Restrained joints shall be subject to the prior approval of the Engineer. Restrained joints shall not be used in lieu of thrust blocking or tiebacks except as allowed by the Details shown on the plans.

WATER MAIN CONNECTION TO AN EXISTING MAIN

Mechanical joint (M.J.) sleeves shall comply with AWWA C110 Table 10.10 or C153 Table 53.5. The pressure class shall be 200 psi. In cases of differing pipe outside diameters, a ductile iron or cast iron M.J. transition sleeve or coupling shall be used. For transition couplings larger than 12 inch in diameter, submit manufacturer's specification data for approval. Steel couplings shall not be allowed. The time required to shutdown the water system to make connection shall be subject to the approval of the Engineer in writing.

WATER MAIN FITTINGS

All fittings shall be new ductile iron fittings conforming to ANSI/AWWA C110 thru C153 or latest revision and shall have the proper type of ends to match the type of pipe used.

Gaskets for flange fittings shall conform to AWWA C115.

Ductile iron fittings shall be cement mortar lined or fusion-bonded epoxy coated in accordance with AWWA C104 or latest revision and shall have petroleum asphalt outside coating conforming to AWWA C110. Ductile iron fittings shall have a minimum pressure rating of 250 psi and shall otherwise meet or exceed the pressure rating of the pipe to be installed and shall have a minimum Class 53 thickness rating.

EXTENSION OF STEEL CASING

Existing 24 inch steel casing shall be extended 3 feet beyond the back of the soundwall as shown on the plan.

Outside connection between the existing steel casing and new casing shall be welded as required by the Engineer. Contractor shall provide stainless steel band spacers and insulators between 12 inch water line and 24 inch steel casing.

The elevation of the water line in the casing shall match the elevation of the existing pipe.

PIPE LAYING

Laying And Handling Pipe Materials

Whenever it is necessary to use a short length of pipe at a fitting or valve, the minimum length shall be 3 feet unless otherwise approved by the Engineer.

Cutting pipe by means of oxyacetylene torch shall not be allowed.

Proper implements, tools, and facilities shall be provided and used by the Contractor for safe, convenient, and workmanlike performance of the work. All pipe fittings and valves shall be carefully lowered into the trench in such a manner as to prevent damage to pipe coatings. Under no circumstances shall pipe or accessories be dropped or dumped into the trench. Before lowering and while suspended, the pipe shall be inspected for defects and the cast iron pipe rung with a light hammer to detect cracks. Any defective, damaged, or unsound pipe shall be rejected and sound material furnished. Cutting of pipe for inserting valves, fittings, or closure pieces shall be done in a neat and workmanlike manner without damage to pipe or coating.

Whenever it is necessary either in vertical or horizontal plane to avoid obstructions or when long radius curves are permitted, the amount of deflection shall not exceed the maximum recommended by the pipe manufacturer or that required for satisfactory jointing.

Each length of pipe shall be free of any visible evidence of contamination, dirt, and foreign material before it is lowered into its position in the trench, and it shall be kept clean by approved means during and after laying. At times when pipe laying is not in progress, the open ends of any pipe, which has been laid, shall be closed by approved means to prevent the entrance of small animals or foreign material. Trench water shall not be permitted to enter the pipe.

Individual pieces of pipe, valves, and fittings shall be joined in accordance with the manufacturer's recommendations. The joint sealing rings shall be checked to be sure they are in the proper position once in place. Care shall be taken to insure proper seating of the rings, and adapters shall be utilized for connections as required by the manufacturer.

Necessary cutting or breaking of asbestos concrete pipe shall be done in strict accordance with applicable health and safety regulations.

During pipe laying operations, create a depression under the pipe bells and mechanical joints so that the pipe shall be supported on the barrel and not on the joint.

BOLTS, GLANDS, NUTS, AND MISCELLANEOUS ACCESSORIES

Contractor shall furnish all required bolts, glands, nuts, and miscellaneous accessories. Bolts and nuts for connections shall be stainless steel, ASTM A320, Type 304 SST, Grade #B8.

BITUMINOUS COATING

Bituminous coating for field-applied protection of metal shall be self-priming coal tar Kopper's Bitumastic No. 50, or approved equal. Apply two coats minimum.

WORKMANSHIP

Cut pipe with sharp tools and ream ends of all cut sections. An approved joint compound shall be applied to threaded pipe, fittings, and valves prior to joining. Protective coatings shall be applied in conformance with the manufacturer's instructions and these Special Provisions. Unless otherwise directed, valves shall be installed as shown on the plans.

PIPE PREPARATION AND HANDLING

All pipe, fittings, and appurtenances shall be installed in accordance with the manufacturer's instructions and these Special Provisions.

The Contractor shall store and install pipe, fittings and valves in accordance with the provisions of AWWA C651, Section 4, "Preventative and Corrective Measures During Construction" to minimize the potential for contamination.

Lifting and handling of pipe shall be done in such a manner as to not damage the pipe coating. Cable or chain slings shall not be used. When not being handled, the pipe shall be supported on timber cradles or on properly prepared ground, graded to eliminate all rock points and to provide uniform support along the full length. When being transported, the pipe shall be supported at all times in a manner which will not permit distortion or damage to the lining or coating.

Each pipe and fitting shall be carefully inspected before the pipe or fitting is lowered into the trench. The interior and exterior protective coating shall be inspected, and all damaged areas patched in the field with material similar to the original. Any pipe, which, in the opinion of the Engineer, is damaged beyond repair, shall be removed from the site and replaced with another unit. No payment will be made for damaged pipe or repairs to damaged pipe. Clean ends of pipe thoroughly.

Precautions shall be taken to protect the interiors of pipes, fittings and valves against contamination. Pipe shall be transported, stored and handled in a manner to minimize the entrance of foreign material. Pipe, fittings and valves shall be kept clean and dry.

Prior to installation and joint assembly, the Contractor shall:

1. Clean the pipe bell. Remove sand, dirt, grease, and debris. Swab with liquid hypochlorite solution as necessary.
2. Check the gasket. Make sure the gasket is seated uniformly. Clean the gasket area as necessary; however, do not remove factory installed gaskets from bells (removal could cause improper reinstallation). Swab with liquid hypochlorite solution as necessary.
3. Clean the spigot end of the pipe. Use a clean rag and liquid hypochlorite solution to wipe the spigot clean.
4. Lower the pipe into the trench. Lower carefully to avoid damage to the bell or spigot and to avoid getting dirt into the bell or spigot.
5. Keep excavations dry. Contractor shall conduct the work in a manner to lessen the potential of contamination through the ends of the open pipe. Water that drain from the open ends of the pipe shall be pumped from the excavation.
6. Pipe shall not be laid in water or when, in the opinion of the Engineer, trench conditions are unsuitable. When water is present in excavations, or when water drains from the open ends of pipe, plug the open ends of pipe to minimize the entrance of foreign material. Pump water from the excavation. Place liberal quantities of hypochlorite tablets in the bottom of the trench as necessary.
7. When pipe installation is suspended for work breaks, or at the end of the work day, plug the open ends of pipe to minimize the entrance of foreign material.
8. Assemble pipe. Insert spigot end into the pipe until it contacts the gasket uniformly. Align pipe straight. Apply steady pressure by hand or suitable mechanical means (bar and block, come-along, hydraulic jack) until the spigot slips through the gasket. Do not use a backhoe bucket for assembly or any method or action that can damage bells or dislocate gaskets.
9. If undue resistance to pipe insertion is encountered or if the pipe cannot be inserted to the reference mark, disassemble the joint and check the position of the gasket. Inspect pipe and gasket for damage, replace damaged items, clean the components and repeat the assembly.
10. If the pipe must be field cut, mark the entire circumference of the pipe to ensure a square cut. The pipe may be cut by handsaw or power saw. Bevel the cut end using a pipe beveling tool or portable sander or abrasive disc. Round off any sharp edges. Mark cut end with an insertion line similar to uncut pipe.

Prior to final acceptance, the Contractor shall clean all parts of the system. All accumulated construction debris, rocks, gravel, sand, silt, and other foreign material shall be removed from the system.

The Contractor shall use proper implements, tools, and facilities for the safe and proper protection of the pipe and carefully handle pipe in such a manner as to avoid any physical damage to the pipe. The Contractor shall not drop or dump pipe from trucks or into trenches under any circumstances.

HYDROSTATIC TESTING

All pipe and appurtenances shall successfully pass hydrostatic pressure and leakage tests prior to acceptance and shall be free of all detectable leaks. The test shall be a combined pressure and leakage test. Hydrostatic testing shall be conducted concurrently with the applicable retention period for disinfection of new water mains. The Contractor shall furnish all necessary equipment and material, make all taps, and furnish all closure pieces in the pipe as required for testing. Water from the City may be available for filling and testing of pipelines at the nearest practicable source. The Contractor shall make arrangements with the City for water.

The Contractor shall submit to the Engineer a detailed plan for the hydrostatic testing including a detailed time expected to complete each procedure. Complete details on the procedures to be used and the locations for a necessary equipment and material shall be submitted. This plan shall include date and duration water is desired, required rate and quantity, desired locations, and method of transporting water.

Testing shall be conducted after the trench has been backfilled and the thrust block concrete has the Engineer's approval. Contractor shall provide for temporary blocking of the pipeline at the tie-in points or as directed by the Engineer. No hydrostatic test will be allowed against a closed valve connected to the existing system except under specific supervised conditions approved by the Engineer.

Slowly fill the pipe with water at a rate such that the velocity does not exceed 3 inch per second applied over full area of the pipe and allow to stand for minimum of 24 hours under a slight pressure. Expel all air from the pipe. After filling the pipe with water, but prior to applying test pressure, maintain a pressure up to the operating pressure to allow for absorption by the pipe lining. Apply and maintain the specified test pressure by continuous pumping if necessary for the entire test period.

The pump suction shall be in a barrel or similar device, or metered so that the amount of water required to maintain the test pressure may be measured accurately. The test shall be conducted at 150% of the operating pressure. The test duration shall be 2 hours.

Allowable leakage is defined as the quantity of water required to hold the specified test pressure of the duration of the test. Allowable leakage shall be determined in accordance with the following formula:

$$L = (ND\sqrt{P})/7,400$$

Where: L = allowable leakage (gal/hr)

N = number of joints in the tested line
(including pipe and fittings)

D = nominal diameter of pipe (in.)

P = average test pressure (psi)

The pressure shall not drop more than 5 psi below the test pressure. Alternate methods of determining allowable loss as recommended by the pipe manufacturer will be considered upon request from the Contractor.

Should any test disclose leakage greater than that allowed, the Contractor shall locate and repair the defective joint(s) pipe, or appurtenances until the leakage from subsequent testing is as specified. Irrespective of amount of leakage, all detectable leaks shall be repaired. The pipeline shall be left full of water after repair of leaks.

Following completion of hydrostatic testing and after the applicable disinfectant retention period, water mains shall be flushed thoroughly in accordance with the requirement of AWWA C651. New water mains shall be flushed until chlorine measurements show that the concentration of chlorine in the water discharged from the main is no higher than that generally prevailing in the municipal distribution system.

FLUSHING AND DISINFECTION

Potable water pipelines shall be flushed and disinfected before placed in service in conformance with the AWWA C651 and these Special Provisions. The Contractor shall submit to the Engineer a detailed plan for the flushing and disinfection. Complete details on the procedures to be used and the locations and means of disposal, and materials used shall be submitted. Before disinfecting, flush all foreign matter from the pipelines. Hoses, temporary pipes, ditches, etc. shall be provided as required to dispose of flushing water without damage to adjacent properties. The disinfection testing shall be conducted concurrently with the hydrostatic pressure testing.

The Contractor shall disinfect water mains in accordance with the requirements of AWWA C 651, "Disinfecting Water Mains." The method of disinfection for new water mains shall be the tablet method in accordance with Section 5.1, "Tablet Method." Use of chlorine gas will not be permitted.

All valves, air release and vacuum valves, and other appurtenances shall be operated during disinfection to ensure that the mixture is dispersed into all parts of the line including dead ends, new services, and similar areas that otherwise may not receive the disinfecting solution. Remove plugs to flush water, as directed.

Following disinfection, water mains shall be flushed thoroughly in accordance with the provisions of AWWA C651. The Contractor shall make his own arrangements with the City of Petaluma to dispose the heavily chlorinated water into the sanitary system. The Contractor shall obtain a discharge permit from the City of Petaluma and shall pay all fees involved.

Water mains may be flushed to a gutter or storm drain through diffuser using dechlorination tablets at a suitable flow rate where it can be demonstrated that the concentration of chlorine in the water discharged to the drainage system is no higher than that generally prevailing in the municipal distribution system.

Following disinfection and flushing of water mains, the Contractor shall collect water samples for bacteriological testing.

Contractor shall furnish the Engineer with temporary sampling taps for the collection of water samples for testing. At least one sample point shall be provided along every street block and at least every 1000 feet along the length of the new water main, plus one at the end of the new main and at least one from each branch. Sample points shall be subject to the approval of the Engineer. The temporary sampling taps shall consist of a 1/2-inch unthreaded bib / faucet installed on a pipe riser a minimum of 12 inches above grade.

Upon receipt of notice from the Engineer that water samples passed the laboratory testing, Contractor shall remove the temporary sampling taps. Should the water samples fail the testing, the Contractor shall be required to repeat the entire disinfection procedure.

Where it is necessary to cut, repair, or make a new connection to an in service water main, the special disinfection procedures of AWWA C651, Section 9, "Disinfection Procedures When Cutting Into or Repairing Existing Mains" shall be observed.

Closure sections of pipelines and cut-in fittings that cannot be disinfected in accordance with the above described procedures because of the critical need to return existing facilities to service shall be surface disinfected. Clean all debris and dirt from the fittings and closure sections then spray or brush a solution of clean water containing 200 ppm of free available chlorine onto the surfaces that will be in contact with potable water. Allow the sprayed on solution to surface dry, then follow promptly by completing the closure and returning the existing facilities to service.

MEASUREMENT AND PAYMENT

The contract lump sum price paid for relocate water line shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in relocate water line, including disconnecting existing line, removing existing water line, abandoning existing water line, flushing and disinfecting, installing pipeline and joints, complete in place, including extension of 24 inch steel casing, notifications, handling and disposal of asbestos containing pipe, sampling and testing, submittals, approvals, permits, planning, all coordination and sequencing, transport, delivery, and any remediation necessary to connect the new water line to the existing pipeline, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

COST BREAK-DOWN

The Contractor shall furnish the Engineer a cost break-down for the contract lump sum items of highway planting and irrigation system. Cost break-down tables shall be submitted to the Engineer for approval within 30 working days after the contract has been approved. Cost break-down tables will be approved, in writing, by the Engineer before any partial payment will be made for the applicable items of highway planting and irrigation system involved.

Attention is directed to "Time-Related Overhead" of these special provisions regarding compensation for time-related overhead.

Cost break-downs shall be completed and furnished in the format shown in the samples of the cost break-downs included in this section. Line item descriptions of work shown in the samples are the minimum to be submitted. Additional line item descriptions of work may be designated by the Contractor. If the Contractor elects to designate additional line item descriptions of work, the quantity, value and amount for those line items shall be completed in the same manner as for the unit descriptions shown in the samples. The line items and quantities given in the samples are to show the manner of preparing the cost break-downs to be furnished by the Contractor.

The Contractor shall determine the quantities required to complete the work shown on the plans. The quantities and their values shall be included in the cost break-downs submitted to the Engineer for approval. The Contractor shall be responsible for the accuracy of the quantities and values used in the cost break-downs submitted for approval.

The sum of the amounts for the line items of work listed in each cost break-down table for highway planting and for irrigation system work shall be equal to the contract lump sum price bid for Highway Planting and Irrigation System, respectively. Overhead and profit, except for time-related overhead, shall be included in each individual line item of work listed in a cost break-down table.

No adjustment in compensation will be made in the contract lump sum prices paid for highway planting and irrigation system due to differences between the quantities shown in the cost break-downs furnished by the Contractor and the quantities required to complete the work as shown on the plans and as specified in these special provisions.

Individual line item values in the approved cost break-down tables will be used to determine partial payments during the progress of the work and as the basis for calculating an adjustment in compensation for the contract lump sum items of highway planting and irrigation system due to changes in line items of work ordered by the Engineer. When the total of ordered changes to line items of work increases or decreases the lump sum price bid for either Highway Planting or Irrigation System by more than 25 percent, the adjustment in compensation for the applicable lump sum item will be determined in the same manner specified for increases and decreases in the total pay quantity of an item of work in Section 4-1.03B, "Increased or Decreased Quantities," of the Standard Specifications.

HIGHWAY PLANTING COST BREAK-DOWN

Contract No. 04-0A1844

UNIT DESCRIPTION	UNIT	APPROXIMATE QUANTITY	VALUE	AMOUNT
ROADSIDE CLEARING	LS	LUMP SUM		
SOIL AMENDMENT	CY	6		
COMMERCIAL FERTILIZER (GRANULAR)	LB	16		
COMMERCIAL FERTILIZER (PACKETS)	EA	94		
FILTER FABRIC	SQFT	6,180		
MULCH	CY	85		
PLANT GROUP A	EA	94		

TOTAL _____

IRRIGATION SYSTEM COST BREAK-DOWN

Contract No. 04-0A1844

UNIT DESCRIPTION	UNIT	APPROXIMATE QUANTITY	VALUE	AMOUNT
40 STATION ELECTRIC AUTOMATIC CONTROLLER	EA	1		
IRRIGATION CONTROLLER ENCLOSURE CABINET (SINGLE)	EA	1		
2 INCH BACKFLOW PREVENTER ASSEMBLY	EA	1		
BACKFLOW PREVENTER INSULATED BLANKET	EA	1		
BACKFLOW ASSEMBLY ENCLOSURE	EA	1		
CONTROL, NEUTRAL AND SPARE CONDUCTORS	LS	LUMP SUM		
3 INCH MASTER VALVE	EA	1		
1 INCH REMOTE CONTROL VALVE ASSEMBLY	EA	2		
¾ INCH QUICK COUPLING VALVES	EA	7		
2 INCH GATE VALVE	EA	3		
3 INCH GATE VALVE	EA	2		
1 INCH WYE STRAINER	EA	2		
2 INCH PLASTIC PIPE (PR 315) (SUPPLY LINE)	LF	1000		
3 INCH PLASTIC PIPE (PR 315) (SUPPLY LINE)	LF	75		
1 INCH PLASTIC PIPE (PR 200) (SUPPLY LINE)	LF	120		
3/4 INCH PLASTIC PIPE (PR 200) (SUPPLY LINE)	LF	1000		
SPRINKLER TYPE C-2	LF	94		

TOTAL _____

BID ITEM LIST
04-0A1844

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
101	560233	FURNISH FORMED PANEL SIGN (OVERHEAD)	SQFT	600		
102	560248	FURNISH SINGLE SHEET ALUMINUM SIGN (0.063"-UNFRAMED)	SQFT	200		
103	560249	FURNISH SINGLE SHEET ALUMINUM SIGN (0.080"-UNFRAMED)	SQFT	270		
104	560251	FURNISH SINGLE SHEET ALUMINUM SIGN (0.063"-FRAMED)	SQFT	18		
105	561016	60" CAST-IN-DRILLED-HOLE CONCRETE PILE (SIGN FOUNDATION)	LF	75		
106	562004	METAL (RAIL MOUNTED SIGN)	LB	2,080		
107	566011	ROADSIDE SIGN - ONE POST	EA	5		
108	019562	PAINT POSTMILE MARKINGS	EA	34		
109	620100	18" ALTERNATIVE PIPE CULVERT	LF	1,870		
110	620140	24" ALTERNATIVE PIPE CULVERT	LF	19		
111	620160	27" ALTERNATIVE PIPE CULVERT	LF	10		
112	620180	30" ALTERNATIVE PIPE CULVERT	LF	8		
113	665010	12" CORRUGATED STEEL PIPE	LF	19		
114	680905	8" PERFORATED PLASTIC PIPE UNDERDRAIN	LF	1,080		
115	019563	8" PLASTIC PIPE	LF	21		
116	692305	12" ANCHOR ASSEMBLY	EA	4		
117	705311	18" ALTERNATIVE FLARED END SECTION	EA	1		
118	721008	ROCK SLOPE PROTECTION (LIGHT, METHOD B)	CY	360		
119	729010	ROCK SLOPE PROTECTION FABRIC	SQYD	620		
120	731502	MINOR CONCRETE (MISCELLANEOUS CONSTRUCTION)	CY	0.3		

BID ITEM LIST
04-0A1844

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
161	019573	VIDEO ENCODER UNIT	EA	2		
162	019574	GENERAL PACKET RADIO SYSTEM WIRELESS MOD EM ASSEMBLY	EA	4		
163	BLANK					
164	020706	RELOCATE WATER LINE	LS	LUMP SUM	LUMP SUM	
165	999990	MOBILIZATION	LS	LUMP SUM	LUMP SUM	

**TOTAL BID
FOR ITEMS:**

\$ _____

**TOTAL BID
FOR TIME:**

$$\frac{\text{WORKING DAYS BID (Not to exceed 325 Days)}}{\text{COST PER DAY}} \times \$9,100.00 = \$ \underline{\hspace{2cm}}$$

TOTAL BID FOR COMPARISON (COST PLUS TIME):

\$ _____