

DEPARTMENT OF TRANSPORTATION
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July 21, 2009

03-Sac-51-9.7/13.4
03-1A1404

Addendum No. 2

Dear Contractor:

This addendum is being issued to the contract for CONSTRUCTION ON STATE HIGHWAY IN SACRAMENTO COUNTY IN SACRAMENTO FROM HOWE AVENUE TO 0.5 KM EAST OF WATT AVENUE.

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 August 5, 2009. The original bid opening date was previously postponed until sometime in July 2009 under Addendum No. 1 dated June 18, 2009.

This addendum is being issued to set a new bid opening date as shown herein and revise the Project Plans, the Notice to Bidders and Special Provisions, and the Bid book.

Project Plan Sheets 13, 14, 15, 17, 20, 25, 26, 27, 28, 29, 31, 32, 33, 34, 35, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 52, 53, 55, 56, 57 and 58 are revised. Copies of the revised sheets are attached for substitution for the like-numbered sheets.

In the Special Provisions, Section 5-1.08, "ENVIRONMENTALLY SENSITIVE AREA," is added as attached.

In the Special Provisions, Section 5-1.09, "ARCHAEOLOGICAL RESOURCES," is added as attached.

In the Special Provisions, Section 5-1.10, "BIRD PROTECTION," is added as attached.

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

"Notify the Engineer 15 days prior to removing any trees or shrubs during the anticipated nesting period of February 15 to September 1. The Department Biologist will survey for nesting birds. Work can begin when written permission is received from the Engineer."

In the Special Provisions, Section 10-1.05, "COOPERATION," is revised as attached.

In the Special Provisions, Section 10-1.13, "MAINTAINING TRAFFIC," in Charts 3 and 4 under "Remarks," the following is added:

"This chart applies only if work is being performed at ramp, gore area or area close to ramp."

03-Sac-51-9.7/13.4
03-1A1404

In the Special Provisions, Section 10-1.13, "MAINTAINING TRAFFIC," in Charts 1, 2, 3 and 4 under "Remarks," the following is added:

"See "Lane Closure Restriction for Designated Legal Holidays and Special Days," included in this Section "Maintaining Traffic," for additional closure restrictions."

In the Special Provisions, Section 10-1.19, "TURF (SEED)," is deleted.

In the Special Provisions, Section 10-1.215, "ROADSIDE SIGNS," is added as attached.

In the Special Provisions, Section 10-2.04, "HIGHWAY PLANTING," subsection "ROADSIDE CLEARING," the first sentence of the first paragraph is revised as follows:

"Prior to preparing planting areas, mulch areas, or commencing irrigation trenching operations for planting areas, trash and debris shall be removed from the entire highway right of way within the project limits, excluding medians."

In the Special Provisions, Section 10-2.04, "HIGHWAY PLANTING," subsection "CULTIVATE," the first paragraph is revised as follows:

"All areas to be planted with Plant Group F shall be cultivated 100 mm to 200 mm in depth except for embankment slopes which will not be cultivated. Cultivation shall remain outside of drip line of existing trees to remain."

In the Special Provisions, Section 10-2.04, "HIGHWAY PLANTING," subsection "CULTIVATE," the second paragraph is revised as follows:

"Immediately prior to cultivation, commercial fertilizer shall be added to the areas to be cultivated. Commercial fertilizer shall be applied at the rate of 2.3 kilograms per 100 square meters for Plant Group F. Fertilizer shall be thoroughly mixed with the soil during cultivation."

In the Special Provisions, Section 10-2.04, "HIGHWAY PLANTING," subsection "PLANTING," the fourth paragraph is revised as follows:

"Mulch placed in areas outside of plant basins shall be spread to a uniform depth of 100 mm except for Plant Group F areas, where mulch shall be spread to a uniform depth of 50 mm."

In the Special Provisions, Section 10-2.05, "IRRIGATION SYSTEMS," is revised as attached.

In the Bid book, in the "Bid Item List," Items 11, 12, 13, 14, 15, 16, 17, 24, 25, 26, 32, 33, 34, 35, 36, 37, 45, 46, 47, 48, 49, 50, 51, 52, 55, 64 and 65 are revised, Items 70, 71, 72 and 73 are added and Items 18, 21, 28, 29, 30, 31, 38, 39, 40, 41, 42 and 69 are deleted as attached.

Addendum No. 2
Page 3
July 21, 2009

03-Sac-51-9.7/13.4
03-1A1404

To Bid book holders:

Replace the entire "Bid Item List" in the Bid book with the attached revised Bid Item List. The revised Bid Item List is to be used in the bid.

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 office is sending this addendum by GSO overnight mail to Bid book holders to ensure that each receives it. A copy of this addendum is available for the Contractors' use on the Web site:

http://www.dot.ca.gov/hq/esc/oe/weekly_ads/addenda.php

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,

ORIGINAL SIGNED BY

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

Attachments

5-1.08 ENVIRONMENTALLY SENSITIVE AREA

An environmentally sensitive area (ESA) shall consist of an area within and near the limits of construction where access is prohibited or limited for the preservation of archeological site or existing vegetation, or protection of biological habitat as shown on the plans. The Engineer will determine the exact location of the boundaries of the ESA. No work shall be conducted within the ESA.

Attention is directed to Section 7—1.01 "Laws to be Observed," and Section 7—1.04 "Permits and Licenses," of the Standard Specifications regarding State and Federal regulations, permits, or agreements which pertain to an ESA.

Vehicle access, storage or transport of materials or equipment, or other project related activities are prohibited within the boundaries of ESA.

The Contractor shall mitigate damage or impacts to the ESA caused by the Contractor's operations, at the Contractor's expense. If the Engineer determines mitigation work will be performed by others, or if mitigation fees are assessed the Department, deductions from moneys due or to become due the Contractor will be made for the mitigation costs.

5-1.09 ARCHAEOLOGICAL RESOURCES

If archaeological resources are discovered at the job site, do not disturb the resources and immediately:

1. Stop all work within a 20 meter radius of the discovery
2. Protect the discovery area
3. Notify the Engineer

The Department investigates. Do not take archaeological resources from the job site. Do not resume work within the discovery area until authorized.

If, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of an archaeological find, or investigation or recovery of archeological materials, you will be compensated for resulting losses, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays" of the Standard Specifications.

If ordered, furnish resources to assist in the investigation or recovery of archaeological resources. This work will be paid for as extra work as specified in Section 4-1.03D, "Extra Work" of the Standard Specifications.

5-1.10 BIRD PROTECTION

GENERAL

This work includes protecting migratory and nongame birds, their occupied nests, and their eggs.

Nesting or attempted nesting by migratory and nongame birds is anticipated to occur but is not limited to February 15 through September 1.

QUALITY ASSURANCE

Regulatory requirements

The Federal Migratory Bird Treaty Act (16 USC §703-711.), 50 CFR 10, and Fish & Game Code §3503, §3513, and §3800, protect migratory and nongame birds, their occupied nests, and their eggs.

The Federal Endangered Species Act of 1973 (16 USC §1531,§1543) and California Endangered Species Act (Fish & Game Code §2050-§2115.5) prohibit the take of listed species and protect occupied and unoccupied nests of threatened and endangered bird species.

The Bald Eagle Protection Act (16 USC §668) prohibits the destruction of bald and golden eagles occupied and unoccupied nests.

Permits are included in the Project Information handout.

CONSTRUCTION

When migratory or nongame bird nests are discovered which may be adversely affected by construction activity, or when a bird is found injured or killed as a result of construction activity, immediately stop work within 30 meters of the nest or bird and notify the Engineer. Work must not resume until the Engineer provides written notification that work may resume at that location.

When ordered by the Engineer, use exclusion devices, nesting prevention measures or remove and dispose of partially constructed and unoccupied nests of migratory or nongame birds on a regular basis to prevent their occupation.

MEASUREMENT AND PAYMENT

Exclusion devices, nesting prevention measures and nest removal that are ordered by the Engineer will be paid for as extra work as specified in Section 4-1.03D, "Extra Work," of the Standard Specifications.

A delay to the controlling operation due to migratory or nongame birds or their nests will be considered a temporary suspension of work under Section 8-1.05, "Temporary Suspension of Work," of the Standard Specifications. Adjustments will be made for delays that the Engineer determines are not due to the Contractor's failure to perform the provision of the contract in the same manner as for suspensions due to unsuitable weather in Section 8-1.05.

10-1.05 COOPERATION

It is anticipated that work by another contractor may be in progress adjacent to or within the limits of this project during progress of the work on this contract. The following table lists contracts anticipated to be in progress during this contract.

Contract No.	Co-Rte-KP	Location	Type of Work
03-3m3804	Sac-51-16.7/8.5	Sacramento	Reconstruct Bridge Hinge

Comply with Section 7-1.14, "Cooperation," of the Standard Specifications.

10-1.215 ROADSIDE SIGNS

Roadside signs shall be furnished and installed at the locations shown on the plans or where designated by the Engineer and in conformance with the provisions in Section 56-2, "Roadside Signs," of the Standard Specifications and these special provisions.

The Contractor shall furnish roadside sign panels in conformance with the provisions in "Furnish Sign" of these special provisions.

Wood posts shall be pressure treated after fabrication in conformance with the provisions in Section 58, "Preservative Treatment of Lumber, Timber and Piling," of the Standard Specifications and AWPAs Use Category System: UC4A, Commodity Specification A or B.

10-2.05 IRRIGATION SYSTEMS

Irrigation systems shall be furnished and installed in conformance with the provisions in Section 20-5, "Irrigation Systems," of the Standard Specifications, except materials containing asbestos fibers shall not be used.

Attention is directed to the provisions in "Obstructions" of these special provisions, regarding work over or adjacent to existing underground facilities. Excavation for proposed irrigation facilities shall not be started until the existing underground facilities have been located.

Method A pressure testing shall conform to the provisions in Section 20-5.03H(1), "Method A", of the Standard Specifications, except leaks that develop in the tested portion of the system shall be located and repaired after each test period when a drop of more than 35 kPa is indicated by the pressure gage. After the leaks have been repaired, the one hour pressure test shall be repeated and additional repairs made until the drop in pressure is 35 kPa or less.

Pipe supply lines shall be pressure tested in conformance with the provisions in Section 20-5.03H, "Pressure Testing," of the Standard Specifications, except the pipe (supply line) on the discharge side of the control valve shall be tested by Method B as specified in Section 20-5.03H(2), "Method B," of the Standard Specifications.

Only pipeline trenches and excavation pits for supply lines being supplied from one water service point shall be open at one time. After pressure testing is complete, trenches and pits excavated for pipe supply lines, being supplied from one water service point, shall be backfilled prior to commencing excavations for pipe supply lines being supplied from another water service point.

VALVE BOXES

Valve boxes shall conform to the provisions in Section 20-2.24, "Valve Boxes," of the Standard Specifications, except as otherwise provided herein.

Valve boxes shall be precast portland cement concrete.

Covers for concrete valve boxes shall be glass fiber reinforced plastic.

Valve boxes shall be identified on the top surface of the covers by stenciling with paint the appropriate abbreviations for the irrigation facilities contained in the valve boxes as shown on the plans. Valve boxes that contain remote control valves shall be identified by the appropriate letters and numbers (controller and station numbers). The letters and numbers shall be 50 mm in height. The stenciling paint shall be a commercial quality, epoxy resin base paint of a color which contrasts with the valve box covers.

GATE VALVES

Gate valves shall be as shown on the plans and in conformance with the provisions in Section 20-2.28, "Gate Valves," of the Standard Specifications and these special provisions.

Gate valves, 75 mm and larger in size, shall be furnished with a square nut and 1 long shank key that will operate the valve.

Gate valves shall have a solid bronze or brass wedge.

REMOTE IRRIGATION CONTROL SYSTEM

The Remote Irrigation Control System (RICS) shall consist of connection to an existing base station, three (3) field unit systems, and personnel training.

The equipment and software, made by the same manufacturer and bearing the same model number, proposed for this project shall have been in use as a complete unit for a minimum of 6 months by a private sector company or a government agency located in the State of California. The Engineer shall be furnished with the location and owner (name, address and phone number) of the RICS including approval by its owner for the Engineer to view, inspect, and discuss the system and its components.

BASE STATION

The existing base station is located at the Department of Transportation's Elk Grove District Maintenance Station at 9087 Elkmont Way, Elk Grove, CA.

The Contractor shall make application and arrangements for communication network service provided by AT&T (916) 804-8822 and assign the services to the State upon the date of acceptance of the contract.

Fees for the applications will be reimbursed by the State.

Auxiliary items shall consist of one hand-held radio transmitter and three 50 mm flow sensors.

Set Up

The Contractor shall be responsible for connecting to the existing base station and demonstrating that the RICS is in operating condition and performs the functions specified.

Field Units

The field units shall consist of one 24 station irrigation controller unit with equipment in a single cabinet, and two 24 station irrigation controller units with equipment in a double cabinet, as listed below:

24 Station Field Unit (Single) (One for ICC A)				
Model #	Description	Cost	Qty	
ET200e-24	24 Station Enhanced ET and Moisture Based Irrigation Controller	\$2,525.00	1	\$2,525.00
-Gr	GPRS Radio Remote Receiver Board	1,590.00	1	1,590.00
-RRe	Enhanced Radio Remote Receiver Board	185.00	1	185.00
SSE-R	Stainless Steel Enclosure with TP-1, TP-110 Dome Antenna	2,350.00	1	2,350.00
	ET2000e-24 -GR-RRe-SSE-R			
Total for 1 - 24 Station Field Unit (Single)				\$6,650.00

24 Station Field Unit (Double) (One for ICC B-C and one for ICC D-E)				
Model #	Description	Cost	Qty	
ET200e-24	24 Station Enhanced ET and Moisture Based Irrigation Controller	\$2,525.00	1	\$2,525.00
-GR	GPRS Radio Remote Receiver Board	1,590.00	1	1,590.00
-M	Multiple Communication Board	580.00	1	580.00
-FL	FLOWSENSE Software	470.00	1	470.00
-RRe	Enhanced Radio Remote Receiver Board	185.00	1	185.00
	ET2000e-24 -GR-M-FL-RRe			
ET200e-24	24 Station Enhanced ET and Moisture Based Irrigation Controller	\$2,525.00	1	\$2,525.00
-M	Multiple Communication Board	580.00	1	580.00
-FL	FLOWSENSE Software	470.00	1	470.00
-RRe	Enhanced Radio Remote Receiver Board	185.00	1	185.00
SSE-D-R	Stainless Steel Enclosure with TP-1's, TP-110 Dome Antennas for two Controllers	3,725.00	1	3,725.00
	ET2000e-24 -M-FL-RRe-SSE-D-R			
Total for 1 - 24 Station Field Unit (Double)				\$12,835.00

Auxiliary Items				
Model #	Description	Cost	Qty	
RRe-TRAN	Calsense Enhanced Radio Remote Hand-held Transmitter	\$850.00	1	\$850.00
FM 2	2" PVC Sch 80 Tee Mounted Flow Meter	530.00	3	1,590.00

Field units shall monitor the main line flows when operating with, or independently of, the base station.

Field units grouped together shall share a common communication unit with the base station.

The communication equipment for the field units shall have a 2-way data communication link with the base station by Cellular Digital Packet Data (CDPD) wireless modem.

Inputs and outputs of the communication system shall be lightning, transient and surge protected, including power, antenna and control connections.

TRAINING

Personnel training shall consist of a minimum 60 hours of classroom and field training for 4 personnel on the use and adjustment of the base station equipment (including software) and field units. The training shall be conducted over 8 consecutive working days, unless otherwise permitted by the Engineer. One complete set of training documentation and training aids shall be provided to each trainee and 2 sets to the Engineer (if videos are included in the training sessions, only one video tape copy will be required) and the training material shall become the property of the State.

The State will provide space for the training, including chairs and tables. Other required training aids will be the responsibility of the Contractor. At the option of the Contractor, the training facility may be provided at a facility of the Contractor's choice, that is, within 50 km of the project location or of the Office of the District Director of the District in which the project is located.

MEASUREMENT AND PAYMENT

Quantities of 24 Station Field Unit (Single) will be measured by the unit as determined from actual count in place.

The contract unit price paid for 24 Station Field Unit (Single) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in 24 Station Field Unit (Single), complete in place, including communication equipment, enclosure cabinet, and training, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Quantities of 24 Station Field Unit (Double) will be measured by the unit as determined from actual count in place.

The contract unit price paid for 24 Station Field Unit (Double) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in 24 Station Field Unit (Double), complete in place, including communication equipment, enclosure cabinet, and training, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

The contract lump sum price paid for Auxiliary Items shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in Auxiliary Items, complete in place, including Radio Remote Handheld Transmitter and Tee Mounted Flow Meters, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Attention is directed to the provisions in Section 10-3, "Signals, Lighting and Electrical Systems," of these special provisions, regarding electrical power for irrigation controllers and irrigation controller enclosure cabinets.

Attention is directed to the provisions in "Booster Pump System" of these special provisions, regarding electrical power for irrigation controllers.

Electric Remote Control Valves

Electric remote control valves shall conform to the provisions in Section 20-2.23, "Control Valves," of the Standard Specifications and the following:

- A. Valves shall be glass filled nylon construction.

Pull Boxes

Pull box installations shall conform to the provisions in Section 20-5.027I, "Conductors, Electrical Conduits and Pull Boxes," of the Standard Specifications.

Conductors

Low voltage, as used in this section "Conductors," shall mean 36 V or less.

Low voltage control and neutral conductors in pull boxes and valve boxes, at irrigation controller terminals, and at splices shall be marked as follows:

- A. Conductor terminations and splices shall be marked with adhesive backed paper markers or adhesive cloth wrap-around markers, with clear, heat-shrinkable sleeves sealed over the markers.
- B. Non-spliced conductors in pull boxes and valve boxes shall be marked with clip-on, "C" shaped, white extruded polyvinyl chloride sleeves. Marker sleeves shall have black, indented legends of uniform depth with transparent overlays over the legends and "chevron" cuts for alignment of 2 or more sleeves.

Markers for the control conductors shall be identified with the appropriate number or letter designations of irrigation controllers and station numbers. Markers for neutral conductors shall be identified with the appropriate number or letter designations of the irrigation controllers.

New control and neutral conductors that are to replace existing control and neutral conductors shall be the same size and color as the existing control and neutral conductors being connected to.

The color of low voltage neutral and control conductor insulation, except for the striped portions, shall be homogeneous throughout the entire thickness of the insulation.

Insulation for conductors may be UL listed polyethylene conforming to UL44 test standards with a minimum insulation thickness of 1.05 mm for wire sizes 10AWG and smaller.

At the option of the Contractor, other types of splice sealing materials and methods may be used provided other materials and methods have been approved in writing by the Engineer prior to installation of the connectors.

Prior to granting relief from maintenance and responsibility, as provided in these special provisions, the functional test, in conformance with the provisions in Section 20-5.027J, "Testing," of the Standard Specifications, shall be satisfactorily completed, and instruction shall be given to the Engineer on the use and adjustment of the installed irrigation controllers.

IRRIGATION CONTROLLER ENCLOSURE CABINET

Irrigation controller enclosure cabinets shall be constructed and equipment installed in the cabinets in conformance with the details shown on the plans, the provisions of Section 86-3.04A, "Cabinet Construction," of the Standard Specifications, and these special provisions.

Electric service shall be installed in accordance with "Electric Service (Irrigation)" of these special provisions.

The anchorage arrangement shall be inside the cabinet as shown on the plans. Dimensions of the cabinet shall be suitable for the equipment to be installed as shown on the plans and specified in these special provisions.

Door locks for the irrigation controller enclosure cabinets shall be a removable-core mortise cam cylinder door lock that receives the State's lock core. The State's lock core is a "Best" construction core. Keys shall be removable from the locks in the locked position only. Door locks shall be installed in conformance with the manufacturer's written instructions and recommendations. Two keys for each door lock shall be delivered to the Engineer.

Equipment, except for field wiring, shall be installed in the cabinet in a shop prior to field installation.

Equipment, except for field wiring, shall be installed in the cabinet in a shop by the equipment manufacturer's representative or distributor prior to field installation.

Full compensation for Irrigation Controller Enclosure Cabinet shall be considered as included in the contract unit price paid for Field Unit and no separate payment will be made therefor.

IRRIGATION SYSTEMS FUNCTIONAL TEST

Functional tests for the irrigation controllers and associated automatic irrigation systems shall conform to the provisions in Section 20-5.027J, "Testing," of the Standard Specifications and these special provisions.

Tests shall demonstrate to the Engineer, through one complete cycle of the irrigation controllers in the automatic mode, that the associated automatic components of the irrigation systems operate properly. If automatic components of the irrigation systems fail a functional test, these components shall be repaired at the Contractor's expense and the testing repeated until satisfactory operation is obtained.

Associated automatic components shall include, but not be limited to, booster pump systems, well, remote control valve actuator systems, and remote control valves.

Upon completion of work on an irrigation system, including correction of deficiencies and satisfactory functional tests for the systems involved, the plants to be planted in the area watered by the irrigation system may be planted provided the planting areas have been prepared as specified in these special provisions.

PIPE

Plastic Pipe

Plastic pipe supply lines shall be polyvinyl chloride (PVC) 1120 or 1220 pressure rated pipe with the minimum pressure rating (PR) shown on the plans.

Plastic pipe supply lines shall have solvent cemented type joints. Primers shall be used on the solvent cemented type joints.

Plastic pipe supply lines (main) shall have a minimum cover of 0.45 m unless otherwise stated on the plans.

A nonhardening joint compound shall be used in place of the pipe thread sealant tape conforming to the provisions in Section 20-5.03E, "Pipe," of the Standard Specifications. Joint compounds shall be applied in conformance with the manufacturer's recommendations.

Fittings for plastic pipe supply lines with a pressure rating (PR) of 315 shall be Schedule 80.

WATER METER

Water meters for the irrigation systems will be furnished and installed by the serving utility at the locations shown on the plans.

The Contractor shall make the arrangements and pay the costs and fees required by the serving utility.

The Sacramento Suburban Water District, at 3701 Marconi Avenue, Suite 100, Sacramento, CA 95821, has established a fee of \$36,603 for furnishing a water meter. If, at the time of installation, this fee has been changed, the State will take a credit for the reduction in the fee, or the State will pay the difference for the increase in the fee. The credit or payment will be taken or paid on the first monthly progress payment made after the meter is installed. The Contractor shall furnish the Engineer with a copy of the invoice for the installation fee.

Attention is directed to Section 20-4.06, "Watering," of the Standard Specifications. The Contractor shall make the arrangements for furnishing and applying water until the water meters have been installed by the serving utility.

The quantity of water meters will be measured by the unit as determined from actual count in place.

The contract unit price paid for water meter shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installing water meters, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

BACKFLOW PREVENTER ASSEMBLIES

Backflow preventers shall conform to the provisions in Section 20-2.25, "Backflow Preventers," of the Standard Specifications and these special provisions.

Backflow preventers shall have current approval from the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (USC Foundation).

Before backflow preventer assembly installation, the Contractor shall provide the Engineer with the portion of the USC Foundation "List of Approved Backflow Prevention Assemblies" showing type of assembly, manufacturer's name, model number, edition of the manual under which the assembly was approved, approval date and the last renewal date.

The "List of Approved Backflow Prevention Assemblies" is available to Foundation Members. Membership information to join the USC Foundation is available at:

<http://www.usc.edu/dept/fccchr/membership.html>

Questions concerning the USC Foundation "List of Approved Backflow Prevention Assemblies" can be answered by calling the Foundation at toll free (866) 545-6340.

Pressure loss through the backflow preventers shall not exceed the following:

BACKFLOW PREVENTER SIZE (millimeters)	FLOW RATE (Liters per minute)	PRESSURE LOSS (kPa)
75	160	82.7

Backflow preventer assemblies shall be painted with a minimum of 2 applications of a commercial quality enamel paint. The color of the paint shall be light brown.

BACKFLOW PREVENTER ASSEMBLY ENCLOSURE

Enclosures shall be fabricated of structural steel angles and flattened expanded metal and shall be installed over backflow preventer assemblies on a portland cement concrete pad as shown on the plans and in conformance with these special provisions.

Expanded metal for sides, ends and top panels shall be fabricated from 1.9 mm (14-gage), minimum thickness, sheet steel. The flattened expanded metal openings shall be approximately 20 mm by 45 mm in size.

Expanded metal panels shall be attached to the steel frames by a series of welds, not less than 6.4 mm in length and spaced not more than 100 mm on centers, along the edges of the enclosure.

Padlocks will be State-furnished in accordance with "State-furnished Materials" of these special provisions.

Enclosures shall be galvanized, after fabrication, in conformance with the provisions in Section 75-1.05, "Galvanizing," of the Standard Specifications.

Concrete for the concrete pad shall conform to Section 90-10, "Minor Concrete," of the Standard Specifications.

Hold down bolt assemblies shall be galvanized and shall be installed when the portland cement concrete pad is still plastic. Nuts shall be hexagonal and washers shall be the lock type.

Enclosures shall be painted with one application of a commercial quality pre-treatment, vinyl wash primer and a minimum of one application of a commercial quality, exterior enamel for metal. The finish color shall be light brown.

All parts of the backflow preventer assembly enclosure, including hold down assemblies, may be constructed of stainless steel instead of standard steel materials specified above. Stainless steel enclosures shall conform to the provisions herein except galvanizing, priming and painting shall not be required. Stainless steel enclosures shall be powder coated a light brown color by the manufacturer.

The minimum clearance between the backflow preventer assembly and the backflow preventer assembly enclosure shall be 50 mm.

Full compensation for furnishing and installing backflow preventer assembly enclosures and constructing the portland cement concrete pads for the enclosures shall be considered as included in the contract unit price paid for the size of backflow preventer assembly involved and no separate payment will be made therefor.

TESTING NEW BACKFLOW PREVENTERS

New backflow preventers shall be tested for proper operation in conformance with the provisions in Section 20-5.03J, "Check and Test Backflow Preventers," of the Standard Specifications and these special provisions.

Tests for new backflow preventers shall be satisfactorily completed after installation and before operation of the irrigation systems.

New backflow preventers shall be retested one year after the satisfactory completion of the previous test, and each year thereafter until the plant establishment period is completed. An additional test shall be provided not more than 10 days prior to acceptance of the contract.

SPRINKLERS

Sprinklers shall conform to the type, pattern, material, and operating characteristics listed in the "Sprinkler Schedule" shown on the plans.

Flexible risers shall be ultraviolet (UV) resistant, brown in color and shall conform to the details shown on the plans.

**BID ITEM LIST
03-1A1404**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
1	070013	SMALL BUSINESS UTILIZATION REPORT	EA	3	250.00	750.00
2	074016	CONSTRUCTION SITE MANAGEMENT	LS	LUMP SUM	LUMP SUM	
3 (S)	074019	PREPARE STORM WATER POLLUTION PREVENTION PLAN	LS	LUMP SUM	LUMP SUM	
4 (S)	120090	CONSTRUCTION AREA SIGNS	LS	LUMP SUM	LUMP SUM	
5 (S)	120100	TRAFFIC CONTROL SYSTEM	LS	LUMP SUM	LUMP SUM	
6 (S)	128650	PORTABLE CHANGEABLE MESSAGE SIGN	LS	LUMP SUM	LUMP SUM	
7 (S)	150742	REMOVE ROADSIDE SIGN	EA	21		
8 (S)	152320	RESET ROADSIDE SIGN	EA	1		
9	190110	LEAD COMPLIANCE PLAN	LS	LUMP SUM	LUMP SUM	
10	200002	ROADSIDE CLEARING	LS	LUMP SUM	LUMP SUM	
11	202006	SOIL AMENDMENT	M3	1100		
12	202011	MULCH	M3	2660		
13	202031	COMMERCIAL FERTILIZER (SLOW RELEASE)	KG	510		
14	202033	COMMERCIAL FERTILIZER (PACKET)	EA	2030		
15	204006	PLANT (GROUP F)	EA	115 000		
16	204035	PLANT (GROUP A)	EA	1680		
17	204036	PLANT (GROUP B)	EA	120		
18	BLANK					
19	204096	MAINTAIN EXISTING PLANTED AREAS	LS	LUMP SUM	LUMP SUM	
20	204099	PLANT ESTABLISHMENT WORK	LS	LUMP SUM	LUMP SUM	

**BID ITEM LIST
03-1A1404**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
21	BLANK					
22	206401	MAINTAIN EXISTING IRRIGATION FACILITIES	LS	LUMP SUM	LUMP SUM	
23	206560	CONTROL AND NEUTRAL CONDUCTORS	LS	LUMP SUM	LUMP SUM	
24	206611	25 MM ELECTRIC REMOTE CONTROL VALVE	EA	52		
25	206613	40 MM ELECTRIC REMOTE CONTROL VALVE	EA	27		
26	206614	50 MM ELECTRIC REMOTE CONTROL VALVE	EA	13		
27	206615	65 MM ELECTRIC REMOTE CONTROL VALVE	EA	2		
28	BLANK					
29	BLANK					
30	BLANK					
31	BLANK					
32 (F)	208250	25 MM PLASTIC PIPE (PR 200) (SUPPLY LINE)	M	9520		
33 (F)	208251	32 MM PLASTIC PIPE (PR 200) (SUPPLY LINE)	M	2025		
34 (F)	208252	40 MM PLASTIC PIPE (PR 200) (SUPPLY LINE)	M	1045		
35 (F)	208253	50 MM PLASTIC PIPE (PR 200) (SUPPLY LINE)	M	635		
36 (F)	208254	65 MM PLASTIC PIPE (PR 200) (SUPPLY LINE)	M	560		
37 (F)	208255	75 MM PLASTIC PIPE (PR 200) (SUPPLY LINE)	M	4680		
38	BLANK					
39	BLANK					
40	BLANK					

**BID ITEM LIST
03-1A1404**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
41	BLANK					
42	BLANK					
43	208304	WATER METER	EA	2		
44	208436	65 MM BACKFLOW PREVENTER ASSEMBLY	EA	2		
45	208466	SPRINKLER (TYPE A-6)	EA	440		
46	208471	SPRINKLER (TYPE B-1)	EA	35		
47	208472	SPRINKLER (TYPE B-2)	EA	450		
48	208482	SPRINKLER (TYPE C-2)	EA	1700		
49	208488	25 MM GATE VALVE	EA	10		
50	208490	40 MM GATE VALVE	EA	14		
51	208491	50 MM GATE VALVE	EA	13		
52	208492	65 MM GATE VALVE	EA	16		
53	208505	25 MM MANUAL CONTROL VALVE	EA	1		
54	208796	100 MM WELDED STEEL PIPE CONDUIT (6.02 MM THICK)	M	40		
55	208798	200 MM WELDED STEEL PIPE CONDUIT (6.35 MM THICK)	M	200		
56 (S)	209503	BOOSTER PUMP SYSTEM	EA	2		
57 (S)	012988	WATER WELL SYSTEM	LS	LUMP SUM	LUMP SUM	
58 (S)	209801	MAINTENANCE VEHICLE PULLOUT	EA	12		
59	560238	FURNISH SINGLE SHEET ALUMINUM SIGN (1.6 MM-UNFRAMED)	M2	10		
60	560239	FURNISH SINGLE SHEET ALUMINUM SIGN (2.0 MM-UNFRAMED)	M2	18		

**BID ITEM LIST
03-1A1404**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
61	560241	FURNISH SINGLE SHEET ALUMINUM SIGN (1.6 MM-FRAMED)	M2	3.4		
62 (S)	566011	ROADSIDE SIGN - ONE POST	EA	20		
63 (S)	566012	ROADSIDE SIGN - TWO POST	EA	1		
64 (S)	731518	MINOR CONCRETE (BRUSHED CONCRETE)	M2	1380		
65 (S)	731519	MINOR CONCRETE (STAMPED CONCRETE)	M2	1440		
66 (S)	860090	MAINTAINING EXISTING TRAFFIC MANAGEMENT SYSTEM ELEMENTS DURING CONSTRUCTION	LS	LUMP SUM	LUMP SUM	
67 (S)	860797	ELECTRIC SERVICE (IRRIGATION)	LS	LUMP SUM	LUMP SUM	
68 (S)	012989	BOOSTER PUMP AND WELL PUMP ELECTRICAL SYSTEM	LS	LUMP SUM	LUMP SUM	
69	BLANK					
70	017251	24 STATION FIELD UNIT (SINGLE)	EA	1		
71	017252	24 STATION FIELD UNIT (DOUBLE)	EA	2		
72	017253	AUXILIARY ITEMS	LS	LUMP SUM	LUMP SUM	
73	999990	MOBILIZATION	LS	LUMP SUM	LUMP SUM	

TOTAL BID: _____