DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
OFFICE ENGINEER
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Flex your power!
Be energy efficient!

September 17, 2012

04-Ala,CC-80-2.3/8.0, 0,0/13.1
04-3A7774
Project ID 0400002044

Addendum No. 3

Dear Contractor:

This addendum is being issued to the contract for CONSTRUCTION ON STATE HIGHWAY IN IN ALAMEDA AND CONTRA COSTA COUNTIES AT VARIOUS LOCATIONS FROM 0.1 MILE WEST OF POWELL STREET UNDERCROSSING TO 0.5 MILE EAST CUMMINGS SKYWAY OVERCROSSING.

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 Friday, September 21, 2012 at 10:00 a.m.

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

Project Plan Sheet 213 is revised. A copy of the revised sheets is attached for substitution for the like-numbered sheets.

Project Plan Sheets 167A, 185A, 185B, 185C, 185D, 185E, 188A, 212A, 212B, 212C, 212D, 212E, 212F, and 212G, 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 added as attached.

In the Notice to Bidders and Special Provisions, in the "STANDARD PLANS LIST," the following Standard Plans are added:

"H-1, PLANTING AND IRRIGATION - ABBREVIATIONS
H-2, PLANTING AND IRRIGATION - SYMBOLS
H-5, PLANTING AND IRRIGATION DETAILS."

In the Notice to Bidders, the thirteenth paragraph is revised as follows:

"The Department will receive bids until 10:00 a.m. on the bid open date at 1727 30th Street, Bidder's Exchange, MS 26, Sacramento, CA 95816. Bids received after this time will not be accepted. Department staff will direct the bidders to the bid opening."

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In the Special Provisions, Section 8-1.02, "STATE FURNISHED MATERIALS," the first paragraph is revised as follows:

"The State furnishes you with:

- Hardware for mounting sign panels as follows:
  Laminated wood box posts with metal caps
- Marker panels, including reflectors, for Type N, Type P, and Type R object markers
- Concrete barrier markers
- Model 2070L Controller Unit and Controller Assembly, including controller unit, completely wired controller cabinet, and detector sensor units
- Sign controller and cabinet assembly, including controller units, and completely wired controller cabinet for Lane Use Signs, Variable Advisory Speed Sign, and Variable Message Sign
- CCTV Router
- Information Display Board Sign, Lane Use Signs, Variable Advisory Speed Sign, Variable Message Sign, and mounting hardware."

In the Special Provisions, Section 10-2, "HIGHWAY PLANTING AND IRRIGATION SYSTEMS," is added as attached.

In the Special Provisions, Section 10-3.205, "VARIABLE MESSAGE SIGN (VMS) ASSEMBLY FOR HIGHWAY ADVISORY RADIO," is added as attached.

In the Special Provisions, Section 10-3.22, "PAYMENT," the second paragraph is revised as follows:

"If any of the fabrication sites for the materials listed are located more than 300 air line miles from both Sacramento and Los Angeles, additional shop inspection expenses will be sustained by the State. Whereas it is and will be impractical and difficult to determine the actual increase in these expenses, it is agreed that payment to the Contractor for furnishing these listed materials from each fabrication site located more than 300 air line miles from both Sacramento and Los Angeles will be reduced $2,000:

1. Service Equipment Enclosures
2. Closed Circuit Television Cabinets furnished by the Contractor
3. Variable Message Sign (VMS) Assemblies for Highway Advisory Radio."

In the Special Provisions, Section 10-3.22, "PAYMENT," is added as follows at the end of the section:

"The contract unit price paid for Variable Message Sign (VMS) Assembly for Highway Advisory Radio shall include full compensation for furnishing all materials, tools, equipment, and incidentals, and for doing all the work involved in Variable Message Sign (VMS) for Highway Advisory Radio, complete in place, including the removal and salvaging of existing EMS assemblies, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer."

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In the Bid book, in the "Bid Item List," Item 93 is revised, Items 130, 131, 132, 133, 134, 135, 136, and 137 are added and Item 129 is deleted as attached.

To Bid book holders:

Replace pages 7 and 9 of the "Bid Item List" in the Bid book with the attached revised pages 7 and 9 of the 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 addendum and attachments are available for the Contractors' download on the Web site:

http://www.dot.ca.gov/hq/esc/oe/project_ads_addenda/04/04-3A7774

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,

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

Attachments

SECTION 10-2 HIGHWAY PLANTING AND IRRIGATION SYSTEMS

10-2.01 GENERAL

The work performed in connection with highway planting and irrigation systems shall conform to the provisions in Section 20, "Erosion Control and Highway Planting," of the Standard Specifications and these special provisions.

The Contractor shall notify the Engineer not less than 72 hours prior to requiring initial access to the existing irrigation controllers. When the Engineer determines that access to the controllers is required at other times, arrangements will be made to provide this access.

COST BREAK-DOWN

The Contractor shall furnish the Engineer a cost break-down for the contract lump sum item of irrigation system. The cost break-down table shall be submitted to the Engineer for approval within 15 working days after the contract has been approved. The cost break-down table will be approved, in writing, by the Engineer before any partial payment will be made for the item of irrigation system.

The cost break-down shall be completed and furnished in the format shown in the sample of the cost break-down 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 line item descriptions shown in the samples. The line items and quantities given in the sample are to show the manner of preparing the cost break-down 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-down submitted to the Engineer for approval. The Contractor shall be responsible for the accuracy of the quantities and values used in the cost break-down submitted for approval.

The sum of the amounts for the line items of work listed in the cost break-down table for irrigation system work shall be equal to the contract lump sum price bid for the work. Overhead and profit shall be included in each individual line item of work listed in the cost break-down table.

No adjustment in compensation will be made in the contract lump sum price paid for irrigation system due to differences between the quantities shown in the cost break-down table 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 table 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 item of irrigation system due to changes in line items of work ordered by the Engineer. When the total value of ordered changes to line items of work increases or decreases the lump sum price bid for irrigation system by more than 25 percent, the adjustment in compensation 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.

IRRIGATION SYSTEM COST BREAK-DOWN

Contract No. 04-3A7774

UNIT DESCRIPTION	UNIT	APPROXIMATE QUANTITY	VALUE	AMOUNT
CHECK AND TEST IRRIGATION FACILITES	LS	LUMP SUM		
REMOVE AND SALVAGE SPRINKLER HEAD	EA	1		
REMOVE SPRINKLER HEAD	EA	16		
INSTALL SPRINKLER HEAD	EA	16		
CONNECT NEW IRRIGATION LATERAL TO EXISTING PIPE	EA	2		
REMOVE ¾" PLASTIC PIPE (PR 200)	LF	180		
REMOVE 1" PLASTIC PIPE (PR 200)	LF	360		
REMOVE 1 ¼" PLASTIC PIPE (PR 200)	LF	240		
REMOVE 2" PLASTIC PIPE (PR 200)	LF	60		
INSTALL ¾" PLASTIC PIPE (PR 200)	LF	180		
INSTALL 1" PLASTIC PIPE (PR 200)	LF	360		
INSTALL 1 ¼" PLASTIC PIPE (PR 200)	LF	240		
INSTALL 2" PLASTIC PIPE (PR 200)	LF	60		

10-2.02 EXISTING HIGHWAY PLANTING

In addition to the provisions in Section 20, "Erosion Control and Highway Planting," of the Standard Specifications, work performed in connection with existing highway planting shall conform to the provisions in "Existing Highway Facilities," of these special provisions.

PRUNE EXISTING PLANTS

Existing plants shown on the plans to be pruned shall be pruned in conformance with the provisions in Section 20-4.055, "Pruning," of the Standard Specifications.

Pruning shall include removal of deadwood, suckers, and broken or bruised branches one inch or larger in diameter. Tree seal compounds shall not be used to cover pruning cuts.

Removed pruned materials shall be disposed of in conformance to the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications. At the Contractor's option, prunings may be reduced to chips. Chipped materials shall be spread within the highway right of way where designated by the Engineer.

The contract lump sum price paid for prune existing plants, except as otherwise provided, shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in pruning existing plants, complete in place, including removing and disposing of pruned materials, or chipping and spreading of chipped materials, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

10-2.03 EXISTING HIGHWAY IRRIGATION FACILITIES

The work performed in connection with the various existing highway irrigation system facilities shall conform to the provisions in "Existing Highway Facilities," of these special provisions.

Water shall be maintained in conformance with the provisions in Section 20-5.025, "Maintain Existing Water Supply," of the Standard Specifications.

CHECK AND TEST EXISTING IRRIGATION FACILITIES

Existing irrigation facilities that are to remain or to be relocated, and that are within those areas where clearing and grubbing or earthwork operations are to be performed, shall be checked for missing or damaged components and proper operation prior to performing clearing and grubbing or earthwork operations. Existing irrigation facilities outside of work areas that are affected by the construction work shall also be checked for proper operation.

A written list of existing irrigation system deficiencies shall be submitted to the Engineer within 5 working days after checking the existing facilities.

When existing irrigation facilities are checked, existing 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.

Length of watering cycles for use of potable water from water meters for checking or testing existing irrigation facilities shall be as determined by the Engineer.

Additional repairs required for the existing irrigation system as ordered by the Engineer, except as otherwise provided for in "Existing Highway Irrigation Facilities" of these special provisions, will be paid for as extra work as provided in Section 4-1.03D, "Extra Work," of the Standard Specifications.

REMOVE EXISTING IRRIGATION FACILITIES

Existing irrigation facilities where shown on the plans to be removed, shall be removed. Facilities that are more than 6 inches below finished grade, excluding facilities to be salvaged, may be abandoned in place.

Immediately after disconnecting an existing irrigation facility to be removed or abandoned from an existing facility to remain, the remaining facility shall be capped or plugged, or shall be connected to a new or existing irrigation facility.

Existing Sprinkler heads, where shown on the plans to be removed, shall be salvaged.

The Engineer shall be given written notification of the intent to salvage existing irrigation facilities a minimum of 72 hours prior to salvaging these facilities.

Salvaged irrigation facilities shall remain the property of the State and shall be delivered to Engineer.

A list of salvaged facilities, including the quantity and size of each item salvaged, shall be included with each delivery.

Facilities to be removed, excluding facilities to be salvaged, 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.

RELOCATE EXISTING IRRIGATION FACILITIES

Relocate existing irrigation facilities shall consist of relocating existing sprinklers, and other facilities shown on the plans or specified in these special provisions.

Relocate existing sprinklers shall consist of relocating existing sprinklers, risers, riser supports, check valves, and concrete protectors as shown on the plans.

Existing irrigation facilities, shown on the plans to be relocated, that are, in the opinion of the Engineer, unsuitable for the purpose intended, shall be replaced in conformance with the provisions in Section 15-2.05, "Reconstruction," of the Standard Specifications.

After irrigation facilities have been relocated, the Contractor shall demonstrate that the relocated facilities function properly in the presence of the Engineer.

ROADSIDE CLEARING

Before preparing planting areas or commencing irrigation trenching operations for planting areas, trash and debris shall be removed from these areas as required under Construction Site Management of these special provisions.

The project area shall be cleared as specified herein:

A. Existing plants, where shown on the plans to be removed, shall be removed.
B. At the option of the Contractor, removed trees and shrubs may be reduced to chips. Chipped material shall be spread within the project limits at locations designated by the Engineer. Chipped material shall not be substituted for mulch, nor shall the chipped material be placed within areas to receive mulch.

After the initial roadside clearing is complete, additional roadside clearing work shall be performed as necessary to maintain the areas, as specified above, in a neat appearance until the start of the plant establishment period. This work shall include the following:

A. Trash and debris shall be removed.
B. Rodents shall be controlled.

Roadside clearing work shall not include work required to be performed as clearing and grubbing as specified in Section 16, "Clearing and Grubbing," of the Standard Specifications.

PIPE

Plastic Pipe

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

Plastic pipe supply lines less than 3 inches in diameter must have solvent cemented type joints. Primers must be used on the solvent cemented type joints.

A nonhardening joint compound must 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 must be applied in conformance with the manufacturer's recommendations.

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

FINAL IRRIGATION SYSTEM CHECK

A final check of existing and new irrigation facilities shall be performed not more than 40 working days and not less than 30 working days prior to acceptance of the contract.

The length of watering cycles using potable water measured by water meters for the final check of irrigation facilities will be determined by the Engineer.

Remote control valves connected to existing and new irrigation controllers shall be checked for automatic performance when the controllers are in automatic mode.

Unsatisfactory performance of irrigation facilities installed or modified by the Contractor shall be repaired and rechecked at the Contractor's expense until satisfactory performance is obtained, as determined by the Engineer.

Repair or replacement of existing irrigation facilities due to unsatisfactory performance shall conform to the provisions in "Existing Highway Irrigation Facilities" of these special provisions.

Nothing in this section "Final Irrigation System Check" shall relieve the Contractor of full responsibility for making good or repairing defective work or materials found before the formal written acceptance of the entire contract by the Director.

Full compensation for checking the irrigation systems prior to the acceptance of the contract shall be considered as included in the contract lump sum price paid for irrigation system and no additional compensation will be allowed therefor.

10-3.205 VARIABLE MESSAGE SIGN (VMS) ASSEMBLY FOR HIGHWAY ADVISORY RADIO

GENERAL

This work includes removing, salvaging and replacing of existing Extinguishable Message Sign (EMS) assemblies for the Highway Advisory Radio system with Variable Message Sign (VMS) assemblies at the following locations:

1. Eastbound Interstate 80, East of the Central Avenue Off-ramp
2. Eastbound Interstate 80, West of Hilltop Drive
3. Eastbound Interstate 80, at the 580WB/80EB/880NB Interchange
4. Westbound Interstate 80, West of the John Muir Parkway Off-ramp
5. Eastbound Interstate 80, West of the Willow Avenue Off-ramp
6. Westbound Interstate 80, West of the Cummings Skyway Off-ramp
7. Eastbound Interstate 80, East of the Cummings Skyway Off-ramp

Variable Message Sign (VMS) assembly shall include one sign panel, one sign controller assembly including enclosure, and one sign interface cable.

VMS assembly shall operate at a frequency of 60 ±3 Hz over a voltage ranging from 90 to 135 V(ac). The voltage fluctuations must not cause visible flicker or change in pixel luminous intensity. The rated voltage for measurements shall be 120 V(ac).

VMS assembly shall include voltage surge protection to withstand high repetition noise transient as stated in section 2.1.6 of NEMA Standard TS-2.

VMS assembly shall meet Federal Communications Commission (FCC) Title 47, SubPart B, Section 15 regulations concerning the emission of electronic noise.

All wiring shall be No. 22 AWG or larger, and shall be color-coded per TEES Section 1.3.13. All wiring shall be bundled, wrapped, and permanently labeled.

Performance Warranty

The Contractor must provide manufacturer's written warranty for replacement against defects in materials and workmanship for VMS assembly for a minimum period of 48 months from the date of successful completion of acceptance testing.

Replacement must be provided within 15 days after receipt of failed parts at your expense. The State pays for shipping the failed parts to you. Replacement of failed parts must be delivered to State Maintenance Electrical Shop at 30 Rickard Street, San Francisco, CA 94134.

The manufacturer must also replace or repair any pixel module that contains a pixel that exhibits light degradation greater than 50 percent within the first 36 months of operation, or if more than 20 percent of its LEDs fail during that same period.

SIGN PANEL

The maximum dimensions of each sign panel shall be 114 inches in length, 63 inches in height and 10 inches in depth. Each sign panel shall not weigh more than 400 pounds.

Each sign panel shall have internal power supplies to fully operate the sign. The sign panel power factor shall be greater than 90 percent, and current total harmonic distortion shall be less than 25 percent. The maximum power consumption of each sign panel shall be 150 W.

Each sign panel shall have dimming capability to fully operate the sign, using one or more photosensors installed inside the housing to measure ambient light level.

Housing

Each sign panel shall be constructed with an extruded aluminum frame that meets AAMA 2604 or 2605 powder coating on aluminum standard. One 0.25 inch reinforcing plate shall be added at the top and bottom of the frame. Two 0.5625 inch diameter holes shall be drilled through both the reinforcing plate and the housing at the top and bottom of the panel, with each hole centered 2 inches from the rear of the housing and 30 inches off the panel vertical centerline.

The rear, sides, top and bottom of the housing shall consist of 0.0625 inch minimum sheet aluminum, with a high gloss textured black finish powder coat paint meeting the color standards of Federal specifications 595b, 17038, applied to both internal and external surfaces.

The front face shall have a 6 inch wide border on the top, bottom and both sides to frame the pixel array. The border shall consist of 0.0625 inch minimum sheet aluminum, with a high gloss textured black finish powder coat paint meeting the color standards of Federal specifications 595b, 17038, applied to both internal and external surfaces. The front face shall be constructed with a transparent anti-glare polycarbonate or hardened acrylic panel mounted behind the border.

The front face shall be hinged to allow access to the interior of the panel. The sign panel shall be provided with devices to retain the front face in a fully open mode. The housing shall be made rain-tight with a closed-cell neoprene gasket.

The housing shall be vented on the bottom and shall be provided with an interior temperature-controlled ventilation fan. Additional ventilation shall be provided such as to ensure the interior of the housing remains below 131 °F without compromising the rain-tight integrity. Each vent shall have a removable filter installed in a frame.

The housing shall have fully welded seams. All interior and exterior hardware shall be either stainless steel or cadmium-plated steel.

Each sign panel shall have the manufacturer's name and trademark permanently marked on its side. Each sign panel shall be identified with a model, serial number and shipping date stamped on a tag attached to its side for warranty purposes. The lettering shall be a minimum of 9/32-inch high. The information may be either depressed or raised, and shall be legible and durable.

Pixel Module

Each sign panel shall have a full matrix of pixels, with a minimum of 56 pixels wide by 25 pixels high. The pixels shall be uniformly arranged in multiple modules, with minimum horizontal and vertical pitch of 1.75 inch.

Each pixel module shall be fabricated from 0.0625 inch minimum thick aluminum sheet. After fabrication, each pixel module shall be treated with a high gloss textured black finish powder coat paint meeting the color standards of Federal specifications 595b, 17038.

Each pixel module shall have the manufacturer's name, trademark, model number, serial number permanently marked on the back of the panel. Rated voltage, current, power consumption and Volt-Amperes (VA) per pixel shall also be identified.

Each pixel module shall be identical to and interchangeable with each others.

Each pixel module shall be 100 percent solid-state design with no moving parts or switches.

Each pixel module shall be secured to the sign panel frame with louvers in front of Pixels with captive type retainers.

Pixels

Each pixel shall consist of high-intensity ultra-bright Aluminum Indium Gallium Phosphide (AlInGaP) LEDs. Each LED shall be rated for 100,000 hours of continuous operation from -35 to +165 °F. The color of each LED shall be yellow (592 ±5 nm). Each LED in a pixel shall be from the same manufacturer and color bin. Each LED shall be UV-stabilized.

Each pixel shall be designed such that a catastrophic failure of one LED will result in the loss of not more than 40 percent of the total LEDs for that pixel.

Each pixel shall have a maximum LED array size of 1 inch diameter (if circular array) or 1 inch square (if square array). The LEDs shall be evenly distributed throughout the pixel.

Each pixel shall have a viewing angle of 30 degrees. Each pixel shall have an initial nominal luminous intensity of 9.5 cd on the maximum setting. Each pixel shall be rated for a minimum useful life of 48 months and shall maintain not less than 85 percent of the minimum intensity while operating throughout the temperature range of -35 to +165 °F.

The measured chromatic coordinates of each pixel shall conform to the chromaticity requirements of section 5.3.2.1 and Figure C of the Equipment and Materials Standards of the Institute of Transportation Engineers ITE Publication ST-017A.

Each pixel shall have a removable black plastic visor to enhance resistance to sun phantom.

Each pixel shall be encapsulated for water resistance.

SIGN CONTROLLER ASSEMBLY

General

Each sign controller assembly shall consist of one sign controller, one power supply, one standard PC-compatible keyboard, and one multi-line LCD display mounted inside one enclosure.

Sign Controller

Each sign controller shall have one EIA-232 communication interface for remote communications. Each sign controller shall have the necessary interface to control 2 beacons.

Each sign controller shall have firmware that allows the user to create, edit and save a minimum of 50 messages and 99 pages. These shall be stored in non-volatile memory and shall remain unaltered for a minimum of 30 days without AC power to the sign controller.

The firmware shall interact with the sign panel through a menu-driven interface. The firmware shall be accessible via either the keyboard or through the EIA-232 port.

Access to the firmware shall be protected by multi-level password control. A function to reset password and re-initializing the system shall be provide by the supplier.

The firmware shall be NTCIP (National Transportation Communication for ITS Protocol) compliant including, but not limited to, the following standards:

1. Device Data Dictionary: NTCIP 1201 – Global Object Definitions, all mandatory objects of all mandatory conformance groups
2. Device Data Dictionary: NTCIP 1203 – Object Definitions for Dynamic Message Signs;
3. Application Profile Level: NTCIP 1101 – Simple Transportation Management Framework (STMF) – and shall meet Conformance Level 1
4. Sub-network Profile Level: NTCIP 2103 – SP PPP / RS-232
5. Transport Profile Level: NTCIP 2201, TP – Transportation Transport Profile.

The firmware shall support the following tags as defined in NTCIP 1203, v02.31a:

1. Flash
2. Font
3. Graphic
4. Justification – Line
5. Justification – Page
6. New Line
7. New Page
8. Page Time
9. Spacing Character

The firmware shall support 2 beacons with opposed flashing.

Dimming Control

The sign controller shall automatically adjust the intensity of all pixels by means of photo sensors installed in the sign housing. There shall be a minimum of three adjustable levels of luminance: 100 , 60 , and 30 percent.

A single-throw "Dim Test" switch shall be provided to override the automatic intensity selection and force each activated pixel to 30 percent luminance.

Enclosure

The enclosure shall include the sign controller assembly, power supply, operational display of the controller, keyboard and a disconnect switch. Enclosure shall be partitioned with a continuous stainless steel hinge panel. In the back of this panel, install the sign controller assembly, and power supply. In front of this panel, install the display, key board, and disconnect switch. This panel shall be secured with thumbscrews when it is closed.

The enclosure shall be fabricated from galvanized sheet steel, or shall be fabricated from sheet steel and zinc- or cadmium-plated after fabrication, or shall be fabricated from aluminum. The enclosure shall conform to the provisions for a NEMA Type 3R enclosure.

The enclosure door shall have a handheld latch to keep the door closed. Padlock hasps with a 7/16 inch hole shall be welded to the enclosure and door to enable the installation of a State-furnished padlock.

Each enclosure shall have the manufacturer's name and trademark permanently marked on its side. Each enclosure shall be identified with a model, serial number and shipping date stamped on a tag attached to its side for warranty purposes. The lettering shall be a minimum of 9/32-inch high. The information may be either depressed or raised, and shall be legible and durable.

Sign Operating Software (SOS)

The sign operating software shall enable a PC laptop to interact with sign controller via an on-board communications port. This port may be either Ethernet or EIA-232.

The manufacturer shall supply the State free of charge one copy of the SOS in CD-ROM format for each VMS Assembly delivered in the contract, up to a maximum of 5 copies.

SIGN INTERFACE CABLE

The sign interface cable shall connect the sign panel to sign controller assembly and shall be continuous without splicing. The cable shall be fabricated by the sign manufacturer. The manufacturer identification shall be printed in white ink every foot along the surface of the cable. The cable shall meet all specifications for outdoor use. The cable length shall be a minimum of 50 feet.

The Contractor shall furnish a EIA-232 to EIA-422 converter for each fix camera installed in this contract. EIA-422 shall be crew terminal type connection. EIA-232 shall be DE9 female connector type connection.

PRE-FABRICATION APPROVAL

Complete shop drawings for the VMS Assembly shall be submitted to the Engineer for testing, evaluation and approval, a minimum of 30 days before ordering or fabrication of equipment.

MANUALS

Two copies of the Service & Maintenance Manual, and Operational Manual shall be submitted to the Engineer for evaluation and approval. Upon approval by the Engineer, two copies of these Manual for each VMS Assembly delivered in the contract, up to a maximum of 10 manuals, shall be provided.

All pages in the manual shall be securely fastened together between protective covers (loose-leaf ring binding is acceptable). No page shall be subject to fading from exposure to any normal source of ambient lighting (ozalid-reproduced pages are non acceptable).

Each manual shall contain but not limited to the following sections and sub-sections:

1. General

    1.1. List of applicable subassemblies that comprise the specified equipment.
    1.2. Overall description of the equipment design features (including any modification if applicable), performance, and applications.
    1.3. Equipment specifications summary.
    1.4. Equipment installation instructions.

2. Operations

    2.1. Theory of operation of the standard equipment, with unique or unusual circuitry described in detail.
    2.2. Theory of operation reflecting any modification to the standard equipment.
    2.3. Operation of the VMS and controller assembly

3. Service and Maintenance

    3.1. Recommended test equipment and fixtures, or minimum operational and performance requirements for appropriate test equipment.
    3.2. Trouble shooting information, resetting instruction/process and charts.
    3.3. Removal and installation procedures for replacing assemblies and subassemblies, if not obvious or if improper sequencing of steps may result in damage.
    3.4. Service of the VMS components and controller assembly

4. Replacement Parts

    4.1. Equipment replacement parts list including electrical parts, mechanical parts and assemblies, with each semiconductor device identified by the supplier's numbers and by JEDEC numbers if applicable.

5. Diagrams

5.1. Schematic diagrams(s) identifying all circuit components and showing normal test voltages and levels.
5.2. Overall functional block diagram.
5.3. Detailed interconnecting diagram(s) showing wiring between modules, circuit boards and major components.
5.4. Pictorial circuit board layout diagram(s) showing both component placement and printed wiring detail.
5.5. Diagram(s) showing location of circuit boards and other subassemblies.
5.6. Exploded view diagram(s) of complex mechanical assemblies.

TESTING

Each VMS Assembly shall be inspected and tested by the California Department of Transportation, Transportation Laboratory Electrical Testing Branch. Quality Assurance (QA) inspection and acceptance testing shall be at the manufacturer's facility. Two copies of the Manuals and two copies of the shop drawings, showing the mechanical and electrical systems and circuits, shall be delivered to the Electrical Testing Branch engineer prior to acceptance testing. It is the responsibility of the Contractor to make arrangements with the Electrical Testing Branch to schedule an inspection date. This date shall be agreed upon no fewer than 15 days prior to the inspection date.

Each VMS assembly shall be inspected and tested by the Electrical Testing Branch engineer for mechanical and electrical specification compliance and quality of workmanship. In addition to factory testing, the following functional testing shall be done by a qualified representative of the sign manufacturer in the presence of the Electrical Testing Branch engineer. The State may reject any unit, which is not in compliance with the specifications.

A minimum of 5 different messages composed of text and graphics display shall be performed. Any others tests recommended by the manufacturer shall also be conducted.

BID ITEM LIST

04-3A7774

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
81	839585	ALTERNATIVE FLARED TERMINAL SYSTEM	EA	3		
82	839591	CRASH CUSHION, SAND FILLED	EA	1		
83	840504	4" THERMOPLASTIC TRAFFIC STRIPE	LF	87,300		
84	840506	8" THERMOPLASTIC TRAFFIC STRIPE	LF	4,000		
85	840515	THERMOPLASTIC PAVEMENT MARKING	SQFT	440		
86	850101	PAVEMENT MARKER (NON-REFLECTIVE)	EA	4,810		
87	850111	PAVEMENT MARKER (RETROREFLECTIVE)	EA	1,820		
88	860090	MAINTAINING EXISTING TRAFFIC MANAGEMENT SYSTEM ELEMENTS DURING CONSTRUCTION	LS	LUMP SUM	LUMP SUM	
89	023618	MODEL 334 CABINET	EA	7		
90	023619	VIDEO ENCODER UNIT	EA	9		
91	023620	CAMERA CONTROL UNIT	EA	9		
92	023621	INTEGRATED CAMERA UNIT	EA	9		
93	023622	SIGNAL INTERCONNECT NETWORK ELEMENT	EA	18		
94	023623	TYPE CCTV40 POLE	EA	9		
95	023624	TRAFFIC OPERATIONS SYSTEM (LOCATION 1)	LS	LUMP SUM	LUMP SUM	
96	023625	TRAFFIC OPERATIONS SYSTEM (LOCATION 2)	LS	LUMP SUM	LUMP SUM	
97	023626	TRAFFIC OPERATIONS SYSTEM (LOCATION 3)	LS	LUMP SUM	LUMP SUM	
98	023627	TRAFFIC OPERATIONS SYSTEM (LOCATION 4)	LS	LUMP SUM	LUMP SUM	
99	023628	TRAFFIC OPERATIONS SYSTEM (LOCATION 5)	LS	LUMP SUM	LUMP SUM	
100	023629	TRAFFIC OPERATIONS SYSTEM (LOCATION 6)	LS	LUMP SUM	LUMP SUM	

REVISED PER ADDENDUM NO. 3 DATED SEPTEMBER 17, 2012

BID ITEM LIST

04-3A7774

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
121	023650	TRAFFIC OPERATIONS SYSTEM (LOCATION 27)	LS	LUMP SUM	LUMP SUM	
122	023651	TRAFFIC OPERATIONS SYSTEM (LOCATION 28)	LS	LUMP SUM	LUMP SUM	
123	023652	TRAFFIC OPERATIONS SYSTEM (LOCATION 29)	LS	LUMP SUM	LUMP SUM	
124	023653	TRAFFIC OPERATIONS SYSTEM (LOCATION 30)	LS	LUMP SUM	LUMP SUM	
125	023654	TRAFFIC OPERATIONS SYSTEM (LOCATION 31)	LS	LUMP SUM	LUMP SUM	
126	023655	TRAFFIC OPERATIONS SYSTEM (LOCATION 32)	LS	LUMP SUM	LUMP SUM	
127	023656	GENERAL PACKET RADIO SERVICE WIRELESS MODEM ASSEMBLY	EA	44		
128	023657	LONG LEAD-IN CABLE LOOP DETECTOR SENSOR UNIT	EA	29		
129	BLANK					
130	150748	REMOVE ROADSIDE SIGN PANEL	EA	4		
131	200002	ROADSIDE CLEARING	LS	LUMP SUM	LUMP SUM	
132	200052	PRUNE EXISTING PLANTS	LS	LUMP SUM	LUMP SUM	
133	208000	IRRIGATION SYSTEM	LS	LUMP SUM	LUMP SUM	
134	566011	ROADSIDE SIGN - ONE POST	EA	25		
135	568016	INSTALL ROADSIDE SIGN PANEL ON EXISTING POST	EA	8		
136	024838	VARIABLE MESSAGE SIGN ASSEMBLY FOR HIGHWAY ADVISIORY RADIO	EA	7		
137	999990	MOBILIZATION	LS	LUMP SUM	LUMP SUM	

TOTAL BID: **$** _____