

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

OFFICE ENGINEER

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August 20, 2012

04-Ala,CC-80-3.8/8.0, 0.0/13.5

04-3A7764

Project ID 0400002043

Addendum No. 3

Dear Contractor:

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

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, August 24, 2012.

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

Project Plan Sheets 1, 181, 183, 184, 186, 187, 205, 206, 212, 215, 220, and 232 are revised. Copies of the revised sheets are attached for substitution for the like-numbered sheets.

Project Plan Sheet 241A is added. A copy of the added sheet is attached for addition to the project plans.

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

"The estimated cost of the project is \$6,000,000.00."

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, Bidders' 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."

In the Special Provisions, Section 10-3.01, "DESCRIPTION," is revised as follows:

"Modify lighting, variable message signs, modify ramp metering systems, general packet radio service wireless modem assembly, long lead-in cable loop detector sensor unit, ramp meter transit signal priority system, and maintaining existing traffic management system elements during construction shall conform to the provisions in Section 86, "Electrical Systems," of the Standard Specifications and these special provisions."

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In the Special Provisions, Section 10-3.185, "RAMP METER TRANSIT SIGNAL PRIORITY SYSTEM," is added as attached.

To Bid book holders:

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/04/04-3A7764](http://www.dot.ca.gov/hq/esc/oe/project_ads_addenda/04/04-3A7764)**

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

## **10-3.185 RAMP METER TRANSIT SIGNAL PRIORITY SYSTEM**

### **GENERAL**

This work includes installing, testing, and providing training for a ramp meter transit signal priority (TSP) system as shown on these plans, and as specified in these special provisions. The TSP detection equipment shall be installed at ramp meter locations. The TSP emitter equipment for transit vehicles shall be furnished to AC Transit for installation by AC Transit.

### **SUBMITTALS**

The submittals for the TSP detection equipment and vehicle emitter equipment shall conform to the provisions of Section 86-1.04, "Equipment List and Drawings," of the Standard Specifications and these special provisions. The submittals shall be delivered to the Engineer for review and approval. The Engineer will be allowed at least 15 working days for the review and approval of the submittals.

### **MANUALS**

The Contractor shall provide 10 operations and maintenance manuals for all equipment. Receive approval from the Engineer on approved manual before presenting all final copies. Manuals must include the following:

1. Comprehensive system overview
2. Theory of Operation
3. Preemption System Sequence of Operation
4. Preventive Maintenance Procedures
5. Diagnostic & Troubleshooting Procedures
6. Corrective Maintenance & Repair Procedures
7. Data retrieval and data query at the controller
8. Parts lists and catalogue number

### **CERTIFICATE OF COMPLIANCE**

The Contractor shall provide the Engineer with a Certificate of Compliance from the manufacturer in accordance with the provisions of Section 6-1.07, "Certificates of Compliance," of the Standard Specifications for the TSP detection equipment and vehicle emitter equipment. The certificate shall include all test reports on the equipment by the manufacturer.

### **WARRANTY**

Provide a minimum two-year warranty for all TSP equipment during which the manufacturer shall replace or repair any units that prove to be defective at no additional cost to the State or AC Transit. The warranty period starts on the date its installation has been accepted in the field. Furnish replacement TSP equipment within 10 days after receipt of the failed equipment. The Department does not pay for the replacement. Deliver replacement TSP detection equipment to the Caltrans Maintenance Electrical Shop at 30 Rickard Street, San Francisco, CA 94134. Deliver the replacement vehicle emitter equipment to AC Transit at 1600 Franklin St, Oakland, CA 94612.

### **TSP DETECTION EQUIPMENT**

The TSP detection equipment installed at ramp meter locations shall recognize TSP commands from both infrared and GPS-based radio emitters and provide TSP calls to ramp metering controllers. AC Transit vehicles utilize infrared emitters. WestCAT vehicles utilize GPS-based emitters. All equipment shall be new. The following equipment shall be manufactured by Global Traffic Technologies:

1. Model 764 Multimode Phase Selector
2. Model 768 Auxiliary Interface Panel
3. Model 721 Infrared Detector
4. Model 1012 GPS-based radio receiver in cabinet
5. Model 138 detector cable

## VEHICLE EMITTER EQUIPMENT

TSP emitter equipment shall be multimode (GPS and infrared) pre-emption vehicle kit, as manufactured by Global Traffic Technologies. All equipment shall be new. Vehicle kit shall include the following components:

1. 1020 GPS Vehicle Control unit
2. 1012 GPS Radio unit with 1050 GPS antenna
3. 794TM Multi-mode low priority emitter
4. Model 1072 Cable assembly
5. All connecting cables and harnesses

## VENDOR QUOTE

Arrangements have been made for the Contractor to obtain TSP equipment from Advanced Traffic Products (Global Traffic Technologies California dealer), 909 SE Everett Mall Way, Suite B280, Everett, WA 98208, (800) 690-4287.

The price quoted by the manufacturer for equipment is summarized below:

Equipment	Quantity	Unit Price	Extended Price
Model 764 Multimode Phase Selector	8	\$2,751.00	\$22,008.00
Model 768 Auxiliary Interface Panel	8	\$300.00	\$2,400.00
Model 721 Infrared Detector	8	\$483.90	\$3,871.20
Model 1012 GPS-based radio receiver and antenna	8	\$2,680.00	\$21,440.00
Model 138 detector cable (1000' roll)	1	\$410.00	\$410.00
GPS Pre-emption Vehicle Kit	40	\$3,500.00	\$140,000.00
Support: Testing, Training	1	\$3,000.00	\$3,000.00
<b>Total Price</b>			<b>\$183,129.20</b>

The above prices will be firm for orders placed on or before June 30, 2013. Delivery is included in these prices, sales taxes are not included.

## CONSTRUCTION

### Ramp Meter Detection Equipment

Install detection system on traffic signal poles, conduits and cabinet locations according to manufacturer's recommendations, as shown on the plans, Standard Plans, Standard Specifications and these special provisions.

Install infrared detectors on traffic signal poles within unobstructed direct line-of-sight per manufacturer's recommendation for horizontal and vertical cone of vision. The cable connecting infrared detectors and phase selector shall be installed without splices.

Install GPS-based radio receiver in controller cabinet per manufacturer's recommendation. Install cables connecting radio to phase selector.

Install and program the phase selector at ramp meter locations shown on the plans. Furnish and install phase selector in existing detector rack. Program phase selector with authorized emergency response vehicle ID at each location. The Engineer shall provide a list of authorized vehicle identification numbers to the Contractor.

### Vehicle Emitter Equipment

Furnish vehicle emitter equipment to AC Transit Central Maintenance Yard at 10626 E. 14<sup>th</sup> Street, Oakland, AC Transit contact telephone number: 510-577-8875, as directed by Engineer. Provide 48-hour notice prior to delivery. All equipment necessary for unloading delivery vehicle and moving equipment to AC Transit designate storage area shall be furnished by the Contractor.

## TESTING

Demonstrate that the TSP system at ramp meter locations is functional when receiving the signal from the new emitters to be installed on AC Transit and WestCAT transit vehicle equipment and the ramp meter TSP performs satisfactorily as a system. Arrange to have the manufacturer's representative on-site during the system testing.

Notify the Engineer a minimum 15 working days prior to final testing. Provide the Engineer all test data results for review before final approval.

Perform the following tests after completion of work in the presence of the Engineer:

1. Test TSP detection by infrared and GPS-based radio system using AC Transit and WestCAT furnished transit vehicles at each TSP ramp meter location at distance of 400' from the ramp meter stop-bar.
2. Conduct tests for a period of one hour, during which the emitter shall be operated for 5 cycles, each consisting of a one minute "on" interval and a one minute "off" interval. During the total test period, the emitter signal shall cause the proper response from the Model 170E or 2070 controller unit during each "on" interval and there shall be no improper operation of either the Model 170E or 2070 controller unit or the monitor during each "off" interval.
3. There must be at least ten attempted activations of the infrared pre-emption utilizing 10 different unauthorized ID codes to verify that the identification feature has been activated and is screening the pre-emption requests. If any of the unauthorized ID code pre-emption requests is granted, the error shall be corrected and a new set of ten unauthorized ID coded attempts shall be made.

## TRAINING

Arrange for certified manufacturer's representative to provide training. The content of the training shall include instruction on how to install, align, program, adjust, calibrate and maintain the TSP detection equipment. 15-day notice shall be provided.

The training shall be a minimum of 2 days, 8 hours per day, for a total of 16 hours of training for TSP system for up to 20 State staff and representatives. The time and location of each training session shall be agreed upon by the Engineer and the Contractor. If no agreement can be reached, the Engineer shall determine the time and location.

Training must include both classroom and on-the-job (hands-on) instruction on installation, service and operation of the TSP system, and cover the following:

1. Demonstration of operating procedures and system overview
2. Demonstration of diagnostic, service, preventive maintenance and repair procedures
3. Demonstrations of download records, data retrieval and data query at the controller of activity showing class, code, priority, direction, call duration, final greens at end of call, duration of final greens, time call ended in real time plus maximum signal intensity (vehicle location information)
4. How to install, align, program, adjust, calibrate and maintain the system

## PAYMENT

Full compensation for furnishing all labor, materials, tools, equipment, testing, and training for ramp meter transit priority system at the various ramp meter locations shall be considered included in the contract lump sum price for modify ramp metering system at the various locations and no additional compensation will be allowed therefor.