



**REQUEST FOR QUALIFICATIONS
(RFQ) # 2023-08**

For the

**WESTBOUND I-80 CORDELIA CVEF
COMMERCIAL VEHICLE MANAGEMENT SYSTEM**

In
Solano County

Release Date: Tuesday, May 23, 2023

RESPONSES DUE:

4:00 PM PDT, Monday, June 19, 2023

One (1) digital copy (CD or flash drive) of your Qualifications,
addressed to:

Solano Transportation Authority
One 423 Main Street
Suisun City, CA 94585

REQUEST FOR QUALIFICATIONS (RFQ) # 2023-08 Questions and Answers

1. What brand Weigh-in-Motion System (WIM) will be installed by WB-CCVEF C (PDF page 69)
Answer: See Specification (below) that will be included in the CM/GC Contract for the WIM System (bending plate) procurement/installation.
2. What level of design input will the Commercial Vehicle Management System Vendor have in the selection and location of the Variable Message Signs and other driver feedback devices CCVEF?
Answer: The selected CVMS Team will work with the Design Team (WMH) and CM/GC Team (Kiewit) to determine the acceptable specifications/locations of the final infrastructure placement to optimize the CVMS's ability to screen, sort, and route the commercial vehicles.
3. What is the Network and Communications system availability from the remote sites? Who is responsible for supplying this network?
Answer: Remote sites will be serviced through separate AT&T Commercial Fiber that will be installed to the nearest technology hub by the CM/GC Team (Kiewit).
4. Who is responsible for supplying the infrastructure (civil work, poles, gantries, equipment mounts cabinets, and electrical supply) to the various sites where the Commercial Vehicle Management System equipment will be installed?
Answer:
 - *The scope of work for the CM/GC (Kiewit) team includes the infrastructure for the project (Signs, Signals, Poles, Foundations, Conduits, Loops, Pull-boxes, and Power/communications to technology hubs) shown on the 65% Plans. The CM/GC scope also includes the standard user controls for operating the basic functionality (back-up system for open/closed lanes, signal controls, VMS messaging, etc.) for directing traffic within the facility.*
 - *The scope of work for the Firm/Team selected through this RFQ/RFP Process ("Others") will include all sensors, technology, communications/power back to the nearest technology hub, and any associated electrical boxes/cabinets. This scope also includes the user interface to consolidate the screening, sorting, and routing of commercial vehicles for inspection and enforcement efforts on vehicles with the worst potential condition.*
5. When will the RFP be issued?
Answer: The RFP is currently scheduled for release to the selected Firms/Teams from this RFQ Process on June 26th, 2023, as shown on page 10 of the RFQ.
6. What Financial Qualifications are desired to demonstrate "Evidence of financial stability to support project deployment and five years of maintenance"?
Answer: Qualifications should demonstrate the Firm/Team's financial stability and longevity to take on a \$6 Million project. Statements reflecting the Firm/Team's gross net revenue and references to other projects of similar size and duration are typical responses.

8. What is the scope of work for the Construction Manager/General Contractor (CM/GC), Kiewit, and "Furnished and Installed By Others" Contractor? Please provide a detailed scope for the CM/CG and "Others".

Answer: The selected CVMS Team will work with the Design Team (WMH) and CM/GC Team (Kiewit) to determine the acceptable specifications/locations of the final infrastructure placement to optimize the CVMS's ability to screen, sort, and route the commercial vehicles. In general, the scopes are as follows:

- The scope of work for the CM/GC (Kiewit) team includes the infrastructure for the project (Signs, Signals, Poles, Foundations, Conduits, Loops, Pull-boxes, and Power/communications to technology hubs) shown on the 65% Plans. The CM/GC scope also includes the standard user controls for operating the basic functionality (back-up system for open/closed lanes, signal controls, VMS messaging, etc.) for directing traffic within the facility.*
- The scope of work for the Firm/Team selected through this RFQ/RFP Process ("Others") will include all sensors, technology, communications/power back to the nearest technology hub, and any associated electrical boxes/cabinets. This scope also includes the user interface to consolidate the screening, sorting, and routing of commercial vehicles for inspection and enforcement efforts on vehicles with the worst potential condition.*

**Replace section 87-17 with:
87-17 HIGH SPEED WEIGH-IN-MOTION (WIM) SYSTEM**

87-17.01 GENERAL

87-17.01A Summary

Section 87-17 includes specifications for constructing high speed weigh-in-motion (WIM) systems.

The high speed WIM system includes:

1. Foundations
2. Pull boxes
3. Conduit
4. Conductors and cables
5. Service equipment enclosures
6. WIM scales
7. WIM controller cabinet and equipment
8. Detector loops
9. Piezoelectric axle sensors

The components of the high speed WIM system are shown on the project plans.

Rapid strength concrete for replacement of pavement for the high speed WIM system must comply with section 41-9.

87-17.01B Definitions

Central unit: device that includes equipment and software necessary to calculate, store and transmit data to a host computer.

WIM Engineer: representative from the Department WIM Office.

87-17.01C Submittals

Submit a certificate of compliance for the piezoelectric axle sensors. Furnish an installation and operation manual for each piezoelectric axle sensor. Submit warranty documentation before installation.

Furnish a maintenance manual for the central unit, including vehicle detector sensor units and an operation manual for the high speed WIM system. The maintenance manual and operation manual may be combined into one manual. The manual(s) must include, but not limited to, the following:

1. Specifications
2. Design characteristics
3. General operation theory
4. Function of all controls
5. Troubleshooting procedure (diagnostic routine)
6. Block circuit diagram
7. Geographical layout of components
8. Schematic diagrams
9. List of component parts with stock numbers
10. Documentation for application software

87-17.01D Quality Assurance

87-17.01D(1) General

Reserved

87-17.01D(2) Warranty

Furnish from the manufacturer or supplier of the system a 5-year warranty against any defects or failures of the wheel scales, lead-in cables, frames, and mounting hardware. Furnish from the manufacturer or supplier a 2-year warranty on all other equipment in section 87-17.02. The effective date of the warranty is the date of acceptance for the installation and must include parts and installation costs for repair or replacement, including traffic control.

The wheel scales, lead-in cables, frames and mounting hardware provided must include the manufacturer's or supplier's 5-year warranty. All other equipment specified under on site equipment of these special provisions must include the manufacturer's or supplier's 2-year warranty.

87-17.01D(3) Department Acceptance

87-17-01D(3)(a) General

Reserved

87-17-01D(3)(b) Concrete Pavement

Pavement surface must not vary from the lower edge of the 12-foot straightedge by more than:

1. 0.01 foot when the straightedge is laid parallel with the centerline
2. 0.01 foot when the straightedge is laid perpendicular to the centerline and extends from edge to edge of a traffic lane

87-17-01D(3)(c) Piezoelectric Axle Sensors

Piezoelectric axle sensors must comply with section 87-1.01D(2)(d).

87-17-01D(3)(d) High Speed WIM System

Successfully perform the acceptance test for each lane of data collection. Accuracy testing must be performed using one or more tests trucks deemed by the WIM Engineer to be representative of the truck traffic through the weigh station bypass system site. Each test truck must be loaded at a minimum of 90 percent of its legal operation weight. Conformance to accuracy testing is based upon a minimum of two test truck measurements at each 5 mph increments between the typical minimum and maximum operating speeds of the truck traffic through the weigh station bypass system site.

The acceptance test must consist of:

1. Continuous operation of the high speed WIM system for 72 consecutive hours
2. Testing of the WIM system application software during the above noted 72-hour period and a consecutive 24-hour period

Failure of the high speed WIM systems consists of:

1. Inability to record and store data meeting the requirements for an accumulated time exceeding 3 hours during the 72-hour period
2. Unavailability of the high speed WIM system
3. Inability of the software to perform any application meeting the requirements
4. Inability of the host computer or its peripheral equipment to transmit data

87-17.02 MATERIALS

87-17.02A General

Reserved

87-17.02B Piezoelectric Axle Sensors

Piezoelectric axle sensors must comply with section 86-1.02E.

87-17.02C High Speed WIM System

The high speed WIM system provides for single threshold weighing and operating over a speed range from 5 to 100 mph. Single threshold weighing consists of a scale or scales in each lane of travel. The weigh sensors cover the entire lane width of 12 feet. The high speed WIM system includes equipment and software for collecting, processing, storing, transmitting to a host computer and manipulating information related to the counting, classifying, and speed monitoring of vehicles and the weighing of trucks and buses.

The high speed WIM system must provide for calibration features to meet the required accuracies at speeds within the operating speed range.

The high speed WIM system must be able to accommodate vehicles and vehicle combinations with up to nine axles and must automatically determine for each vehicle, by lane of travel:

1. Weight of each axle:

Accuracy	Mean	Std Deviation
Single axle	±5%	8%
Tandem axle	±5%	6%
Gross weight	±5%	5%

2. Axle spacing, vehicle length, and speed:

Accuracy	Mean	Std Deviation
Axle spacing	±6"	12"
Vehicle length	±12"	18"
Speed	±1 mph	2 mph

3. Vehicle classification: The high speed WIM system must provide for a minimum of 15 vehicle classifications:

- 3.1. Class 1 through Class 13 must be defined according to 13-Category Classification System (as shown in Appendix 4-C of the FHWA Traffic Monitoring Guide)
- 3.2. Class 14 must identify special vehicles as determined by the user
- 3.3. Class 15 must identify any vehicle which does not conform to the classification criteria for Classes 1 through 14

4. Classification criteria for Classes 1 through 14 must be programmable by the user. The high speed WIM system must provide sufficient flexibility in programming parameters including number of axles, axle spacing, and weights (gross, or axle and gross) for each of these classes so that accurate classifying is achievable.

5. Invalid measurements: An "invalid measurement" code will be assigned to any vehicle meeting the front axle weight threshold when the left and right wheel weights of any axle have a difference of 40 percent or more; and, either of the wheel weights of such axle exceeds 2.0 kip. Both the 40 percent and 2.0-kip values must be programmable by the operator. Any vehicle assigned an "invalid measurement" code will not be considered a "Weighed Vehicle" but must be classified and counted and all vehicle data must be stored in the vehicle record.

6. Determination of weight violations: For any vehicle meeting the front axle weight threshold, the high speed WIM system must determine which, if any, axle(s) or axle grouping(s) exceed the weight limits set forth in the "Weight Violation Table" contained in the Information Handout. Any vehicle with 1 or more weight violations will be coded as to such a violation or combination of violations. The weight limitations set forth in the "Weight Violation Table" must be the default settings. Such weights must be programmable by the user.

The high speed WIM system must include the following components:

1. Wheel scale or scales, scale lead-in-cable, frames, and mounting hardware for each lane. The scales must report weigh data for each wheel track (right axle weight and left axle weight independently). Such wheel data must be uniform across any section of the scale.
2. Two inductive loop detectors per lane for measuring speed and vehicle length.
3. A central unit that calculates and temporarily stores specified data on a storage medium. The medium must be capable of storing a minimum of 7 days of vehicle count data and individual vehicle records. The storage medium must be completely solid state with no mechanical components and must be a type that is not susceptible to loss of accumulated data should electrical power be interrupted. The central unit must continue to calculate and store data for vehicles passing through the system during periods of access, both on-site by portable PC and remotely by the host computer for purposes of programming, in a real-time view, and downloading of data. The central unit must store the following data:
 - 3.1. Hourly vehicle counts by class and by speed range for each 24-hour period (Class/Count summary).
 - 3.2. Individual vehicle records for vehicles with a front axle weight greater than 3.5 kip, referred to herein as "truck records". The front axle weight threshold for truck records must be programmable by the operator with 3.5 kip as a default setting. Each truck record must include, as a minimum, the following data:
 - 3.2.1. Time and Date

- 3.2.2. Lane number
 - 3.2.3. Vehicle number
 - 3.2.4. Speed
 - 3.2.5. Vehicle classification
 - 3.2.6. Weight in kips of each wheel or dual set of wheels by left and right side and by axle number
 - 3.2.7. Spacing in feet between each sequentially numbered axle
 - 3.2.8. Overall length of each vehicle or combination of vehicles in feet
 - 3.2.9. Code for weight violation(s)
 - 3.2.10. Code for invalid measurement(s)
4. A 334LS controller cabinet to house the central unit with battery backup system capable of providing uninterrupted power for a minimum of 1 hour.
 5. Battery powered portable personal computer (PC) adequate to connect to the central unit for system testing, adjustments, programming, on-site direct data downloading, and off-site downloading and testing of the high speed WIM system with software and cable to facilitate these functions. The portable PC must have, as a minimum, an i7 2.33 GHz processor, 14" LED color display, 8 gigabytes RAM, minimum 500 gigabyte internal solid state drive, internal 10/100/1000 Ethernet or other direct communication port to high speed WIM controller, and an internal or external V.92 modem.
 6. Necessary interconnecting cables and miscellaneous materials required to make the high speed WIM system operational via direct connection and via phone line.
 7. The WIM controller must interface and produce WIM data that is compatible to Department WIM Enterprise server system.
 8. Axle sensors containing piezoelectric material and screened transmission cable. The embedded axle sensors must be electrically screened to not generate electrical noise. Sensors must be self powered, provide steady output signal over the complete active zone, and must be capable of operation throughout a temperature of -40 to 80 degrees C.

The high speed WIM system must include an application program, referred to herein as the "system program", which can be run on the host computer. The host computer will be furnished by others and will consist of:

1. Basic desktop personal computer using Microsoft Windows compatible operating system
2. Networked printers
3. V.92 compliant modem

The system program must provide communications between the host computer and the on-site central unit and must process downloaded data to generate the specified reports and ASCII files.

The communications portion of the system program must meet the following functional requirements:

1. The system program must initialize the host computer's modem so that necessary operating characteristics are set.
2. The system program must provide for operation at a minimum rate of 9600 baud.
3. The system program must not disable the modems' error checking features which prevent phone line noise from corrupting data during file downloading.
4. The system program must display a window that allows the user to monitor the progress of file downloading and must also provide for the abort of a file download.

Although referred to herein as a single software program, communications functions and data processing functions may be provided as 2 separate programs as long as all functional requirements are met.

The system program must be hierarchical menu driven and must perform the following applications:

1. A real time view application that provides for online monitoring of traffic. The display on the host computer must depict the axle configuration of each vehicle passing through the site. The content and format for the real time display must be similar to the sample display. The user must have the option of displaying vehicle classifications 1 through 15 as well as the option of displaying a selected individual lane or all lanes. Printing of the real time data on the host computer printer must be facilitated by means of an on/off toggle key from the keyboard.

2. A system data programming application that provides for online modification to the central unit's software parameters such as speed and weight calibration factors, vehicle classification parameters, weight violation table parameters, and front axle weight threshold.
3. A manual downloading application that provides for the downloading of selected daily data files from the storage medium of the central unit to the storage medium of the host computer. The system program must provide for a listing of the daily data files stored in the central unit and must provide for user selection of the file or files to be downloaded from such a listing. The system program must provide for the downloading of the current day's data stored as of the time of downloading.
4. An automatic downloading application that provides for unattended downloading of daily data files stored in the central unit's storage medium to the storage medium of the host computer. The application must provide the following:
 - 4.1. User's input for the date and time that unattended downloading must begin
 - 4.2. Downloading of all daily files not previously downloaded by the automatic downloading application
 - 4.3. At least 3 attempts to make a connection with the central unit
 - 4.4. At least 3 attempts to download files from the central unit before aborting download
 - 4.5. Discontinue telephone connection after downloading of files from the central unit or after an abort and returning the host computer to a standby mode
5. A history file application that creates a daily file that chronologically records events occurring during manual and automatic downloading sessions. Such events must include modem result messages, start and end time of each file download, and any pertinent messages generated by the system program. The system program must provide for one of the following:
 - 5.1. The history file must be in the form of an ASCII text file which can be viewed or sent to the printer.
 - 5.2. A menu selection which must provide for a listing of available history files and user selection of a file to be sent to the printer in the form of a report.
6. A report preparation application that generates specified reports using the downloaded data. These reports must be sent to the host computer printer. The application must prepare the following reports:
 - 6.1. From vehicle class/count summary file:
 - 6.1.1. Distribution of class and speed counts by lane
 - 6.1.2. Distribution of vehicle counts by hour of day by lane
 - 6.1.3. Distribution of vehicle classifications by hour of day
 - 6.1.4. Distribution of vehicle classifications by day of month
 - 6.1.5. Distribution of vehicles by speed by hour of day
 - 6.2. From individual truck records file:
 - 6.2.1. Distribution of truck record data by lane
 - 6.2.2. Distribution of weight violations and invalid measurements for vehicle classification 4 through 15
 - 6.2.3. Distribution of weight violations by hour of day for vehicle classifications 4 through 14
 - 6.2.4. Distribution of overweight vehicles by hour of day for vehicle classifications 4 through 14
 - 6.2.5. Distribution of gross weights for vehicle classifications 4 through 14
 - 6.2.6. Distribution of 18 kip equivalent single axle loadings (ESALS) by hour of day for vehicle classifications 4 through 14. The system program must provide for user input of:
 - 6.2.6.1. Pavement type for one of the following:
 - 6.2.6.1.1. Flexible pavement and structural number
 - 6.2.6.1.2. Rigid pavement and slab thickness
 - 6.2.6.2. Vehicle status for one of the following:
 - 6.2.6.2.1. "All" weighed vehicles (default)
 - 6.2.6.2.2. "Legal only" weighed vehicles
 - 6.2.6.2.3. "Overweight only" weighed vehicles
 - 6.2.7. Distribution of trucks by day of month for classifications 4 through 15
7. A truck record batch print application that provides for the display of, and on/off printer toggle of, individual truck records. The system program must provide for a listing of the daily truck record files available on the storage medium of the host computer and the user's selection of 1 of those files. Example of the truck record batch print is included in the Information Handout. The application must provide for the user's selection of the vehicle class or classes for which individual truck records will be

displayed or printed with the starting hour of day. The user must have the following options in viewing and printing the individual truck records:

- 7.1. Scroll and print continuously all records for the selected class(es); user must have the capability to stop/resume scrolling or terminate program
- 7.2. Scroll each record 1 at a time; user must have the capability to:
 - 7.2.1. Print displayed record and display next record
 - 7.2.2. Display next record
 - 7.2.3. Terminate program
8. An ASCII export utility application that allows the user to generate specified ASCII files using downloaded files. The file formats for these files are included. The user must have the choice of:
 - 8.1. From vehicle class/count summary file:
 - 8.1.1. ASCII classification file
 - 8.1.2. ASCII speed file
 - 8.2. From individual truck record file: ASCII truck record file

ASCII Classification File Format^a

Field	Length	Starts in Column
Lane	2	1
Hour	2	4
Count, Class 1	4	7
Count, Class 2	4	12
Count, Class 3	4	17
Count, Class 4	4	22
Count, Class 5	4	27
Count, Class 6	4	32
Count, Class 7	4	37
Count, Class 8	4	42
Count, Class 9	4	47
Count, Class 10	4	52
Count, Class 11	4	57
Count, Class 12	4	62
Count, Class 13	4	67
Count, Class 14	4	72
Count, Class 15	4	77

ASCII Speed File Format^a

Field	Length	Starts in Column
Lane	2	1
Hour	2	4
Count, 0-35 MPH	4	7
Count, 36-40 MPH	4	12
Count, 41-45 MPH	4	17
Count, 46-50 MPH	4	22
Count, 51-55 MPH	4	27
Count, 56-60 MPH	4	32
Count, 61-65 MPH	4	37
Count, 66-70 MPH	4	42
Count, 71-75 MPH	4	47
Count, 76-80 MPH	4	52
Count, 81-85 MPH	4	57
Count, >86 MPH	4	62

^aFor the above two files, each field must be comma delimited. For each day's file there is one record for each lane for each hourly period.

ASCII Truck Record File Format^{b,c}

Field	Length	Decimal Places	Starts in Column
LANE	1	-	1
MONTH	2	-	3
DAY	2	-	6
YEAR	2	-	9
HOUR	2	-	12
MINUTE	2	-	15
SECOND	2	-	18
VEHICLE NO.	5	-	21
CLASS	2	-	27
GROSS WEIGHT	6	-	30
LENGTH	6	1	37
SPEED	5	1	44
VIOLATION CODE	3	1	50
AXLE 1 RT. WEIGHT	4	-	54
AXLE 1 LT. WEIGHT	4	1	59
AXLE 2 RT. WEIGHT	4	1	64
AXLE 2 LT. WEIGHT	4	1	69
AXLE 1-2 SPACING	4	1	74
AXLE 3 RT. WEIGHT	4	1	79
AXLE 3 LT. WEIGHT	4	1	84
AXLE 2-3 SPACING	4	1	89
AXLE 4 RT. WEIGHT	4	1	94
AXLE 4 LT. WEIGHT	4	1	99
AXLE 3-4 SPACING	4	1	104
AXLE 5 RT. WEIGHT	4	1	109
AXLE 5 LT. WEIGHT	4	1	114
AXLE 4-5 SPACING	4	1	119
AXLE 6 RT. WEIGHT	4	1	124
AXLE 6 LT. WEIGHT	4	1	129
AXLE 5-6 SPACING	4	1	134
AXLE 7 RT. WEIGHT	4	1	139
AXLE 7 LT. WEIGHT	4	1	144
AXLE 6-7 SPACING	4	1	149
AXLE 8 RT. WEIGHT	4	1	154
AXLE 8 LT. WEIGHT	4	1	159
AXLE 7-8 SPACING	4	1	164
AXLE 9 RT. WEIGHT	4	1	169
AXLE 9 LT. WEIGHT	4	1	174
AXLE 8-9 SPACING	4	1	179
VENDOR SPECIFIC OPTIONAL FIELDS	-	-	184

^bThis file must include every 'truck record' contained in the daily data file. Each field must be comma delimited and padded with blanks to complete the fixed logical record length

^cFor axle weight only weighing (in lieu of right and left wheel weighing), either the "AXLE n RT. WEIGHT" or the "AXLE n LT. WEIGHT" field may be used for the "AXLE n WEIGHT".

9. A Traffic Monitoring Guide files utility that allows the user to generate ASCII files under the instructions contained in Section 6 of the *FHWA Traffic Monitoring Guide* using downloaded files.

87-17.02D Reports

The reports must include all information contained in and formatted similar to the sample reports. The reports must be printed in condensed print when necessary to fit on 8 1/2 by 11-inch sheets. Sample reports are included in the *Information Handout*.

Determination of 18-kip equivalent single axle loads must comply with the "Axle Load Equivalency Factor" tables. Tables of axle load equivalency factors are included in the *Information Handout*.

The system program must provide for the generation of reports in the following 2 modes:

1. Manual mode: For daily reports, the system program must provide for user selection of the date and the specific report. For monthly reports, the system program must provide for user selection of the month/year and the specific report. The selected monthly report must include the data from all downloaded daily data files resident with the system program on a directory or subdirectory of the host computer's storage medium. The system program must provide for user selection of the lane or lanes to be covered by the specific report (not applicable to the "Distribution of Class and Speed Counts by Lane", the "Distribution of Vehicle Counts by Hour of Day by Lane" and the "Distribution of Truck Record Data by Lane" reports). The default must be "all lanes." The printed report must note the lanes represented.
2. Automatic mode: The system program must provide for user designation of 1 or a combination of the specific daily reports for automatic processing. User selection of lane or lanes is not required. The "all lanes" default may be used. User selection of vehicle status for the 18 kip ESAL report is not required. The "all" weighed vehicles default may be used. Such designations must be affected by means of 1 of the following:
 - 2.1. An ASCII text file, which can be revised with text editor or word processor, supplied with a "Sample" designation
 - 2.2. A menu selection which must provide for user input of designation

Upon selection of automatic mode of report preparation by the user, the system program must send to the printer all pre-designated reports for all downloaded daily data files resident with the system program on a directory or subdirectory of the host computer's storage medium.

The designated reports must remain in effect for subsequent automatic mode sessions unless the user revises report designation.

Regardless of the method of data manipulation and formatting used by the central unit, data files must comply with the following:

1. Individual daily data files must be created and stored in the storage medium of the central unit. Each daily data file must include data for each 00:00 hour through a 24:00 hour period and must have a file name which uniquely identifies the file as to site designation, date, and file contents (class/count summary data, individual truck record data, or both).
2. The daily data files must be created at the start of each day, data for each vehicle must be filed within one hour of the vehicle's passing through the site, and the current day's files must be downloadable at any time during the day. Data file structure must be efficient in use of storage medium space and rapid downloading via modem to the host computers.
3. The daily files containing class/count summary data and individual truck records data may be created in the storage medium of the central unit as 2 separate daily files or as 1 daily file. If 1 daily file is created and downloaded as such, the system program must create 2 separate daily files, each with a file name which uniquely identifies it as to site, date, and whether it is a vehicle class/count summary file or an individual truck records file.

87-17.03 CONSTRUCTION

87-17.03A General

Reserved

87-17-03B Piezoelectric Axle Sensors

Piezoelectric axle sensors must comply with section 87-1.03K.

87-17.03C High Speed WIM System

Coordinate modifications to the high speed WIM system equipment with the Department Headquarters, WIM Department, WIM Engineer at (916) 654 5651 or (916) 654-7375.

Arrange for a representative of the high speed WIM manufacturer to be on site during the installation of the high speed WIM scale frames and scales.

Exact location of the high speed WIM scales is to be determined by the WIM Engineer.

Conform to the WIM manufacturer's instructions for the exact configuration and installation procedures for the scale frame and loop detectors.

Arrange for the high speed WIM manufacturer's representative to supervise the layout and cutting of the high speed WIM scale frames.

Perform the saw cutting and concrete removal for the high speed WIM scale frames and detector loops only after the concrete pavement has been ground, straightedged and brought into tolerance.

WIM scale must match existing roadway profile and cross-slope.

Before removing any materials, use a power driven concrete saw to cut neat outlines in the pavement to a minimum depth of 4 inches for the high speed WIM scale frames.

Backfill any excavations with temporary HMA, conforming to the grade of the adjacent concrete pavement before opening lanes to public, if scale frames and weigh pads are not installed by the end of each working day.

87-17.04 PAYMENT

Not Used.