WEIGH IN MOTION SYSTEM
DEVICE TESTING - LEVEL A

Project Name: _____ Test Date: _____

WIMS # _____ Route: _____ MM_____ . ____ NB/SB/EB/WB/Median
Nearest Side Street Name: _____

This procedure outlines Level A device test to be performed on Weigh in Motion System. Perform following tests at controller WIMS cabinet using vendor certified Software. Level A device testing demonstrates that the individual devices at each work site are fully operational.

Testing Software Name: _____

WIM Manufacturer: _____WIM Model No.: _____WIM Serial No.: _____

1: WIMS CONTROLLER

No.	Task	Required Value	Actual Value	Pass	Fail	Comments
I.	Verify communication between modem and data collection unit					
II.	Verify 8 digit station ID					
III.	Confirm recording and data storage interval settings	User selectable increments of 1, 5, 15, 30, 60 minutes				
IV.	Verify date and time					
V.	Verify sensor configuration, size and spacing					
VI.	Verify loop inputs and recording channels					
VII.	Verify available memory and memory in use					
VIII.	Verify data recording parameters	Speed, Length, Gap, Headway, Volume				
IX.	Verify bin thresholds and view recordings by bin					
X.	Verify individual sensor activations					
XI.	Verify individual recording in real time for each vehicle					
XII.	Map channels into groups, such as by direction and local and express lanes, for each sensor input					
XIII.	Unplug the modem and plug-in after 60 second and verify if communication is restored without modem reset					
XIV.	Unplug the data collection unit and re-plug after 60 sec and verify if any data loss occurred					

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2: WIM CALIBRATION

No.	Task	Required Value	Actual Value	Pass	Fail	Comments
I.	Drive the truck as specified over each lane a minimum of 5 times and record the values by each sensor for each pass. Verify that average values among 5 passes meets the following calibration factors:	5-axle tractor-trailer with gross combined weight of 75000-80000 pounds				
II.	Gross vehicle weight	± 5%				
III.	Axle weight accuracy	± 10%				
IV.	Vehicle length accuracy	± 12 inch				
V.	Axle spacing	± 6 inch				
VI.	Speed accuracy	± 1 MPH				
VII.	Perform functional test when lane is opened for traffic using oscilloscope.					
VIII.	Verify the accuracy of volume, speed, and length					

3: SENSORS PERFORMANCE

No.	Task	Required Value	Actual Value	Pass	Fail	Comments
I.	Using an LCR (inductance, capacitance, resistance) meter, measure the inductance and resistance of each loop detector, both at the junction box nearest to the sensor array and at the terminal strip in the controller cabinet	Inductance: Within the range consistent with 4 turns of loop detector wire				
II.	Verify the ratio of loop detector inductance to detector lead inductance and record the value	Meets manufacturer's requirements				
III.	Using an LCR (inductance, capacitance, resistance) meter, measure the capacitance and resistance of each piezoelectric axle weight sensor both before installation and after installation.	Meets the requirements for Class I Piezoelectric Sensors as outlined in FHWA Report No. DP-88-76-006				

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IV.	Verify the signal produced by piezoelectric axle sensor	In conformance with manufacturer's requirements				
No.	**Task**	**Required Value**	**Actual Value**	**Pass**	**Fail**	**Comments**
V.	Verify the real time review capabilities of the system to verify that On-site controller receiving signals from all roadway sensors and is converting those signals into useful data					
VI.	Verify the accuracy of vehicle classification and vehicle counts recorded by loops and weight sensor combination					
VII.	Verify the signals received by system electronics from In-Road temperature sensor	In conformance with manufacturer's requirements				

4: DATA RETREIVAL

No.	Task	Required Value	Actual Value	Pass	Fail	Comments
I.	Obtain precise time of each individual sensor activation and recorded weights					
II.	Create a classification scheme based on number and spacing of axles and select newly created classification scheme					
III.	Verify real time vehicle viewing selectable by lane with graphical output					
IV.	Verify that data retrieval does not interfere with data collection operation					

5: WIM CABINET

No.	Task	Required Value	Actual Value	Pass	Fail	Comments
I.	Verify thermostat operation for ventilation control					

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II.	Verify that cabinet light is operational					
III.	Verify that upon power loss , plug-in "power off" relay de-energize and remain de-energized until reset, but allows control mechanism to return to operation when current is restored					
No.	**Task**	**Required Value**	**Actual Value**	**Pass**	**Fail**	**Comments**
IV.	Verify that universal power supply is functional	4 hours of uninterrupted service				
V.	Verify resistance for off-scale sensors and lead in cables					
VI.	Verify ground resistance					

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Project Name: _____ Test Date: _____

WIMS # _____ Route: _____ MM_____ . ____ NB/SB/EB/WB/Median
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LEVEL A TEST RESULTS:

PASS ☐ **FAIL** ☐

Correction Work Items:

1. _____

2. _____

3. _____

4. _____

5. _____

We agree that Level A testing of the Weigh in Motion System has been performed and that the information above accurately represent the results of the test.

Contractor Name: _____
Contractor Representative Name: _____
Signature and Date: _____

ITS Inspector Name: _____
Signature and Date: _____

Corrected Work Items: ITS Inspector Signatures & Date

1. _____ _____
2. _____ _____
3. _____ _____
4. _____ _____
5. _____ _____