

WIM System Field Calibration and Validation Handout Guide

Kansas, SPS-2
SHRP ID – 200200

Validation Date: November 15, 2011



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1 Site Information

Site ID:	200200	State:	Kansas
LTPP Region:	North Central	Configuration:	Loop - 2 Bending Plates - Loop
Controller Type:	iSINC	Sensor Type:	Bending Plate
Power:	AC	Communication:	Landline
Class Scheme:	LTPP Mar 06	CPU type/setup:	

2 Contact Information

Agency	Contact	Position	Phone	E-mail
FHWA	Debbie Walker	COTR	202-493-3068	deborah.walker@dot.gov
FHWA	Tom Deddens	Division Office	785-271-2448	tom.deddens@fhwa.dot.gov
RSC	Frank Meyer	Project Manager	716-632-0804	fmeyer@stantec.com
KSDOT	Bill Parcells	LTPP Coord.	785-291-3846	billp@ksdot.org
KSDOT	Rick Kreider	LTPP Contact	785-296-3711	rickk@ksdot.org
KSDOT	Bill Hughes	Traffic Contact	785-296-6863	bhughes@ksdot.org
ARA	Dean Wolf	Task Leader	717-512-6638	dwolf@ara.com
ARA	Olga Selezneva	Project Manager	410-540-9949	oselezneva@ara.com
DeBruce Grain	Nathan Jacobs	Truck Vendor	785-263-7275	njacobs@debruce.com

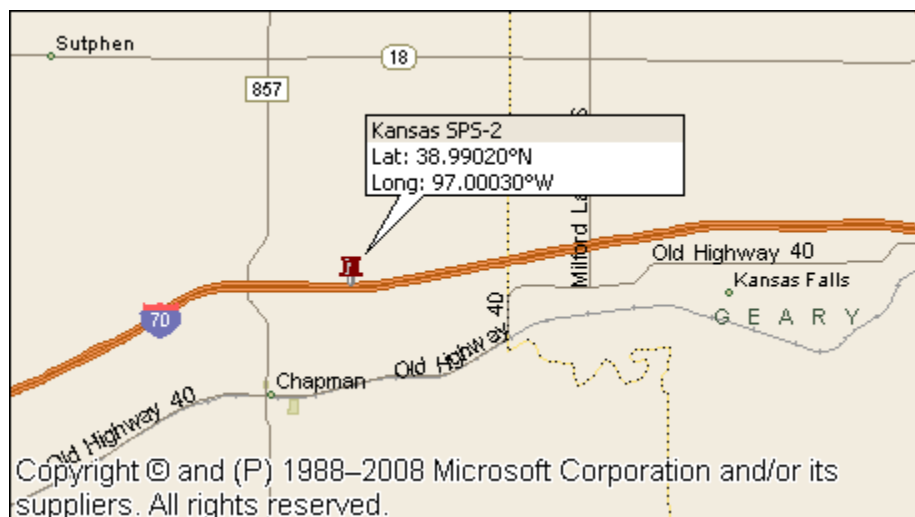
3 Schedule of Events

Date	Event	Location	Start Time
11/14/11	Travel	Abilene, KS	TBD
11/15/11	Test Truck Weigh/Measure/Inspection	DeBruce Grain	6:30 am
11/15/11	Equipment Assessment	WIM Site	7:30 am
11/15/11	Initial Performance Evaluation	WIM Site	8:00 am
11/15/11	Classification and Speed Study	WIM Site	TBD
11/16/11	Test Truck Weigh/Measure/Inspection	DeBruce Grain	6:30 am
11/16/11	Calibration/Validation (if required)	WIM Site	TBD
11/17/11	Travel	Camp Hill, PA	TBD

4 Maps

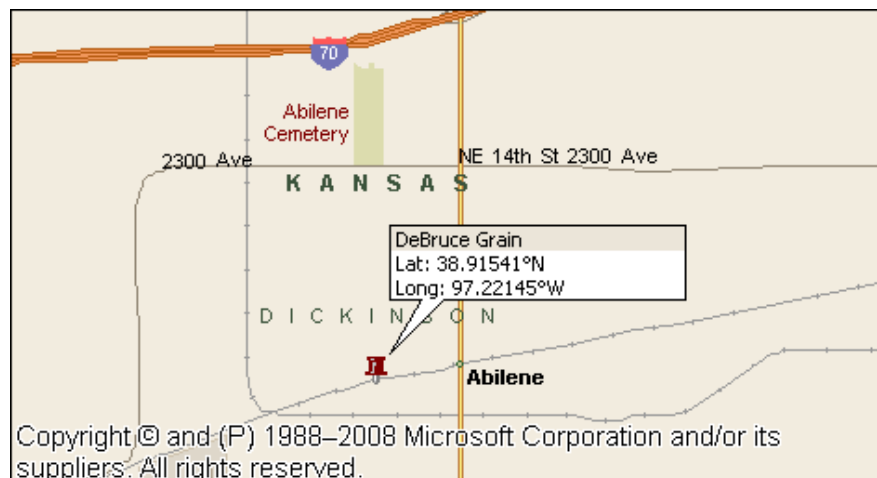
4.1 Site Location

Location:	I-70 West at M.P. 287.48, 7.6 miles west of US 77		Direction:	WB
Latitude:	38.99020°	Longitude:	-97.00030°	



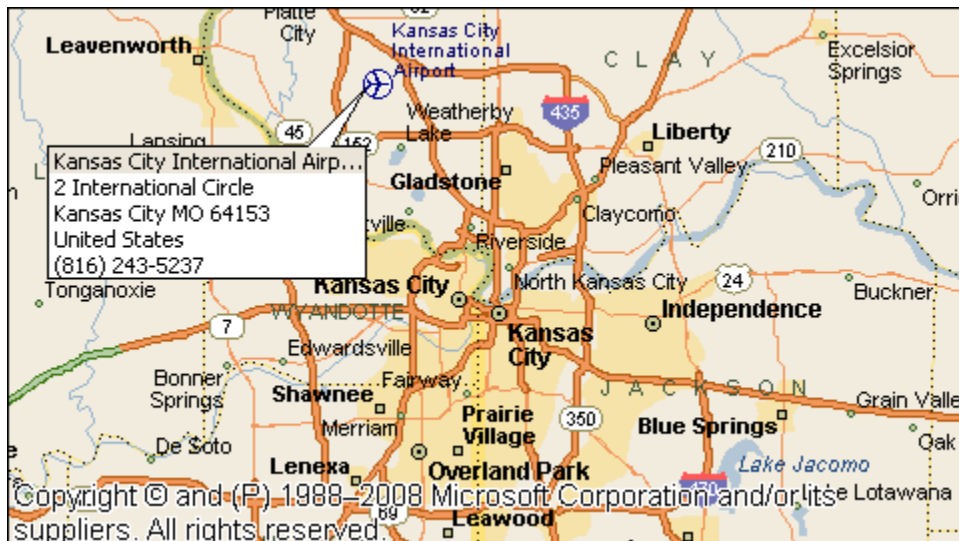
4.2 Truck Scale Location

Name:	DeBruce Grain	Location:	513 W. First St., Abilene, KS
Latitude:	38.91541°	Longitude:	-97.22145°



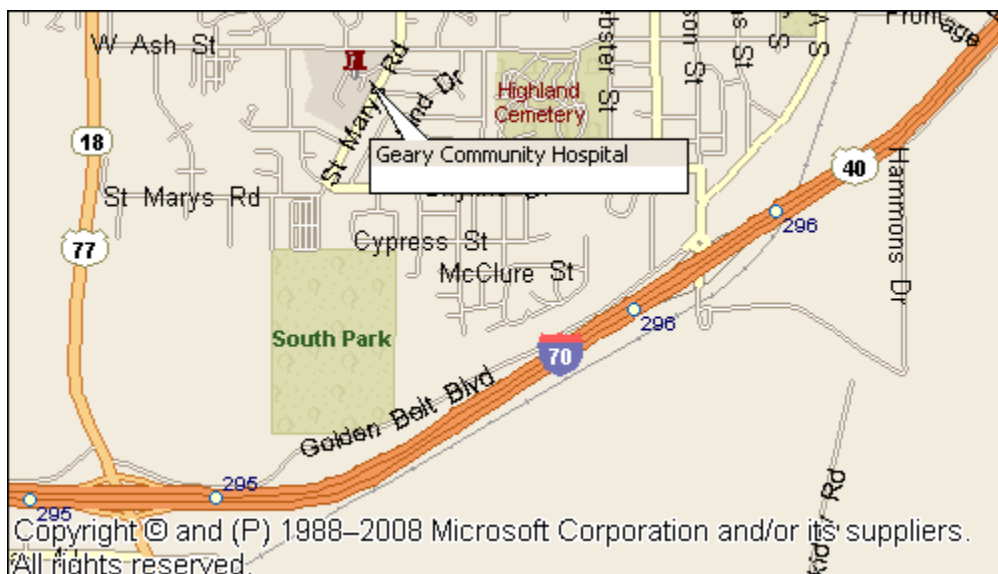
4.3 Airport Location

Name:	Kansas City International Airport	Location:	Kansas City, MO
Latitude:	39.29916°	Longitude:	-94.71739°



4.4 Hospital Location

Name:	Geary Community Hospital - ER		
Phone:	(785) 238-4131	Location:	Junction City, KS



5 Occupational Health and Safety Plan

All fieldwork in the right-of-way will be carried out when the ground visibility is more than 3 km, and when there is no accumulation of water, snow, or ice is on the pavement.

To the extent possible, inspection work during extremely high and low temperatures will be avoided. If the work becomes necessary, workers will be reminded to make appropriate precautions (wear protective clothing, drink fluids, and avoid prolonged exposure to severe weather conditions).

All personnel present on the right-of-way will wear approved safety gear (boots, reflective safety vest, and helmet).

The following items will be available at the site: a standard first-aid kit, a cell phone, and the location of nearby hospital(s).

6 Contingency Plan

If inclement weather is forecasted prior to mobilizing to the site, the Project Manager will make the final decision to postpone the Validation visit. The Task Leader is responsible for contacting all parties involved to inform them of the postponement. He is also responsible for rearranging travel.

Once the Validation team is on-site, the On-Site Task Leader is responsible for making decisions to delay or postpone the Validation. He will contact the Project Manager to make recommendations for completing the Validation, and the Project Manager will make the final decision to cancel or postpone. The On-Site Task Leader is responsible for contacting the COTR and all other participating parties to inform them of the delay or postponement.

Traffic Sheet 17 LTPP MONITORED TRAFFIC DATA WIM SITE INVENTORY	STATE CODE: 20 SPS WIM ID: 200200 DATE (mm/dd/yyyy) 11/15/2011
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10. CABINET LOCATION

Same side of road as LTPP lane: Y
Distance from edge of traveled lane: 72 ft
distance from system: 78 ft
type: M

Cabinet access controlled by: Agency and LTPP
Contact name: Roy Czinku Phone # 306-653-6627
Alternate name: Bill Hughes Phone # 785-296-6863

11. POWER

Distance to cabinet from drop: 440 ft
Type: AC
AC in cabinet? Y
Service provider: _____ Phone # _____

12. TELEPHONE

Distance to cabinet from drop: 1 ft
Type: landline
Service provider: _____ Phone # _____

13. SYSTEM

Software and version no. iSINC
Computer connection: RS-232

14. TEST TRUCK TURNAROUND TIME

Duration: 12 minutes Distance: 7.6 miles

15. PHOTOS

	Filename
Power source:	<u>200200_power_meter_11_15_11.jpg</u>
Phone source:	<u>200200_telephone_drop_11_15_11.jpg</u>
Cabinet exterior:	<u>200200_cabinet_exterior_11_15_11.jpg</u>
Cabinet interior:	<u>200200_cabinet_interior_front_11_15_11.jpg</u>
Weight sensors:	<u>200200_leading_WIM_sensor_11_15_11.jpg</u>
	<u>200200_trailing_WIM_sensor_11_15_11.jpg</u>
Other sensors:	<u>200200_leading_loop_11_15_11.jpg</u>
	<u>200200_trailing_loop_11_15_11.jpg</u>
Downstream from sensors on LTPP lane:	<u>200200_downstream_11_15_11.jpg</u>
Upstream from sensors on LTPP lane:	<u>200200_upstream_11_15_11.jpg</u>

Traffic Sheet 18 LTPP MONITORED TRAFFIC DATA WIM SITE COORDINATION	STATE CODE: 20 SPS WIM ID: 200200 DATE (mm/dd/yyyy) 11/15/2011
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1. DATA PROCESSING

- a. Download: LTPP download
- b. Data review: LTPP
If state, how often?
- c. Data submission LTPP
If state how often?

2. EQUIPMENT

- a. Purchase LTPP
- b. Installation LTPP contract
- c. Maintenance Separate contract LTPP
Expiration Date
- d. Calibration LTPP
- e. Manuals and software control: LTPP
- f. Power
i. Type Underground ii. Payment State
- g. Communication
i. Type Landline ii. Payment State

3. PAVEMENT

- a. Type Portland Concrete Cement
- b. Allowable Rehabilitation activities Always new
- c. Profile Site Markings Temporary

Traffic Sheet 18 LTPP MONITORED TRAFFIC DATA WIM SITE COORDINATION	STATE CODE: 20 SPS WIM ID: 200200 DATE (mm/dd/yyyy) 11/15/2011
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5. SITE SPECIFIC CONDITIONS

- a. Funds and accountability: _____
- b. Reports: _____
- c. Other: _____
- c. Special Conditions _____

6. CONTACTS

- a. Equipment (operational status, access, etc.)
Name Roy Czinku Phone # 306-270-9492
Agency IRD
- b. Maintenance (equipment)
Name Roy Czinku Phone # 306-270-9492
Agency IRD
- c. Data Processing and pre-visit data
Name Basel Abukhater Phone # 716-632-0804
Agency Stantec
- d. Construction schedule and verification
Name Bill Hughes Phone # 785-296-6863
Agency KS DOT
- e. Test Vehicles (trucks, loads, drivers)
Name Curt Phone # 785-263-7275
Agency DeBruce Grain
- f. Traffic control
Name _____ Phone # _____
Agency _____
- g. Enforcement coordination
Name _____ Phone # _____
Agency _____
- h. Nearest static scale
Name DeBruce Grain Location: Abilene, KS
Phone: 785-263-7275

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 1	STATE CODE: 20
	SPS WIM ID: 200200
	DATE (mm/dd/yyyy) 11/15/2011

CALIBRATION TEST TRUCK - Primary

PART A

1. FHWA CLASS: 9 2. Number of axles: 5
3. AXLE WEIGHTS (lbs)

	a. Empty Truck Avg. Axle Weight	b. Pre-test Average Axle Weight	c. Post-Test Avg. Axle Weight	d. Direct or Calculated?
A		11065	10930	Calculated
B		16435	16470	Calculated
C		15870	15670	Calculated
D		15720	15690	Calculated
E		15750	15760	Calculated
F				

4. GVW (same units as axles)

- a. Empty GVW: _____
- b. Average Pre-Test Loaded weight: 74840
- c. Post Test Loaded Weight: 74520
- d. Difference Post Test - Pre-Tests: 320

5. TRUCK DESCRIPTION

- a. Tractor Cab Style: Conventional Sleeper Cab: Yes
photo: ☒

- b. Make: International
c. Model: 9900i

d. Trailer Load Distribution Description:

grain

photo: ☒

- e. Tractor Tare weight - _____ - _____
- f. Trailer Tare weight - _____ - _____
- g. Axle Spacing - (feet and tenths)

A to B 18.2 B to C 4.3 C to D 32.3 D to E 4.0 E to F _____

- h. Wheelbase - ☐ Measured _____ ☐ Computed 58.8
- i. Kingpin offset from Axle B (units) 1.3' photo: ☐
- j. Overall Length - ☒ Measured 63.4

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # <u>1</u>	STATE CODE: 20 SPS WIM ID: 200200 DATE (mm/dd/yyyy) 11/15/2011
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CALIBRATION TEST TRUCK - Primary

6. SUSPENSION

	a. Tire size	b.Suspension description (leaf, air # of leaves, taper or flat leaf, etc.)	c. photo
A	275/80R22.5	steel spring	☒
B	295/75R22.514PR	air	☒
C	295/75R22.514PR	air	☒
D	11R24.5	air	☒
E	11R24.5	air	☒
F			☐

d. Cold Tire Pressures (psi)- from right to left

Steering Axle	Axle B	Axle C	Axle D	Axle E	Axle F
104	105.4	102	109.7	106.4	

PART B

Table 1 - Raw Measurements -Platform Scale

Axles	Meas.	Pre-test Weight	Instance	Instance	Post-test weight
A	I	11160			10900
A+B	II	27840			27700
A+B+C	III	43360			43100
A+B+C+D	IV	59200			58760
A+B+C+D+E(1)	V	74840			74520
A+B+C+D+E+(F)(1)	VI				
B+C+D+E+(F)	VII	63870			63560
C+D+E+(F)	VIII	47680			47420
D+E+(F)	IX	31460			31480
E+(F)	X	15860			15760
(F)	XI				
A+B+C+D+E+(F)(2)	XII	74840			74520

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # <u>1</u>	STATE CODE: 20 SPS WIM ID: 200200 DATE (mm/dd/yyyy) 11/15/2011
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CALIBRATION TEST TRUCK - Primary

Table 2 - Axle and GVW Computations -Platform Scale Pre-test

	1		2		Avg.
Axle A	I	11160	VI-VII	10970	11065
Axle B	II-I	16680	VII-VIII	16190	16435
Axle C	III-II	15520	VIII-IX	16220	15870
Axle D	IV-III	15840	IX-X	15600	15720
Axle E	V-IV	15640	X-XI	15860	15750
Axle F	VI-V		XI		
GVW	VI	74840	XII	74840	74840

Table 3- Axle and GVW Computations - Platform Scale - Instance -

	1		2		Avg.
Axle A	I	0	VI-VII	0	0
Axle B	II-I	0	VII-VIII	0	0
Axle C	III-II	0	VIII-IX	0	0
Axle D	IV-III	0	IX-X	0	0
Axle E	V-IV	0	X-XI	0	0
Axle F	VI-V		XI		
GVW	VI	0	XII	0	0

Table 4- Axle and GVW Computations - Platform Scale - Instance -

	1		2		Avg.
Axle A	I	0	VI-VII	0	0
Axle B	II-I	0	VII-VIII	0	0
Axle C	III-II	0	VIII-IX	0	0
Axle D	IV-III	0	IX-X	0	0
Axle E	V-IV	0	X-XI	0	0
Axle F	VI-V		XI		
GVW	VI	0	XII	0	0

Table 5- Axle and GVW Computations - Platform Scale Post-Test

	1		2		Avg.
Axle A	I	10900	VI-VII	10960	10930
Axle B	II-I	16800	VII-VIII	16140	16470
Axle C	III-II	15400	VIII-IX	15940	15670
Axle D	IV-III	15660	IX-X	15720	15690
Axle E	V-IV	15760	X-XI	15760	15760
Axle F	VI-V		XI		
GVW	VI	74520	XII	74520	74520

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # <u>1</u>	STATE CODE: 20 SPS WIM ID: 200200 DATE (mm/dd/yyyy) 11/15/2011
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CALIBRATION TEST TRUCK - Primary

Table 6 - Raw Data -Axle Scales - Pre-test

Pass	Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	GVW
1							
2							
Avg.							

Table 7- Raw Data- Axle scales -

Pass	Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	GVW
Avg.							

Table 8- Raw Data- Axle scales -

Pass	Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	GVW
Avg.							

Table 9 - Raw Data -Axle Scales - Post-test

Pass	Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	GVW
1							
2							
Avg.							

Validation Test Truck Run Set - Pre

Measured By: Kevin Trousdale

Verified By: Dean Wolf

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 2	STATE CODE: 20
	SPS WIM ID: 200200
	DATE (mm/dd/yyyy) 11/15/2011

CALIBRATION TEST TRUCK - Secondary

PART A

1. FHWA CLASS: 9 2. Number of axles: 5
3. AXLE WEIGHTS (lbs)

	a. Empty Truck Avg. Axle Weight	b. Pre-test Average Axle Weight	c. Post-Test Avg. Axle Weight	d. Direct or Calculated?
A		10910	10930	Calculated
B		14750	14470	Calculated
C		14730	14690	Calculated
D		12130	12090	Calculated
E		12300	12320	Calculated
F				

4. GVW (same units as axles)

- a. Empty GVW: _____
- b. Average Pre-Test Loaded weight: 64820
- c. Post Test Loaded Weight: 64500
- d. Difference Post Test - Pre-Tests: 320

5. TRUCK DESCRIPTION

- a. Tractor Cab Style: Conventional Sleeper Cab: Yes
photo: ☒

- b. Make: Peterbilt
- c. Model: _____

d. Trailer Load Distribution Description:

grain

photo: ☒

- e. Tractor Tare weight - _____ - _____
- f. Trailer Tare weight - _____ - _____
- g. Axle Spacing - (feet and tenths)

A to B 19.5 B to C 4.3 C to D 31.5 D to E 4.0 E to F _____

- h. Wheelbase - ☐ Measured _____ ☒ Computed 59.3
- i. Kingpin offset from Axle B (units) 1.2' photo: ☐
- j. Overall Length - ☒ Measured 63.9



Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # <u>2</u>	STATE CODE: 20 SPS WIM ID: 200200 DATE (mm/dd/yyyy) 11/15/2011
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CALIBRATION TEST TRUCK - Secondary

6. SUSPENSION

	a. Tire size	b.Suspension description (leaf, air # of leaves, taper or flat leaf, etc.)	c. photo
A	11R24.514PR	steel spring	☐
B	11R24.514PR	air	☐
C	11R24.514PR	air	☐
D	11R24.5	air	☐
E	11R24.5	air	☐
F			☐

d. Cold Tire Pressures (psi)- from right to left

Steering Axle	Axle B	Axle C	Axle D	Axle E	Axle F
111.2	108.9	104.7	91.3	93.2	

PART B

Table 1 - Raw Measurements -Platform Scale

Axes	Meas.	Pre-test Weight	Instance	Instance	Post-test weight
A	I	10940			10940
A+B	II	25720			25520
A+B+C	III	40300			40120
A+B+C+D	IV	52580			52140
A+B+C+D+E(1)	V	64820			64500
A+B+C+D+E+(F)(1)	VI				
B+C+D+E+(F)	VII	53940			53580
C+D+E+(F)	VIII	39220			39220
D+E+(F)	IX	24340			24440
E+(F)	X	12360			12280
(F)	XI				
A+B+C+D+E+(F)(2)	XII	64820			64500

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 2	STATE CODE: 20 SPS WIM ID: 200200 DATE (mm/dd/yyyy) 11/15/2011
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CALIBRATION TEST TRUCK - Secondary

Table 2 - Axle and GVW Computations -Platform Scale Pre-test

	1		2		Avg.
Axle A	I	10940	VI-VII	10880	10910
Axle B	II-I	14780	VII-VIII	14720	14750
Axle C	III-II	14580	VIII-IX	14880	14730
Axle D	IV-III	12280	IX-X	11980	12130
Axle E	V-IV	12240	X-XI	12360	12300
Axle F	VI-V		XI		
GVW	VI	64820	XII	64820	64820

Table 3- Axle and GVW Computations - Platform Scale - Instance -

	1		2		Avg.
Axle A	I	0	VI-VII	0	0
Axle B	II-I	0	VII-VIII	0	0
Axle C	III-II	0	VIII-IX	0	0
Axle D	IV-III	0	IX-X	0	0
Axle E	V-IV	0	X-XI	0	0
Axle F	VI-V		XI		
GVW	VI	0	XII	0	0

Table 4- Axle and GVW Computations - Platform Scale - Instance -

	1		2		Avg.
Axle A	I	0	VI-VII	0	0
Axle B	II-I	0	VII-VIII	0	0
Axle C	III-II	0	VIII-IX	0	0
Axle D	IV-III	0	IX-X	0	0
Axle E	V-IV	0	X-XI	0	0
Axle F	VI-V		XI		
GVW	VI	0	XII	0	0

Table 5- Axle and GVW Computations - Platform Scale Post-Test

	1		2		Avg.
Axle A	I	10940	VI-VII	10920	10930
Axle B	II-I	14580	VII-VIII	14360	14470
Axle C	III-II	14600	VIII-IX	14780	14690
Axle D	IV-III	12020	IX-X	12160	12090
Axle E	V-IV	12360	X-XI	12280	12320
Axle F	VI-V		XI		
GVW	VI	64500	XII	64500	64500

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # <u>2</u>	STATE CODE: 20 SPS WIM ID: 200200 DATE (mm/dd/yyyy) 11/15/2011
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CALIBRATION TEST TRUCK - Secondary

Table 6 - Raw Data -Axle Scales - Pre-test

Pass	Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	GVW
1							
2							
Avg.							

Table 7- Raw Data- Axle scales -

Pass	Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	GVW
Avg.							

Table 8- Raw Data- Axle scales -

Pass	Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	GVW
Avg.							

Table 9 - Raw Data -Axle Scales - Post-test

Pass	Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	GVW
1							
2							
Avg.							

Validation Test Truck Run Set - Pre

Measured By: Kevin Trousdale

Verified By: Dean Wolf

Traffic Sheet 21 (Wheel Load) LTPP MONITORED TRAFFIC DATA WIM SYSTEM TRUCK RECORDS										STATE CODE: 20 SPS WIM ID: 200200 DATE: (mm/dd/yyyy): 11/15/2011									
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Pvmt Temp	Radar speed	Truck	Pass	Time	Record No.	WIM Speed	Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	GVW	A-B space	B-C space	C-D space	D - E space	E - F space	Axle Length	Overall Length
40.6	54	2	1	9:24:11	11537	54.0	10.5	13.9	13.7	11.7	11.8		61.6	19.5	4.3	31.6	4.1		59.5	64.0
40.6	54	1	1	9:24:18	11538	55.0	10.6	15.7	14.8	14.9	14.9		71.0	18.1	4.4	32.3	4.1		58.9	62.0
44.8	64	2	2	9:36:46	11607	64.0	11.2	14.7	14.3	12.2	12.3		64.6	19.4	4.4	31.5	4.0		59.3	64.0
44.8	64	1	2	9:36:52	11608	65.0	11.0	17.1	15.9	15.8	15.6		75.6	18.1	4.4	32.2	4.0		58.7	63.0
46.8	73	2	3	9:49:33	11673	73.0	11.1	15.7	14.4	11.7	12.1		65.0	19.5	4.4	31.6	4.1		59.6	64.0
46.8	74	1	3	9:49:40	11674	75.0	11.4	16.8	15.7	16.0	15.5		75.5	18.1	4.4	32.3	4.1		58.9	63.0
52.5	55	2	4	10:30:12	11883	54.0	10.4	13.6	13.2	11.9	11.8		60.9	19.4	4.3	31.4	4.1		59.2	63.0
52.5	54	1	4	10:30:18	11884	54.0	10.5	15.5	14.5	14.9	14.6		70.0	18.1	4.3	32.1	4.1		58.6	62.0
54.8	64	2	5	10:42:52	11962	65.0	10.9	15.2	14.5	12.6	12.6		65.8	19.5	4.4	31.6	4.1		59.6	64.0
54.8	64	1	5	10:42:57	11963	65.0	11.2	17.0	15.9	15.5	15.3		74.8	18.1	4.4	32.2	4.0		58.7	63.0
54.1	73	2	6	10:55:21	12028	73.0	11.0	14.5	14.7	12.1	12.5		64.8	19.4	4.3	31.6	4.0		59.3	64.0
54.1	73	1	6	10:55:25	12029	75.0	11.2	17.3	16.1	15.8	16.5		76.8	18.1	4.3	32.2	4.0		58.6	62.0
57.1	54	2	7	11:08:36	12104	54.0	10.3	13.9	13.5	11.7	11.7		61.2	19.5	4.4	31.6	4.1		59.6	64.0
57.1	54	1	7	11:08:41	12105	54.0	10.6	15.7	14.7	14.8	14.6		70.3	18.1	4.4	32.2	4.0		58.7	62.0
64.8	64	2	8	12:08:01	12414	65.0	10.8	15.0	14.1	12.7	12.7		65.3	19.4	4.4	31.5	4.0		59.3	64.0
64.8	64	1	8	12:08:06	12415	64.0	11.0	16.6	15.6	15.6	15.0		73.8	18.1	4.4	32.3	4.0		58.8	63.0
63.1	69	2	9	12:20:24	12490	68.0	10.8	14.3	14.5	12.4	11.3		63.4	19.5	4.4	31.6	4.1		59.6	64.0
63.1	70	1	9	12:20:28	12491	71.0	11.1	16.6	15.8	16.3	15.3		75.1	18.1	4.3	32.3	4.1		58.8	63.0
63.3	53	2	10	12:32:59	12544	55.0	10.4	14.3	13.4	12.0	11.7		61.9	19.4	4.3	31.5	4.0		59.2	63.0
63.3	53	1	10	12:33:15	12545	54.0	10.7	15.4	14.6	14.8	14.5		69.9	18.1	4.4	32.2	4.0		58.7	62.0
67.5	64	2	11	12:45:36	12614	64.0	11.1	14.8	14.6	12.1	12.1		64.6	19.5	4.4	31.6	4.1		59.6	64.0
67.5	64	1	11	15:54:00	12615	64.0	11.0	16.9	15.7	15.2	15.3		74.0	18.0	4.4	32.2	4.0		58.6	63.0
68.7	54	2	12	13:09:43	12772	54.0	10.5	13.8	13.6	11.9	11.7		61.4	19.4	4.3	31.5	4.1		59.3	63.0
68.7	54	1	12	13:09:56	12773	55.0	10.5	15.7	14.8	15.0	14.8		70.7	18.1	4.4	32.2	4.1		58.8	63.0

Recorded By: _____ ar _____	Verified By: _____ djw _____	Run Set _____ Pre _____
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Traffic Sheet 21 (Wheel Load) LTTP MONITORED TRAFFIC DATA WIM SYSTEM TRUCK RECORDS										STATE CODE: 20 SPS WIM ID: 200200 DATE: (mm/dd/yyyy): 11/15/2011									
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Pvmt Temp	Radar speed	Truck	Pass	Time	Record No.	WIM Speed	Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	GVW	A-B space	B-C space	C-D space	D - E space	E - F space	Axle Length	Overall Length
66.0	64	2	13	13:21:54	12837	64.0	11.1	14.8	14.8	12.5	12.1		65.2	19.5	4.4	31.6	4.1		59.6	64.0
66.0	64	1	13	13:22:05	12839	64.0	11.1	16.5	15.4	15.3	15.3		73.6	18.1	4.4	32.2	4.0		58.7	63.0
65.8	71	2	14	13:33:47	12901	73.0	10.5	14.3	15.1	11.5	11.1		62.4	19.4	4.3	31.5	4.1		59.3	64.0
65.8	68	1	14	13:34:08	12904	68.0	10.9	16.7	15.9	15.1	15.3		74.0	18.0	4.4	32.3	4.0		58.7	63.0
64.6	54	2	15	13:46:29	12979	54.0	10.4	13.4	13.4	11.8	11.8		60.6	19.4	4.3	31.4	4.0		59.1	64.0
64.6	53	1	15	13:46:44	12981	54.0	10.8	15.5	14.5	14.8	14.5		70.2	18.1	4.4	32.2	4.4		59.1	63.0
64.7	63	2	16	13:58:57	13056	64.0	11.1	14.8	14.4	12.2	12.6		65.1	19.4	4.4	31.6	4.0		59.4	64.0
64.7	64	1	16	13:59:12	13057	63.0	11.1	16.7	15.6	15.7	15.1		74.1	18.1	4.4	32.2	4.4		59.1	63.0
65.0	73	2	17	14:10:55	13125	74.0	10.6	15.3	15.1	12.6	12.2		65.9	19.4	4.3	31.5	4.1		59.3	64.0
65.0	74	1	17	14:11:07	13128	75.0	11.6	16.8	15.1	15.6	14.8		74.0	18.1	4.4	32.3	4.1		58.9	63.0
63.1	54	2	18	14:23:10	13191	54.0	10.1	13.7	13.4	11.8	11.5		60.5	19.4	4.3	31.4	4.0		59.1	63.0
63.1	55	1	18	14:23:29	13194	55.0	11.0	15.6	14.6	15.1	14.9		71.1	18.1	4.3	32.2	4.1		58.7	63.0
62.2	65	2	19	14:35:31	13276	65.0	10.9	14.8	14.9	12.2	12.0		64.8	19.5	4.3	31.6	4.1		59.5	64.0
62.2	63	1	19	14:36:07	13280	64.0	11.0	16.7	16.0	15.0	15.1		73.8	18.1	4.4	32.3	4.0		58.8	63.0
63.6	74	2	20	14:47:33	13360	74.0	10.9	15.2	14.5	12.7	12.3		65.4	19.5	4.3	31.6	4.1		59.5	64.0
63.6	73	1	20	14:47:34	13361	75.0	11.3	17.3	15.8	15.1	15.4		74.9	18.1	4.4	32.3	4.0		58.8	63.0

Recorded By: _____ ar _____	Verified By: _____ djw _____	Run Set _____ Pre _____
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Traffic Sheet 22 LTPP MONITORED TRAFFIC DATA SITE EQUIPMENT ASSESSMENT LTPP LANE ONLY	STATE CODE:	20
	SPS WIM ID:	200200
	STATE ASSIGNED ID	0
	DATE (mm/dd/yyyy)	11/15/2011

SITE EQUIPMENT INFORMATION

1. TYPE OF EQUIPMENT	BOTH		
2. LANE NUMBER ON SITE	1	3. DIRECTION ON SITE	west
4. VENDOR	IRD	MODEL	iSINC
		SERIAL#	51202225
5. WEIGHING SENSOR TYPE	bending plate		
6. SYSTEM SOFTWARE VERSIONS:			
CPU			
LOOP			
PIEZO			
WEIGHTPAD/ LOADCELL			
COMMUNICATIONS			

7. CLASSIFICATION VIDEO:

TIME FROM: _____ TO: _____
TIME FROM: _____ TO: _____

SITE CONDITIONS

8. PAVEMENT:

Indicate any deficiencies that may affect the performance of the WIM system. List all photos on Sheet 24 that support the evaluation.

There were no pavement distresses noted that may affect the accuracies of the WIM system.

Traffic Sheet 22 LTPP MONITORED TRAFFIC DATA SITE EQUIPMENT ASSESSMENT LTPP LANE ONLY	STATE CODE: 20 SPS WIM ID: 200200 STATE ASSIGNED ID 0 DATE (mm/dd/yyyy) 11/15/2011
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9. IN ROAD SENSORS:

Describe any deficiencies regarding the sensor installation. Indicate sensors that show any signs of being broken, severely worn, missing, removed, or loose. List photos on Sheet 24 for

the equipment is operating within the manufacturer's tolerances.

TRUCK OBSERVATIONS

- 10.** Indicate any irregular truck behaviors such as bouncing, swerving, or braking near the weighing area (within 40 meters). Note the distance from the weighing sensors.

A visual observation of the trucks as they approach, traverse, and leave the sensor area did not indicate any adverse dynamics that would affect the accuracy of the WIM system. The trucks appear to track down the center of the lane.

Minimum 15 minute or 35 truck sample video sample for pavement interaction deficiencies:

Tape Filename: _____
Time: From: _____ To: _____

Traffic Sheet 22 LTPP MONITORED TRAFFIC DATA SITE EQUIPMENT ASSESSMENT LTPP LANE ONLY	STATE CODE: 20 SPS WIM ID: 200200 STATE ASSIGNED ID 0 DATE (mm/dd/yyyy) 11/15/2011
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11. CLASSIFICATION VERIFICATION VIDEO:

TAPE 1- NAME: _____

Interval	Filename	From	To
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____

TAPE 2- NAME: _____

Interval	Filename	From	To
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____

TAPE 3- NAME: _____

Interval	Filename	From	To
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____

Traffic Sheet 22 LTPP MONITORED TRAFFIC DATA SITE EQUIPMENT ASSESSMENT LTPP LANE ONLY	STATE CODE: 20 SPS WIM ID: 200200 STATE ASSIGNED ID 0 DATE (mm/dd/yyyy) 11/15/2011
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SYSTEM ACCURACY TESTS

12. CONDUCT THE FOLLOWING SYSTEM ACCURACY TESTS EITHER ON- SITE OR IN OFFICE

Speed Accuracy - Complete Sheet 20 and attach.

Average radar speed	<u>67.4</u> mph	Average WIM Speed	<u>66.9</u> mph
Mean Difference	<u>-0.4</u> mph	SD of mean	<u>6.5</u>

Posted Speed Limit	<u>75</u> mph		
Speed Range	15th percentile - <u>63</u> mph	85th percentile-	<u>74</u> mph

Spacing and Weight - Complete Sheet 21 and attach.

Average distance between axles of drive tandem		<u> </u> feet	
% error from 4.25 ft (industry average)	OR	<u>4.36</u>	ft (WIM system average)
= <u>2.6</u> %			

Average front axle weight for Class 9 vehicles		<u> </u> lbs	
% error from 10.3 kips (industry average) OR		<u>10.9</u>	lbs (known site value)
= <u>5.4</u> %			

SUPPORT EQUIPMENT STRUCTURES

17. Indicate any deficiencies with any site equipment other than the in-road sensors. List all photos on the Sheet 24 for each occurrence.

Cabinet/Foundation None ☒

no cabinet or foundation deficiencies

Pull Boxes None ☒

no pull box deficiencies

Mast None ☒

no service mast deficiencies

Solar Panels None ☒

no solar panel deficiencies

Traffic Sheet 22 LTPP MONITORED TRAFFIC DATA SITE EQUIPMENT ASSESSMENT LTPP LANE ONLY	STATE CODE: 20 SPS WIM ID: 200200 STATE ASSIGNED ID 0 DATE (mm/dd/yyyy) 11/15/2011
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Telephone D-Mark Box None ☒

no telephone d-mark box deficiencies

Power Service Box None ☒

no power service box deficiencies

Grounding None ☒

no grounding deficiencies

Conduit None ☒

no conduit deficiencies

STATIC AND DYNAMIC ELECTRONIC EQUIPMENT TESTS

18. Complete and attach a Sheet 22 addendum applicable to the installed road equipment.

ADDITIONAL COMMENTS

All values for the WIM sensors and inductive loops were within tolerances. Electronic tests of the power and communication devices indicated that they were operating normally.

Assessor Kevin Trousdale

Traffic Sheet 22 Addendum - Weighpad LTPP MONITORED TRAFFIC DATA SITE EQUIPMENT ASSESSMENT LTPP LANE ONLY	STATE CODE:	20
	SPS WIM ID:	200200
	STATE ASSIGNED ID	0
	DATE (mm/dd/yyyy)	11/15/2011

STATIC EQUIPMENT VALUES (SYSTEM OFF)

1. POWER

a. Solar Panel		WATTS		VDC
b. Equipment Power	122.4	VAC		VDC
c. Battery 1	13.47	VDC		
d. Battery 2		VDC		
e. Regulated	13.46	VDC		
f. Power Supply	13.47	VDC		VDC
g. System Input		VAC	11.6	VDC
h. Modem Power		VAC	11.6	VDC
i. Telephone	49.1	VDC		

2. LOOP SENSORS

	Resistance	Inductance	Shield
a. Leading	0.5 Ω	132.0 μ h	inf M Ω
b. Trailing	0.4 Ω	164.0 μ h	inf M Ω

3. WEIGHPAD SENSORS

	Input	Output	Shield
a. Leading	976 Ω	845 Ω	inf Ω
b. Trailing	973 Ω	847 Ω	inf Ω

DYNAMIC EQUIPMENT VALUES (SYSTEM ON)

4. LOOP SENSORS

	Frequency
a. Leading	26.4 KHz
b. Trailing	26.2 KHz

5. WEIGHPAD SENSORS

	Zero Point
a. Leading	0.1 mV
b. Trailing	-0.1 mV

Assessor Kevin Trousdale

Traffic Sheet 24A LTPP MONITORED TRAFFIC DATA SITE PHOTO LOG - Equipment	STATE CODE: 20 SPS WIM ID: 200200 DATE (mm/dd/yyyy) 11/15/2011
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Item	Description	Filename
1	Power Source	200200_power_meter_11_15_11.jpg
2	Telephone Source	200200_telephone_drop_11_15_11.jpg
3	Cabinet Exterior	200200_cabinet_exterior_11_15_11.jpg
4	Cabinet Interior	200200_cabinet_interior_front_11_15_11.jpg
5	Leading weight sensor	200200_leading_WIM_sensor_11_15_11.jpg
6	Trailing weight sensor	200200_trailing_WIM_sensor_11_15_11.jpg
7	Leading classification sensor	
8	Trailing classification sensor	
9	Leading loop sensor	200200_leading_loop_11_15_11.jpg
10	Trailing loop sensor	200200_trailing_loop_11_15_11.jpg
11	Downstream from site	200200_downstream_11_15_11.jpg
12	Upstream from site	200200_upstream_11_15_11.jpg
13	Cabinet Interior - Rear	200200_cabinet_interior_11_15_11.jpg
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		

RECORDED BY: _____ Dean J. Wolf

Traffic Sheet 24B LTPP MONITORED TRAFFIC DATA SITE PHOTO LOG - Test Trucks	STATE CODE: 20 SPS WIM ID: 200200 DATE (mm/dd/yyyy) 11/15/2011
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Item	Description	Filename
1	Tractor, Truck #1	200200_truck_1_tractor_11_15_11.jpg
2	Trailer/Load, Truck #1	200200_truck_1_trailer_11_15_11.jpg
3	Kingpin Offset, Truck #1	
4	Suspension A, Truck #1	200200_truck_1_suspension_1_11_15_11.jpg
5	Suspension B, Truck #1	200200_truck_1_suspension_2_11_15_11.jpg
6	Suspension C, Truck #1	200200_truck_1_suspension_3_11_15_11.jpg
7	Suspension D, Truck #1	200200_truck_1_suspension_4_11_15_11.jpg
8	Suspension E, Truck #1	200200_truck_1_suspension_5_11_15_11.jpg
9	Suspension F, Truck #1	
10	Tractor, Truck #2	200200_truck_2_tractor_11_15_11.jpg
11	Trailer/Load, Truck #2	200200_truck_2_trailer_11_15_11.jpg
12	Kingpin Offset, Truck #2	200200_truck_2_suspension_1_11_15_11.jpg
13	Suspension A, Truck #2	200200_truck_2_suspension_2_11_15_11.jpg
14	Suspension B, Truck #2	200200_truck_2_suspension_3_11_15_11.jpg
15	Suspension C, Truck #2	200200_truck_2_suspension_4_11_15_11.jpg
16	Suspension D, Truck #2	200200_truck_2_suspension_5_11_15_11.jpg
17	Suspension E, Truck #2	
18	Suspension F, Truck #2	
19	Tractor, Truck #3	
20	Trailer/Load, Truck #3	
21	Kingpin Offset, Truck #3	
22	Suspension A, Truck #3	
23	Suspension B, Truck #3	
24	Suspension C, Truck #3	
25	Suspension D, Truck #3	
26	Suspension E, Truck #3	
27	Suspension F, Truck #3	
28	Scale	
29		
30		

RECORDED BY: _____ Dean J Wolf