

WIM System Field Calibration and Validation Handout Guide

Arizona SPS-1
SHRP ID – 040100

Validation Date: October 15th, 2013



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1 Site Information

Site ID:	040100	State:	Arizona
LTPP Region:	Southern	Configuration:	Loop – 2 Bending Plates – Loop
Controller Type:	iSINC	Sensor Type:	Bending Plate
Power:	Solar	Communication:	Cellular
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	Karen King	Division Office	602-382-8965	karen.king@dot.gov
RSC	Kevin Senn	Project Manager	775-329-4955	KSenn@ncenet.com
ADOT	Murari Man Pradhan	LTPP Coordinator	602-712-6574	mpradhan@azdot.gov
ADOT	Mark Catchpole	Traffic Contact	602-712-8596	mcatchpole@azdot.gov
ARA	Dean Wolf	Task Leader	717-512-6638	dwolf@ara.com
ARA	Olga Selezneva	Project Manager	410-540-9949	oselezneva@ara.com
	Scott Sunderland	Truck Vendor	480-641-3500	

3 Schedule of Events

Date	Event	Location	Start Time
10/14/13	Travel	Kingman, AZ	TBD
10/15/13	Test Truck Weigh/Measure/Inspection	TA Kingman	7:30 am
10/15/13	Equipment Assessment	SPS-1 WIM Site	8:00 am
10/15/13	Initial Performance Evaluation	SPS-1 WIM Site	8:30 am
10/15/13	System Test/Class and Speed Study	SPS-1 WIM Site	TBD
10/16/13	Test Truck Weigh	TA Kingman	7:30 am
10/16/13	Calibration/Validation	SPS-1 WIM Site	8:00 am
10/17/13	Travel	Camp Hill, PA	TBD

4 Maps

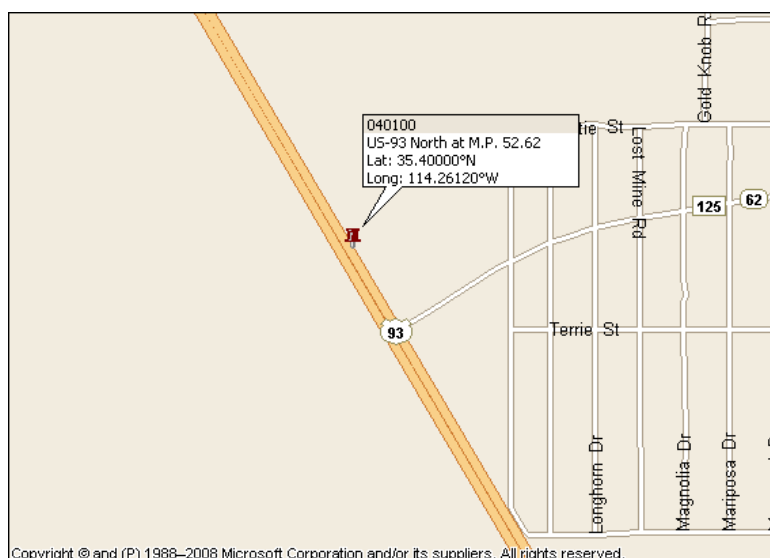
4.1 Airport Location

Name:	McCarran International Airport	Location:	Las Vegas, NV
Latitude:	36.08072°	Longitude:	-115.14370°



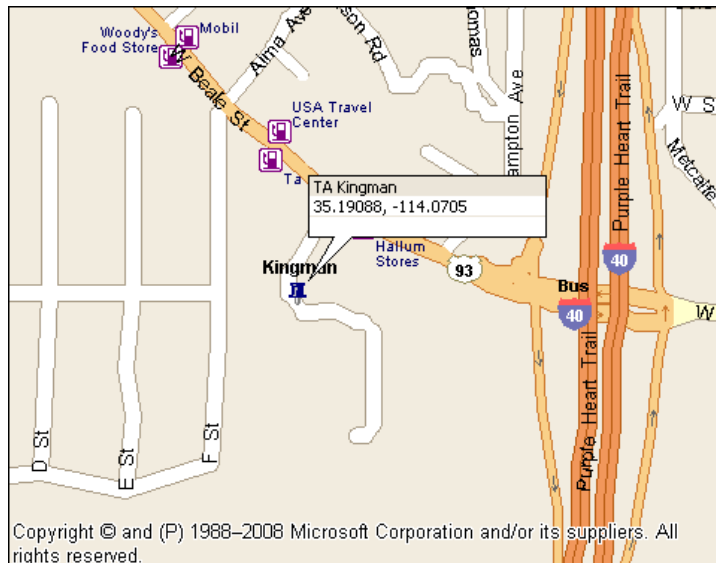
4.2 Site Location

Location:	US-93 North at M.P. 52.6	Direction:	NB
Latitude:	35.4000°	Longitude:	-114.2619°



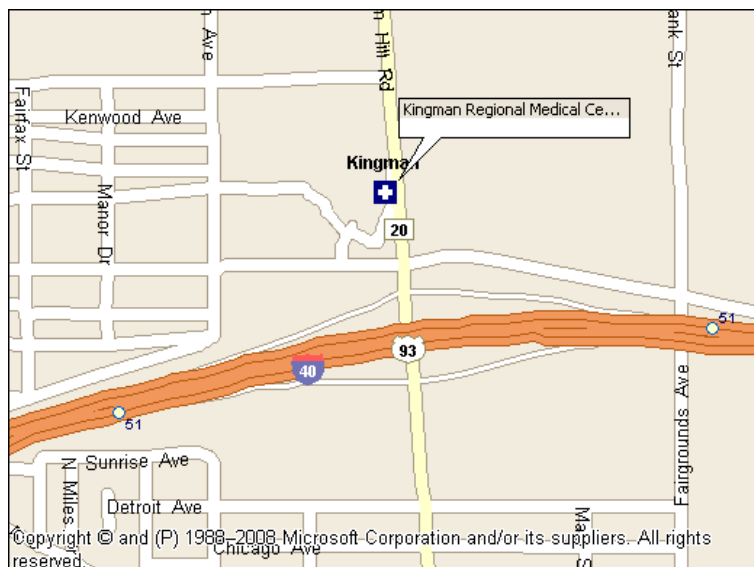
4.3 Truck Scale Location

Name:	TA Kingman	Location:	I-40 & Exit 48
Latitude:	35.1909°	Longitude:	-114.0705°



4.4 Hospital Location

Name:	Kingman Regional Medical Center		
Phone:	(928) 757-2101	Location:	3269 Stockton Hill Road, Kingman, AZ



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: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/16/2013
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10. CABINET LOCATION

Same side of road as LTPP lane: Y
Distance from edge of traveled lane: 83 ft
distance from system: 90 ft
type: M

Cabinet access controlled by: Agency and LTPP
Contact name: Roy Czinku Phone # 306-653-6627
Alternate name: Mark Catchpole Phone # 602-712-8596

11. POWER

Distance to cabinet from drop: ft
Type: Solar
AC in cabinet? N
Service provider: Phone #

12. TELEPHONE

Distance to cabinet from drop: ft
Type: cellular
Service provider: Phone #

13. SYSTEM

Software and version no. iSINC
Computer connection: Ethernet

14. TEST TRUCK TURNAROUND TIME

Duration: minutes Distance: miles

15. PHOTOS

	Filename
Power source:	<u>040100_solar_panel_10_16_13.jpg</u>
Phone source:	<u>040100_telephone_pedestal_10_15_13.jpg</u>
Cabinet exterior:	<u>040100_cabinet_exterior_10_16_13.jpg</u>
Cabinet interior:	<u>040100_cabinet_interior_front_10_16_13.jpg</u>
Weight sensors:	<u>040100_leading_WIM_sensor_10_15_13.jpg</u>
	<u>040100_trailing_WIM_sensor_10_15_13.jpg</u>
Other sensors:	<u>040100_leading_loop_10_15_13.jpg</u>
	<u>040100_trailing_loop_10_15_13.jpg</u>
Downstream from sensors on LTPP lane:	<u>040100_downstream_10_15_13.jpg</u>
Upstream from sensors on LTPP lane:	<u>040100_upstream_10_15_13.jpg</u>

Traffic Sheet 18 LTPP MONITORED TRAFFIC DATA WIM SITE COORDINATION	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/16/2013
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1. DATA PROCESSING

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

2. EQUIPMENT

- a. Purchase LTPP
- b. Installation Included with purchase
- c. Maintenance Contract with purchase
Expiration Date _____
- d. Calibration LTPP
- e. Manuals and software control: LTPP
- f. Power
i. Type Solar ii. Payment N/A
- g. Communication
i. Type Cellular ii. Payment _____

3. PAVEMENT

- a. Type Portland Concrete Cement
- b. Allowable Rehabilitation activities Replacement as needed
- c. Profile Site Markings Temporary

Traffic Sheet 18
LTPP MONITORED TRAFFIC DATA
WIM SITE COORDINATION

STATE CODE: 04
 SPS WIM ID: 040100
 DATE (mm/dd/yyyy) 10/16/2013

4. Onsite Activities

- a. WIM Validation Check advance notice required

_____ Days 2 Weeks

- b. Notice for straightedge and grinding check

_____ Days 2 Weeks

i. On site lead LTPP

ii. Accept grinding LTPP

- c. Authorization to calibrate site LTPP

- d. Calibration routine LTPP annually
 Other: _____

- e. Test Vehicle Responsibilities

- i. Trucks

1st- Air suspension 3S2 LTPP

2nd- Air Suspension 3S2 LTPP

3rd- _____

4th- _____

- ii. Loads LTPP

- iii. Drivers LTPP

- f. Contractor(s) with prior experience in wim calibration in state:
IRD

- g. Access to cabinet Joint

- h. State personel required on site No

- i. Traffic control required No

- J. Enforcement coordination required No

Traffic Sheet 18 LTPP MONITORED TRAFFIC DATA WIM SITE COORDINATION	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/16/2013
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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 Kevin Senn Phone # _____
Agency Fugro
- d. Construction schedule and verification
Name _____ Phone # _____
Agency _____
- e. Test Vehicles (trucks, loads, drivers)
Name Scott Sunderland Phone # 480-641-3500
Agency Otto Logistics
- f. Traffic control
Name _____ Phone # _____
Agency _____
- g. Enforcement coordination
Name _____ Phone # _____
Agency _____
- h. Nearest static scale
Name _____ Location: _____
Phone: _____

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 1	STATE CODE: 04
	SPS WIM ID: 040100
	DATE (mm/dd/yyyy) 10/15/2013

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		11550	11360	Direct
B		16380	16165	Direct
C		16380	16165	Direct
D		16815	16750	Direct
E		16815	16750	Direct
F				

4. GVW (same units as axles)

a. Empty GVW: _____
b. Average Pre-Test Loaded weight: 77940
c. Post Test Loaded Weight: 77190
d. Difference Post Test - Pre-Tests: -750

5. TRUCK DESCRIPTION

a. Tractor Cab Style: Conventional Sleeper Cab: No
photo: ☒

b. Make: CHU613
c. Model: Mack

d. Trailer Load Distribution Description:

trash

photo: ☒

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

A to B 14.8 B to C 4.4 C to D 33.2 D to E 4.1 E to F _____

h. Wheelbase - ☐ Measured _____ ☒ Computed 56.5
i. Kingpin offset from Axle B (units) .7 photo: ☐
j. Overall Length - ☒ Measured 61.8

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 1	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/15/2013
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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	11R22.5	steel spring	☒
B	11R22.5	air	☒
C	11R22.5	air	☒
D	11R22.5	air	☒
E	11R22.5	air	☒
F			☐

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

Steering Axle	Axle B	Axle C	AxleD	AxleE	Axle F

PART B

Table 1 - Raw Measurements -Platform Scale

Axles	Meas.	Pre-test Weight	Instance	Instance	Post-test weight
A	I				
A+B	II				
A+B+C	III				
A+B+C+D	IV				
A+B+C+D+E(1)	V				
A+B+C+D+E+(F)(1)	VI				
B+C+D+E+(F)	VII				
C+D+E+(F)	VIII				
D+E+(F)	IX				
E+(F)	X				
(F)	XI				
A+B+C+D+E+(F)(2)	XII				

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 1	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/15/2013
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CALIBRATION TEST TRUCK - Primary

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

	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 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	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

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 1	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/15/2013
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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	11520	16400	16400	16800	16800		77920
2	11580	16360	16360	16830	16830		77960
Avg.	11550	16380	16380	16815	16815		77940

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	11400	16140	16140	16760	16760		77200
2	11320	16190	16190	16740	16740		77180
Avg.	11360	16165	16165	16750	16750		77190

Validation Test Truck Run Set - Pre

Measured By: Andrew Lewis

Verified By: Gregory Helman

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 1	STATE CODE: 04
	SPS WIM ID: 040100
	DATE (mm/dd/yyyy) 10/16/2013

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		11750	0	Direct
B		16320	0	Direct
C		16320	0	Direct
D		16730	0	Direct
E		16730	0	Direct
F				

4. GVW (same units as axles)

a. Empty GVW: _____
b. Average Pre-Test Loaded weight: 77830
c. Post Test Loaded Weight: 0
d. Difference Post Test - Pre-Tests: -77830

5. TRUCK DESCRIPTION

a. Tractor Cab Style: Conventional Sleeper Cab: No
photo: ☒

b. Make: CHU613
c. Model: Mack

d. Trailer Load Distribution Description:

trash

photo: ☒

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

A to B 14.8 B to C 4.4 C to D 33.2 D to E 4.1 E to F _____

h. Wheelbase - ☐ Measured _____ ☒ Computed 56.5
i. Kingpin offset from Axle B (units) .7 photo: ☐
j. Overall Length - ☒ Measured 61.8

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 1	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/16/2013
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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	11R22.5	steel spring	☒
B	11R22.5	air	☒
C	11R22.5	air	☒
D	11R22.5	air	☒
E	11R22.5	air	☒
F			☐

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

Steering Axle	Axle B	Axle C	AxleD	AxleE	Axle F

PART B

Table 1 - Raw Measurements -Platform Scale

Axles	Meas.	Pre-test Weight	Instance	Instance	Post-test weight
A	I				
A+B	II				
A+B+C	III				
A+B+C+D	IV				
A+B+C+D+E(1)	V				
A+B+C+D+E+(F)(1)	VI				
B+C+D+E+(F)	VII				
C+D+E+(F)	VIII				
D+E+(F)	IX				
E+(F)	X				
(F)	XI				
A+B+C+D+E+(F)(2)	XII				

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 1	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/16/2013
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CALIBRATION TEST TRUCK - Primary

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

	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 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	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

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 1	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/16/2013
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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	11660	16370	16370	16720	16720		77820
2	11840	16270	16270	16740	16740		77840
Avg.	11750	16320	16320	16730	16730		77830

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
Avg.							

Validation Test Truck Run Set - Cal 1

Measured By: Andrew Lewis
Verified By: Gregory Helman

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 1	STATE CODE: 04
	SPS WIM ID: 040100
	DATE (mm/dd/yyyy) 10/16/2013

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		11750	11570	Direct
B		16320	16130	Direct
C		16320	16130	Direct
D		16730	16685	Direct
E		16730	16685	Direct
F				

4. GVW (same units as axles)

a. Empty GVW: _____
b. Average Pre-Test Loaded weight: 77830
c. Post Test Loaded Weight: 77200
d. Difference Post Test - Pre-Tests: -630

5. TRUCK DESCRIPTION

a. Tractor Cab Style: Conventional Sleeper Cab: No
photo: ☒

b. Make: CHU613
c. Model: Mack

d. Trailer Load Distribution Description:

trash

photo: ☒

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

A to B 14.8 B to C 4.4 C to D 33.2 D to E 4.1 E to F _____

h. Wheelbase - ☐ Measured _____ ☒ Computed 56.5
i. Kingpin offset from Axle B (units) .7 photo: ☐
j. Overall Length - ☒ Measured 61.8

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # <u>1</u>	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/16/2013
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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	11R22.5	steel spring	☒
B	11R22.5	air	☒
C	11R22.5	air	☒
D	11R22.5	air	☒
E	11R22.5	air	☒
F			☐

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

Steering Axle	Axle B	Axle C	Axle D	Axle E	Axle F

PART B

Table 1 - Raw Measurements -Platform Scale

Axles	Meas.	Pre-test Weight	Instance	Instance	Post-test weight
A	I				
A+B	II				
A+B+C	III				
A+B+C+D	IV				
A+B+C+D+E(1)	V				
A+B+C+D+E+(F)(1)	VI				
B+C+D+E+(F)	VII				
C+D+E+(F)	VIII				
D+E+(F)	IX				
E+(F)	X				
(F)	XI				
A+B+C+D+E+(F)(2)	XII				

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # <u>1</u>	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/16/2013
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CALIBRATION TEST TRUCK - Primary

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

	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 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	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

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # <u>1</u>	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/16/2013
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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	11660	16370	16370	16720	16720		77820
2	11840	16270	16270	16740	16740		77840
Avg.	11750	16320	16320	16730	16730		77830

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	11500	16170	16170	16680	16680		77200
2	11640	16090	16090	16690	16690		77200
Avg.	11570	16130	16130	16685	16685		77200

Validation Test Truck Run Set - Cal 1

Measured By: Andrew Lewis
Verified By: Gregory Helman

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 2	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/15/2013
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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	11R22.5	steel spring	☒
B	11R22.5	air	☒
C	11R22.5	air	☒
D	11R22.5	air	☒
E	11R22.5	air	☒
F			☐

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

Steering Axle	Axle B	Axle C	AxleD	AxleE	Axle F

PART B

Table 1 - Raw Measurements -Platform Scale

Axles	Meas.	Pre-test Weight	Instance	Instance	Post-test weight
A	I				
A+B	II				
A+B+C	III				
A+B+C+D	IV				
A+B+C+D+E(1)	V				
A+B+C+D+E+(F)(1)	VI				
B+C+D+E+(F)	VII				
C+D+E+(F)	VIII				
D+E+(F)	IX				
E+(F)	X				
(F)	XI				
A+B+C+D+E+(F)(2)	XII				

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 2	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/15/2013
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CALIBRATION TEST TRUCK - Secondary

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

	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 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	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

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 2	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/15/2013
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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	11680	13710	13710	14580	14580		68260
2	11720	13650	13650	14590	14590		68200
Avg.	11700	13680	13680	14585	14585		68230

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	11500	13520	13520	14500	14500		67540
2	11480	13540	13540	14510	14510		67580
Avg.	11490	13530	13530	14505	14505		67560

Validation Test Truck Run Set - Pre

Measured By: Andrew Lewis
Verified By: Gregory Helman

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 2	STATE CODE: 04
	SPS WIM ID: 040100
	DATE (mm/dd/yyyy) 10/16/2013

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		11860	0	Direct
B		13735	0	Direct
C		13735	0	Direct
D		14470	0	Direct
E		14470	0	Direct
F				

4. GVW (same units as axles)

a. Empty GVW: _____
b. Average Pre-Test Loaded weight: 68270
c. Post Test Loaded Weight: 0
d. Difference Post Test - Pre-Tests: -68270

5. TRUCK DESCRIPTION

a. Tractor Cab Style: Conventional Sleeper Cab: No
photo: ☒

b. Make: Mack
c. Model: CXU613

d. Trailer Load Distribution Description:

trash

photo: ☒

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

A to B 13.4 B to C 4.3 C to D 33.5 D to E 4.2 E to F _____

h. Wheelbase - ☐ Measured _____ ☒ Computed 55.4
i. Kingpin offset from Axle B (units) 0.8 photo: ☐
j. Overall Length - ☒ Measured 62.5

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 2	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/16/2013
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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	11R22.5	steel spring	☒
B	11R22.5	air	☒
C	11R22.5	air	☒
D	11R22.5	air	☒
E	11R22.5	air	☒
F			☐

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

Steering Axle	Axle B	Axle C	AxleD	AxleE	Axle F

PART B

Table 1 - Raw Measurements -Platform Scale

Axles	Meas.	Pre-test Weight	Instance	Instance	Post-test weight
A	I				
A+B	II				
A+B+C	III				
A+B+C+D	IV				
A+B+C+D+E(1)	V				
A+B+C+D+E+(F)(1)	VI				
B+C+D+E+(F)	VII				
C+D+E+(F)	VIII				
D+E+(F)	IX				
E+(F)	X				
(F)	XI				
A+B+C+D+E+(F)(2)	XII				

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 2	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/16/2013
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CALIBRATION TEST TRUCK - Secondary

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

	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 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	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

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 2	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/16/2013
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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	11860	13740	13740	14470	14470		68280
2	11860	13730	13730	14470	14470		68260
Avg.	11860	13735	13735	14470	14470		68270

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
Avg.							

Validation Test Truck Run Set - Cal 1

Measured By: Andrew Lewis
Verified By: Gregory Helman

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 2	STATE CODE: 04
	SPS WIM ID: 040100
	DATE (mm/dd/yyyy) 10/16/2013

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		11860	11690	Direct
B		13735	13600	Direct
C		13735	13600	Direct
D		14470	14425	Direct
E		14470	14425	Direct
F				

4. GVW (same units as axles)

a. Empty GVW: _____
b. Average Pre-Test Loaded weight: 68270
c. Post Test Loaded Weight: 67740
d. Difference Post Test - Pre-Tests: -530

5. TRUCK DESCRIPTION

a. Tractor Cab Style: Conventional Sleeper Cab: No
photo: ☒

b. Make: Mack
c. Model: CXU613

d. Trailer Load Distribution Description:

trash

photo: ☒

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

A to B 13.4 B to C 4.3 C to D 33.5 D to E 4.2 E to F _____

h. Wheelbase - ☐ Measured _____ ☒ Computed 55.4
i. Kingpin offset from Axle B (units) 0.8 photo: ☐
j. Overall Length - ☒ Measured 62.5

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 2	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/16/2013
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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	11R22.5	steel spring	☒
B	11R22.5	air	☒
C	11R22.5	air	☒
D	11R22.5	air	☒
E	11R22.5	air	☒
F			☐

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

Steering Axle	Axle B	Axle C	AxleD	AxleE	Axle F

PART B

Table 1 - Raw Measurements -Platform Scale

Axles	Meas.	Pre-test Weight	Instance	Instance	Post-test weight
A	I				
A+B	II				
A+B+C	III				
A+B+C+D	IV				
A+B+C+D+E(1)	V				
A+B+C+D+E+(F)(1)	VI				
B+C+D+E+(F)	VII				
C+D+E+(F)	VIII				
D+E+(F)	IX				
E+(F)	X				
(F)	XI				
A+B+C+D+E+(F)(2)	XII				

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 2	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/16/2013
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CALIBRATION TEST TRUCK - Secondary

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

	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 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	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

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 2	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/16/2013
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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	11860	13740	13740	14470	14470		68280
2	11860	13730	13730	14470	14470		68260
Avg.	11860	13735	13735	14470	14470		68270

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	11680	13600	13600	14430	14430		67740
2	11700	13600	13600	14420	14420		67740
Avg.	11690	13600	13600	14425	14425		67740

Validation Test Truck Run Set - Cal 1

Measured By: Andrew Lewis

Verified By: Gregory Helman

Traffic Sheet 21 (Wheel Load) LTPP MONITORED TRAFFIC DATA WIM SYSTEM TRUCK RECORDS										STATE CODE: 04 SPS WIM ID: 040100 DATE: (mm/dd/yyyy): 10/15/2013									
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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
67.2	60	1	1	10:04:33	17469	62.0	11.5	15.9	17.1	18.5	18.0		81.0	14.8	4.4	33.4	4.1		56.7	63.0
67.2	60	2	1	10:04:35	17471	55.0	11.8	13.7	13.6	15.5	13.7		68.2	13.5	4.3	33.7	4.1		55.6	62.0
69.1	44	1	2	10:13:56	17500	44.0	11.7	16.3	16.4	17.0	16.6		77.9	14.7	4.4	33.3	4.1		56.5	62.0
69.1	44	2	2	10:13:59	17501	44.0	12.7	14.2	13.8	14.8	14.7		70.0	13.5	4.3	33.8	4.1		55.7	63.0
69.8	55	1	3	10:23:38	17531	55.0	11.6	15.5	16.5	17.3	16.5		77.3	14.8	4.4	33.3	4.1		56.6	63.0
69.8	55	2	3	10:23:42	17532	54.0	11.3	14.2	13.6	14.7	13.9		67.6	13.5	4.3	33.6	4.1		55.5	62.0
71.3	62	1	4	10:32:58	17569	62.0	11.4	15.7	16.6	18.2	18.3		80.4	14.8	4.4	33.4	4.1		56.7	62.0
71.3	64	2	4	10:33:02	17570	65.0	12.2	13.8	13.6	16.4	15.7		71.7	13.5	4.3	33.6	4.1		55.5	62.0
73.5	44	1	5	10:42:23	17603	44.0	12.1	16.7	16.3	17.2	17.2		79.6	14.7	4.4	33.2	4.1		56.4	62.0
73.5	44	2	5	10:42:29	17604	45.0	11.2	14.2	13.9	14.7	14.3		68.3	13.5	4.3	33.6	4.1		55.5	62.0
74.0	54	1	6	10:51:57	17636	55.0	11.5	15.7	16.4	17.1	16.1		76.8	14.8	4.4	33.4	4.1		56.7	62.0
74.0	54	2	6	10:52:00	17637	55.0	11.1	14.1	14.0	14.7	13.6		67.4	13.5	4.4	33.6	4.1		55.6	62.0
75.2	62	1	7	11:01:47	17676	64.0	11.3	15.7	16.7	18.3	18.1		80.2	14.8	4.5	33.4	4.1		56.8	63.0
75.2	65	2	7	11:01:57	17677	65.0	11.8	13.7	13.5	16.6	15.9		71.5	13.5	4.3	33.6	4.1		55.5	63.0
76.7	44	1	8	11:11:41	17720	44.0	12.0	16.5	16.6	17.0	16.7		78.8	14.8	4.4	33.4	4.1		56.7	63.0
76.7	44	2	8	11:11:45	17721	45.0	11.9	14.3	13.3	15.1	13.5		68.1	13.6	4.3	33.6	4.1		55.6	62.0
77.8	54	1	9	11:21:26	17763	55.0	11.7	15.8	16.2	17.0	16.0		76.8	14.8	4.4	33.4	4.1		56.7	63.0
77.8	54	2	9	11:21:30	17764	55.0	10.9	14.3	13.7	16.0	13.8		68.6	13.5	4.3	33.7	4.1		55.6	63.0
78.8	64	1	10	11:31:05	17807	64.0	11.4	16.0	16.9	18.5	18.6		81.5	14.8	4.4	33.3	4.1		56.6	63.0
78.8	64	2	10	11:31:07	17808	64.0	12.1	13.9	13.7	16.8	15.2		71.7	13.5	4.3	33.6	4.1		55.5	63.0
82.4	44	1	11	13:57:26	18493	45.0	11.7	16.6	16.7	17.4	15.4		77.9	14.8	4.4	33.4	4.1		56.7	62.0
82.4	44	2	11	13:57:31	18494	45.0	11.5	14.1	13.6	15.4	13.9		68.4	13.4	4.3	33.4	4.1		55.2	62.0
81.0	54	1	12	14:07:19	18544	54.0	11.4	15.9	16.3	16.5	16.2		76.5	14.8	4.4	33.3	4.1		56.6	63.0
81.0	54	2	12	14:07:27	18545	55.0	11.4	14.1	14.1	16.4	13.7		69.8	13.5	4.3	33.5	4.1		55.4	63.0

Recorded By: <u>ABL</u>										Verified By: <u>GAH</u>										Run Set <u>Pre</u>	
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Traffic Sheet 21 (Wheel Load) LTPP MONITORED TRAFFIC DATA WIM SYSTEM TRUCK RECORDS							STATE CODE: 04 SPS WIM ID: 040100 DATE: (mm/dd/yyyy): 10/15/2013												
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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
80.5	64	1	13	14:17:47	18599	64.0	11.4	16.2	16.8	18.3	18.6		81.4	14.8	4.4	33.3	4.1		56.6	62.0
80.5	64	2	13	14:17:49	18600	64.0	12.2	13.6	13.3	17.6	15.4		72.1	13.5	4.3	33.5	4.1		55.4	63.0
81.2	45	1	14	14:27:08	18637	45.0	11.7	16.4	16.4	17.5	16.7		78.8	14.7	4.4	33.1	4.1		56.3	62.0
81.2	45	2	14	14:27:18	18638	45.0	12.3	14.3	13.7	15.9	13.1		69.2	13.4	4.3	33.5	4.1		55.3	62.0
80.7	54	1	15	14:36:34	18693	54.0	11.7	16.0	16.4	16.6	15.8		76.5	14.7	4.4	33.3	4.1		56.5	62.0
80.7	54	2	15	14:36:41	18694	54.0	11.3	14.2	14.1	15.1	14.0		68.7	13.5	4.3	33.5	4.1		55.4	63.0
80.2	64	1	16	14:46:33	18750	64.0	11.4	15.9	16.7	18.2	18.8		81.0	14.7	4.4	33.1	4.1		56.3	62.0
80.2	64	2	16	14:47:20	18756	64.0	11.7	13.6	13.6	16.5	16.1		71.6	13.5	4.3	33.5	4.1		55.4	63.0
79.5	4	1	17	14:56:26	18804	46.0	11.6	16.4	16.9	16.7	16.9		78.6	14.7	4.4	33.3	4.1		56.5	62.0
79.5	4	2	17	14:56:30	18805	44.0	11.5	13.9	13.9	14.9	13.8		67.8	13.5	4.3	33.5	4.1		55.4	63.0
78.8	54	1	18	15:06:01	18851	55.0	11.4	15.6	16.0	16.9	16.5		76.3	14.8	4.4	33.3	4.1		56.6	63.0
78.8	54	2	18	15:06:06	18852	55.0	11.1	14.2	13.8	15.6	14.1		68.7	13.5	4.3	33.6	4.1		55.5	62.0
76.9	63	1	19	15:16:16	18894	64.0	11.8	15.8	17.1	18.3	18.3		81.3	14.8	4.4	33.3	4.1		56.6	63.0
76.9	63	2	19	15:16:28	18895	65.0	11.6	13.9	13.6	16.8	16.2		72.2	13.5	4.3	33.4	4.1		55.3	63.0
76.1	45	1	20	15:26:00	18934	45.0	11.9	16.6	16.8	16.8	17.2		79.2	14.7	4.4	33.3	4.1		56.5	63.0
76.1	45	2	20	15:26:03	18935	45.0	12.0	13.9	13.6	14.6	14.1		68.4	13.5	4.3	33.6	4.1		55.5	62.0

Recorded By: <u>ABL</u>	Verified By: <u>GAH</u>	Run Set <u>Pre</u>
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Traffic Sheet 21 (Wheel Load) LTPP MONITORED TRAFFIC DATA WIM SYSTEM TRUCK RECORDS										STATE CODE: 04 SPS WIM ID: 040100 DATE: (mm/dd/yyyy): 10/16/2013									
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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
50.5	64	1	1	8:46:35	20895	64.0	11.4	15.1	15.8	17.2	17.8		77.2	14.7	4.4	33.4	4.1		56.6	62.0
50.5	64	2	1	8:46:41	20896	65.0	11.9	12.9	12.9	16.4	14.4		68.5	13.5	4.3	33.6	4.1		55.5	63.0
55.5	44	1	2	8:56:06	20919	44.0	12.1	16.3	16.2	16.9	17.3		78.9	14.8	4.4	33.3	4.1		56.6	63.0
55.5	44	2	2	8:56:11	20920	45.0	12.0	13.8	13.4	16.5	13.5		69.2	13.6	4.3	33.6	4.2		55.7	62.0
57.0	55	1	3	9:05:30	20946	54.0	11.6	15.7	16.6	16.6	16.2		76.6	14.7	4.4	33.3	4.1		56.5	62.0
57.0	55	2	3	9:05:34	20947	54.0	11.6	13.9	13.5	15.2	13.8		68.1	13.5	4.3	33.7	4.1		55.6	62.0
58.6	62	1	4	9:14:30	20972	65.0	11.4	15.2	15.9	17.1	17.8		77.4	14.8	4.4	33.4	4.1		56.7	63.0
58.6	55	2	4	9:14:50	20976	55.0	11.2	14.0	13.6	14.6	13.3		66.7	13.5	4.4	33.8	4.1		55.8	63.0
58.6	45	1	5	9:24:11	21006	44.0	11.8	16.5	16.5	16.6	17.0		78.5	14.8	4.4	33.4	4.1		56.7	62.0
58.6	45	2	5	9:24:14	21007	44.0	11.8	14.0	13.1	14.4	13.3		66.7	13.5	4.3	33.6	4.1		55.5	62.0
60.2	53	1	6	9:33:23	21038	55.0	11.7	15.9	16.4	16.2	15.8		75.9	14.8	4.4	33.3	4.1		56.6	62.0
60.2	53	2	6	9:33:26	21039	55.0	11.6	13.7	13.7	14.2	14.0		67.3	13.5	4.3	33.6	4.1		55.5	62.0
62.2	65	1	7	9:43:00	21062	65.0	11.4	15.3	15.7	17.6	17.6		77.7	14.7	4.4	33.2	4.1		56.4	62.0
62.2	65	2	7	9:43:04	21063	65.0	12.2	12.9	12.7	16.1	14.2		68.0	13.5	4.3	33.4	4.1		55.3	61.0
72.7	45	1	8	11:01:16	21337	44.0	12.2	16.4	16.2	16.4	15.2		76.4	14.7	4.4	33.2	4.1		56.4	62.0
72.7	45	2	8	11:01:19	21338	44.0	12.0	13.7	13.7	14.4	13.8		67.6	13.5	4.3	33.5	4.1		55.4	62.0
75.1	54	1	9	11:11:28	21373	55.0	11.8	15.5	16.2	16.6	16.4		76.4	14.8	4.4	33.4	4.1		56.7	63.0
75.1	54	2	9	11:11:31	21374	55.0	11.6	14.5	13.8	14.9	13.2		68.0	13.5	4.3	33.6	4.2		55.6	62.0
75.8	64	1	10	11:21:10	21409	64.0	11.3	15.4	15.8	17.4	17.1		77.0	14.8	4.4	33.3	4.1		56.6	62.0
75.8	64	2	10	11:21:12	21410	65.0	11.8	12.7	12.4	15.4	15.0		67.3	13.5	4.3	33.5	4.1		55.4	63.0
76.5	44	1	11	11:31:54	21456	44.0	11.8	16.7	16.4	17.1	15.5		77.5	14.7	4.4	33.2	4.1		56.4	61.0
76.5	44	2	11	11:31:57	21457	44.0	11.7	13.9	13.7	14.5	13.4		67.2	13.5	4.3	33.4	4.2		55.4	62.0
77.3	54	1	12	11:41:06	21491	55.0	11.9	15.6	16.1	16.6	16.0		76.4	14.8	4.4	33.2	4.1		56.5	61.0
77.3	54	2	12	11:41:09	21492	55.0	11.7	14.0	13.7	15.3	14.0		68.7	13.6	4.3	33.7	4.1		55.7	62.0

Recorded By: ABL

Verified By: GAH

Run Set Cal 1

Traffic Sheet 21 (Wheel Load) LTPP MONITORED TRAFFIC DATA WIM SYSTEM TRUCK RECORDS										STATE CODE: 04 SPS WIM ID: 040100 DATE: (mm/dd/yyyy): 10/16/2013									
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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
78.2	64	1	13	11:50:33	21537	64.0	11.2	15.2	15.8	17.2	17.7		77.1	14.8	4.4	33.3	4.1		56.6	62.0
78.2	64	2	13	11:50:35	21538	64.0	12.0	13.3	13.1	15.1	14.4		67.8	13.5	4.3	33.5	4.1		55.4	62.0
77.6	45	1	14	12:00:40	21573	45.0	12.1	16.5	16.5	16.6	15.7		77.5	14.7	4.4	33.2	4.1		56.4	62.0
77.6	45	2	14	12:00:43	21574	45.0	12.6	14.0	13.5	16.0	13.8		69.8	13.5	4.3	33.6	4.1		55.5	62.0
81.5	64	1	15	13:20:18	21954	64.0	11.2	15.4	15.7	17.5	17.5		77.3	14.7	4.4	33.3	4.1		56.5	62.0
81.5	64	2	15	13:20:22	21955	65.0	11.7	13.3	13.1	15.4	14.6		68.0	13.5	4.3	33.6	4.1		55.5	62.0
83.3	44	1	16	13:30:32	22009	45.0	11.8	16.1	16.7	16.9	16.8		78.4	14.7	4.4	33.3	4.1		56.5	62.0
83.3	44	2	16	13:30:36	22010	45.0	12.5	13.8	13.4	14.4	13.6		67.9	13.5	4.3	33.6	4.1		55.5	62.0
81.8	55	1	17	13:41:45	22064	55.0	11.7	15.6	16.5	16.4	16.1		76.2	14.7	4.4	33.2	4.1		56.4	62.0
81.8	55	2	17	13:41:49	22065	55.0	11.8	14.2	13.7	14.6	14.1		68.3	13.5	4.3	33.6	4.1		55.5	62.0
83.4	64	1	18	13:51:17	22120	64.0	11.1	15.0	15.9	17.8	17.7		77.5	14.7	4.4	33.3	4.1		56.5	62.0
83.4	64	2	18	13:51:23	22121	65.0	11.7	13.1	13.4	15.4	14.6		68.2	13.5	4.3	33.5	4.1		55.4	63.0
82.5	45	1	19	14:02:32	22182	45.0	12.2	16.4	16.6	17.0	16.1		78.4	14.7	4.4	33.2	4.1		56.4	62.0
82.5	45	2	19	14:02:36	22183	45.0	12.7	14.1	13.9	16.4	13.6		70.6	13.5	4.3	33.5	4.1		55.4	62.0
82.5	54	1	20	14:12:24	22231	55.0	12.0	15.5	16.2	16.9	16.4		77.0	14.8	4.4	33.3	4.1		56.6	62.0
82.5	54	2	20	14:12:29	22232	55.0	11.5	14.2	13.9	15.1	14.2		68.8	13.5	4.3	33.6	4.1		55.5	62.0

Recorded By: ABL

Verified By: GAH

Run Set Cal 1

Traffic Sheet 22 LTPP MONITORED TRAFFIC DATA SITE EQUIPMENT ASSESSMENT LTPP LANE ONLY	STATE CODE:	04
	SPS WIM ID:	040100
	STATE ASSIGNED ID	N/A
	DATE (mm/dd/yyyy)	10/16/2013

SITE EQUIPMENT INFORMATION

1. TYPE OF EQUIPMENT		<u>BOTH</u>	
2. LANE NUMBER ON SITE		<u>1</u>	3. DIRECTION ON SITE <u>north</u>
4. VENDOR	<u>IRD</u>	MODEL	<u>iSINC</u> SERIAL# <u>51202222</u>
5. WEIGHING SENSOR TYPE		<u>bending plate</u>	
6. SYSTEM SOFTWARE VERSIONS:			
CPU		<u></u>	
LOOP		<u></u>	
PIEZO		<u></u>	
WEIGHTPAD/ LOADCELL		<u></u>	
COMMUNICATIONS		<u></u>	
7. CLASSIFICATION VIDEO:			
TIME FROM: <u></u>		TO: <u></u>	
TIME FROM: <u></u>		TO: <u></u>	

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: 04 SPS WIM ID: 040100 STATE ASSIGNED ID N/A DATE (mm/dd/yyyy) 10/16/2013
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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. None of the in-road sensors show signs of damage or excessive wear and appear to be fully secured in the pavement.

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: 04 SPS WIM ID: 040100 STATE ASSIGNED ID N/A DATE (mm/dd/yyyy) 10/16/2013
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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: 04 SPS WIM ID: 040100 STATE ASSIGNED ID N/A DATE (mm/dd/yyyy) 10/16/2013
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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>63.9</u>	mph	Average WIM Speed	<u>64.9</u>	mph
Mean Difference	<u>1.0</u>	mph	SD of mean	<u>4.9</u>	

Posted Speed Limit	<u>65</u>	mph			
Speed Range	15th percentile - <u>65</u>	mph	85th percentile-	<u>76</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>4.35</u>	ft (WIM system average)
= <u>2.4</u> %			

Average front axle weight for Class 9 vehicles		<u> </u>	lbs
% error from 10.3 kips (industry average) OR		<u>11.8</u>	lbs (known site value)
= <u>14.4</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: 04 SPS WIM ID: 040100 STATE ASSIGNED ID N/A DATE (mm/dd/yyyy) 10/16/2013
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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 _____

Traffic Sheet 22 Addendum - Weighpad LTPP MONITORED TRAFFIC DATA SITE EQUIPMENT ASSESSMENT LTPP LANE ONLY	STATE CODE:	04
	SPS WIM ID:	040100
	STATE ASSIGNED ID	N/A
	DATE (mm/dd/yyyy)	10/16/2013

STATIC EQUIPMENT VALUES (SYSTEM OFF)

1. POWER

a. Solar Panel	<u>80</u>	WATTS	<u>22.9</u>	VDC
b. Equipment Power		VAC	<u>11.4</u>	VDC
c. Battery 1	<u>12.9</u>	VDC		
d. Battery 2	<u>12.9</u>	VDC		
e. Regulated	<u>12.9</u>	VDC		
f. Power Supply		VDC		VDC
g. System Input		VAC	<u>11.4</u>	VDC
h. Modem Power		VAC	<u>11.4</u>	VDC
i. Telephone	<u>53.4</u>	VDC		

2. LOOP SENSORS

	Resistance		Inductance		Shield	
a. Leading	<u>0.8</u>	Ω	<u>133.9</u>	μh	<u>inf</u>	M Ω
b. Trailing	<u>0.8</u>	Ω	<u>136.8</u>	μh	<u>inf</u>	M Ω

3. WEIGHPAD SENSORS

	Input		Output		Shield	
a. Leading	<u>984</u>	Ω	<u>846</u>	Ω	<u>inf</u>	Ω
b. Trailing	<u>986</u>	Ω	<u>846</u>	Ω	<u>inf</u>	Ω

DYNAMIC EQUIPMENT VALUES (SYSTEM ON)

4. LOOP SENSORS

	Frequency	
a. Leading	<u>8.3</u>	KHz
b. Trailing	<u>8.4</u>	KHz

5. WEIGHPAD SENSORS

	Zero Point	
a. Leading	<u>0.0</u>	mV
b. Trailing	<u>0.0</u>	mV

Assessor _____ 0 _____

Traffic Sheet 24A LTPP MONITORED TRAFFIC DATA SITE PHOTO LOG - Equipment	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/16/2013
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Item	Description	Filename
1	Power Source	040100_solar_panel_10_16_13.jpg
2	Telephone Source	040100_telephone_pedestal_10_15_13.jpg
3	Cabinet Exterior	040100_cabinet_exterior_10_16_13.jpg
4	Cabinet Interior - Front	040100_cabinet_interior_front_10_16_13.jpg
5	Cabinet Interior - Rear	040100_cabinet_interior_back_10_15_13.jpg
6	Leading weight sensor	040100_leading_WIM_sensor_10_15_13.jpg
7	Trailing weight sensor	040100_trailing_WIM_sensor_10_15_13.jpg
8	Leading classification sensor	
9	Trailing classification sensor	
10	Leading loop sensor	040100_leading_loop_10_15_13.jpg
11	Trailing loop sensor	040100_trailing_loop_10_15_13.jpg
12	Downstream from site	040100_downstream_10_15_13.jpg
13	Upstream from site	040100_upstream_10_15_13.jpg
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		

Traffic Sheet 24B LTPP MONITORED TRAFFIC DATA SITE PHOTO LOG - Test Trucks	STATE CODE: 04 SPS WIM ID: 040100 DATE (mm/dd/yyyy) 10/16/2013
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Item	Description	Filename
1	Tractor, Truck #1	040100_Truck_1_Tractor_10_15_13.jpg
2	Trailer/Load, Truck #1	040100_Truck_1_Trailer_10_15_13.jpg
3	Kingpin Offset, Truck #1	
4	Suspension A, Truck #1	040100_Truck_1_Suspension_1_10_15_13.jpg
5	Suspension B, Truck #1	040100_Truck_1_Suspension_2_10_15_13.jpg
6	Suspension C, Truck #1	040100_Truck_1_Suspension_3_10_15_13.jpg
7	Suspension D, Truck #1	040100_Truck_1_Suspension_4_10_15_13.jpg
8	Suspension E, Truck #1	040100_Truck_1_Suspension_5_10_15_13.jpg
9	Suspension F, Truck #1	
10	Tractor, Truck #2	040100_Truck_2_Tractor_10_15_13.jpg
11	Trailer/Load, Truck #2	040100_Truck_2_Trailer_10_15_13.jpg
12	Kingpin Offset, Truck #2	
13	Suspension A, Truck #2	040100_Truck_2_Suspension_1_10_15_13.jpg
14	Suspension B, Truck #2	040100_Truck_2_Suspension_2_10_15_13.jpg
15	Suspension C, Truck #2	040100_Truck_2_Suspension_3_10_15_13.jpg
16	Suspension D, Truck #2	040100_Truck_2_Suspension_4_10_15_13.jpg
17	Suspension E, Truck #2	040100_Truck_2_Suspension_5_10_15_13.jpg
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		