October 27, 2023

KLJ Engineering, LLC
330 Knollwood Drive
Rapid City, South Dakota 57701

Attn: Tanya Huber

RE: Pine Ridge Indian Reservation Pavement Testing Report
Oglala Lakota and Jackson Counties, South Dakota
AET Project No.: P-0025926

Dear Ms. Huber:

American Engineering Testing, Inc. (AET) is pleased to present this report transmitting the results of the pavement testing performed along select roadway segments within the Pine Ridge Indian Reservation in Oglala Lakota and Jackson Counties, South Dakota. This work was performed in general accordance with our proposal dated August 18, 2023.

PROJECT INFORMATION

We understand that the roadway segments included in this project scope include the following:

- BIA 2 East – BIA 41 to BIA 27
- BIA 2 West – Stover Street to SD-44
- BIA 28 – BIA 27 to BIA 33
- BIA 32 – BIA 41 to W Main Street
- BIA 41 – SD-40 to US-18

Our scope of services includes obtaining the pavement roughness along the above roadways using a high-speed inertial profilometer (HIP) and analysis of the obtained data. Specific details on test procedures, test results, and analysis performed are described in the following sections and attachments to this report.

PAVEMENT ROUGHNESS TESTING

AET performed HIP testing on August 22, 2023, on approximately 100 lane miles in one direction of travel. The HIP device used was a Surface Systems and Instruments (SSI) CS9300 Inertial Profiling System (IPS). The IPS device collects continuous high-speed

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roughness measurements along both wheel paths and in the middle of the lane. In addition to performing HIP tests, AET engineers processed and analyzed the pavement profile data using the Federal Highway Administration (FHWA) Profile Viewing and Analysis (ProVAL) software to produce a longitudinal surface profile, which met precision and bias specifications outlined in ASTM E950. The longitudinal surface profile was further processed within ProVAL to produce an International Roughness Index (IRI) rating for the tested roads, which is discussed in the next section. More details on the test apparatus, methodology, and relevant metrics are attached at the end of this report.

TEST RESULTS

The IRI rating indicates the roughness of the road in terms of elevation change normal to the direction of travel (in inches per mile). A very rough road would correspond to higher values of IRI. SDDOT has developed descriptions of roughness ratings that correspond to IRI values in their 2023 Enhanced Pavement Management System Synopsis. Using the *Roughness* chart from the SDDOT's pavement management system, the descriptions correlating with IRI values are presented in Table 1, and we adopt them in this report.

The FHWA provides a slightly different scale which is Good (<95), Acceptable (95-170), and Poor (>170) for interstate pavements.

Table 1. SDDOT Description of Pavement Roughness in Terms of IRI[1]

IRI (in/mi)	Qualitative Ride Rating (QRR)
< 160	Good
160 - 190	Fair
> 190	Poor

Table 2 below presents the IRI rating for the right wheel path (RWP) of each roadway segment, the average IRI in the RWP of the direction tested, the coefficient of variation (CV) in the RWP, and the minimum IRI values in the RWP averaged in 0.1-mile intervals.

[1] SDDOT (2023). *SDDOT's Enhanced Pavement Management System Synopsis – August 3, 2023*. https://dot.sd.gov/media/Synopsis2023_Final.pdf

Table 2. RWP Statistics per Section

Section	Avg. IRI (in/mi)	CV (%)	15th (in/mi)	Min. (in/mi)	Average QRR	15th QRR
S-01 BIA 2 East	149.1	42	208.2	41.1	Good	Poor
S-02 BIA 2 West	218.4	23	262.8	103.0	Poor	Poor
S-03 BIA 28	173.1	30	222.0	62.3	Fair	Poor
S-04 BIA 32	156.8	33	203.0	79.3	Good	Poor
S-05 BIA 41 North	148.1	40	210.7	47.5	Good	Poor
S-06 BIA 41 South	120.7	47	177.6	42.5	Good	Fair

Summary reports are attached to the end of this report and include the IRI of the left wheel path, right wheel path, and middle values averaged in 0.1-mile intervals for each roadway segment. Figures 1-6 present the IRI rating for the highest IRI value recorded in 0.1-mile intervals.

REMARKS

We thank you for the opportunity to assist you in this project. If you have any questions or need additional information, please do not hesitate to contact us.

Sincerely,
American Engineering Testing

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(586) 850-9717

Jacob O. Michalowski, PE (MN)
Pavement Group Manager
jmichalowski@teamaet.com
(651) 283-2481

Attachments:

a. High Speed Inertial Profiler Testing Test Methods, 3 pages
b. Figures 1-6: Ride Quality Rating Figures, 6 pages
c. IRI Summary Reports, 26 pages

1 PAVEMENT TESTING

The pavement profile at the site was evaluated nondestructively using High Speed Inertial Profiler (HIP). The description of the equipment precedes the IRI Data and Analysis Results in this appendix.

2 EQUIPMENT DESCRIPTION

2.1 SSI CS9300 Inertial Profiling System

The HIP owned by AET is a Surface Systems & Instruments (SSI) CS9300 Inertial Profiling System that consists of two LMI/Selcom 5KHz "Gocator" Roline wide scan sensors (dual track), an ISO9001 built portable digital data collection electronics module, and SSI Data Collector software for calibration and data collection. Figure 1 provides a view of this equipment.

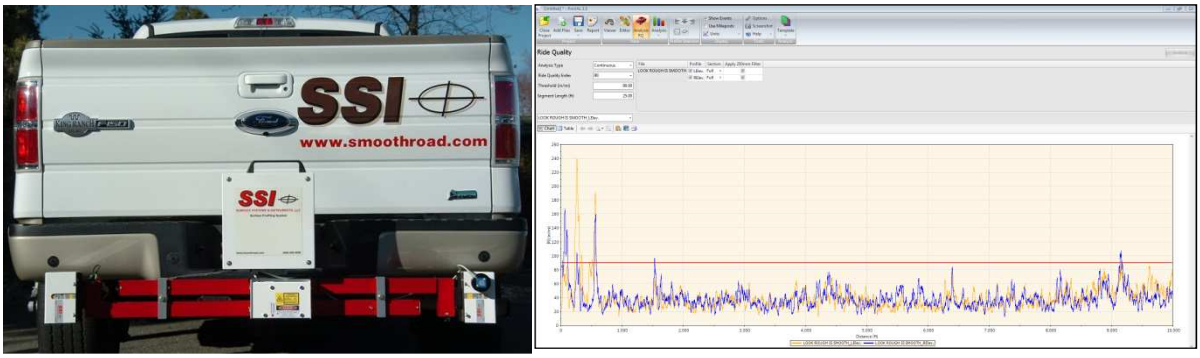


Figure 1 SSI CS9300 Inertial Profiling System

The SSI system utilizes a proprietary digital data collection architecture that generates surface profile data with proven repeatability and accuracy--equal to or exceeding any competing device. SSI™s performance has been proven by worldwide compliance with agency specifications and test methods. The SSI system is a Class I profiling device under ASTM E950/E950M-09 at all collections speeds (from 5 mph to 70 mph). SSI™s systems comply with applicable specifications and certification requirements, including US State DOT, Ministries of Transportation, and AASHTO M328, R054, R056-R057.

The SSI system has two LMI/Selcom 5KHz "Gocator" Roline wide scan sensors for laser readings with up to 6"/150mm lateral footprint, a more advanced laser that has evolved for measuring pavements with grooves, tines or coarse textures. Those surfaces achieve a more accurate profile using a wide-footprint laser (the LMI Technologies Roline sensor sampling at 3kHz or equivalent). The Roline laser was developed to minimize the artificial impact of single point lasers on concrete or other pavement finishes with significant texture attributes, such as longitudinal tines or grooves from diamond grinding. The Roline laser collects height measurements using 4 inch/100 mm lateral sampling of the surface, as compared to spot lasers that sample using a beam no wider than about .25 (6.35mm).

Field testing is performed in accordance with the standard ASTM procedures as described in ASTM E950/E950M-09, "Standard Test Method for Measuring the Longitudinal Profile of Traveled Surfaces with an Accelerometer Established Inertial Profiling Reference" and our equipment is certified at the MnROAD Research Facility in Albertville, MN and operated by an AET's inertial profiler operator certified by the MnDOT Inertial profiler certification program.

2.2 Linear Distance and Spatial Reference System

Distance measuring instrument (DMI) is a vehicle rim mounted two phase encoder system. When DMI is connected to the data collection module it provides for automatic display and recording distance information in both English and metric units with a 1 foot (0.3 meters) resolution and with longitudinal distance measurement error of 0.1% or less when calibrated using provided procedure in the Field Program.

Spatial reference system is a Trimble 10Hz OEM Global Positioning System (GPS) subsystem with GP</GLONASS, with limited corrections, that consists of fully integrated receiver, antenna and battery unit to provide sub-meter (1 m) post-processed accuracy.

2.3 Camera Monitoring System
A battery operated independent Digital camera (dashboard mounted) with images Integrated with profiling system data at user specified intervals.

3 SAMPLING METHODS

Variable sampling interval with default set to 25 mm (1.0 inch) in the Outside Wheel Path (OWP) = 2.5 ft ± 0.25 ft (0.76 m ± 0.08 m), Middle Lane (MDL) =6.0 ft ± 0.25 ft (1.85 m ± 0.08 m) and Inside Wheel Path (IWP) = 8.5 ft ± 0.25 ft (2.61 m ± 0.08 m) for nominal 12 ft (3.7 m) wide lanes. One inch (25 mm) sampling interval valid for all collection speeds. Where a divided roadbed exists, surveys will be taken in both directions if the project will include improvements in both directions. If there is more than one lane in one direction the surveys will be taken in the outer driving lane versus the passing lane of the highway. Profile tests are performed at a constant lateral offset down the test section.

4 QUALITY CONTROL (QC) AND QUALITY ASSURANCE (QA)

Beside the certification of the profiling system, various calibrations are conducted monthly but not to exceed 6 weeks during the months in which the profiler is continually testing. All of the accelerometers are calibrated at the same time, beginning with the accelerometers in the upright position. The DMI is also calibrated monthly by driving the vehicle over a known distance to calculate the distance scale factor.

The line lasers (Selcom 1145, Gocator 2342) is 12 inches above the ground surface and their laser difference for the height verification is less than one hundredths (0.01) of an inch. The height verification is performed to ensure that each individual laser deviates less than a hundredth (0.01) of an inch. The bounce test as a diagnostic procedure is used to determine if the system's accelerometers and height sensors are working in unison and calibrated correctly.

The bounce test is not a calibration procedure and its results are not used to reset or adjust the profiling system. For SSI's inertial profiling systems, static bounce test IRI values below 5 in/mi (78.9 mm/km) and dynamic results below 15 in/mi (236.7 mm/km) are within manufacturer's specifications for a properly functioning systems. Some agencies follow AASHTO R057, which specifies a static bounce test IRI under 3 in/mile (47.35 mm/km) and a dynamic bounce test IRI under 8 in/mile (126.26 mm/km).

An inertial profiler certified within the past 90 days is used to determine the IRI of the section by making a series of at least five profile measurements. The average IRI of the measurements is used to establish the IRI of the control section; provided that the cross correlation of the measurements as determined using the latest version of ProVAL is at least 88 percent (dependent upon the filters used, spectral content of the measured surface, operator, etc.). An inertial profiler is consistent when a single IRI determination does not vary more than 5 percent from the initial control section IRI established previously. After an inertial profiler has been used for the first time on a project, it is acceptable to re-run 528 ft of pavement that was measured on the previous day for comparison purposes. An inertial profiler is verified to be consistent when the current day's value does not differ by more than 5 percent from the previous day's value.

Scheduled preventive maintenance ensures proper equipment operation and helps identify potential problems that can be corrected to avoid poor quality or missing data that results if the equipment malfunctions while on site. The routine and major maintenance procedures established by the FHWA are adopted and any maintenance has been done at the end of the day after the testing is complete and become part of the routine performed at the end of each test/travel day and on days when no other work is scheduled.

The profiler log is always kept with the inertial profiler at all times that is subject to review by the Engineer. Verifications, calibrations, consistency checks, and certifications shall all be included in the profiler log.

5 DATA ANALYSIS METHODS

Data Analysis is performed in accordance with the standard ASTM procedures as described in ASTM E 1926-08, "Standard Practice for Computing International Roughness Index of Roads from Longitudinal Profile Measurements".

5.1 Inputs

IRI is computed from the recorded longitudinal profile measurement. ProVAL accepts the elevation profile data set as input and then calculates the IRI values for that profile data set. If the input to the IRI computer program is in inch-pound units, the elevation profile data points are scaled in inches with the least significant digit being equal to 0.001 in.

5.2 Outputs

Report test data in .ERD format that can be read directly into the latest version of ProVAL. This will permit the customers to directly input profile data, collected with AET's inertial profiler, into its data reduction program for QA testing.

6 TEST LIMITATIONS

6.1 Test Methods

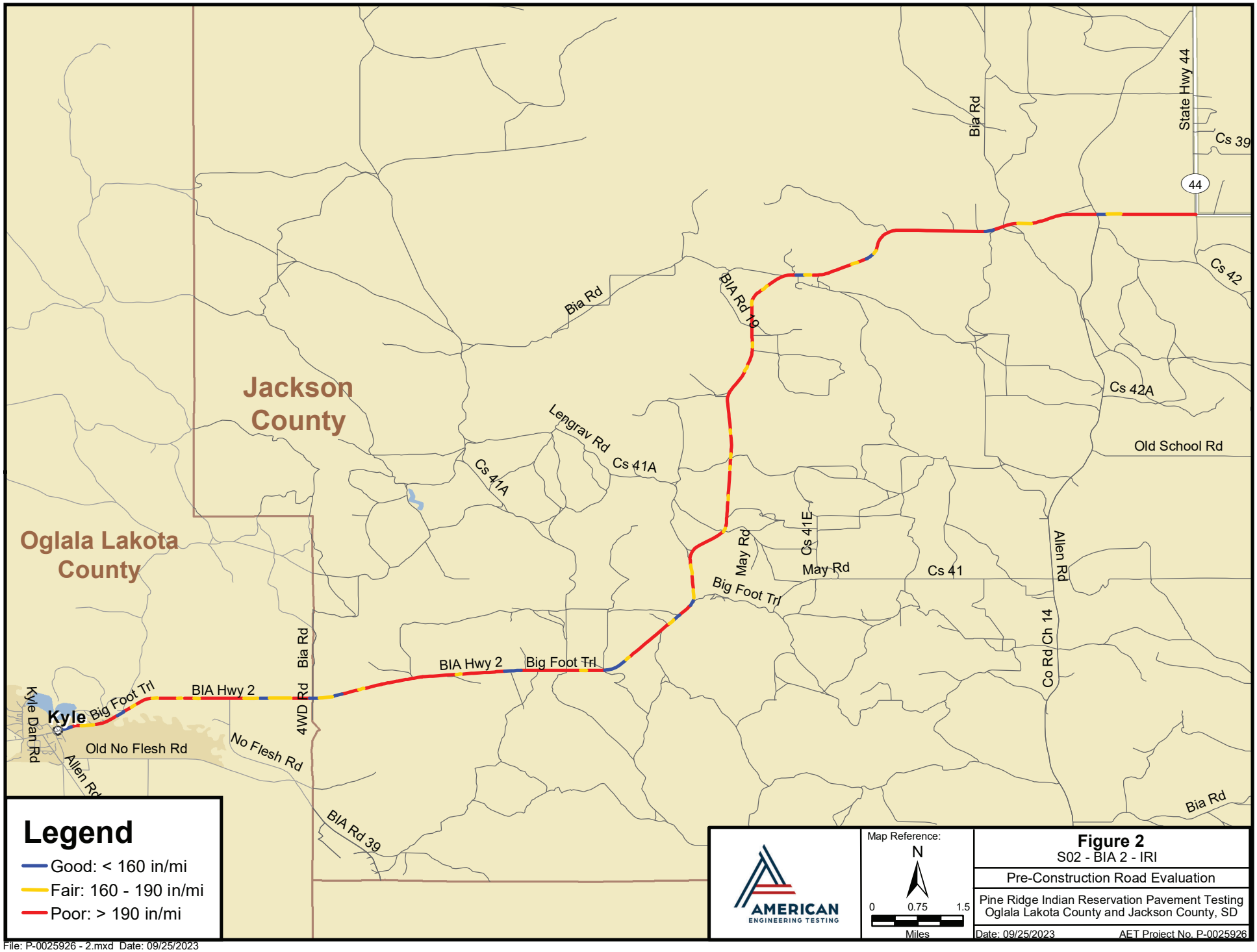
The data derived through the testing program have been used to develop our opinions about the pavement ride quality at your site. However, because no testing program can reveal totally what is in the subsurface, conditions between test locations and at other times, may differ from conditions described in this report. The testing we conducted identified pavement roughness only at those points where we measured pavement profile. Depending on the sampling methods and sampling frequency, every location may not be tested, and some anomalies which are present in the pavement may not be noted on the testing results. If conditions encountered during construction differ from those indicated by our testing, it may be necessary to alter our conclusions and recommendations, or to modify construction procedures, and the cost of construction may be affected.

6.2 Test Standards

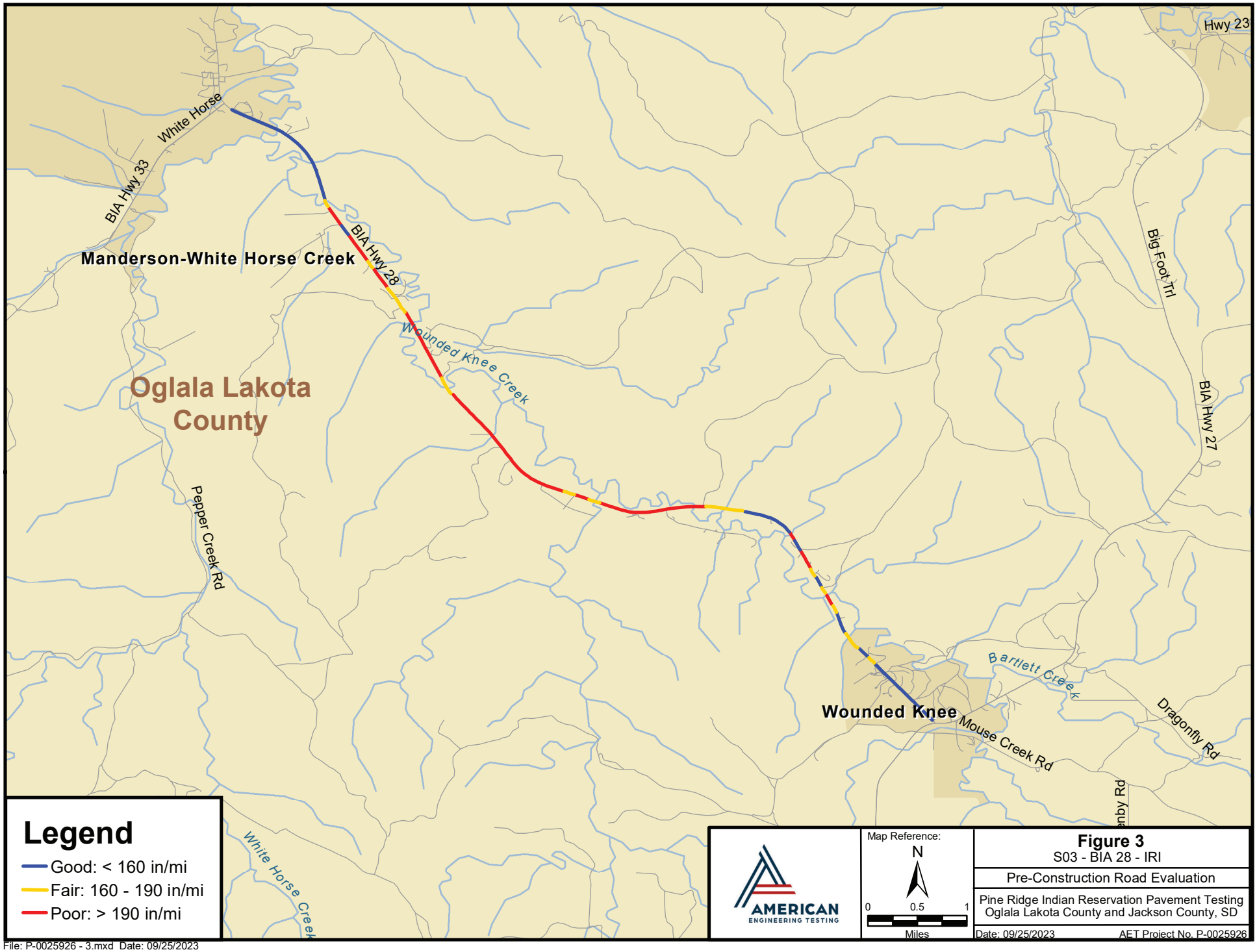
Pavement profile testing is done in general conformance with the described procedures. Compliance with any other standards referenced within the specified standard is neither inferred nor implied.



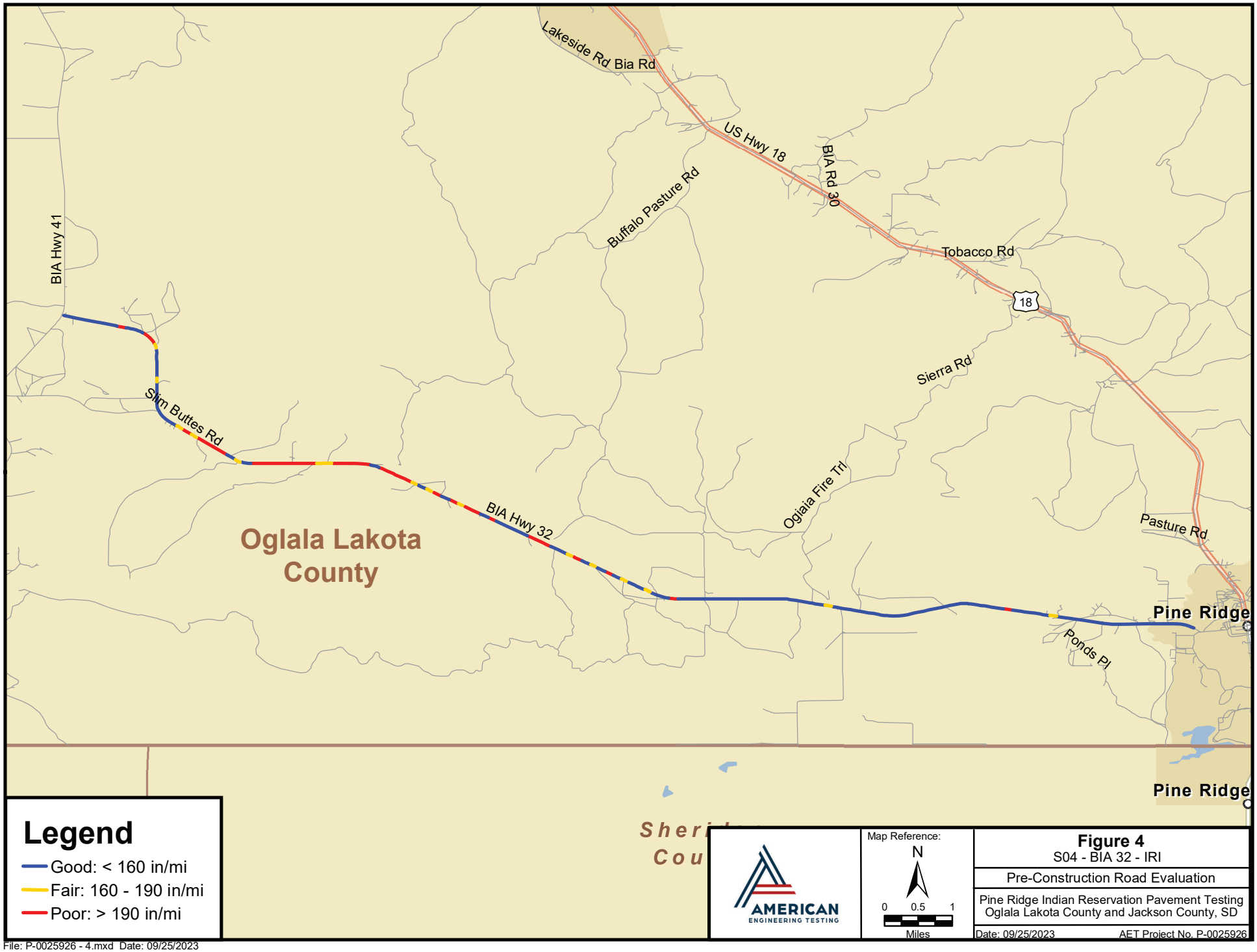
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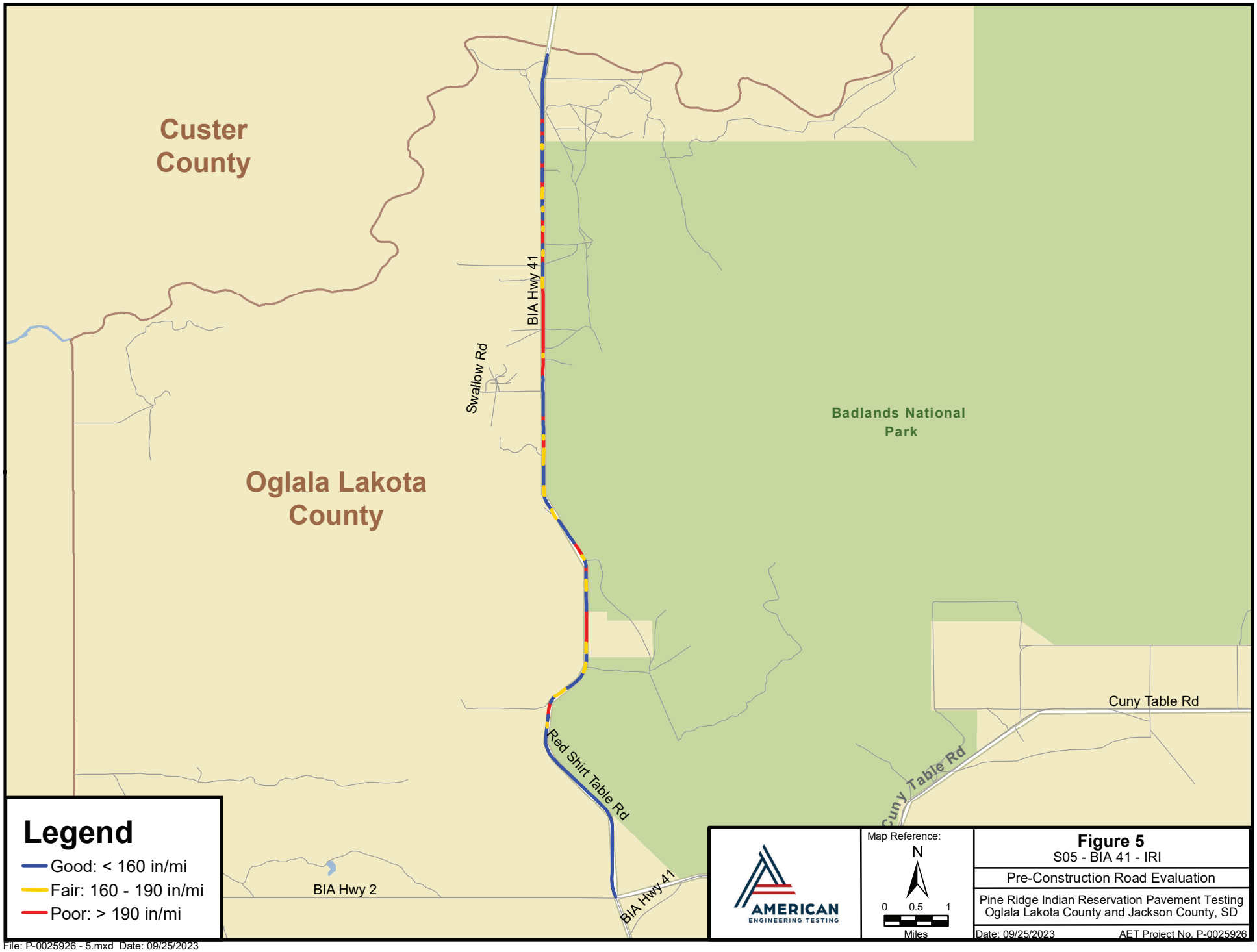
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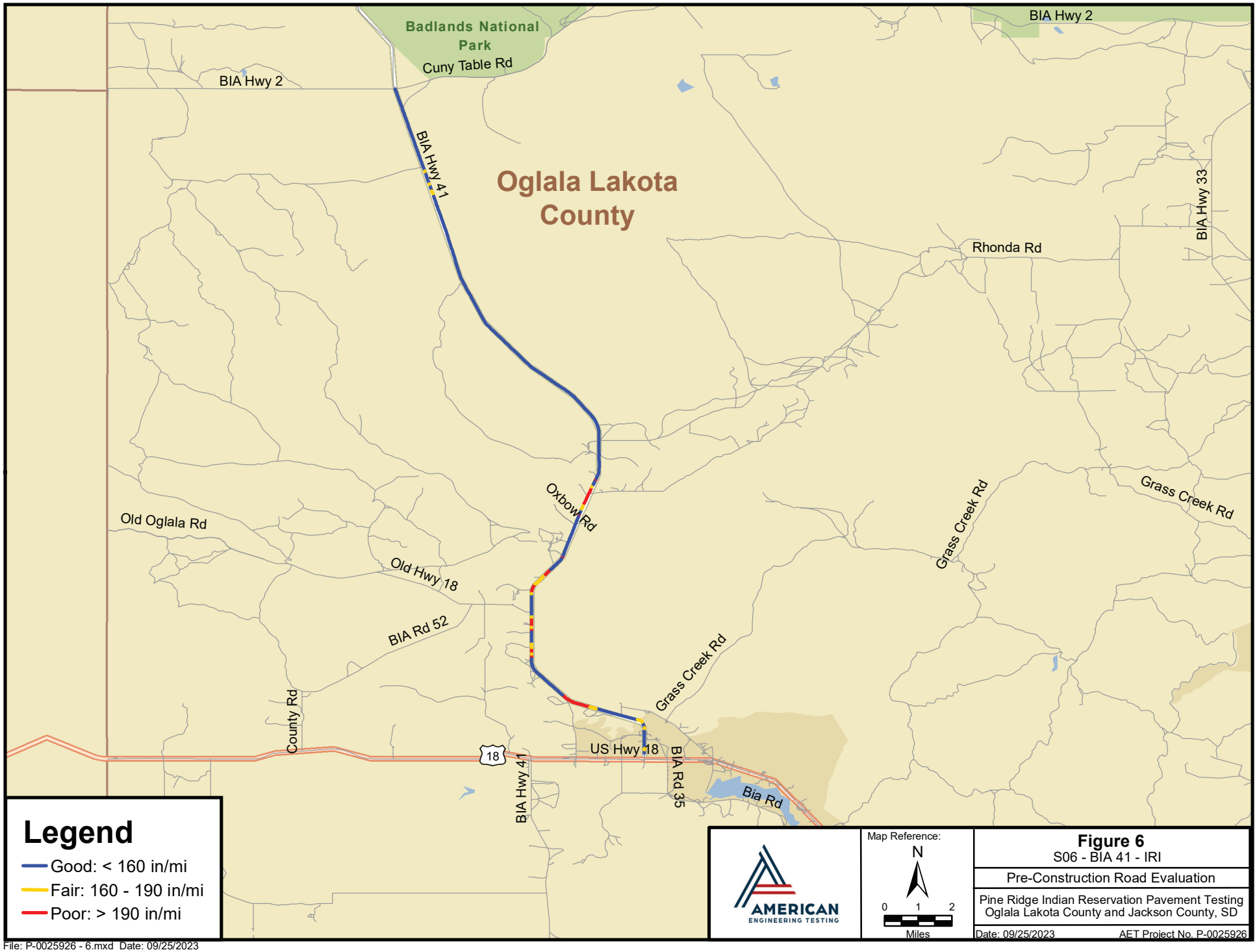
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American Engineering Testing, Inc.
550 Cleveland Avenue North
St. Paul, Minnesota 55114
Phone: (651) 659-9001
Fax: (651) 659-1379

GENERAL INFORMATION: IRI

Project:	Pine Ridge Indian Reservation Pavement Testing	**Date:**	9/22/23
AET Job No.:	P-0025926	**Test Date:**	8/22/23
Road:	BIA 2	**Section/Grid:**	S01
From:	BIA 41	**To:**	BIA 27

SUMMARY STATISTICS

Units: inches

EB			
Average	**CV**	**15th**	**Min.**
149.1	42%	208.2	41.1

			BIA 2 (E) - EB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
1	0.00	0.10	183.0	173.3	180.5
2	0.10	0.20	156.6	168.6	177.1
3	0.20	0.30	110.3	109.9	105.9
4	0.30	0.40	103.5	121.9	114.7
5	0.40	0.50	57.9	72.8	81.1
6	0.50	0.60	122.6	174.1	176.6
7	0.60	0.70	189.6	161.1	184.9
8	0.70	0.80	229.9	233.8	202.6
9	0.80	0.90	94.1	127.3	105.5
10	0.90	1.00	102.5	236.6	184.6
11	1.00	1.10	86.8	140.7	125.5
12	1.10	1.20	80.5	92.0	83.6
13	1.20	1.30	77.5	95.7	99.9
14	1.30	1.40	55.7	79.7	69.5
15	1.40	1.50	62.8	95.1	74.5
16	1.50	1.60	45.7	60.6	54.9
17	1.60	1.70	46.0	60.8	54.2
18	1.70	1.80	81.8	87.1	80.4
19	1.80	1.90	133.6	170.0	140.7
20	1.90	2.00	119.0	171.1	137.7
21	2.00	2.10	176.8	236.7	197.5
22	2.10	2.20	268.9	431.2	232.5
23	2.20	2.30	223.0	237.4	248.8
24	2.30	2.40	154.3	197.6	196.5
25	2.40	2.50	129.4	199.9	185.1
26	2.50	2.60	125.8	182.3	166.7

			BIA 2 (E) - EB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
27	2.60	2.70	104.3	206.9	137.2
28	2.70	2.80	132.6	257.8	161.3
29	2.80	2.90	134.7	170.7	179.4
30	2.90	3.00	117.2	137.8	149.9
31	3.00	3.10	116.8	131.4	140.0
32	3.10	3.20	130.7	178.8	168.8
33	3.20	3.30	149.4	125.2	149.2
34	3.30	3.40	196.6	155.8	207.6
35	3.40	3.50	117.6	128.5	134.6
36	3.50	3.60	128.9	128.4	179.4
37	3.60	3.70	191.0	144.1	205.3
38	3.70	3.80	161.2	191.3	156.5
39	3.80	3.90	243.9	213.7	214.6
40	3.90	4.00	173.5	146.4	132.9
41	4.00	4.10	148.1	131.8	174.7
42	4.10	4.20	182.0	217.1	200.6
43	4.20	4.30	141.0	132.1	167.1
44	4.30	4.40	161.4	179.3	125.4
45	4.40	4.50	188.2	162.1	152.0
46	4.50	4.60	280.2	250.1	222.5
47	4.60	4.70	216.8	176.7	216.3
48	4.70	4.80	209.2	180.9	205.2
49	4.80	4.90	192.3	141.3	140.2
50	4.90	5.00	194.7	222.7	184.1
51	5.00	5.10	189.1	261.7	199.6
52	5.10	5.20	206.6	212.1	191.5
53	5.20	5.30	174.5	185.4	216.2
54	5.30	5.40	204.3	214.9	235.0
55	5.40	5.50	221.9	216.2	206.6
56	5.50	5.60	175.7	264.2	236.2
57	5.60	5.70	168.1	189.0	138.3
58	5.70	5.80	163.6	160.6	167.8
59	5.80	5.90	206.0	259.3	207.0
60	5.90	6.00	162.4	144.6	159.7
61	6.00	6.10	225.8	165.4	160.1
62	6.10	6.20	147.1	155.8	191.5
63	6.20	6.30	192.1	217.5	180.3
64	6.30	6.40	252.8	269.7	246.5
65	6.40	6.50	163.4	165.7	176.8
66	6.50	6.60	210.1	136.6	166.8
67	6.60	6.70	223.3	207.6	212.5
68	6.70	6.80	139.4	159.2	180.2
69	6.80	6.90	201.8	274.0	201.1
70	6.90	7.00	168.8	154.2	180.4
71	7.00	7.10	214.6	208.8	218.4
72	7.10	7.20	167.9	167.4	170.1
73	7.20	7.30	144.9	143.5	176.0
74	7.30	7.40	160.9	127.9	156.8
75	7.40	7.50	135.2	116.4	158.1
76	7.50	7.60	150.3	121.1	157.2
77	7.60	7.70	177.8	274.9	165.5
78	7.70	7.80	131.6	110.0	100.7

			BIA 2 (E) - EB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
79	7.80	7.90	188.0	207.3	178.7
80	7.90	8.00	173.5	188.4	157.9
81	8.00	8.10	151.7	144.0	130.1
82	8.10	8.20	153.9	172.3	166.0
83	8.20	8.30	205.9	188.4	198.1
84	8.30	8.40	142.2	164.2	190.8
85	8.40	8.50	216.9	181.5	197.7
86	8.50	8.60	173.2	193.2	324.9
87	8.60	8.70	232.9	200.0	227.5
88	8.70	8.80	279.7	223.1	242.8
89	8.80	8.90	181.2	172.9	221.6
90	8.90	9.00	176.8	189.5	172.8
91	9.00	9.10	120.3	112.2	158.6
92	9.10	9.20	164.1	145.6	144.8
93	9.20	9.30	68.7	83.3	75.2
94	9.30	9.40	100.6	91.0	97.9
95	9.40	9.50	40.7	44.9	44.8
96	9.50	9.60	73.2	75.6	70.2
97	9.60	9.70	102.3	146.3	124.8
98	9.70	9.80	99.1	93.8	85.6
99	9.80	9.90	117.3	112.9	112.1
100	9.90	10.00	114.2	129.4	129.5
101	10.00	10.10	120.6	202.3	167.6
102	10.10	10.20	185.6	261.2	213.8
103	10.20	10.30	199.4	179.1	176.3
104	10.30	10.40	227.1	292.7	287.2
105	10.40	10.50	208.4	190.7	179.6
106	10.50	10.60	167.8	136.5	162.3
107	10.60	10.70	152.8	126.0	163.7
108	10.70	10.80	147.0	130.4	125.7
109	10.80	10.90	128.2	122.5	130.4
110	10.90	11.00	157.1	155.9	152.9
111	11.00	11.10	136.7	168.5	147.7
112	11.10	11.20	163.4	197.5	175.4
113	11.20	11.30	234.5	162.2	170.0
114	11.30	11.40	165.9	121.5	178.3
115	11.40	11.50	158.2	144.9	137.2
116	11.50	11.60	163.6	155.8	162.3
117	11.60	11.70	131.9	100.9	119.6
118	11.70	11.80	94.3	102.7	114.4
119	11.80	11.90	126.4	144.6	136.6
120	11.90	12.00	160.8	220.8	161.5
121	12.00	12.10	205.5	309.7	198.8
122	12.10	12.20	145.7	212.5	149.5
123	12.20	12.30	209.0	139.0	187.9
124	12.30	12.40	164.3	117.5	157.6
125	12.40	12.50	142.4	134.2	169.9
126	12.50	12.60	164.6	115.4	151.8
127	12.60	12.70	180.7	204.5	196.3
128	12.70	12.80	201.4	182.6	170.3
129	12.80	12.90	188.1	172.8	197.6
130	12.90	13.00	171.2	151.7	180.3

			BIA 2 (E) - EB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
131	13.00	13.10	170.1	187.0	153.8
132	13.10	13.20	177.7	274.2	192.0
133	13.20	13.30	151.1	170.4	144.4
134	13.30	13.40	152.3	185.4	129.5
135	13.40	13.50	122.2	105.3	118.6
136	13.50	13.60	109.5	137.8	141.0
137	13.60	13.70	136.6	177.8	155.1
138	13.70	13.80	153.2	138.2	149.9
139	13.80	13.90	47.0	41.4	48.4
140	13.90	14.00	43.8	45.3	50.2
141	14.00	14.10	53.1	59.3	57.5
142	14.10	14.20	47.5	46.9	46.6
143	14.20	14.30	47.4	44.1	51.0
144	14.30	14.40	44.4	52.7	49.5
145	14.40	14.50	50.6	57.2	52.3
146	14.50	14.60	44.8	52.8	50.3
147	14.60	14.70	41.0	41.1	42.9
148	14.70	14.80	48.3	46.4	49.5
149	14.80	14.90	66.5	66.5	66.5
150	14.90	15.00	107.3	106.0	99.6
151	15.00	15.10	104.4	116.2	111.4
152	15.10	15.20	51.6	49.1	48.0
153	15.20	15.30	66.7	71.9	67.1
154	15.30	15.40	100.6	137.7	121.9
155	15.40	15.50	119.1	125.4	113.2
156	15.50	15.60	105.4	123.9	120.3
157	15.60	15.70	88.2	83.6	84.1
158	15.70	15.80	70.7	86.5	91.0
159	15.80	15.90	56.3	92.4	84.9
160	15.90	16.00	66.7	78.4	64.9
161	16.00	16.10	110.4	138.7	143.1
162	16.10	16.20	99.6	98.1	106.5
163	16.20	16.30	128.8	128.9	124.3
164	16.30	16.40	151.1	160.2	155.5
165	16.40	16.50	120.8	157.8	138.5
166	16.50	16.60	163.7	130.5	116.3
167	16.60	16.70	113.1	112.9	101.5
168	16.70	16.80	86.9	87.9	90.5
169	16.80	16.90	99.8	95.9	82.8
170	16.90	17.00	110.2	99.6	95.9
171	17.00	17.10	66.8	72.7	67.9
172	17.10	17.20	85.0	102.1	91.1
173	17.20	17.30	56.8	66.8	62.5
174	17.30	17.40	74.5	54.0	69.3
175	17.40	17.50	101.9	129.8	105.4
176	17.50	17.60	103.8	134.0	99.6
177	17.60	17.70	131.8	127.8	118.7
178	17.70	17.80	323.7	209.3	264.8
179	17.80	17.90	194.1	130.0	174.8
180	17.90	18.00	98.5	115.7	101.1
181	18.00	18.10	165.9	167.1	161.4
182	18.10	18.20	139.9	139.8	149.7

			BIA 2 (E) - EB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
183	18.20	18.30	139.6	143.6	136.2
184	18.30	18.40	119.9	141.2	131.2
185	18.40	18.50	282.7	262.6	282.8
186	18.50	18.60	139.4	139.8	145.4
187	18.60	18.70	121.0	130.2	117.6
188	18.70	18.80	94.3	97.7	100.6
189	18.80	18.90	56.9	60.8	57.2
190	18.90	19.00	120.3	109.7	114.6
191	19.00	19.10	148.6	149.0	158.4
192	19.10	19.20	181.5	159.4	180.5
193	19.20	19.30	431.0	346.8	494.7
194	19.30	19.40	237.8	197.4	237.7
195	19.40	19.50	112.5	99.0	104.2
196	19.50	19.60	98.6	112.2	95.9
197	19.60	19.70	291.6	172.6	234.0
198	19.70	19.80	337.5	315.3	369.8
199	19.80	19.90	122.2	138.2	131.1
200	19.90	20.00	109.7	104.5	109.7
201	20.00	20.10	113.4	99.9	118.9
202	20.10	20.20	60.1	77.7	65.1
203	20.20	20.30	61.7	67.3	62.3
204	20.30	20.40	65.9	66.8	62.9
205	20.40	20.47	67.1	68.2	63.5
BRIDGE	20.47	20.55	BRIDGE		
206	20.55	20.65	126.3	155.0	128.7
207	20.65	20.75	101.0	117.6	112.2
208	20.75	20.85	101.1	131.7	120.1
209	20.85	20.94	68.7	86.0	82.6
RS	20.94	20.95	RUMBLE STRIPS		
210	20.95	21.00	79.7	91.8	83.1
RS	21.00	21.01	RUMBLE STRIPS		
211	21.01	21.02	84.4	130.2	120.0

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GENERAL INFORMATION: IRI

Project:	Pine Ridge Indian Reservation Pavement Testing	**Date:**	9/22/23
AET Job No.:	P-0025926	**Test Date:**	8/22/23
Road:	BIA 2	**Section/Grid:**	S02
From:	~250' E of Stover St	**To:**	SD-44

SUMMARY STATISTICS

Units: inches

EB			
Average	**CV**	**15th**	**Min.**
218.4	23%	262.8	103.0

			BIA 2 (E) - EB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
1	0.00	0.10	150.3	153.1	128.3
2	0.10	0.20	139.7	208.9	123.3
3	0.20	0.30	149.6	166.2	152.7
4	0.30	0.40	105.6	172.3	107.5
5	0.40	0.50	174.7	305.2	172.5
6	0.50	0.60	163.4	177.3	199.6
7	0.60	0.70	200.3	284.2	195.5
8	0.70	0.80	154.5	144.9	140.5
9	0.80	0.90	150.6	207.2	171.9
10	0.90	1.00	150.0	181.0	167.2
11	1.00	1.10	179.4	229.7	193.8
12	1.10	1.20	195.0	208.4	177.0
13	1.20	1.30	117.7	171.3	124.3
14	1.30	1.40	151.3	201.6	144.5
15	1.40	1.50	133.0	219.3	158.6
16	1.50	1.60	125.5	186.4	138.8
17	1.60	1.70	174.4	232.0	184.4
18	1.70	1.80	156.8	158.6	167.5
19	1.80	1.90	205.1	233.8	161.2
20	1.90	2.00	189.9	382.7	186.0
21	2.00	2.10	205.8	376.5	179.3
22	2.10	2.20	200.3	307.5	253.6
23	2.20	2.30	143.9	217.4	147.1
24	2.30	2.40	130.9	179.5	151.9
25	2.40	2.50	125.2	183.4	158.2
26	2.50	2.60	95.3	148.9	130.1

			BIA 2 (E) - EB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
27	2.60	2.70	166.3	171.7	179.1
28	2.70	2.80	141.8	189.4	145.0
29	2.80	2.90	123.4	184.2	126.0
30	2.90	3.00	151.1	255.2	176.9
31	3.00	3.10	109.2	241.7	115.7
32	3.10	3.20	144.7	152.0	155.7
33	3.20	3.30	94.5	186.3	107.7
34	3.30	3.40	124.4	167.7	148.4
35	3.40	3.50	108.2	138.1	113.4
36	3.50	3.60	168.0	238.7	159.0
37	3.60	3.70	163.6	245.5	201.0
38	3.70	3.80	107.1	180.0	115.0
39	3.80	3.90	140.5	209.0	142.6
40	3.90	4.00	168.7	236.2	156.3
41	4.00	4.10	167.1	201.7	159.4
42	4.10	4.20	155.4	252.7	170.6
43	4.20	4.30	180.4	219.4	154.6
44	4.30	4.40	204.7	343.4	169.5
45	4.40	4.50	166.3	212.8	187.9
46	4.50	4.60	181.7	208.0	161.3
47	4.60	4.70	168.7	263.7	157.8
48	4.70	4.80	178.0	230.8	172.6
49	4.80	4.90	180.5	221.8	158.0
50	4.90	5.00	140.0	186.7	152.6
51	5.00	5.10	139.6	213.5	138.0
52	5.10	5.20	130.0	254.2	142.0
53	5.20	5.30	142.1	236.9	157.7
54	5.30	5.40	160.5	210.1	160.2
55	5.40	5.50	185.8	195.2	142.2
56	5.50	5.60	148.0	151.5	145.8
57	5.60	5.70	82.4	151.9	122.8
58	5.70	5.80	156.2	206.3	132.3
59	5.80	5.90	180.0	235.8	168.0
60	5.90	6.00	190.8	390.6	248.3
61	6.00	6.10	152.8	244.8	157.8
62	6.10	6.20	134.8	194.8	158.2
63	6.20	6.30	183.2	225.1	153.8
64	6.30	6.40	167.8	228.1	170.7
65	6.40	6.50	153.0	181.7	129.5
66	6.50	6.60	158.1	216.2	154.1
67	6.60	6.70	169.6	227.9	135.6
68	6.70	6.80	130.6	115.8	95.1
69	6.80	6.90	129.9	128.3	91.7
70	6.90	7.00	103.9	140.8	119.1
71	7.00	7.10	132.6	185.8	167.9
72	7.10	7.20	141.5	208.9	155.4
73	7.20	7.30	154.1	193.4	154.5
74	7.30	7.40	120.0	192.5	151.2
75	7.40	7.50	141.1	193.7	150.4
76	7.50	7.60	100.4	200.6	136.5
77	7.60	7.70	130.0	253.2	148.5
78	7.70	7.80	150.8	257.1	153.4

			BIA 2 (E) - EB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
79	7.80	7.90	141.6	173.6	137.2
80	7.90	8.00	76.2	103.0	130.0
81	8.00	8.10	103.1	194.6	106.0
82	8.10	8.20	140.5	191.5	146.6
83	8.20	8.30	134.8	116.7	96.5
84	8.30	8.40	121.5	185.6	107.7
85	8.40	8.50	97.6	181.2	115.8
86	8.50	8.60	171.6	217.5	184.6
87	8.60	8.70	175.9	215.5	180.8
88	8.70	8.80	132.9	186.2	132.3
89	8.80	8.90	125.5	177.6	153.0
90	8.90	9.00	173.1	233.7	186.1
91	9.00	9.10	152.2	206.7	181.0
92	9.10	9.20	227.2	251.5	194.3
93	9.20	9.30	173.3	294.6	179.8
94	9.30	9.40	162.4	260.0	143.0
95	9.40	9.50	161.4	206.6	151.7
96	9.50	9.60	170.7	203.0	181.0
97	9.60	9.70	164.4	157.2	123.2
98	9.70	9.80	191.8	288.7	199.8
99	9.80	9.90	132.9	269.7	167.7
100	9.90	10.00	168.1	299.6	215.0
101	10.00	10.10	152.4	216.8	160.4
102	10.10	10.20	129.5	181.1	134.5
103	10.20	10.30	186.3	256.7	180.6
104	10.30	10.40	173.6	206.6	151.9
105	10.40	10.50	197.6	289.7	201.4
106	10.50	10.60	216.3	327.7	214.1
107	10.60	10.70	161.1	181.9	158.3
108	10.70	10.80	161.6	220.8	162.8
109	10.80	10.90	156.6	182.7	141.9
110	10.90	11.00	211.0	255.9	183.6
111	11.00	11.10	195.3	224.8	192.5
112	11.10	11.20	160.4	237.4	162.6
113	11.20	11.30	144.7	187.1	114.2
114	11.30	11.40	173.9	233.5	166.1
115	11.40	11.50	165.8	209.8	134.0
116	11.50	11.60	146.8	238.8	134.0
117	11.60	11.70	187.2	223.0	145.2
118	11.70	11.80	150.0	196.4	152.2
119	11.80	11.90	118.3	200.6	125.2
120	11.90	12.00	145.5	241.9	166.8
121	12.00	12.10	123.1	196.4	164.2
122	12.10	12.20	136.2	203.2	143.7
123	12.20	12.30	130.8	214.7	159.8
124	12.30	12.40	146.8	188.6	156.6
125	12.40	12.50	146.6	214.3	133.7
126	12.50	12.60	165.1	191.5	154.3
127	12.60	12.70	166.9	197.9	149.8
128	12.70	12.80	112.4	187.2	116.6
129	12.80	12.90	140.6	191.8	126.4
130	12.90	13.00	237.8	215.5	190.3

			BIA 2 (E) - EB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
131	13.00	13.10	193.8	193.0	129.1
132	13.10	13.20	190.7	182.7	148.9
133	13.20	13.30	146.5	199.3	144.3
134	13.30	13.40	179.7	198.0	125.5
135	13.40	13.50	165.0	189.5	133.5
136	13.50	13.60	133.9	235.2	156.6
137	13.60	13.70	133.1	192.7	139.2
138	13.70	13.80	143.6	185.4	150.3
139	13.80	13.90	197.5	232.0	146.8
140	13.90	14.00	184.5	201.0	145.0
141	14.00	14.10	179.1	264.8	180.6
142	14.10	14.20	160.6	195.1	181.3
143	14.20	14.30	142.8	128.9	150.2
144	14.30	14.40	168.1	188.2	152.7
145	14.40	14.50	141.5	190.4	144.2
146	14.50	14.60	188.6	195.0	164.8
147	14.60	14.70	236.0	266.0	251.0
148	14.70	14.80	197.2	251.7	207.9
149	14.80	14.90	134.5	244.9	127.4
150	14.90	15.00	152.5	188.2	131.0
151	15.00	15.10	184.6	241.2	134.7
152	15.10	15.20	133.7	136.3	113.4
153	15.20	15.30	157.9	168.8	178.6
154	15.30	15.40	172.2	219.1	190.9
155	15.40	15.50	123.0	245.8	136.3
156	15.50	15.60	211.5	296.5	223.3
157	15.60	15.70	206.4	241.5	207.2
158	15.70	15.80	199.7	268.3	146.5
159	15.80	15.90	141.3	289.5	135.4
160	15.90	16.00	127.3	222.7	156.3
161	16.00	16.10	162.3	203.2	165.4
162	16.10	16.20	200.4	277.7	198.4
163	16.20	16.30	159.8	237.1	133.9
164	16.30	16.40	161.9	206.3	164.3
165	16.40	16.50	137.2	260.7	193.5
166	16.50	16.60	174.4	207.8	156.3
167	16.60	16.70	250.3	379.7	176.2
168	16.70	16.80	229.7	248.0	170.3
169	16.80	16.90	118.6	136.3	139.2
170	16.90	17.00	142.0	210.3	144.1
171	17.00	17.10	173.4	238.4	169.5
172	17.10	17.20	218.5	247.3	169.6
173	17.20	17.30	162.9	189.9	139.2
174	17.30	17.40	133.6	176.4	116.4
175	17.40	17.50	166.0	258.5	165.9
176	17.50	17.60	183.4	312.9	183.2
177	17.60	17.70	167.8	238.3	196.4
178	17.70	17.80	147.5	330.1	199.9
179	17.80	17.90	154.6	212.4	157.7
180	17.90	18.00	142.8	204.6	141.3
181	18.00	18.10	178.5	294.0	182.7
182	18.10	18.20	167.8	276.4	193.2

			BIA 2 (E) - EB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
183	18.20	18.30	83.1	133.8	128.5
184	18.30	18.40	124.3	181.3	119.8
185	18.40	18.50	149.1	187.3	147.9
186	18.50	18.60	179.7	224.7	164.2
187	18.60	18.70	162.5	267.0	178.5
188	18.70	18.80	206.6	249.0	182.8
189	18.80	18.90	230.6	244.6	179.9
190	18.90	19.00	194.6	205.4	192.2
191	19.00	19.10	219.9	325.9	239.9
192	19.10	19.20	191.0	271.8	220.3
193	19.20	19.30	179.3	275.0	140.1
194	19.30	19.38	271.0	262.7	180.4

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GENERAL INFORMATION: IRI

Project:	Pine Ridge Indian Reservation Pavement Testing	**Date:**	9/22/23
AET Job No.:	P-0025926	**Test Date:**	8/22/23
Road:	BIA 28	**Section/Grid:**	S03
From:	~125' N BIA 27	**To:**	BIA 33

SUMMARY STATISTICS

Units: inches

NB			
Average	**CV**	**15th**	**Min.**
173.1	30%	222.0	62.3

			BIA 28 - NB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
1	0.00	0.10	106.1	103.5	125.9
2	0.10	0.20	73.0	103.8	95.8
3	0.20	0.30	60.7	103.7	77.8
4	0.30	0.40	58.7	74.7	76.4
5	0.40	0.50	57.9	62.3	71.2
6	0.50	0.60	58.5	73.2	79.6
7	0.60	0.70	94.3	118.0	99.3
8	0.70	0.80	94.0	160.2	118.1
9	0.80	0.90	154.2	157.9	121.1
10	0.90	1.00	143.5	176.0	156.3
11	1.00	1.10	150.4	173.3	126.5
12	1.10	1.20	69.1	87.3	80.2
13	1.20	1.30	93.3	108.5	96.7
14	1.30	1.40	164.0	189.4	164.8
15	1.40	1.50	163.0	222.0	196.5
16	1.50	1.60	141.0	178.6	159.2
17	1.60	1.70	95.8	154.5	157.6
18	1.70	1.80	146.6	184.5	181.4
19	1.80	1.90	176.7	219.4	227.6
20	1.90	2.00	156.1	187.2	209.4
21	2.00	2.10	98.5	155.7	130.9
22	2.10	2.20	146.4	164.2	205.6
23	2.20	2.30	142.3	118.6	157.6
24	2.30	2.40	90.0	110.3	114.8
25	2.40	2.50	122.2	139.8	154.6
26	2.50	2.60	108.4	119.1	143.1

			BIA 28 - NB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
27	2.60	2.70	146.2	134.3	163.6
28	2.70	2.80	143.4	167.5	154.2
29	2.80	2.90	99.7	149.4	164.0
30	2.90	3.00	200.4	176.0	233.9
31	3.00	3.10	153.3	187.8	197.5
32	3.10	3.20	181.4	202.3	209.3
33	3.20	3.30	162.5	211.3	176.1
34	3.30	3.40	155.0	208.7	198.5
35	3.40	3.50	131.6	196.8	163.3
36	3.50	3.60	161.5	197.7	196.3
37	3.60	3.70	155.5	206.0	163.2
38	3.70	3.80	129.4	164.4	178.2
39	3.80	3.90	111.8	127.5	194.7
40	3.90	4.00	135.3	178.3	180.2
41	4.00	4.10	141.9	223.0	178.1
42	4.10	4.20	161.0	236.0	156.8
43	4.20	4.30	204.3	308.7	195.9
44	4.30	4.40	170.2	269.7	194.7
45	4.40	4.50	167.3	215.3	166.5
46	4.50	4.60	129.6	208.9	145.6
47	4.60	4.70	148.9	225.1	164.2
48	4.70	4.80	148.5	216.2	240.1
49	4.80	4.90	162.9	217.3	161.9
50	4.90	5.00	209.8	265.8	247.5
51	5.00	5.10	163.7	206.9	180.7
52	5.10	5.20	178.3	229.4	212.3
53	5.20	5.30	183.8	214.3	245.8
54	5.30	5.40	133.4	164.9	161.6
55	5.40	5.50	128.3	183.4	157.0
56	5.50	5.60	156.6	218.6	209.7
57	5.60	5.70	186.9	218.2	201.0
58	5.70	5.80	150.9	235.6	164.2
59	5.80	5.90	178.9	213.8	210.0
60	5.90	6.00	190.9	255.0	211.3
61	6.00	6.10	164.5	234.1	170.1
62	6.10	6.20	172.4	221.3	192.0
63	6.20	6.30	115.3	163.4	147.3
64	6.30	6.40	127.3	174.4	148.8
65	6.40	6.50	101.1	165.9	131.9
66	6.50	6.60	148.2	209.2	179.2
67	6.60	6.70	180.2	222.5	196.7
68	6.70	6.80	138.2	183.1	152.4
69	6.80	6.90	140.9	210.9	169.9
70	6.90	7.00	150.2	212.5	158.4
71	7.00	7.10	151.7	225.3	192.5
72	7.10	7.20	107.6	158.3	138.0
73	7.20	7.30	145.1	234.7	161.7
74	7.30	7.40	131.7	215.2	160.1
75	7.40	7.50	131.8	179.1	175.1
76	7.50	7.60	111.3	130.7	138.3
77	7.60	7.70	109.5	125.4	124.7
78	7.70	7.80	93.1	126.1	106.1

			BIA 28 - NB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
79	7.80	7.90	93.5	133.4	118.2
80	7.90	8.00	76.6	91.5	89.5
81	8.00	8.10	103.5	107.4	126.4
82	8.10	8.20	97.1	102.2	119.8
83	8.20	8.30	74.9	88.9	140.6
84	8.30	8.40	78.6	107.2	110.1
85	8.40	8.50	78.9	123.4	128.5
86	8.50	8.60	84.4	121.8	119.6
87	8.60	8.70	65.4	96.1	77.3
88	8.70	8.79	121.9	188.4	175.3

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GENERAL INFORMATION: IRI

Project:	Pine Ridge Indian Reservation Pavement Testing	**Date:**	9/22/23
AET Job No.:	P-0025926	**Test Date:**	8/22/23
Road:	BIA 32	**Section/Grid:**	S04
From:	~75' E of BIA 41	**To:**	W Main St

SUMMARY STATISTICS

Units: inches

EB			
Average	**CV**	**15th**	**Min.**
156.8	33%	203.0	79.3

			BIA 32 - EB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
1	0.00	0.10	94.9	143.5	115.8
2	0.10	0.20	109.4	119.4	99.4
3	0.20	0.30	98.8	97.5	85.8
4	0.30	0.40	65.6	99.7	76.4
5	0.40	0.50	63.0	88.8	69.9
6	0.50	0.60	88.0	102.3	110.0
7	0.60	0.70	188.7	231.4	198.7
8	0.70	0.80	113.5	129.3	110.0
9	0.80	0.90	90.7	139.8	114.5
10	0.90	1.00	153.8	194.5	166.3
11	1.00	1.10	123.2	201.6	155.7
12	1.10	1.20	115.9	160.3	127.7
13	1.20	1.30	101.7	99.1	100.3
14	1.30	1.40	113.1	111.5	109.1
15	1.40	1.50	114.7	147.2	126.2
16	1.50	1.60	112.7	142.7	129.6
17	1.60	1.70	140.2	182.7	157.2
18	1.70	1.80	145.3	146.9	140.4
19	1.80	1.90	101.4	142.9	123.8
20	1.90	2.00	90.9	128.6	115.1
21	2.00	2.10	91.5	126.2	114.0
22	2.10	2.20	100.1	121.5	116.0
23	2.20	2.30	116.3	123.3	119.8
24	2.30	2.40	107.9	145.6	122.3
25	2.40	2.50	123.8	163.7	131.2
26	2.50	2.60	153.9	194.7	159.1

			BIA 32 - EB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
27	2.60	2.70	160.9	146.5	161.7
28	2.70	2.80	274.7	269.7	301.4
29	2.80	2.90	236.6	301.4	322.8
30	2.90	3.00	155.9	205.1	169.7
31	3.00	3.10	315.2	298.9	318.1
32	3.10	3.20	106.6	147.2	122.5
33	3.20	3.30	138.6	163.4	156.5
34	3.30	3.40	130.0	147.8	135.4
35	3.40	3.50	211.5	173.6	196.7
36	3.50	3.60	190.2	177.4	184.4
37	3.60	3.70	265.0	233.3	254.0
38	3.70	3.80	182.7	191.4	203.9
39	3.80	3.90	161.0	206.3	175.0
40	3.90	4.00	215.2	204.0	204.5
41	4.00	4.10	277.3	277.2	261.4
42	4.10	4.20	146.8	189.1	153.6
43	4.20	4.30	173.1	188.7	189.3
44	4.30	4.40	274.2	290.5	266.1
45	4.40	4.50	158.5	198.0	187.4
46	4.50	4.60	211.3	222.4	218.3
47	4.60	4.70	185.6	238.0	211.7
48	4.70	4.80	128.8	155.4	143.6
49	4.80	4.90	269.6	296.1	272.5
50	4.90	5.00	144.7	203.6	180.8
51	5.00	5.10	148.9	203.5	168.5
52	5.10	5.20	316.7	335.6	319.0
53	5.20	5.30	181.0	179.0	178.5
54	5.30	5.40	109.9	142.1	112.5
55	5.40	5.50	149.1	185.7	145.6
56	5.50	5.60	146.1	190.5	155.2
57	5.60	5.70	103.8	143.4	127.4
58	5.70	5.80	172.5	228.7	191.8
59	5.80	5.90	128.7	167.8	139.8
60	5.90	6.00	182.5	218.4	193.3
61	6.00	6.10	207.3	198.8	196.7
62	6.10	6.20	157.7	149.1	150.3
63	6.20	6.30	169.7	194.3	161.7
64	6.30	6.40	92.7	137.3	99.7
65	6.40	6.50	113.4	139.5	129.4
66	6.50	6.60	127.2	149.8	136.2
67	6.60	6.70	145.2	147.6	139.6
68	6.70	6.80	307.4	263.1	265.7
69	6.80	6.90	172.1	222.2	181.5
70	6.90	7.00	200.6	299.6	223.1
71	7.00	7.10	138.0	145.5	130.4
72	7.10	7.20	99.8	138.3	115.2
73	7.20	7.30	148.8	166.2	145.4
74	7.30	7.40	304.4	283.9	270.5
75	7.40	7.50	116.8	131.8	115.0
76	7.50	7.60	136.1	175.3	144.7
77	7.60	7.70	106.9	128.7	107.1
78	7.70	7.80	143.1	193.3	158.0

			BIA 32 - EB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
79	7.80	7.90	96.7	135.8	114.1
80	7.90	8.00	167.9	179.2	157.2
81	8.00	8.10	150.6	140.1	150.5
82	8.10	8.20	112.1	107.7	107.9
83	8.20	8.30	182.9	179.5	180.6
84	8.30	8.40	113.4	133.2	124.2
85	8.40	8.50	140.8	139.6	152.6
86	8.50	8.60	145.9	190.1	154.9
87	8.60	8.70	106.7	149.5	124.8
88	8.70	8.80	113.0	119.0	109.1
89	8.80	8.90	134.5	155.7	128.9
90	8.90	9.00	120.9	128.5	110.7
91	9.00	9.10	95.7	114.7	108.7
92	9.10	9.20	93.1	105.7	99.9
93	9.20	9.30	110.8	122.7	110.1
94	9.30	9.40	89.0	103.0	86.7
95	9.40	9.50	105.0	125.6	105.4
96	9.50	9.60	110.4	91.2	103.4
97	9.60	9.70	117.4	138.9	122.9
98	9.70	9.80	110.4	132.5	106.1
99	9.80	9.90	93.6	110.5	129.3
100	9.90	10.00	97.9	103.3	102.6
101	10.00	10.10	125.2	130.2	129.8
102	10.10	10.20	117.0	122.0	137.6
103	10.20	10.30	149.2	171.7	157.4
104	10.30	10.40	133.4	132.2	131.1
105	10.40	10.50	110.4	150.2	123.9
106	10.50	10.60	127.7	118.4	117.1
107	10.60	10.70	95.4	79.3	90.8
108	10.70	10.80	94.6	115.8	104.3
109	10.80	10.90	97.7	124.5	123.2
110	10.90	11.00	93.8	94.0	96.6
111	11.00	11.10	90.9	96.0	102.8
112	11.10	11.20	92.5	125.9	105.0
113	11.20	11.30	103.3	109.8	104.3
114	11.30	11.40	77.4	126.7	88.1
115	11.40	11.50	85.3	114.1	88.4
116	11.50	11.60	101.0	120.4	111.3
117	11.60	11.70	97.0	121.3	96.4
118	11.70	11.80	115.1	137.0	118.9
119	11.80	11.90	114.5	156.3	116.5
120	11.90	12.00	103.2	123.7	112.9
121	12.00	12.10	91.5	112.0	105.7
122	12.10	12.20	117.6	151.8	129.1
123	12.20	12.30	157.2	191.1	160.9
124	12.30	12.40	122.4	150.6	135.4
125	12.40	12.50	154.5	153.5	153.0
126	12.50	12.60	100.1	153.6	93.8
127	12.60	12.70	92.2	136.7	93.0
128	12.70	12.80	116.3	162.1	124.5
129	12.80	12.90	109.3	155.0	124.0
130	12.90	13.00	116.7	136.6	120.2

			BIA 32 - EB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
131	13.00	13.10	73.6	108.8	83.9
132	13.10	13.20	85.8	121.0	97.7
133	13.20	13.30	106.2	131.8	110.7
134	13.30	13.40	65.4	84.3	76.9
135	13.40	13.50	95.5	111.9	104.0
136	13.50	13.60	103.3	112.9	104.9
137	13.60	13.70	74.3	106.6	96.7
138	13.70	13.80	81.6	109.2	92.5
139	13.80	13.90	85.4	107.0	90.6
140	13.90	14.00	89.8	123.7	100.7
141	14.00	14.10	83.0	105.1	88.1
142	14.10	14.20	71.6	100.1	79.7
143	14.20	14.30	108.4	150.1	118.4

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GENERAL INFORMATION: IRI

Project:	Pine Ridge Indian Reservation Pavement Testing	**Date:**	9/22/23
AET Job No.:	P-0025926	**Test Date:**	8/22/23
Road:	BIA 41	**Section/Grid:**	S05
From:	SD-40	**To:**	BIA 2

SUMMARY STATISTICS

Units: inches

SB			
Average	**CV**	**15th**	**Min.**
148.1	40%	210.7	47.5

			BIA 41 (N) - SB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
1	0.00	0.10	113.9	143.6	136.9
2	0.10	0.20	77.5	109.2	75.4
3	0.20	0.30	89.7	95.4	82.3
4	0.30	0.40	80.2	113.0	87.5
5	0.40	0.50	93.5	148.8	129.7
6	0.50	0.60	132.8	154.7	154.4
7	0.60	0.70	148.9	127.8	137.1
8	0.70	0.80	65.1	64.2	68.5
9	0.80	0.90	58.4	57.1	61.1
10	0.90	1.00	117.8	159.8	121.3
11	1.00	1.10	184.8	262.3	154.0
12	1.10	1.20	135.5	125.5	89.8
13	1.20	1.30	193.7	162.9	105.4
14	1.30	1.40	116.1	129.8	102.8
15	1.40	1.50	134.4	163.9	131.5
16	1.50	1.60	124.6	154.2	123.1
17	1.60	1.70	110.7	141.9	123.0
18	1.70	1.80	160.9	205.3	136.0
19	1.80	1.90	103.6	151.4	109.2
20	1.90	2.00	122.3	140.6	131.7
21	2.00	2.10	172.5	219.8	176.7
22	2.10	2.20	139.7	179.9	135.0
23	2.20	2.30	127.1	173.8	131.5
24	2.30	2.40	114.6	155.1	118.7
25	2.40	2.50	172.4	174.4	132.3
26	2.50	2.60	123.5	155.1	121.3

			BIA 41 (N) - SB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
27	2.60	2.70	163.9	206.9	157.3
28	2.70	2.80	149.5	187.1	143.5
29	2.80	2.90	215.8	229.7	200.9
30	2.90	3.00	151.9	190.2	138.9
31	3.00	3.10	93.8	136.8	101.8
32	3.10	3.20	130.3	181.6	135.7
33	3.20	3.30	153.7	197.0	159.5
34	3.30	3.40	109.3	127.2	120.6
35	3.40	3.50	106.5	143.6	101.6
36	3.50	3.60	132.4	179.1	146.6
37	3.60	3.70	123.8	168.4	133.4
38	3.70	3.80	175.4	254.9	183.5
39	3.80	3.90	146.7	196.7	155.2
40	3.90	4.00	200.0	269.2	242.1
41	4.00	4.10	187.9	273.4	208.5
42	4.10	4.20	201.4	274.1	224.6
43	4.20	4.30	211.2	341.5	222.1
44	4.30	4.40	229.8	299.0	194.4
45	4.40	4.50	177.2	217.0	170.6
46	4.50	4.60	159.4	214.0	165.9
47	4.60	4.70	208.2	250.6	199.8
48	4.70	4.80	146.4	187.7	152.2
49	4.80	4.90	172.3	245.1	187.4
50	4.90	5.00	206.0	253.3	191.1
51	5.00	5.10	123.5	196.7	150.9
52	5.10	5.20	70.4	82.0	80.4
53	5.20	5.30	60.0	64.1	60.4
54	5.30	5.40	91.4	108.2	117.7
55	5.40	5.50	134.4	156.6	114.8
56	5.50	5.60	89.9	128.1	115.7
57	5.60	5.70	104.0	142.5	139.3
58	5.70	5.80	158.7	211.7	139.7
59	5.80	5.90	134.8	154.5	111.7
60	5.90	6.00	93.2	94.2	97.7
61	6.00	6.10	132.2	163.8	154.7
62	6.10	6.20	171.8	221.4	136.2
63	6.20	6.30	127.8	185.3	104.9
64	6.30	6.40	144.9	181.7	138.3
65	6.40	6.50	138.1	174.0	143.0
66	6.50	6.60	115.0	123.1	106.0
67	6.60	6.70	109.3	119.8	131.8
68	6.70	6.80	113.6	137.8	109.3
69	6.80	6.90	133.5	168.4	146.8
70	6.90	7.00	122.6	144.5	171.5
71	7.00	7.10	113.5	109.1	122.7
72	7.10	7.20	111.4	106.4	130.7
73	7.20	7.30	147.3	133.0	168.7
74	7.30	7.40	122.9	135.3	163.9
75	7.40	7.50	117.3	89.2	126.3
76	7.50	7.60	73.4	106.7	101.8
77	7.60	7.70	65.7	76.3	77.7
78	7.70	7.80	107.9	158.2	138.7

			BIA 41 (N) - SB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
79	7.80	7.90	142.2	205.0	172.6
80	7.90	8.00	107.4	210.2	118.4
81	8.00	8.10	118.7	164.6	146.4
82	8.10	8.20	91.7	94.8	115.2
83	8.20	8.30	146.2	198.9	148.9
84	8.30	8.40	93.7	102.6	68.7
85	8.40	8.50	108.3	164.2	105.9
86	8.50	8.60	106.1	160.8	103.9
87	8.60	8.70	150.5	148.5	140.2
88	8.70	8.80	109.7	112.7	81.8
89	8.80	8.90	90.0	116.1	112.2
90	8.90	9.00	161.4	256.1	159.5
91	9.00	9.10	124.0	212.3	149.3
92	9.10	9.20	141.1	238.1	126.0
93	9.20	9.30	155.8	223.6	162.2
94	9.30	9.40	161.3	220.9	117.3
95	9.40	9.50	151.6	166.4	130.7
96	9.50	9.60	128.1	161.6	108.4
97	9.60	9.70	107.4	132.6	112.5
98	9.70	9.80	183.1	159.4	141.5
99	9.80	9.90	144.0	187.4	153.5
100	9.90	10.00	93.2	121.3	145.0
101	10.00	10.10	139.6	122.0	129.7
102	10.10	10.20	116.9	147.7	111.6
103	10.20	10.30	152.4	178.3	170.2
104	10.30	10.40	102.8	109.8	161.4
105	10.40	10.50	73.3	103.5	109.9
106	10.50	10.60	132.2	181.7	197.4
107	10.60	10.70	136.2	192.9	167.3
108	10.70	10.80	121.5	147.6	133.2
109	10.80	10.90	113.1	165.9	122.3
110	10.90	11.00	116.2	146.7	138.8
111	11.00	11.10	85.7	107.5	88.0
112	11.10	11.20	68.9	77.2	67.6
113	11.20	11.30	77.4	134.8	93.1
114	11.30	11.40	66.0	97.0	77.1
115	11.40	11.50	94.8	133.3	100.3
116	11.50	11.60	48.8	59.4	47.2
117	11.60	11.70	58.7	73.7	65.2
118	11.70	11.80	72.1	73.3	73.8
119	11.80	11.90	58.4	58.2	56.2
120	11.90	12.00	67.8	61.0	63.0
121	12.00	12.10	58.5	68.6	71.0
122	12.10	12.20	61.1	80.4	68.1
123	12.20	12.30	55.7	79.8	63.6
124	12.30	12.40	79.7	85.7	80.3
125	12.40	12.50	105.0	120.7	117.0
126	12.50	12.60	123.9	118.2	132.1
127	12.60	12.70	116.6	120.3	121.4
128	12.70	12.80	63.4	67.4	65.6
129	12.80	12.90	55.7	58.8	57.0
130	12.90	13.00	53.4	51.7	48.6

			BIA 41 (N) - SB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
131	13.00	13.10	47.4	51.0	50.3
132	13.10	13.20	53.7	51.1	49.1
133	13.20	13.30	56.8	82.7	66.5
134	13.30	13.40	61.3	71.2	65.2
135	13.40	13.50	82.4	83.9	82.9
136	13.50	13.60	71.8	91.1	80.9
137	13.60	13.70	46.1	47.5	43.7
138	13.70	13.80	66.6	77.2	71.5
139	13.80	13.82	69.8	82.1	73.5

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GENERAL INFORMATION: IRI

Project:	Pine Ridge Indian Reservation Pavement Testing	**Date:**	9/22/23
AET Job No.:	P-0025926	**Test Date:**	8/22/23
Road:	BIA 41	**Section/Grid:**	S06
From:	BIA 2	**To:**	US-18

SUMMARY STATISTICS

Units: inches

SB			
Average	**CV**	**15th**	**Min.**
120.7	47%	177.6	42.5

			BIA 41 (S) - SB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
1	0.00	0.10	75.0	93.3	77.8
2	0.10	0.20	46.1	62.1	50.7
3	0.20	0.30	43.0	54.2	47.3
4	0.30	0.40	44.9	72.6	51.0
5	0.40	0.50	52.7	82.2	58.5
6	0.50	0.60	92.5	133.7	111.3
7	0.60	0.70	72.8	84.9	78.8
8	0.70	0.80	55.0	68.3	59.3
9	0.80	0.90	70.1	74.5	75.7
10	0.90	1.00	58.4	76.7	70.1
11	1.00	1.10	50.5	58.5	54.2
12	1.10	1.20	47.7	55.6	51.1
13	1.20	1.30	59.3	59.9	58.9
14	1.30	1.40	61.3	65.6	59.5
15	1.40	1.50	48.7	68.6	56.1
16	1.50	1.60	52.9	77.2	61.2
17	1.60	1.70	41.1	70.8	50.2
18	1.70	1.80	47.0	71.8	51.8
19	1.80	1.90	61.2	72.2	66.9
20	1.90	2.00	73.2	85.4	73.7
21	2.00	2.10	42.3	55.4	47.4
22	2.10	2.20	44.1	50.7	50.8
23	2.20	2.30	53.6	54.3	53.7
24	2.30	2.40	49.4	63.2	53.6
25	2.40	2.50	103.9	112.5	106.5
26	2.50	2.60	146.1	159.0	163.5

			BIA 41 (S) - SB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
27	2.60	2.70	108.8	116.6	103.1
28	2.70	2.80	117.8	123.2	99.5
29	2.80	2.90	145.5	129.6	123.6
30	2.90	3.00	141.1	169.1	119.7
31	3.00	3.10	97.0	126.1	107.5
32	3.10	3.20	134.0	163.8	128.0
33	3.20	3.30	173.3	189.0	163.9
34	3.30	3.40	106.8	153.2	111.7
35	3.40	3.50	115.1	139.9	120.0
36	3.50	3.60	120.0	129.6	112.4
37	3.60	3.70	109.9	149.0	116.0
38	3.70	3.80	79.9	102.0	72.0
39	3.80	3.90	78.6	70.0	79.1
40	3.90	4.00	86.4	90.9	94.0
41	4.00	4.10	91.3	98.2	102.4
42	4.10	4.20	105.9	110.7	103.7
43	4.20	4.30	94.0	100.4	96.7
44	4.30	4.40	74.1	83.6	78.9
45	4.40	4.50	103.6	104.4	86.0
46	4.50	4.60	88.0	100.5	94.3
47	4.60	4.70	76.0	82.9	74.8
48	4.70	4.80	98.0	81.9	109.5
49	4.80	4.90	79.7	70.1	98.6
50	4.90	5.00	86.6	106.4	95.6
51	5.00	5.10	89.2	91.9	95.0
52	5.10	5.20	105.6	113.9	113.2
53	5.20	5.30	97.9	96.3	119.1
54	5.30	5.40	101.9	99.2	113.1
55	5.40	5.50	133.9	113.9	116.0
56	5.50	5.60	117.9	85.0	101.8
57	5.60	5.70	131.2	120.8	120.9
58	5.70	5.80	152.1	131.4	141.5
59	5.80	5.90	118.4	100.5	113.2
60	5.90	6.00	110.1	103.1	116.6
61	6.00	6.10	108.0	97.7	106.1
62	6.10	6.20	72.7	70.0	64.6
63	6.20	6.30	73.6	80.1	76.1
64	6.30	6.40	65.3	50.0	64.0
65	6.40	6.50	77.9	71.4	75.8
66	6.50	6.60	129.2	133.2	124.2
67	6.60	6.70	80.6	77.2	88.7
68	6.70	6.80	105.0	125.7	93.7
69	6.80	6.90	87.2	67.7	92.4
70	6.90	7.00	110.1	99.9	114.5
71	7.00	7.10	81.2	70.1	81.6
72	7.10	7.20	69.9	85.2	81.7
73	7.20	7.30	83.1	76.6	84.4
74	7.30	7.40	83.1	81.1	87.7
75	7.40	7.50	83.8	83.1	84.0
76	7.50	7.60	86.7	86.8	83.2
77	7.60	7.70	56.8	71.3	60.4
78	7.70	7.80	80.5	91.6	82.2

			BIA 41 (S) - SB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
79	7.80	7.90	105.8	111.5	104.7
80	7.90	8.00	102.4	111.4	102.7
81	8.00	8.10	113.3	88.3	112.6
82	8.10	8.20	42.6	47.0	51.4
83	8.20	8.30	76.8	82.0	76.2
84	8.30	8.40	44.4	42.5	43.2
85	8.40	8.50	40.0	44.5	48.6
86	8.50	8.60	59.5	66.3	65.5
87	8.60	8.70	96.2	108.7	101.9
88	8.70	8.80	94.8	99.6	83.2
89	8.80	8.90	50.5	51.5	52.2
90	8.90	9.00	61.8	75.4	72.3
91	9.00	9.10	49.9	61.5	51.1
92	9.10	9.20	51.8	76.1	57.3
93	9.20	9.30	41.2	51.5	44.3
94	9.30	9.40	51.5	56.4	54.5
95	9.40	9.50	73.1	87.8	79.2
96	9.50	9.60	70.6	83.7	75.6
97	9.60	9.70	44.8	54.1	47.8
98	9.70	9.80	46.8	49.9	51.5
99	9.80	9.90	50.4	48.4	52.6
100	9.90	10.00	48.2	53.6	52.3
101	10.00	10.10	54.4	54.0	61.0
102	10.10	10.20	56.5	65.9	60.6
103	10.20	10.30	54.2	54.9	56.5
104	10.30	10.40	67.1	66.9	62.4
105	10.40	10.50	57.2	74.2	63.9
106	10.50	10.60	46.4	47.1	49.4
107	10.60	10.70	57.3	50.1	53.2
108	10.70	10.80	40.2	46.0	46.1
109	10.80	10.90	92.9	93.1	94.2
110	10.90	11.00	59.8	68.5	64.1
111	11.00	11.10	49.4	49.8	51.5
112	11.10	11.20	67.0	70.8	79.1
113	11.20	11.30	58.1	56.9	56.5
114	11.30	11.40	52.0	58.6	51.7
115	11.40	11.50	63.2	65.2	64.2
116	11.50	11.60	57.9	51.0	60.6
117	11.60	11.70	64.5	72.2	70.6
118	11.70	11.80	69.4	67.7	71.1
119	11.80	11.90	47.4	55.5	51.2
120	11.90	12.00	54.9	59.4	53.5
121	12.00	12.10	59.3	46.3	52.1
122	12.10	12.20	55.8	57.0	61.5
123	12.20	12.30	58.1	56.9	55.5
124	12.30	12.40	74.1	78.6	68.1
125	12.40	12.44	124.7	124.2	127.9
BRIDGE	12.44	12.49	BRIDGE		
126	12.49	12.59	105.7	111.2	102.6
127	12.59	12.69	125.7	127.8	119.9
128	12.69	12.79	80.8	82.0	82.9
129	12.79	12.89	164.3	200.6	164.8

			BIA 41 (S) - SB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
130	12.89	12.99	110.7	135.6	125.8
131	12.99	13.09	130.4	184.6	132.8
132	13.09	13.19	196.3	282.9	206.8
133	13.19	13.29	214.5	247.4	231.4
134	13.29	13.39	213.6	268.6	217.0
135	13.39	13.49	228.1	284.5	244.6
136	13.49	13.59	170.9	213.3	168.5
137	13.59	13.69	175.9	162.8	134.4
138	13.69	13.79	157.5	189.9	154.8
139	13.79	13.89	125.0	138.6	136.5
140	13.89	13.99	232.3	237.6	224.4
141	13.99	14.09	132.1	142.7	138.6
142	14.09	14.19	154.1	147.2	136.1
143	14.19	14.29	104.8	147.7	126.6
144	14.29	14.39	83.1	115.2	98.4
145	14.39	14.49	76.8	121.8	128.6
146	14.49	14.59	110.8	132.7	110.5
147	14.59	14.69	90.9	142.5	97.9
148	14.69	14.79	99.0	135.1	128.9
149	14.79	14.89	116.0	142.1	151.2
150	14.89	14.99	93.2	106.7	136.9
151	14.99	15.09	81.6	153.3	104.2
152	15.09	15.19	101.5	127.1	100.1
153	15.19	15.29	120.5	190.6	151.2
154	15.29	15.39	125.8	154.4	135.1
155	15.39	15.49	65.0	100.8	86.8
156	15.49	15.59	100.8	121.2	91.7
157	15.59	15.69	99.0	156.0	111.4
158	15.69	15.79	116.8	253.2	180.3
159	15.79	15.89	163.1	263.9	192.9
160	15.89	15.99	163.3	187.7	175.3
161	15.99	16.09	114.0	178.4	147.5
162	16.09	16.19	168.0	183.7	155.9
163	16.19	16.29	169.9	164.3	152.5
164	16.29	16.39	251.8	284.5	257.7
165	16.39	16.49	155.0	182.1	215.8
166	16.49	16.59	142.6	177.7	149.5
167	16.59	16.69	88.8	141.0	91.6
168	16.69	16.79	88.9	126.9	103.9
169	16.79	16.89	111.5	156.9	130.0
170	16.89	16.99	109.5	134.9	105.8
171	16.99	17.09	121.2	138.8	121.7
172	17.09	17.19	121.4	155.3	137.0
173	17.19	17.29	130.0	164.9	127.4
174	17.29	17.39	180.5	235.5	178.0
175	17.39	17.49	142.0	200.7	166.9
176	17.49	17.59	136.7	177.1	159.3
177	17.59	17.69	106.6	213.0	132.0
178	17.69	17.79	101.2	140.7	125.5
179	17.79	17.89	103.4	147.5	120.1
180	17.89	17.99	116.8	150.6	126.5
181	17.99	18.09	116.9	165.0	143.6

			BIA 41 (S) - SB		
Segment [#]	**Start [mi]**	**End [mi]**	**Driver [in/mi]**	**Passenger [in/mi]**	**Middle [in/mi]**
182	18.09	18.19	104.3	178.7	122.6
183	18.19	18.29	114.0	196.1	131.8
184	18.29	18.39	137.3	161.0	140.0
185	18.39	18.49	127.2	198.0	143.9
186	18.49	18.59	91.7	136.5	114.8
187	18.59	18.69	91.9	118.7	106.4
188	18.69	18.79	94.9	147.3	125.8
189	18.79	18.89	117.6	149.1	137.4
190	18.89	18.99	87.9	150.2	113.1
191	18.99	19.09	88.8	143.8	104.4
192	19.09	19.19	92.1	137.6	124.9
193	19.19	19.29	86.3	115.0	95.0
194	19.29	19.39	82.6	125.7	109.2
195	19.39	19.49	95.7	126.0	75.5
196	19.49	19.59	91.5	137.6	94.8
197	19.59	19.69	102.1	158.4	86.2
198	19.69	19.79	112.8	139.0	120.0
199	19.79	19.89	237.8	271.4	251.8
200	19.89	19.99	287.7	317.0	308.8
201	19.99	20.09	314.8	295.9	289.2
202	20.09	20.19	242.7	243.1	257.5
203	20.19	20.29	196.1	236.6	206.0
204	20.29	20.39	170.5	201.9	174.9
205	20.39	20.49	136.5	192.3	154.7
206	20.49	20.59	119.6	169.1	135.5
207	20.59	20.69	133.0	160.1	142.2
208	20.69	20.79	109.3	103.1	109.1
209	20.79	20.89	101.9	108.5	104.3
210	20.89	20.99	116.8	124.2	120.4
211	20.99	21.09	109.8	141.5	118.2
212	21.09	21.19	113.8	121.8	110.7
213	21.19	21.29	86.1	93.6	116.1
214	21.29	21.39	123.0	139.2	119.5
215	21.39	21.49	142.4	132.0	120.3
216	21.49	21.59	138.6	154.1	139.2
217	21.59	21.69	140.1	179.1	105.3
218	21.69	21.79	126.7	178.4	108.2
219	21.79	21.89	120.1	138.7	112.5
220	21.89	21.99	118.7	166.9	124.7
221	21.99	22.09	86.2	121.2	94.7
222	22.09	22.19	80.8	101.7	87.6
223	22.19	22.29	81.0	83.1	94.2
224	22.29	22.39	88.8	131.3	105.0
225	22.39	22.49	83.2	134.5	101.5
226	22.49	22.57	84.5	166.8	93.4
227	22.57	22.61	95.8	183.5	110.8
RS	22.61	22.62	RUMBLE STRIPS		
228	22.62	22.65	95.3	139.2	89.2
RS	22.65	22.66	RUMBLE STRIPS		
229	22.66	22.75	85.1	174.0	94.3