



APPLIED RESEARCH ASSOCIATES, INC.

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Dr. Mumtahir Hasnat, PhD
Pavement Engineer
Wisconsin Department of Transportation
Bureau of Technical Services
3502 Kinsman Boulevard
Madison, Wisconsin 53704
P: (608) 246-7543
E: mumtahir.hasnat@dot.wi.gov

Subject: **FINAL - Pavement friction testing throughout Central and Southern Wisconsin.**
ARA Project No. D00348.00001

Dear Dr. Hasnat:

Applied Research Associates, Inc., is pleased to present our final findings from friction testing conducted May and July 2024 at 90 test sites throughout Central and Southern Wisconsin. In addition to this narrative report, a Google Earth .KMZ file is being delivered to WisDOT for easy-to-view summary results.

It has been a pleasure providing these services to the Wisconsin Department of Transportation, and we look forward to working with you on future projects. If you have any questions or comments regarding this report, please do not hesitate to contact us at your convenience.

Sincerely,

Paul M. Dalbey, P.E.
Senior Engineer

Michael J. Harrell, P.E.
Vice President & Principal Engineer

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INTRODUCTION

The Wisconsin Department of Transportation (WisDOT) Bureau of Technical Services (BTS) contracted Applied Research Associates, Inc. (ARA) to provide pavement friction testing at 90 test sites throughout Central and Southern Wisconsin, divided generally into five main testing zones. The general locations of the five testing zones were as follows:

- Zone 1: Milwaukee
- Zone 2: Madison
- Zone 3: La Crosse
- Zone 4: Wausau
- Zone 5: Eau Claire

Figure 1 shows the locations of the five testing zones and the number of test sites within each zone. Overview maps of each test zone are found within the results section below. Tables 2-6 present the Test Sites within each zone.

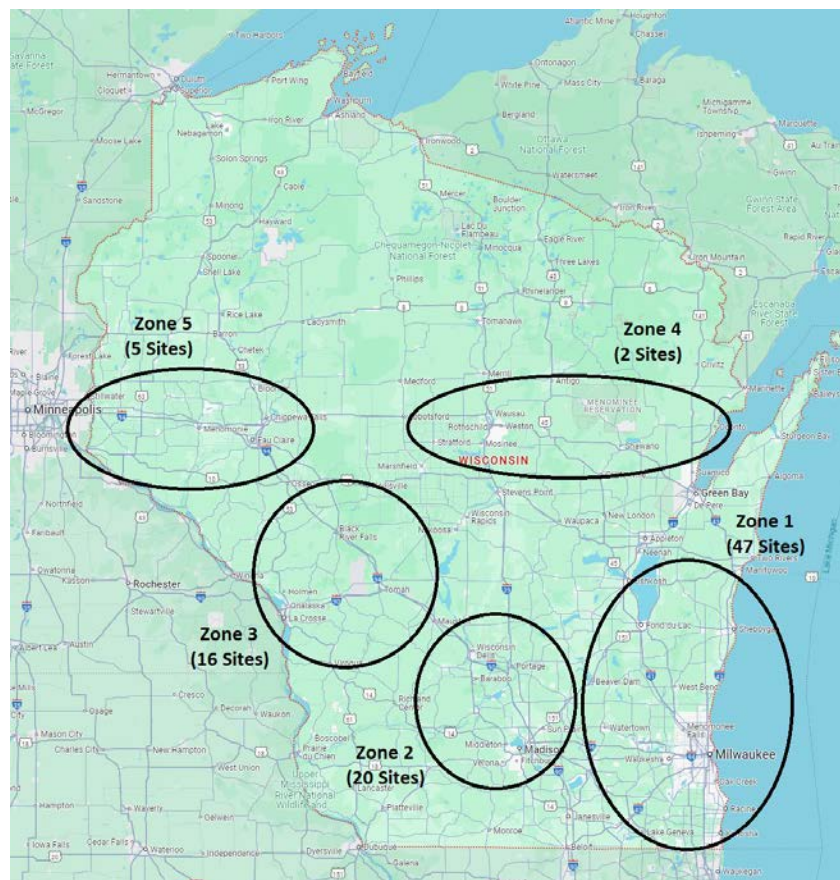


Figure 1. Location of test zones

FIELD COLLECTION

Data was collected in two mobilizations. Most of the data in Zone 1 was collected July 8-11, 2024, while data in Zones 2-5 was primarily collected May 1-3, 2024. ARA personnel used a locked-wheel skid friction tester manufactured by International Cybernetics Corporation that meets all specifications set forth in ASTM E-274, *Standard Test Method for Skid Resistance of Paved Surfaces Using a Full-Scale Tire*. Tests were conducted using an ASTM E-501 ribbed testing tire in the left wheel path. The testing interval for the project was set at 0.05 miles when site length was sufficient to collect at regular, automated intervals. In locations where the site length was not long enough to collect adequate data, testing was manually activated by ARA personnel as often as possible to maximize data collection. Data collected at each test point include SN40R, test speed, linear distance, GPS coordinates, ambient air temperature, and surface temperature. The target test speed for all location was 40 mph. However, due to geometric limitations, some data was collected at speeds below 40 mph and corrected in post-processing. Further discussion of the speed correction is found in the *Results* section below.

Testing was conducted by Mr. Jacob Bennett of ARA. Mr. Paul Dalbey was the project manager and lead data analyst for this project. Mr. Dalbey has performed pavement skid friction testing since 2009, covering dozens of testing projects and tens of thousands of miles of pavement. Water was supplied to ARA by WisDOT and County Highway Departments in Milwaukee County and La Crosse County. Traffic control in Zones 1 and 2 was provided by ANASA TRS, a third-party subcontractor to ARA for effort.

ARA's pavement skid friction tester, shown in Figure 2 below, was manufactured in 2012 and has been maintained in accordance with all manufacturer recommendations since that time. In accordance with ASTM E-2793 and ASTM E-556, the system was most recently fully calibrated and correlated in April 2024 at the Transportation Research Center (TRC, Inc.) located in East Liberty, Ohio. A copy of the calibration report is included with this report in Appendix D.



Figure 2. ARA's locked-wheel pavement friction tester

RESULTS

An individual friction test is not a single reading but rather the average over a specified number of readings. As seen in Figure 3 below, a peak, rolling friction value is obtained immediately after the brake is applied and before the test wheel fully locks. The friction forces then settle back to a stable, sliding friction value once lock-up is achieved. Once the system detects wheel lock-up and following a 0.2-second delay, the system begins to record the vertical load and horizontal force. These values are averaged over a 1.0-second period (though this time may be extended as necessary and appropriate). Data is sampled at 500Hz, or approximately every 1.4 inches at 40 mph.

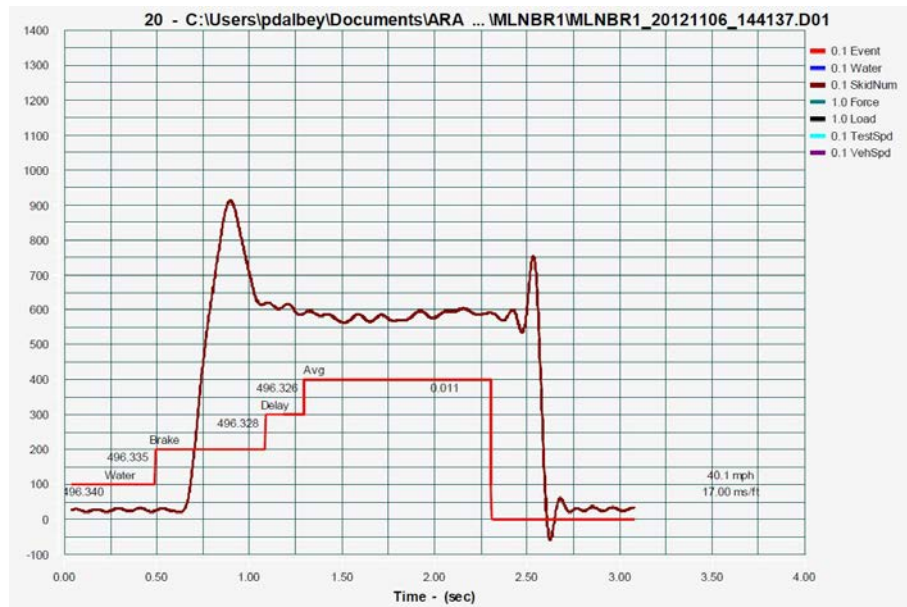


Figure 3. Typical graphical output from friction test

The average of the calculated friction coefficients in this one-second period is reported as the *skid number (SN)* or *friction number (FN)*. Within each test, a standard deviation of the SN can be computed. This value gives an indication of the consistency of the frictional force readings within a single test. If this intra-test standard deviation is high, it may indicate that the test was conducted on a rough pavement, across pavement striping, across bridge joints, or across some other pavement abnormality. Likewise, across a series of tests spaced at some interval on a pavement, a standard deviation of the average skid numbers can be computed. This standard deviation of the average values is indicative of the overall consistency of the pavement.

Table 1 outlines how state DOTs nationwide use skid testing results to trigger further project-level investigation based on results of a survey conducted as part of the NCHRP 01-43 project (*NCHRP Web Only Document 108*). It is important to note that while these skid numbers are used to trigger further investigation, no national standards currently exist defining a necessary or required skid number as a trigger for corrective or remedial action.

Table 1. Skid numbers used by state to trigger project-level investigation of friction

Skid Number	Number of States	
	Ribbed Tire Friction	Smooth Tire Friction
<37	2	
<35	5	1
<32	1	
<30	6	
<25	1	
<20		3

Test results discussed represent the SN40R (Skid Number at **40** mph as measured with a **Ribbed** tire). Testing was generally conducted at 40 mph unless traffic, geometric, or other conditions warrant testing at a different (likely lower) speed. To account for variations in test speed, ARA corrected all friction data to 40 mph. To correct for speed variation, ARA adds 0.5 SN for each mile-per-hour tested above 40 mph. If testing is conducted below 40 mph, 0.5 SN is subtracted from the measured value to obtain a corrected SN40. This method, shown in Equation 1 below, is recommended by the equipment manufacturer and has been verified on several ARA projects across varying pavement types to yield values very close to results obtained at 40 mph. Other studies by ARA indicate this correction factor may range from 0.3 to 0.75, but in nearly all cases, using 0.5 brings the data to within the inherent variability of the testing procedure when correcting for speed differentials up to 30 mph. ARA can submit to WisDOT test information to verify this procedure upon request.

$$SN40R = SN_x - 0.5(40 - X) \quad \text{Eq. 1}$$

Where:

$SN40R$ = Calculated skid number at 40 mph.

SN_x = Measured skid number at speed X.

ZONE 1

Zone 1 consists of areas in and around the Milwaukee Metropolitan Area, specifically within Manitowoc, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha Counties. Testing of 47 sites in Zone 1 was performed by Mr. Bennett primarily on July 8-11, 2024.

New sites added were F81, F82, F84, and F88. Previous sites excluded from this round of collection were 1a, 1b, F02, and F03. Field personnel also noted that Lane 1 at Sites 4, F14, and F48 were under construction and could not be tested or were partially tested due to closures. An overview map of Zone 1 is shown below in Figure 4.

A small number of sections appear to have received new surface treatments or overlays since previous testing conducted in 2022. Among these sites are Test Sites F13, F15, F39, and F40, all of which showed SH40R increases of greater than 40 points. Conversely, only one site (Test Site

F42) showed a drop in SN40R readings from 2022 of greater than 10 points. Several other locations showed increases of between 5 and 10 points compared to 2022 but compared well with testing in 2021. This would indicate that most of these sections are seeing steady friction values from year to year but that testing in 2022 may have had systematically low readings. Though it is not necessarily typical for friction to increase several years after a pavement surface is placed, many interacting variables can affect the friction values and cause higher readings, including system recalibration, pavement surface temperatures, cleanliness of the pavement surface. As such, ARA strongly recommends looking at datasets over time and evaluating the overall performance of the road rather than looking only at a single point in time.

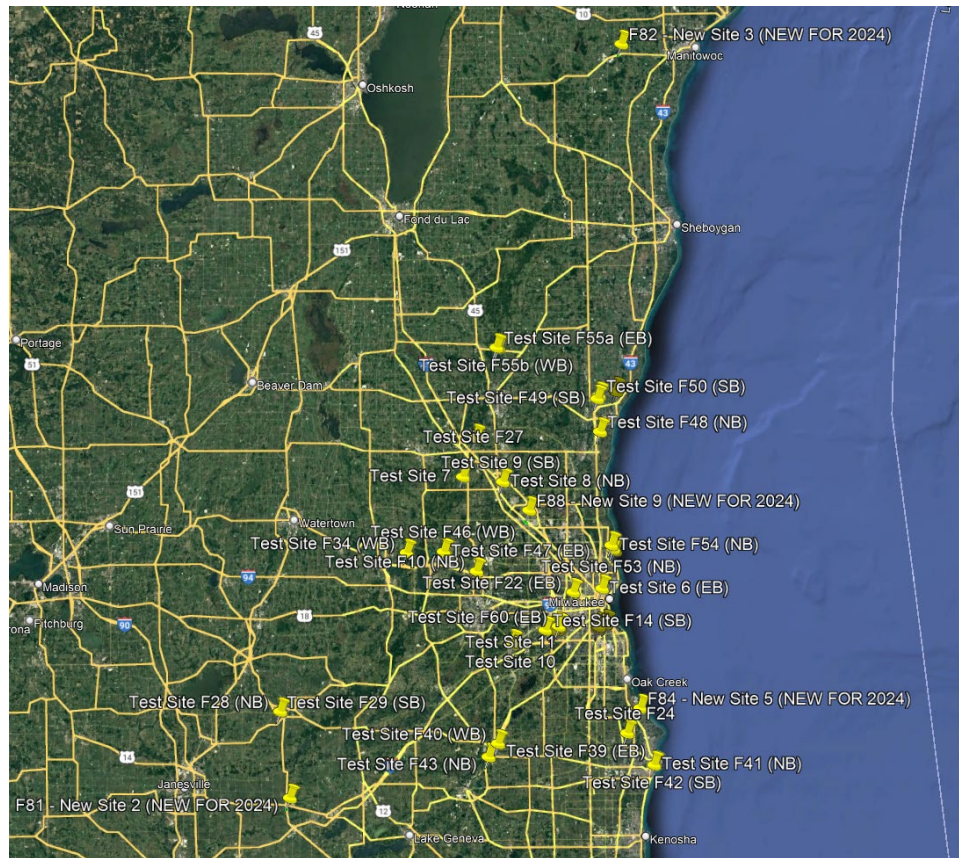


Figure 4. Location of test sites within Zone 1

Table 2 presents a summary of skid data from Zone 1. Graphs for each test site are available in Appendix A. Note that for Test Sites 7 and 8, summary values represent only those tests on pavement that had received recent overlays. Additional test points from within the site boundaries but not part of the study pavement are shown in the graphs in Appendix C.

Table 2. Summary friction data for Zone 1

Test Site	Route	Direction	Lane	SN40R	Std Dev of SN	Avg SD	SN _{min}	SN _{max}	No. of Tests
2	I-43	NB	1	35.7	3.2	1.5	32.0	39.5	7
3	I-894	EB	1	70.7	2.9	5.1	67.1	73.8	5
3	I-894	EB	2	71.8	1.6	2.7	70.7	74.5	5
3	I-894	EB	3	70.6	4.4	3.6	63.7	75.1	5
4	I-894	WB	1	--	--	--	--	--	--
4	I-894	WB	2	30.3	5.2	4.9	25.8	38.9	7
4	I-894	WB	3	35.1	5.3	4.7	29.8	44.5	7
5	I-894	EB	1	61.6	13.2	11.9	52.2	70.9	2
5	I-894	EB	2	70.5	1.4	2.2	69.5	71.6	2
5	I-894	EB	3	71.9	3.6	3.0	69.4	74.4	2
6	I-94	EB	1	69.0	3.2	2.5	65.8	73.4	6
6	I-94	EB	2	71.8	3.0	3.4	67.7	75.5	5
7	STH 167	EB	1	75.3	2.1	2.7	73.4	77.7	4
7	STH 167	WB	1	76.1	4.6	5.5	70.1	81.3	4
8	USH 41/45	NB	1	75.1	1.6	2.6	71.5	77.3	14
8	USH 41/45	NB	2	72.0	1.4	2.6	69.3	73.9	14
8	USH 41/45	NB	3	71.4	1.4	2.7	68.3	73.2	14
9	USH 41/45	SB	1	75.0	2.1	3.5	72.3	79.8	15
9	USH 41/45	SB	2	70.9	2.0	2.4	67.6	74.6	15
9	USH 41/45	SB	3	72.8	2.2	2.6	66.5	75.5	14
10	CTH Y	RAB	1	62.5	8.1	9.2	50.2	69.8	8
10	CTH Y	RAB	2	63.1	5.4	7.9	57.8	68.6	3
11	CTH Y	RAB	1	60.9	8.6	7.0	45.7	74.4	7
11	CTH Y	RAB	2	61.6	4.1	8.8	58.2	68.5	5
F10	STH 16	WB	1	37.5	6.6	3.9	25.2	46.6	9
F10	STH 16	WB	2	35.3	4.1	3.7	29.4	40.9	9
F11	STH 16	EB	1	40.3	6.0	2.9	27.1	47.2	9
F11	STH 16	EB	2	38.0	4.5	2.3	27.9	41.6	8
F13	I-43	NB	1	78.0	2.8	7.4	74.4	81.2	4
F13	I-43	NB	2	78.7	2.0	2.8	76.5	81.4	4
F14	I-43	SB	1	35.7	4.1	1.8	32.0	41.2	4
F14	I-43	SB	2	32.1	2.1	0.8	28.4	34.6	9
F15	I-43	NB	1	77.7	2.1	2.9	75.1	80.0	6
F15	I-43	NB	2	75.1	3.4	3.8	71.4	80.3	6
F16	I-43	NB	1	45.4	1.6	2.0	43.3	48.5	8
F16	I-43	NB	2	42.7	1.2	1.5	40.9	44.4	8
F17	I-43	SB	1	42.7	1.0	2.3	41.1	44.3	8
F17	I-43	SB	2	42.1	1.2	2.6	40.5	44.2	8
F18	I-43	NB	1	73.0	3.0	3.1	67.3	77.5	12

Test Site	Route	Direction	Lane	SN40R	Std Dev of SN	Avg SD	SN _{min}	SN _{max}	No. of Tests
F18	I-43	NB	2	70.4	4.8	2.2	58.9	75.1	11
F22	I-94	EB	1	46.5	5.5	4.3	39.4	54.5	5
F22	I-94	EB	2	47.7	5.5	2.6	40.2	55.5	5
F22	I-94	EB	3	43.8	8.6	4.3	34.1	54.8	4
F24	STH 38	RAB	1	49.2	6.8	9.2	39.5	58.5	10
F27	USH 41	NB	1	38.8	5.8	2.5	30.8	48.3	8
F28	STH 59	EB	1	60.7	2.4	3.3	57.5	63.4	6
F29	STH 59	WB	1	58.2	3.0	3.1	53.3	61.0	5
F33	I-43	SB	1	75.5	3.6	2.5	66.1	79.7	12
F33	I-43	SB	2	72.6	1.4	2.3	69.9	74.8	11
F34	STH 16	WB	1	58.6	2.4	3.1	55.9	60.2	3
F34	STH 16	WB	2	56.3	1.4	3.0	54.4	57.4	4
F39	STH 20	EB	1	84.0	1.7	2.8	81.9	85.9	4
F40	STH 20	WB	1	83.5	2.1	2.5	81.2	85.4	4
F41	STH 32	NB	2	81.2	1.3	4.4	80.3	82.1	2
F42	STH 32	SB	2	57.7	15.2	3.8	47.0	68.5	2
F43	Milwaukee Ave	NB	1	47.1	2.4	1.5	43.6	49.0	4
F46	STH 16	WB	1	50.2	2.4	2.0	46.8	53.5	6
F46	STH 16	WB	2	48.6	3.0	1.5	44.7	53.2	6
F47	STH 16	EB	1	48.4	2.1	2.2	44.8	50.6	6
F47	STH 16	EB	2	41.9	3.3	1.3	36.5	44.9	6
F48	I-43	NB	1	--	--	--	--	--	--
F48	I-43	NB	2	77.0	1.7	2.8	74.9	80.1	8
F49	I-43	SB	1	80.9	1.7	2.3	77.8	83.4	8
F49	I-43	SB	2	76.0	1.1	2.1	74.0	77.3	8
F50	I-43	SB	1	80.9	1.4	2.6	78.4	82.6	7
F50	I-43	SB	2	76.6	1.8	2.6	73.5	78.5	8
F51	I-43	SB	1	76.9	6.2	3.3	69.7	80.7	3
F51	I-43	SB	2	67.3	9.3	6.9	56.7	73.8	3
F52	SH 32	NB	1	69.5	2.7	4.3	65.5	72.5	5
F53	SH 32	NB	1	70.5	2.6	3.2	67.1	74.8	6
F54	SH 32	NB	1	69.9	4.8	2.6	66.6	73.3	2
F55	CTH H	EB	1	76.8	3.7	5.5	71.2	83.8	8
F55	CTH H	WB	1	77.7	1.7	3.8	75.2	79.6	7
F59	I-894	WB	1	68.3	3.9	3.3	64.7	74.4	7
F59	I-894	WB	2	65.2	4.1	4.1	59.0	69.9	6
F59	I-894	WB	3	67.0	4.1	3.6	59.1	70.2	6
F60	I-894	EB	1	73.5	1.7	4.0	72.5	75.5	3
F60	I-894	EB	2	68.3	1.9	2.8	66.4	70.0	4

Test Site	Route	Direction	Lane	SN40R	Std Dev of SN	Avg SD	SN _{min}	SN _{max}	No. of Tests
F60	I-894	EB	3	69.0	4.0	5.2	63.1	72.3	4
F61	I-894	EB	1	72.1	4.9	5.0	64.1	77.0	7
F61	I-894	EB	2	69.7	2.8	3.0	66.2	74.1	7
F61	I-894	EB	3	69.1	3.9	3.8	63.7	73.9	7
F81	US 14	NB	1	45.5	1.1	1.1	44.0	47.2	9
F81	US 14	SB	1	44.1	1.6	1.3	40.8	45.7	9
F82	US 151	EB	1	45.3	2.2	0.8	42.4	47.9	6
F82	US 151	WB	1	47.0	1.3	1.0	45.6	49.0	7
F84	STH 32	NB	1	39.9	1.3	1.1	38.3	41.4	5
F84	STH 32	SB	1	42.2	1.6	0.7	40.6	43.7	4
F88	I-41	NB	3	41.9	2.2	0.9	39.6	47.0	14
F88	I-41	SB	3	40.6	0.9	1.1	39.3	42.4	14

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ZONE 2

Zone 2 consists of areas in and around the Madison Metropolitan Area, specifically within Adams, Columbia, Dane, Iowa, Juneau, Richland, and Sauk Counties. Testing of 20 sites in Zone 2 was split between May 1 and July 8, 2024.

New sites added for 2024 were F83, F86, F89, F92, F93, and F94. Previous sites excluded from this round of collection were Test Sites 17, 18, and 19. Field personnel also noted that construction near Test Sites F31 and F32 resulted in partial collection of Site 32 and lower than expected averages at Site 31 due to dirty and dusty pavement. An overview map of Zone 2 is shown below in Figure 5.

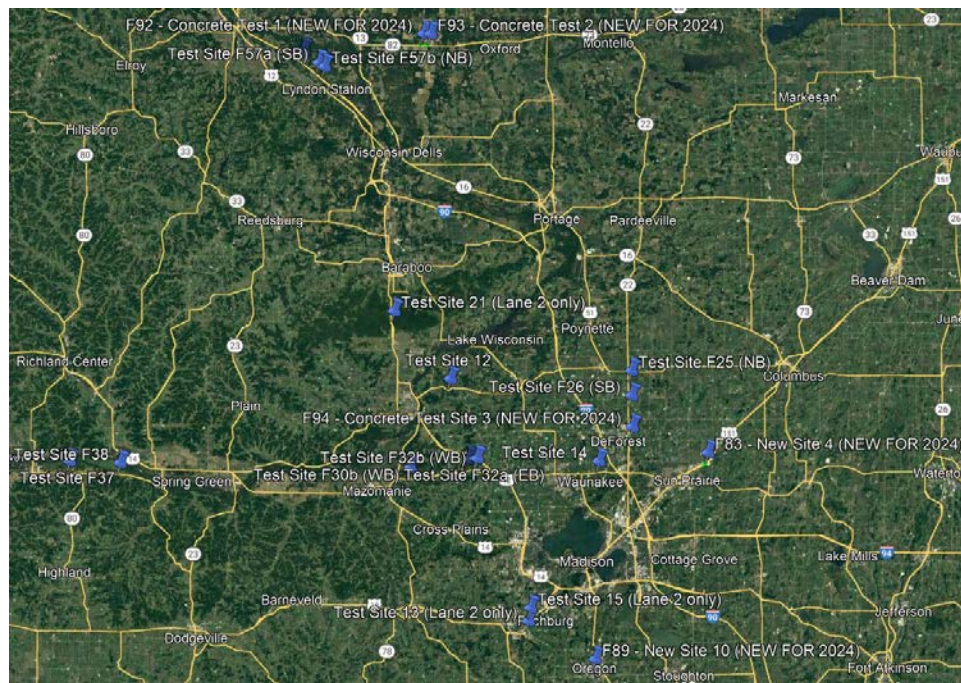


Figure 5. Location of test sites within Zone 2

Table 3 presents a summary of skid data from Zone 2. Graphs for each test site are available in Appendix A. Most test sites in Zone 2 showed consistent results with testing in 2021 and 2022. Two locations – Test Sites 13 and 15 – saw increased friction results of greater than 10 points. Several other locations – namely Test Sites 16, 21, F25, F30, F37, and F38 – had increased values between 5 and 10 points. All other sites had 2024 average SN40R values within +/- 5 points of the 2022 results.

Table 3. Summary friction data for Zone 2

	Route	Direction	Lane	SN40R	Std Dev of SN	Avg SD	SN _{min}	SN _{max}	No. of Tests
12	STH 60	EB	1	55.1	2.2	1.2	50.3	59.9	32
12	STH 60	WB	1	55.3	2.3	1.2	50.9	59.2	32
13	USH 18/151	NB	2	57.0	4.0	2.4	46.7	66.9	17

	Route	Direction	Lane	SN40R	Std Dev of SN	Avg SD	SN _{min}	SN _{max}	No. of Tests
13	USH 18/151	SB	2	54.6	6.9	0.9	50.7	80.8	17
14	STH 19	EB	1	40.3	2.1	2.7	37.6	44.0	18
14	STH 19	WB	1	44.1	2.7	2.3	39.4	51.2	19
15	USH 18/151	NB	2	54.3	5.6	0.9	33.1	58.6	17
15	USH 18/151	SB	2	51.5	3.3	1.1	38.8	54.6	18
16	I-90/94	EB	2	55.3	1.6	1.3	51.7	58.7	96
16	I-90/94	WB	2	55.1	2.4	1.4	43.2	58.4	96
21	USH 12	NB	2	60.0	2.3	1.1	55.2	65.4	26
21	USH 12	SB	2	57.9	1.7	1.4	53.6	61.7	24
F25	USH 51	NB	1	67.4	2.8	1.8	61.3	71.2	21
F26	USH 51	SB	1	57.4	4.0	3.3	47.7	63.2	20
F30	STH 19	EB	1	62.2	2.0	2.0	59.8	64.5	4
F30	STH 19	WB	1	59.2	4.9	2.6	52.2	65.7	5
F31	STH 19	EB	1	50.4	5.0	3.7	42.9	53.5	4.0
F31	STH 19	WB	1	50.0	13.1	5.4	35.0	58.6	3.0
F32	STH 19	EB	1	56.7	5.3	4.1	49.7	62.9	5
F32	STH 19	WB	1	62.0	3.1	1.7	58.9	65.1	3
F37	STH 133	EB	1	58.4	2.1	0.9	55.4	62.6	20
F37	STH 133	WB	1	58.0	1.3	1.1	56.1	61	20
F38	STH 133	EB	1	59.8	2.8	1.3	54.7	63.3	14
F38	STH 133	WB	1	59.6	2.2	1.2	56.1	63.1	15
F57	I-90/94	EB	1	52.6	1.4	1.2	49.5	54.6	20
F57	I-90/94	EB	2	53.7	0.8	1.0	51.9	55.0	21
F57	I-90/94	WB	1	51.8	1.9	3.3	47.7	55.2	21
F57	I-90/94	WB	2	45.5	2.1	3.1	40.6	49.6	21
F83	US 151	NB	2	54.3	0.9	1.4	52.5	56.0	10
F83	US 151	SB	2	55.9	1.0	1.3	54.3	57.8	11
F86	I-90	EB	2	52.6	1.1	1.6	50.9	55.1	11
F86	I-90	WB	2	47.6	2.7	4.0	43.6	53.0	11
F89	Burr Oak Ave	NB	1	60.9	1.8	1.8	58.5	64.7	8
F89	Burr Oak Ave	SB	1	62.0	2.7	2.5	55.8	64.2	8
F92	STH 82	EB	1	56.0	1.3	1.8	54.8	58.1	10
F92	STH 82	WB	1	55.4	2.3	1.7	50.6	58.5	10
F93	STH 82	EB	1	53.4	2.0	1.3	50.3	56.9	10
F93	STH 82	WB	1	54.9	1.0	2.1	53.6	57.0	10
F94	US 51	NB	2	50.7	1.6	2.1	48.6	53.7	10
F94	US 51	SB	2	46.6	2.4	1.8	42.2	49.3	10

ZONE 3

Zone 3 consists of 16 test sites in and around La Crosse in West Central Wisconsin, specifically within Jackson, La Crosse, Monroe, Trempealeau, and Vernon Counties. Testing in Zone 3 was performed on May 1-2 and July 9, 2024.

New sites added were F80 and F85. Previous sites excluded from this round of collection were Sites 31, F05, and F06. An overview map of Zone 3 is shown below in Figure 6.

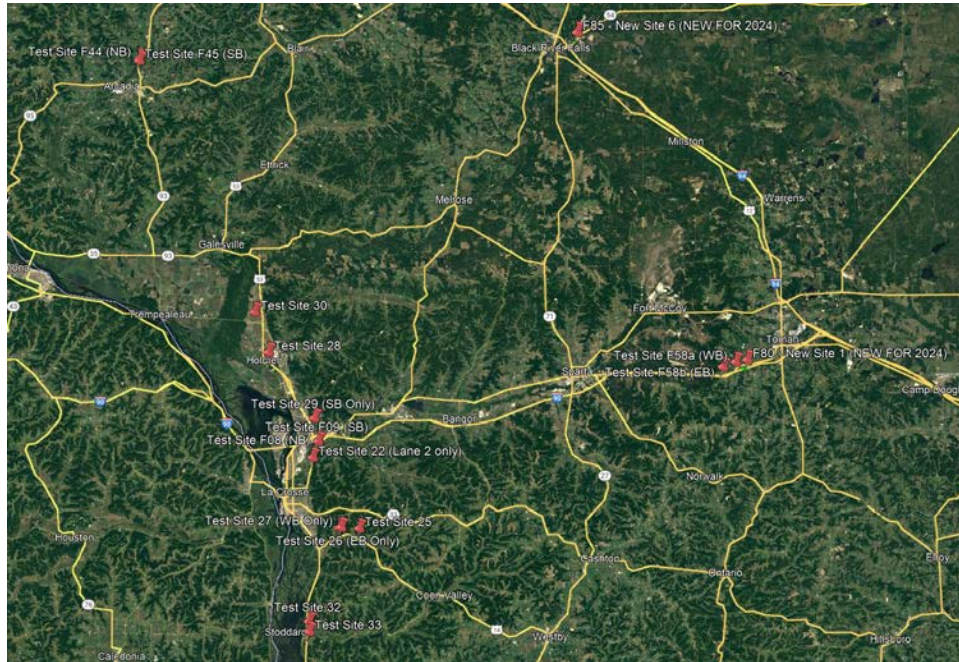


Figure 6. Location of test sites within Zone 3

Test Sites 32 and 33 were reconstructed prior to testing in 2021, and, thus, testing in 2024 was the third round of testing on the new pavements. Both sites showed decreased SN averages of approximately 7-9 points in 2022 but increased in 2024 to within 2 points of their original 2021 values.

Results at Test Sites 25, 29, 32, 33, F09, and F58 were between 5 and 10 points higher than when last tested in 2022. All other sites had 2024 average SN40R values within +/- 5 points of the 2022 results.

Table 4 presents a summary of skid data from Zone 3. Graphs for each test site are available in Appendix A.

Table 4. Summary friction data for Zone 3

Test Site	Route	Direction	Lane	SN40R	Std Dev of SN	Avg SD	SN _{min}	SN _{max}	No. of Tests
22	STH 16	NB	2	48.0	3.3	1.8	37.4	53.1	55
22	STH 16	SB	2	48.9	2.8	1.5	39.1	53.4	56
25	USH 14/61	EB	1	68.8	0.0	3.2	68.8	68.9	2
25	USH 14/61	WB	1	60.8	3.1	3.9	60.8	65.2	2
26	USH 14/61	EB	1	55.4	2.0	0.7	50.4	60.4	54
27	USH 14/61	WB	1	55.0	1.7	0.7	49.2	58.6	55
28	USH 53	NB	1	63.1	1.2	1.3	61.4	65.5	21
28	USH 53	NB	2	56.7	2.1	1.2	52.2	60.6	20
28	USH 53	SB	1	61.1	1.6	1.3	57.3	63.5	20
28	USH 53	SB	2	50.7	2.3	1.1	46.9	56.0	20
29	USH 53	SB	1	51.5	0.4	2.8	51.2	51.8	2
29	USH 53	SB	2	48.0	1.2	4.5	47.1	48.8	2
30	STH 35	EB	1	54.8	3.7	1.1	47.1	60.9	29
30	STH 35	WB	1	55.3	2.2	1.0	50.2	62.5	30
32	STH 35	NB	1	46.2	2.3	0.9	42.8	49.7	13
32	STH 35	SB	1	48.7	2.4	1.2	45.3	52.0	12
33	STH 35	NB	1	54.0	1.1	1.1	51.4	55.2	15
33	STH 35	SB	1	53.2	2.6	0.9	47.9	56.7	14
F08	STH 16	NB	1	49.8	1.1	2.1	48.8	50.9	3
F08	STH 16	NB	2	51.1	0.9	1.5	50.1	51.9	4
F09	STH 16	SB	1	51.7	1.2	1.7	50.5	52.9	3
F09	STH 16	SB	2	46.4	1.5	2.2	44.6	48.4	4
F44	STH 93	NB	1	76.5	1.9	2.4	73.4	78.9	6
F45	STH 93	SB	1	77.4	3.2	2.8	71.3	80.6	6
F58	I-90	EB	1	59.7	1.8	1.4	56.0	62.6	31
F58	I-90	EB	2	57.1	1.8	1.2	52.2	59.4	31
F58	I-90	WB	1	59.8	1.4	1.2	57.2	63.3	32
F58	I-90	WB	2	57.8	1.9	1.3	51.9	60.5	31
F80	I-90	EB	2	56.8	1.6	0.9	54.6	59.5	10
F80	I-90	WB	2	58.4	2.0	1.0	55.7	60.7	10
F85	STH 54	EB	2	54.2	1.6	1.0	52.7	56.4	6
F85	STH 54	WB	2	57.1	2.1	1.3	53.6	59.2	6

ZONE 4

Zone 4 consists of two new test sites, both of which were added to testing for 2024. Test Site F90, located in Oconto County, was tested on July 9, 2024, while F91, located in Wood County, was tested on May 2, 2024. Previous sites excluded from this round of collection were Test Sites F23 and F62. An overview map of Zone 4 is shown below in Figure 7.

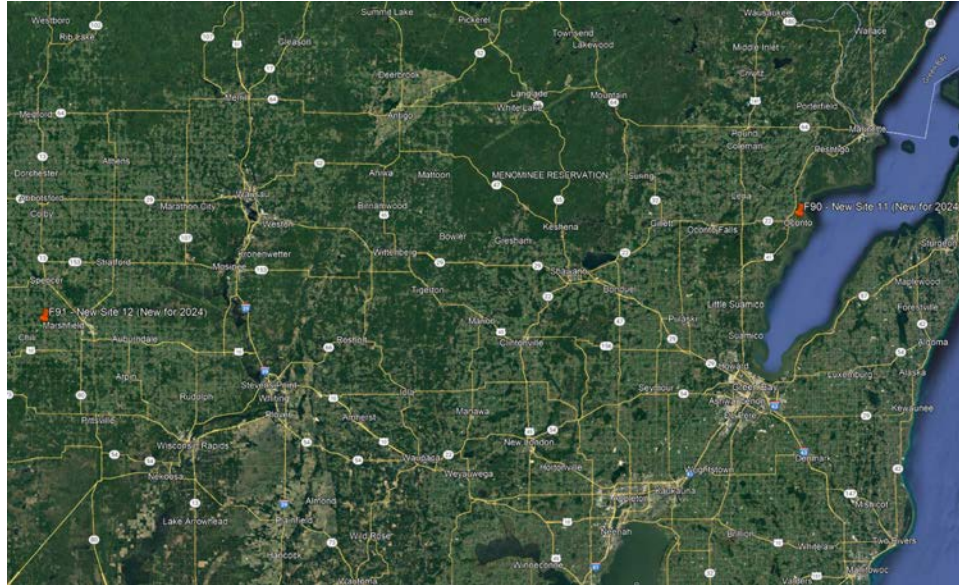


Figure 7. Location of test sites within Zone 4

Table 5 presents a summary of skid data from Zone 4. The graphs for Test Site F90 and F91 are available in Appendix A.

Table 5. Summary friction data for Zone 4

Test Site	Route	Direction	Lane	SN40R	Std Dev of SN	Avg SD	SN _{min}	SN _{max}	No. of Tests
F90	Arbutus Ave	NB	1	62.9	3.2	1.8	58.8	66.8	6
F90	Arbutus Ave	SB	1	63.4	3.3	1.1	59.4	68.6	7
F91	CTH H	EB	1	49.7	1.4	1.0	47.5	52.6	12
F91	CTH H	WB	1	52.8	1.3	1.8	50.8	55.1	13

ZONE 5

Zone 5 consists of five test sites near Eau Claire in West Central Wisconsin, specifically within Chippewa, Eau Claire, and Pierce Counties. Testing in Zone 5 was performed on May 2, 2024. Site F87, located in Pierce County, was a new addition for this round of collection. An overview map of Zone 5 is shown below in Figure 8.

ARA continues to see high variability of results when testing within roundabouts, namely in Test Sites F01, F35, and F36. Roundabouts present a difficult challenge when testing due to

increased wheel path wander when navigating the roundabout and the complex lateral forces and loadings that violate the principal assumptions of the locked-wheel skid tester, i.e. that frictional forces are generally in the same direction as the vehicle travel. The slow speeds and tight radii of roundabouts introduce speed corrections and lateral forces that are particularly difficult to account for, so while the results still have some validity, it is expected that results will have much greater variability than those obtained on tangent pavement sections.

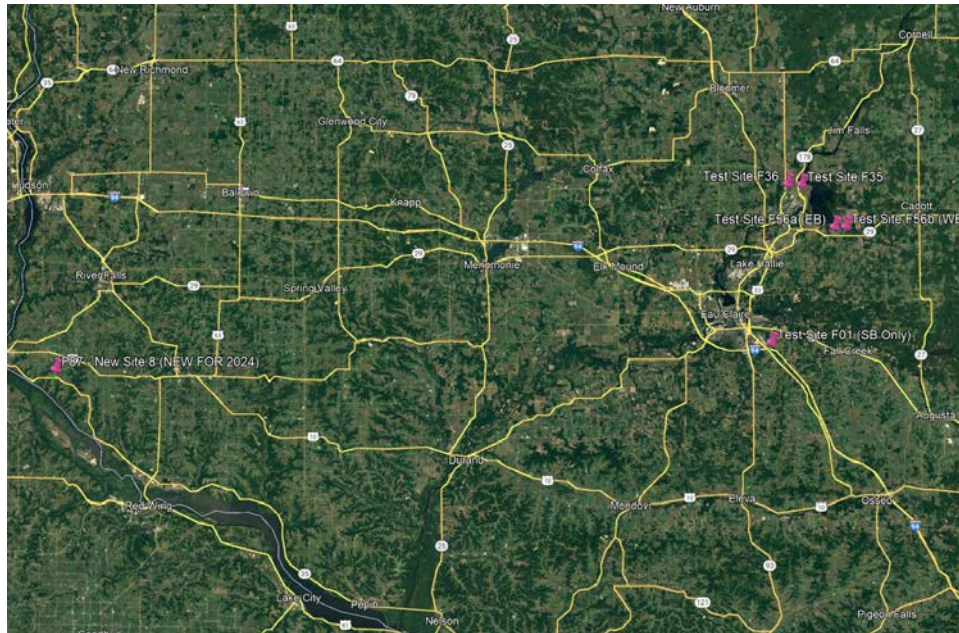


Figure 8. Location of test sites within Zone 5

Table 6 presents a summary of skid data from Zone 5. Graphs for each test site are available in Appendix A.

Table 6. Summary friction data for Zone 5

Test Site	Route	Direction	Lane	SN40R	Std Dev of SN	Avg SD	SN _{min}	SN _{max}	No. of Tests
F01	USH 53	RAB	1	51.5	6.0	2.9	41.9	59.3	22
F01	USH 53	RAB	2	50.4	2.6	3.4	45.4	53.4	12
F35	STH 178/CTH S	RAB	1	45.0	2.3	1.7	42.0	48.5	8
F36	STH 124/CTH S	RAB	1	46.9	2.7	3.9	43.3	51.0	8
F56	STH 29	EB	1	57.7	1.1	0.9	55.5	61.0	29
F56	STH 29	EB	2	54.5	3.3	1.2	46.8	63.4	29
F56	STH 29	WB	1	57.7	1.0	1.0	56.0	61.4	29
F56	STH 29	WB	2	54.9	1.4	1.0	51.7	60.1	30
F87	STH 35	EB	1	56.4	1.7	0.7	53.5	58.3	6
F87	STH 35	WB	1	55.7	1.8	0.7	53.1	57.7	6

COMBINED RESULTS

Table 7 displays data from all zones in a single table.

Table 7. Summary friction data ordered by Test Site

Zone	Test Site	Route	Direction	Lane	SN40R	Std Dev of SN	Avg SD	SNmin	SNmax	No. of Tests
1	2	I-43	NB	1	35.7	3.2	1.5	32.0	39.5	7
1	3	I-894	EB	1	70.7	2.9	5.1	67.1	73.8	5
1	3	I-894	EB	2	71.8	1.6	2.7	70.7	74.5	5
1	3	I-894	EB	3	70.6	4.4	3.6	63.7	75.1	5
1	4	I-894	WB	1	--	--	--	--	--	--
1	4	I-894	WB	2	30.3	5.2	4.9	25.8	38.9	7
1	4	I-894	WB	3	35.1	5.3	4.7	29.8	44.5	7
1	5	I-894	EB	1	61.6	13.2	11.9	52.2	70.9	2
1	5	I-894	EB	2	70.5	1.4	2.2	69.5	71.6	2
1	5	I-894	EB	3	71.9	3.6	3.0	69.4	74.4	2
1	6	I-94	EB	1	69.0	3.2	2.5	65.8	73.4	6
1	6	I-94	EB	2	71.8	3.0	3.4	67.7	75.5	5
1	7	STH 167	EB	1	75.3	2.1	2.7	73.4	77.7	4
1	7	STH 167	WB	1	76.1	4.6	5.5	70.1	81.3	4
1	8	USH 41/45	NB	1	75.1	1.6	2.6	71.5	77.3	14
1	8	USH 41/45	NB	2	72.0	1.4	2.6	69.3	73.9	14
1	8	USH 41/45	NB	3	71.4	1.4	2.7	68.3	73.2	14
1	9	USH 41/45	SB	1	75.0	2.1	3.5	72.3	79.8	15
1	9	USH 41/45	SB	2	70.9	2.0	2.4	67.6	74.6	15
1	9	USH 41/45	SB	3	72.8	2.2	2.6	66.5	75.5	14
1	10	CTH Y	RAB	1	62.5	8.1	9.2	50.2	69.8	8
1	10	CTH Y	RAB	2	63.1	5.4	7.9	57.8	68.6	3
1	11	CTH Y	RAB	1	60.9	8.6	7.0	45.7	74.4	7
1	11	CTH Y	RAB	2	61.6	4.1	8.8	58.2	68.5	5
2	12	STH 60	EB	1	55.1	2.2	1.2	50.3	59.9	32
2	12	STH 60	WB	1	55.3	2.3	1.2	50.9	59.2	32
2	13	USH 18/151	NB	2	57.0	4.0	2.4	46.7	66.9	17
2	13	USH 18/151	SB	2	54.6	6.9	0.9	50.7	80.8	17
2	14	STH 19	EB	1	40.3	2.1	2.7	37.6	44.0	18
2	14	STH 19	WB	1	44.1	2.7	2.3	39.4	51.2	19
2	15	USH 18/151	NB	2	54.3	5.6	0.9	33.1	58.6	17
2	15	USH 18/151	SB	2	51.5	3.3	1.1	38.8	54.6	18
2	16	I-90/94	EB	2	55.3	1.6	1.3	51.7	58.7	96
2	16	I-90/94	WB	2	55.1	2.4	1.4	43.2	58.4	96
2	21	USH 12	NB	2	60.0	2.3	1.1	55.2	65.4	26

Zone	Test Site	Route	Direction	Lane	SN40R	Std Dev of SN	Avg SD	SNmin	SNmax	No. of Tests
2	21	USH 12	SB	2	57.9	1.7	1.4	53.6	61.7	24
3	22	STH 16	NB	2	48.0	3.3	1.8	37.4	53.1	55
3	22	STH 16	SB	2	48.9	2.8	1.5	39.1	53.4	56
3	25	USH 14/61	EB	1	68.8	0.0	3.2	68.8	68.9	2
3	25	USH 14/61	WB	1	60.8	3.1	3.9	60.8	65.2	2
3	26	USH 14/61	EB	1	55.4	2.0	0.7	50.4	60.4	54
3	27	USH 14/61	WB	1	55.0	1.7	0.7	49.2	58.6	55
3	28	USH 53	NB	1	63.1	1.2	1.3	61.4	65.5	21
3	28	USH 53	NB	2	56.7	2.1	1.2	52.2	60.6	20
3	28	USH 53	SB	1	61.1	1.6	1.3	57.3	63.5	20
3	28	USH 53	SB	2	50.7	2.3	1.1	46.9	56.0	20
3	29	USH 53	SB	1	51.5	0.4	2.8	51.2	51.8	2
3	29	USH 53	SB	2	48.0	1.2	4.5	47.1	48.8	2
3	30	STH 35	EB	1	54.8	3.7	1.1	47.1	60.9	29
3	30	STH 35	WB	1	55.3	2.2	1.0	50.2	62.5	30
3	32	STH 35	NB	1	46.2	2.3	0.9	42.8	49.7	13
3	32	STH 35	SB	1	48.7	2.4	1.2	45.3	52.0	12
3	33	STH 35	NB	1	54.0	1.1	1.1	51.4	55.2	15
3	33	STH 35	SB	1	53.2	2.6	0.9	47.9	56.7	14
5	F01	USH 53	RAB	1	51.5	6.0	2.9	41.9	59.3	22
5	F01	USH 53	RAB	2	50.4	2.6	3.4	45.4	53.4	12
3	F08	STH 16	NB	1	49.8	1.1	2.1	48.8	50.9	3
3	F08	STH 16	NB	2	51.1	0.9	1.5	50.1	51.9	4
3	F09	STH 16	SB	1	51.7	1.2	1.7	50.5	52.9	3
3	F09	STH 16	SB	2	46.4	1.5	2.2	44.6	48.4	4
1	F10	STH 16	WB	1	37.5	6.6	3.9	25.2	46.6	9
1	F10	STH 16	WB	2	35.3	4.1	3.7	29.4	40.9	9
1	F11	STH 16	EB	1	40.3	6.0	2.9	27.1	47.2	9
1	F11	STH 16	EB	2	38.0	4.5	2.3	27.9	41.6	8
1	F13	I-43	NB	1	78.0	2.8	7.4	74.4	81.2	4
1	F13	I-43	NB	2	78.7	2.0	2.8	76.5	81.4	4
1	F14	I-43	SB	1	35.7	4.1	1.8	32.0	41.2	4
1	F14	I-43	SB	2	32.1	2.1	0.8	28.4	34.6	9
1	F15	I-43	NB	1	77.7	2.1	2.9	75.1	80.0	6
1	F15	I-43	NB	2	75.1	3.4	3.8	71.4	80.3	6
1	F16	I-43	NB	1	45.4	1.6	2.0	43.3	48.5	8
1	F16	I-43	NB	2	42.7	1.2	1.5	40.9	44.4	8
1	F17	I-43	SB	1	42.7	1.0	2.3	41.1	44.3	8
1	F17	I-43	SB	2	42.1	1.2	2.6	40.5	44.2	8

Zone	Test Site	Route	Direction	Lane	SN40R	Std Dev of SN	Avg SD	SNmin	SNmax	No. of Tests
1	F18	I-43	NB	1	73.0	3.0	3.1	67.3	77.5	12
1	F18	I-43	NB	2	70.4	4.8	2.2	58.9	75.1	11
1	F22	I-94	EB	1	46.5	5.5	4.3	39.4	54.5	5
1	F22	I-94	EB	2	47.7	5.5	2.6	40.2	55.5	5
1	F22	I-94	EB	3	43.8	8.6	4.3	34.1	54.8	4
1	F24	STH 38	RAB	1	49.2	6.8	9.2	39.5	58.5	10
2	F25	USH 51	NB	1	67.4	2.8	1.8	61.3	71.2	21
2	F26	USH 51	SB	1	57.4	4.0	3.3	47.7	63.2	20
1	F27	USH 41	NB	1	38.8	5.8	2.5	30.8	48.3	8
1	F28	STH 59	EB	1	60.7	2.4	3.3	57.5	63.4	6
1	F29	STH 59	WB	1	58.2	3.0	3.1	53.3	61.0	5
2	F30	STH 19	EB	1	62.2	2.0	2.0	59.8	64.5	4
2	F30	STH 19	WB	1	59.2	4.9	2.6	52.2	65.7	5
2	F31	STH 19	EB	1	50.4	5.0	3.7	42.9	53.5	4.0
2	F31	STH 19	WB	1	50.0	13.1	5.4	35.0	58.6	3.0
2	F32	STH 19	EB	1	56.7	5.3	4.1	49.7	62.9	5
2	F32	STH 19	WB	1	62.0	3.1	1.7	58.9	65.1	3
1	F33	I-43	SB	1	75.5	3.6	2.5	66.1	79.7	12
1	F33	I-43	SB	2	72.6	1.4	2.3	69.9	74.8	11
1	F34	STH 16	WB	1	58.6	2.4	3.1	55.9	60.2	3
1	F34	STH 16	WB	2	56.3	1.4	3.0	54.4	57.4	4
5	F35	STH 178/CTH S	RAB	1	45.0	2.3	1.7	42.0	48.5	8
5	F36	STH 124/CTH S	RAB	1	46.9	2.7	3.9	43.3	51.0	8
2	F37	STH 133	EB	1	58.4	2.1	0.9	55.4	62.6	20
2	F37	STH 133	WB	1	58.0	1.3	1.1	56.1	61	20
2	F38	STH 133	EB	1	59.8	2.8	1.3	54.7	63.3	14
2	F38	STH 133	WB	1	59.6	2.2	1.2	56.1	63.1	15
1	F39	STH 20	EB	1	84.0	1.7	2.8	81.9	85.9	4
1	F40	STH 20	WB	1	83.5	2.1	2.5	81.2	85.4	4
1	F41	STH 32	NB	2	81.2	1.3	4.4	80.3	82.1	2
1	F42	STH 32	SB	2	57.7	15.2	3.8	47.0	68.5	2
1	F43	Milwaukee Ave	NB	1	47.1	2.4	1.5	43.6	49.0	4
3	F44	STH 93	NB	1	76.5	1.9	2.4	73.4	78.9	6
3	F45	STH 93	SB	1	77.4	3.2	2.8	71.3	80.6	6
1	F46	STH 16	WB	1	50.2	2.4	2.0	46.8	53.5	6
1	F46	STH 16	WB	2	48.6	3.0	1.5	44.7	53.2	6
1	F47	STH 16	EB	1	48.4	2.1	2.2	44.8	50.6	6
1	F47	STH 16	EB	2	41.9	3.3	1.3	36.5	44.9	6
1	F48	I-43	NB	1	--	--	--	--	--	--

Zone	Test Site	Route	Direction	Lane	SN40R	Std Dev of SN	Avg SD	SNmin	SNmax	No. of Tests
1	F48	I-43	NB	2	77.0	1.7	2.8	74.9	80.1	8
1	F49	I-43	SB	1	80.9	1.7	2.3	77.8	83.4	8
1	F49	I-43	SB	2	76.0	1.1	2.1	74.0	77.3	8
1	F50	I-43	SB	1	80.9	1.4	2.6	78.4	82.6	7
1	F50	I-43	SB	2	76.6	1.8	2.6	73.5	78.5	8
1	F51	I-43	SB	1	76.9	6.2	3.3	69.7	80.7	3
1	F51	I-43	SB	2	67.3	9.3	6.9	56.7	73.8	3
1	F52	SH 32	NB	1	69.5	2.7	4.3	65.5	72.5	5
1	F53	SH 32	NB	1	70.5	2.6	3.2	67.1	74.8	6
1	F54	SH 32	NB	1	69.9	4.8	2.6	66.6	73.3	2
1	F55	CTH H	EB	1	76.8	3.7	5.5	71.2	83.8	8
1	F55	CTH H	WB	1	77.7	1.7	3.8	75.2	79.6	7
5	F56	STH 29	EB	1	57.7	1.1	0.9	55.5	61.0	29
5	F56	STH 29	EB	2	54.5	3.3	1.2	46.8	63.4	29
5	F56	STH 29	WB	1	57.7	1.0	1.0	56.0	61.4	29
5	F56	STH 29	WB	2	54.9	1.4	1.0	51.7	60.1	30
2	F57	I-90/94	EB	1	52.6	1.4	1.2	49.5	54.6	20
2	F57	I-90/94	EB	2	53.7	0.8	1.0	51.9	55.0	21
2	F57	I-90/94	WB	1	51.8	1.9	3.3	47.7	55.2	21
2	F57	I-90/94	WB	2	45.5	2.1	3.1	40.6	49.6	21
3	F58	I-90	EB	1	59.7	1.8	1.4	56.0	62.6	31
3	F58	I-90	EB	2	57.1	1.8	1.2	52.2	59.4	31
3	F58	I-90	WB	1	59.8	1.4	1.2	57.2	63.3	32
3	F58	I-90	WB	2	57.8	1.9	1.3	51.9	60.5	31
1	F59	I-894	WB	1	68.3	3.9	3.3	64.7	74.4	7
1	F59	I-894	WB	2	65.2	4.1	4.1	59.0	69.9	6
1	F59	I-894	WB	3	67.0	4.1	3.6	59.1	70.2	6
1	F60	I-894	EB	1	73.5	1.7	4.0	72.5	75.5	3
1	F60	I-894	EB	2	68.3	1.9	2.8	66.4	70.0	4
1	F60	I-894	EB	3	69.0	4.0	5.2	63.1	72.3	4
1	F61	I-894	EB	1	72.1	4.9	5.0	64.1	77.0	7
1	F61	I-894	EB	2	69.7	2.8	3.0	66.2	74.1	7
1	F61	I-894	EB	3	69.1	3.9	3.8	63.7	73.9	7
3	F80	I-90	EB	2	56.8	1.6	0.9	54.6	59.5	10
3	F80	I-90	WB	2	58.4	2.0	1.0	55.7	60.7	10
1	F81	US 14	NB	1	45.5	1.1	1.1	44.0	47.2	9
1	F81	US 14	SB	1	44.1	1.6	1.3	40.8	45.7	9
1	F82	US 151	EB	1	45.3	2.2	0.8	42.4	47.9	6
1	F82	US 151	WB	1	47.0	1.3	1.0	45.6	49.0	7

Zone	Test Site	Route	Direction	Lane	SN40R	Std Dev of SN	Avg SD	SNmin	SNmax	No. of Tests
2	F83	US 151	NB	2	54.3	0.9	1.4	52.5	56.0	10
2	F83	US 151	SB	2	55.9	1.0	1.3	54.3	57.8	11
1	F84	STH 32	NB	1	39.9	1.3	1.1	38.3	41.4	5
1	F84	STH 32	SB	1	42.2	1.6	0.7	40.6	43.7	4
3	F85	STH 54	EB	2	54.2	1.6	1.0	52.7	56.4	6
3	F85	STH 54	WB	2	57.1	2.1	1.3	53.6	59.2	6
2	F86	I-90	EB	2	52.6	1.1	1.6	50.9	55.1	11
2	F86	I-90	WB	2	47.6	2.7	4.0	43.6	53.0	11
5	F87	STH 35	EB	1	56.4	1.7	0.7	53.5	58.3	6
5	F87	STH 35	WB	1	55.7	1.8	0.7	53.1	57.7	6
1	F88	I-41	NB	3	41.9	2.2	0.9	39.6	47.0	14
1	F88	I-41	SB	3	40.6	0.9	1.1	39.3	42.4	14
2	F89	Burr Oak Ave	NB	1	60.9	1.8	1.8	58.5	64.7	8
2	F89	Burr Oak Ave	SB	1	62.0	2.7	2.5	55.8	64.2	8
4	F90	Arbutus Ave	NB	1	62.9	3.2	1.8	58.8	66.8	6
4	F90	Arbutus Ave	SB	1	63.4	3.3	1.1	59.4	68.6	7
4	F91	CTH H	EB	1	49.7	1.4	1.0	47.5	52.6	12
4	F91	CTH H	WB	1	52.8	1.3	1.8	50.8	55.1	13
2	F92	STH 82	EB	1	56.0	1.3	1.8	54.8	58.1	10
2	F92	STH 82	WB	1	55.4	2.3	1.7	50.6	58.5	10
2	F93	STH 82	EB	1	53.4	2.0	1.3	50.3	56.9	10
2	F93	STH 82	WB	1	54.9	1.0	2.1	53.6	57.0	10
2	F94	US 51	NB	2	50.7	1.6	2.1	48.6	53.7	10
2	F94	US 51	SB	2	46.6	2.4	1.8	42.2	49.3	10

GRAPHICAL RESULTS

In addition to this narrative report, a .KMZ is being delivered to WisDOT for easy graphical viewing of all the test results. This file, viewable in Google Earth, shows the boundaries of each Test Site and summary results at each individual test point. Additionally, a statistical summary for each Test Site is shown with the same information found in this report.

Appendices

A – Friction Graphs

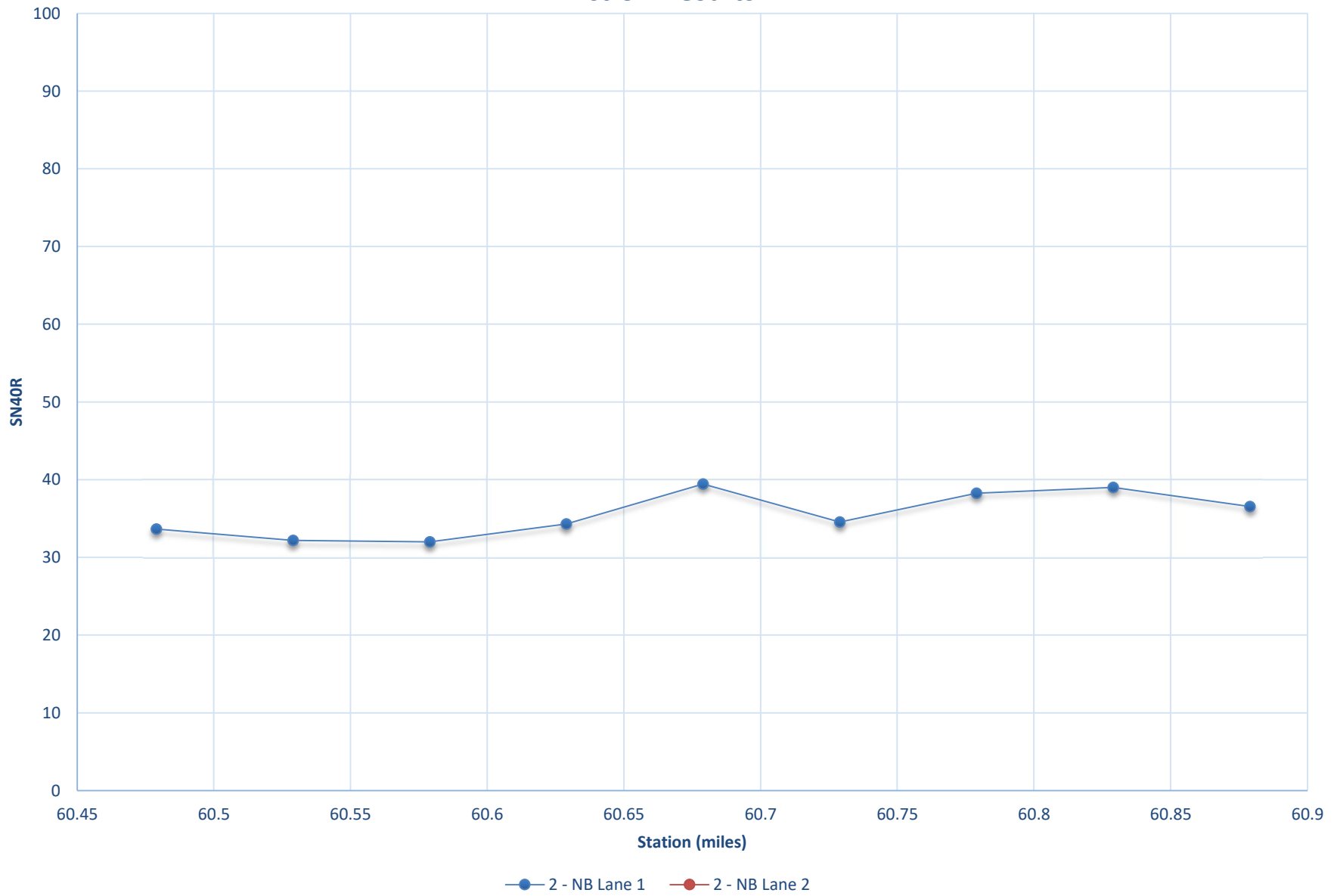
B – Test Site Maps

C – Detailed Friction Results

D – Illinois Friction System Calibration Report

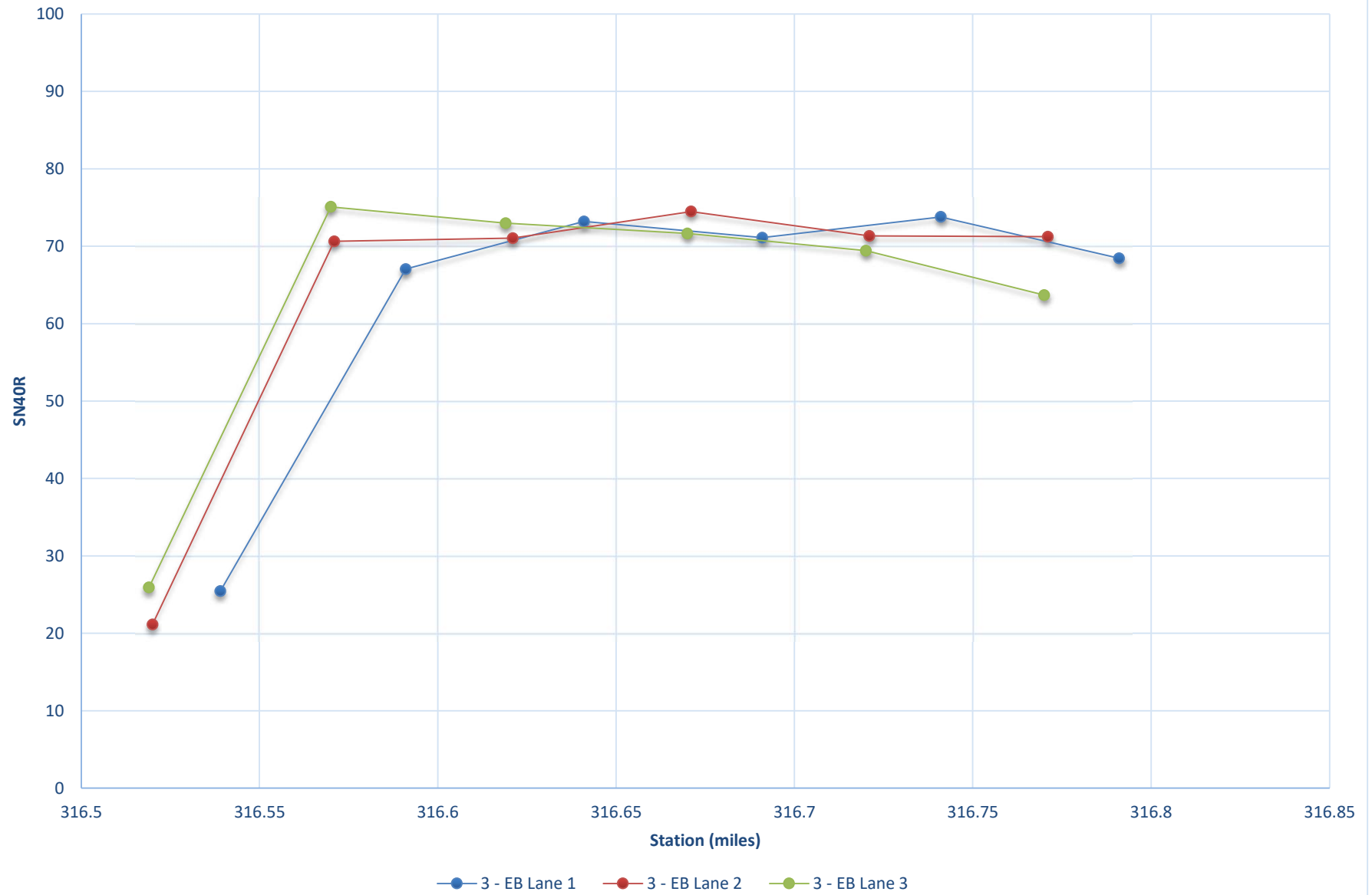
APPENDIX A

Test Site 2 - I-43 NB Friction Results



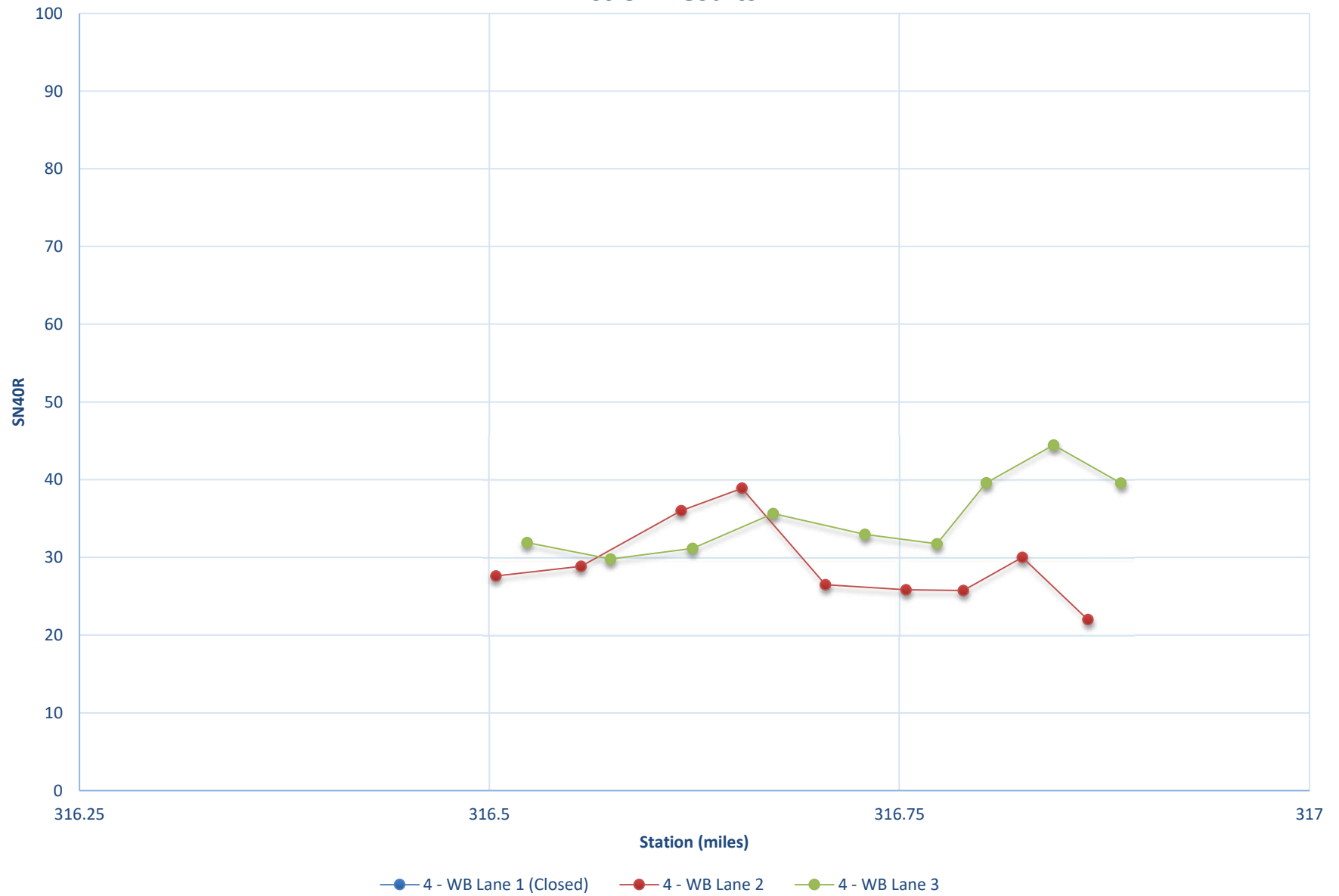
APPENDIX A

Test Site 3 - I-894 EB to I-94 EB (W-S) Friction Results



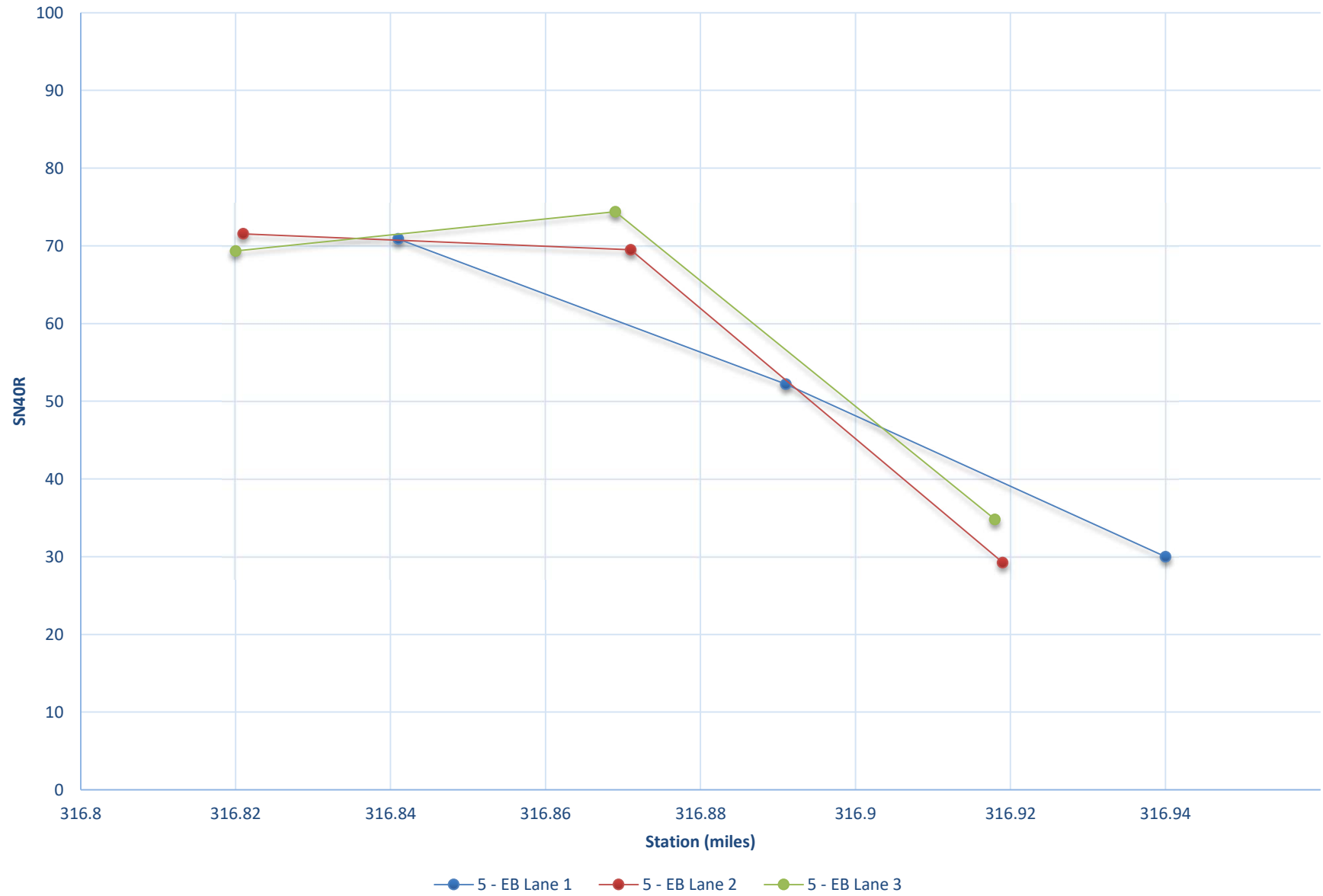
APPENDIX A

Test Site 4 - I-94 NB to I-894 WB (S-W) Friction Results



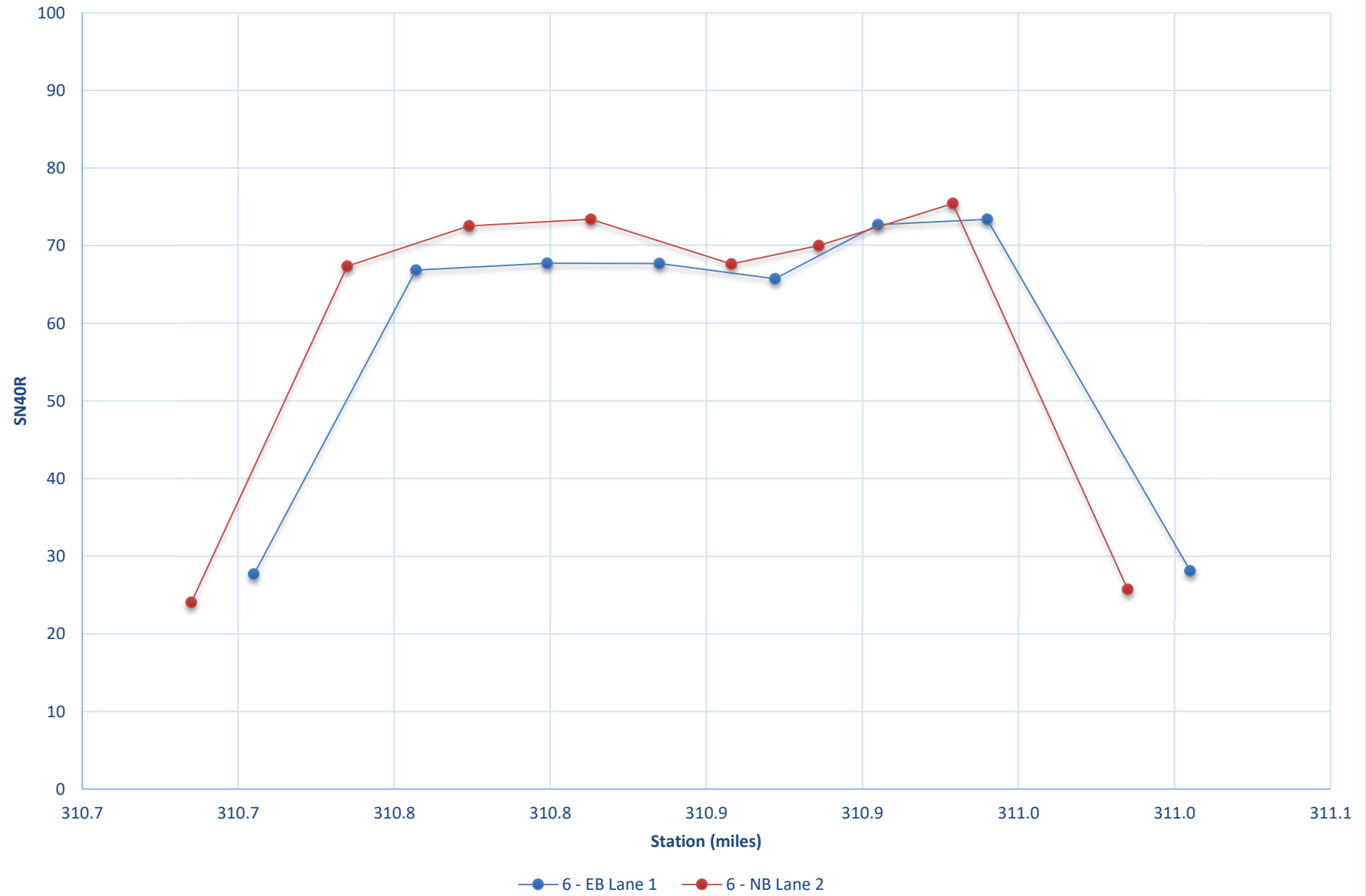
APPENDIX A

Test Site 5 - I-894 EB to I-94 EB (W-S) Friction Results



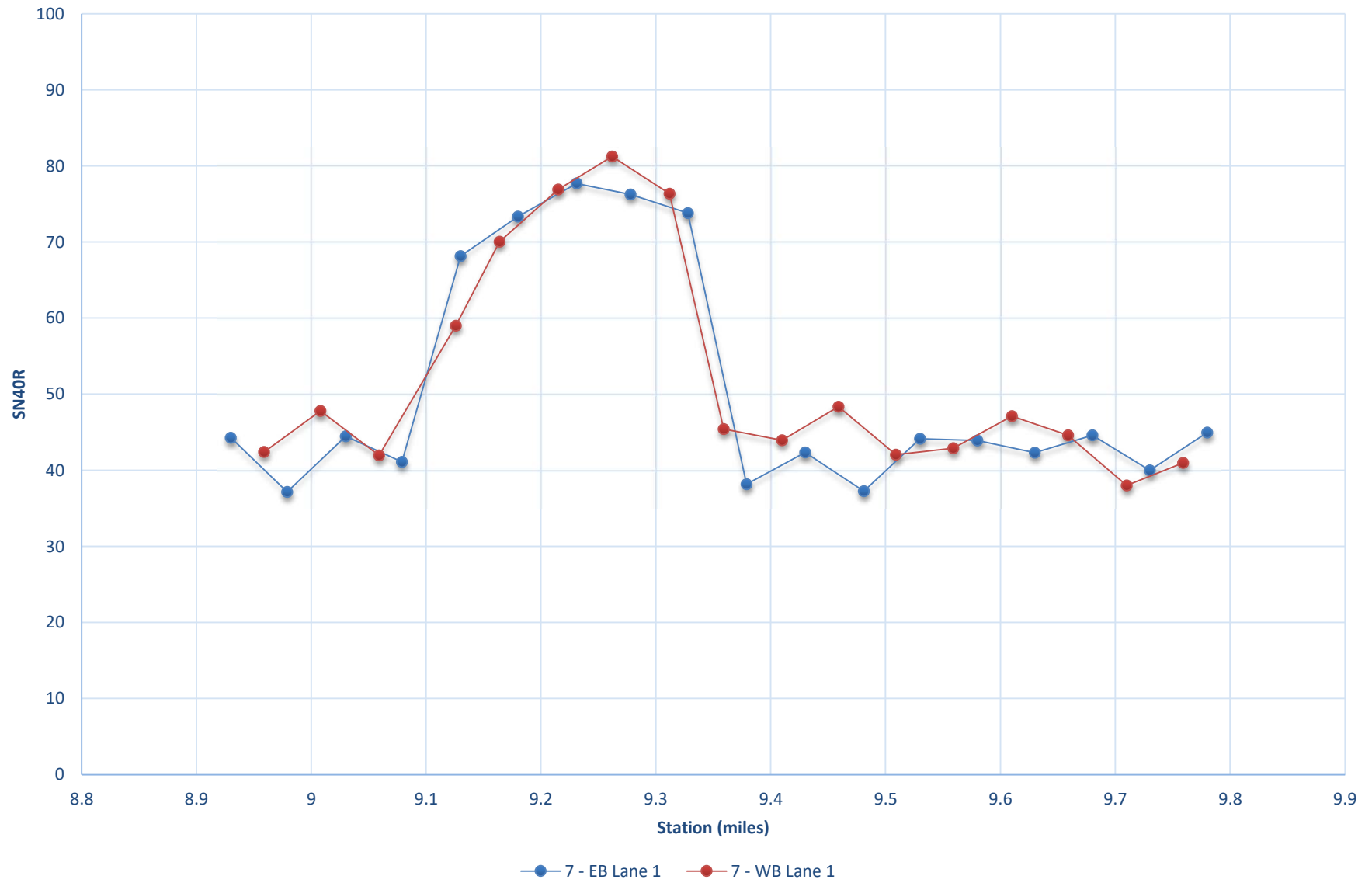
APPENDIX A

Test Site 6 - I-94 EB to I-43 NB
Friction Results



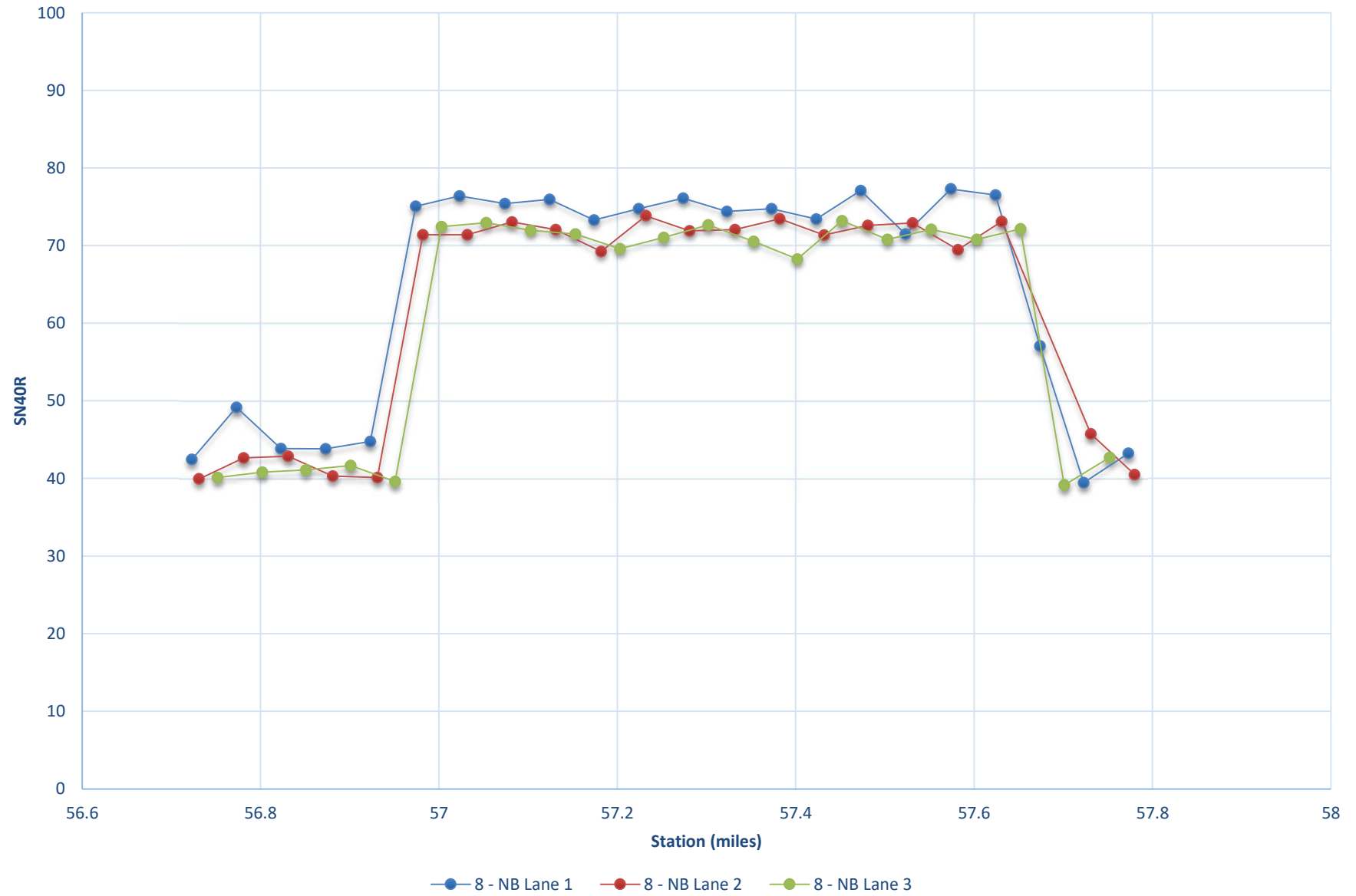
APPENDIX A

Test Site 7 - STH 167 Friction Results



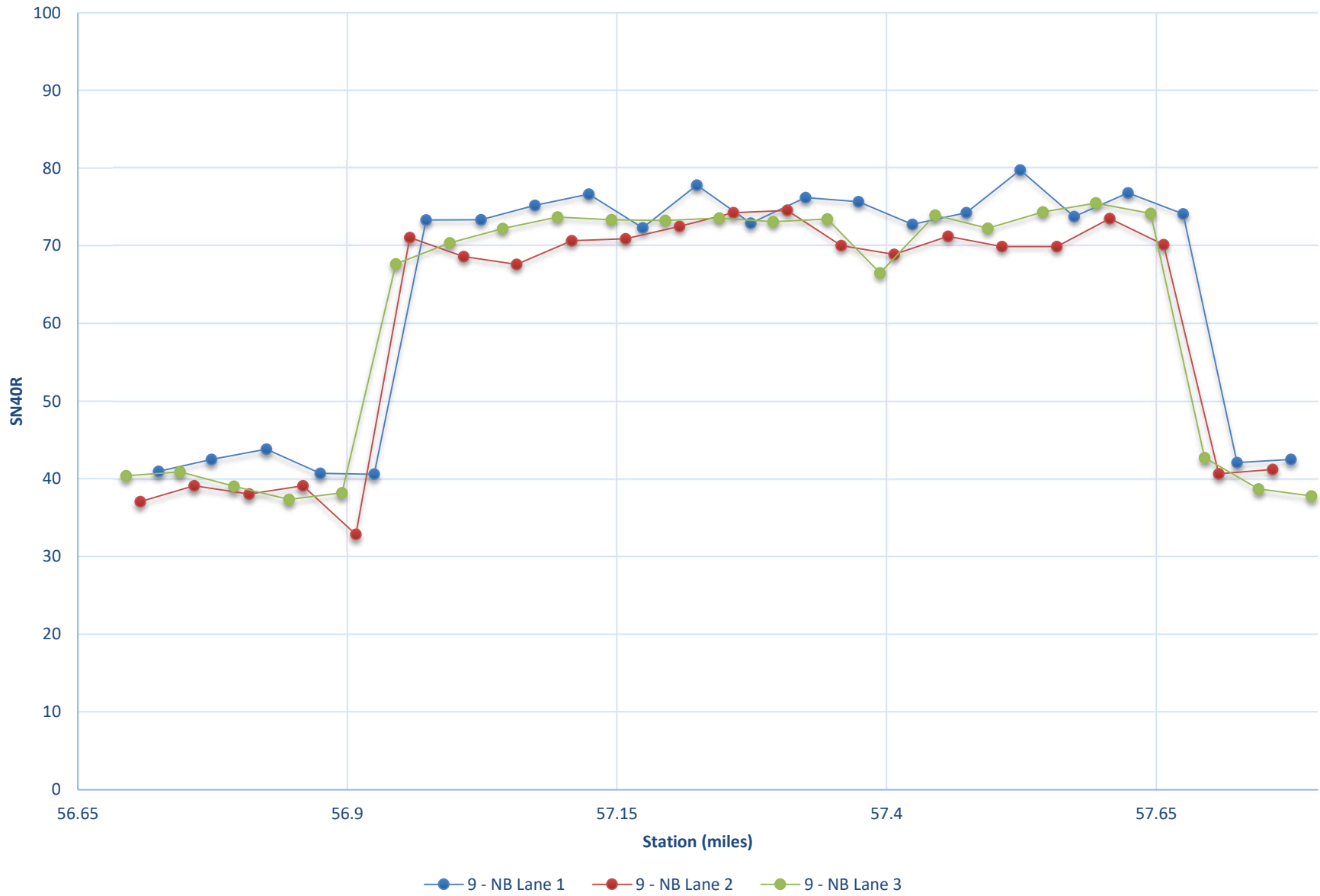
APPENDIX A

Test Site 8 - USH 41 NB Friction Results



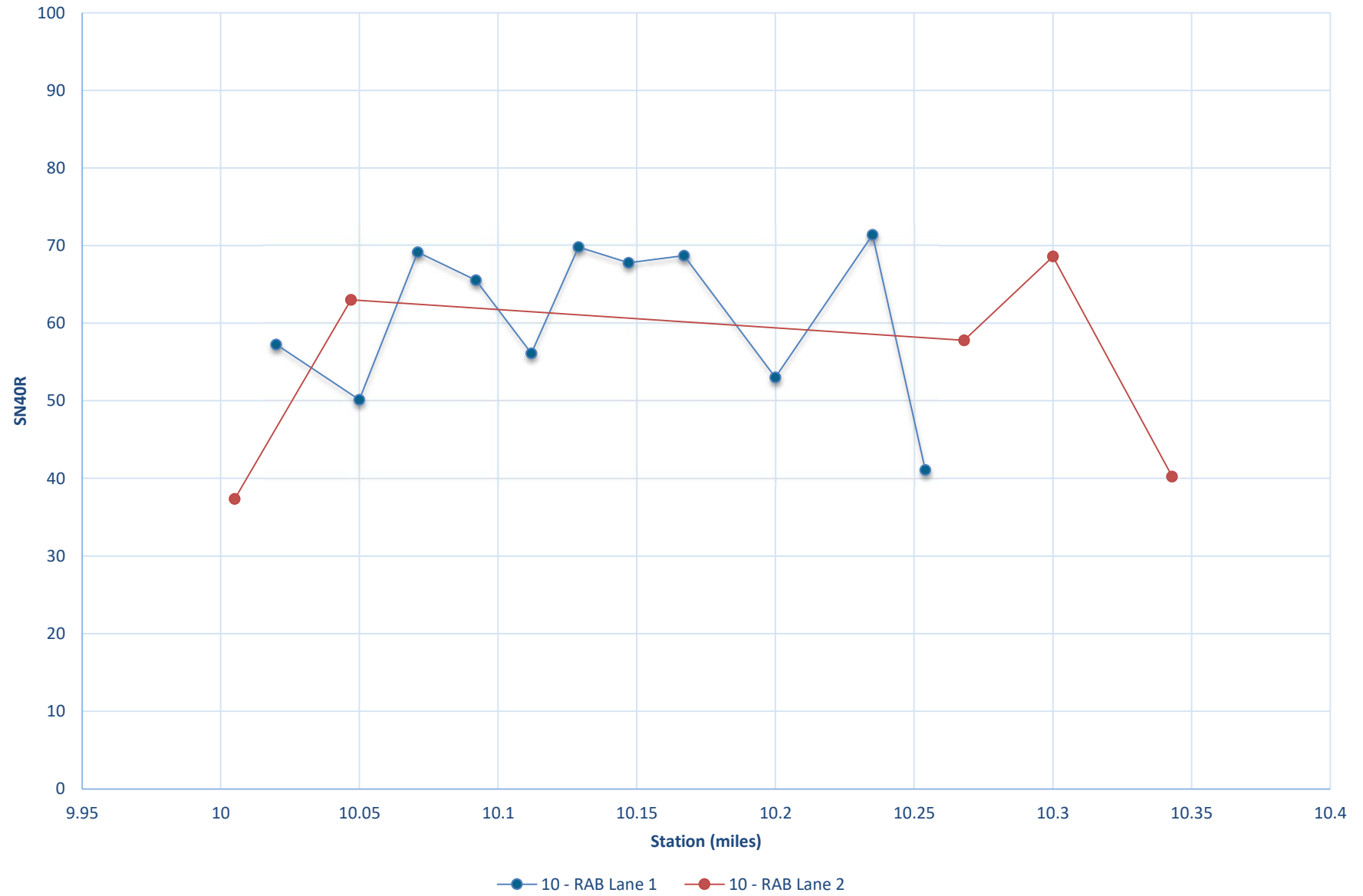
APPENDIX A

Test Site 9 - USH 41 SB Friction Results



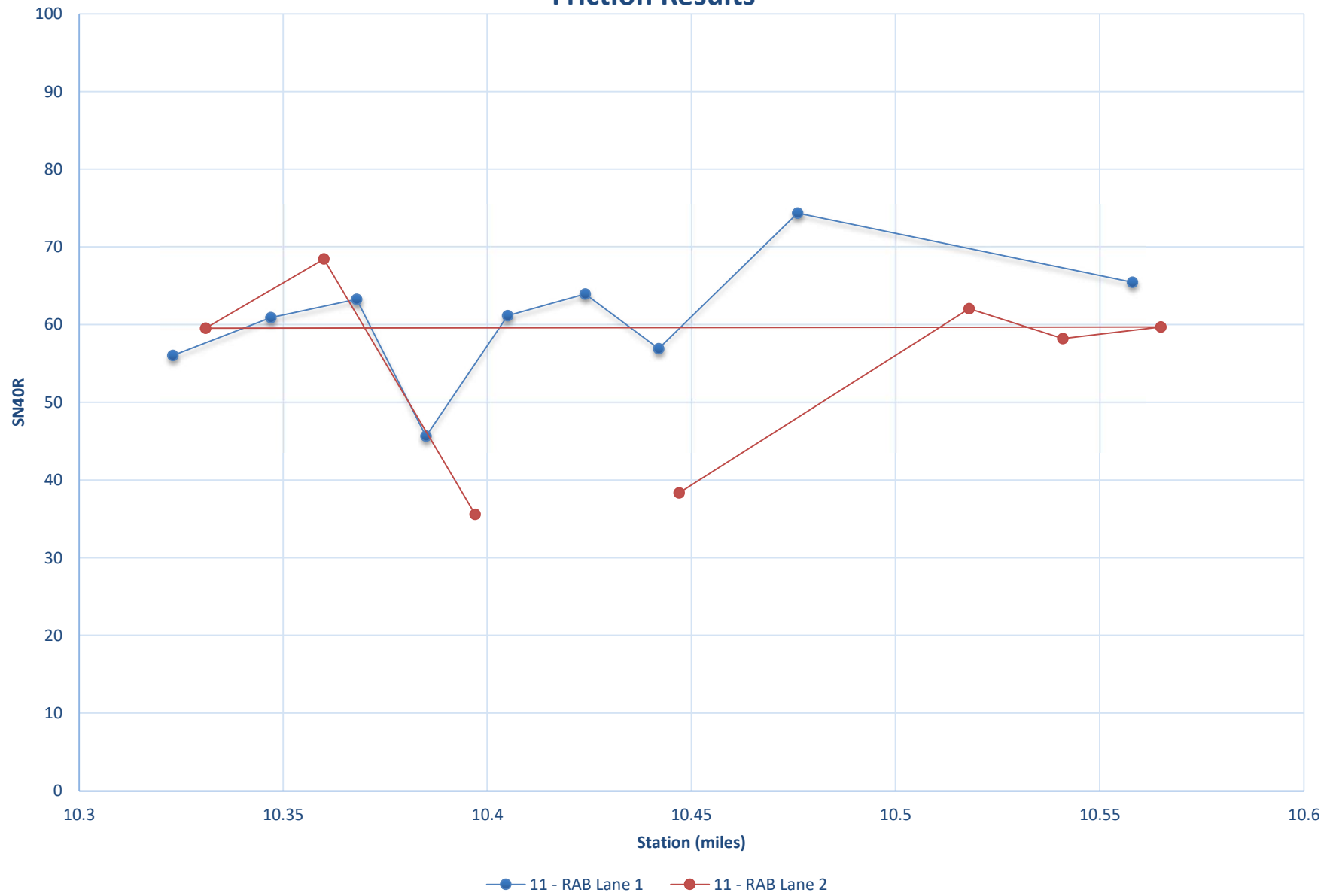
APPENDIX A

Test Site 10 - CTH Y (South) Friction Results



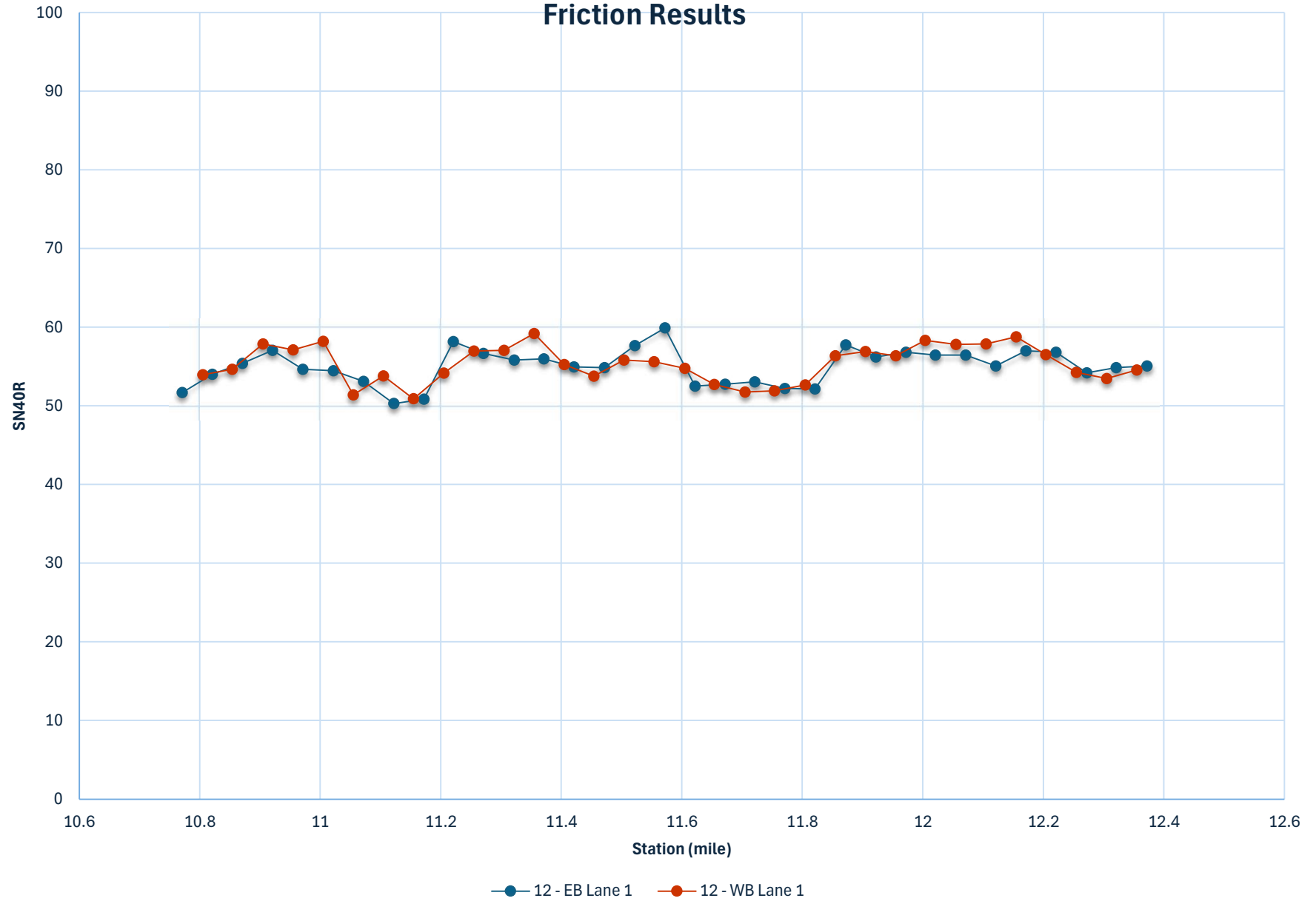
APPENDIX A

Test Site 11 - CTH Y (North)
Friction Results



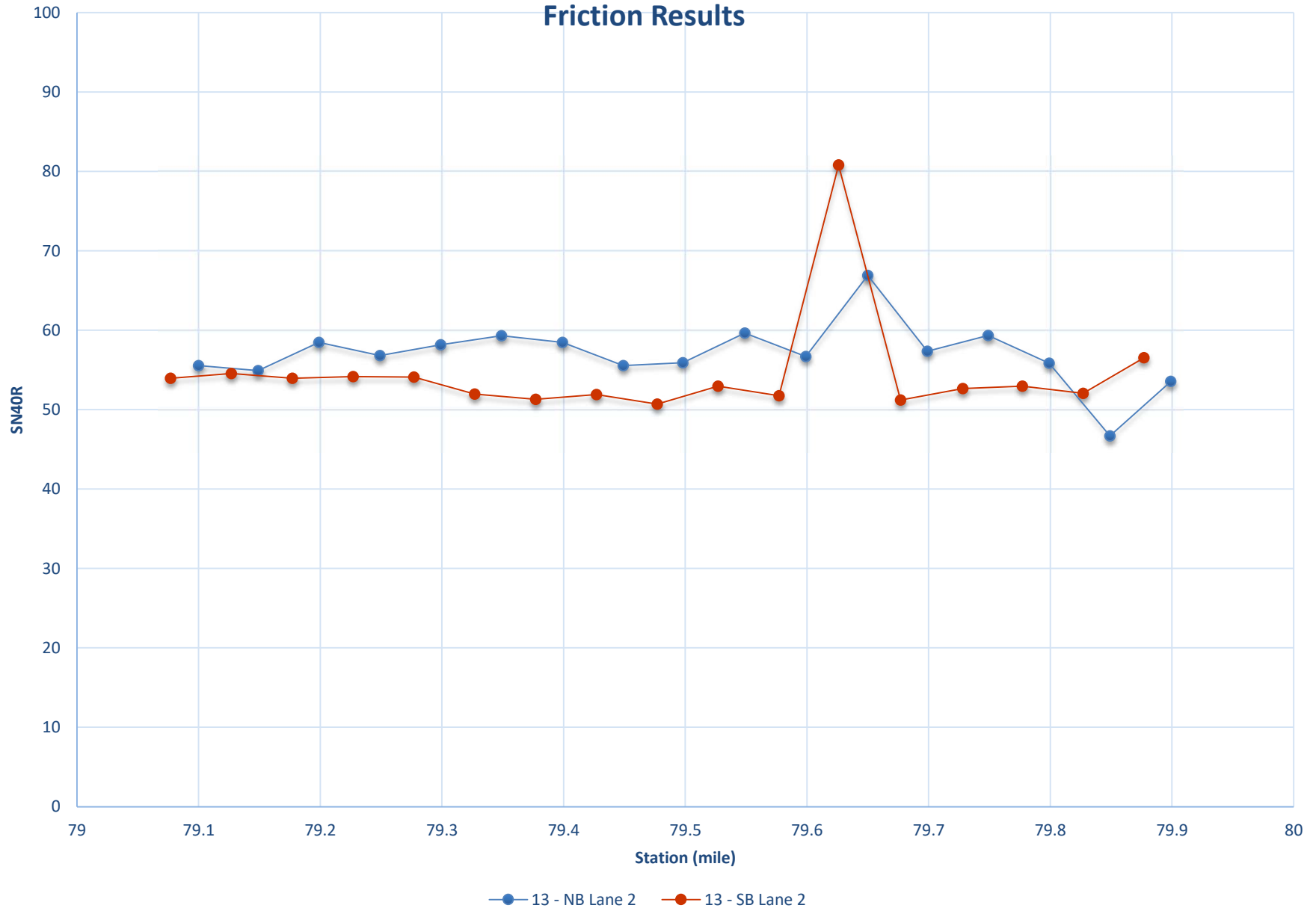
APPENDIX A

Test Site 12 - STH 60
Friction Results



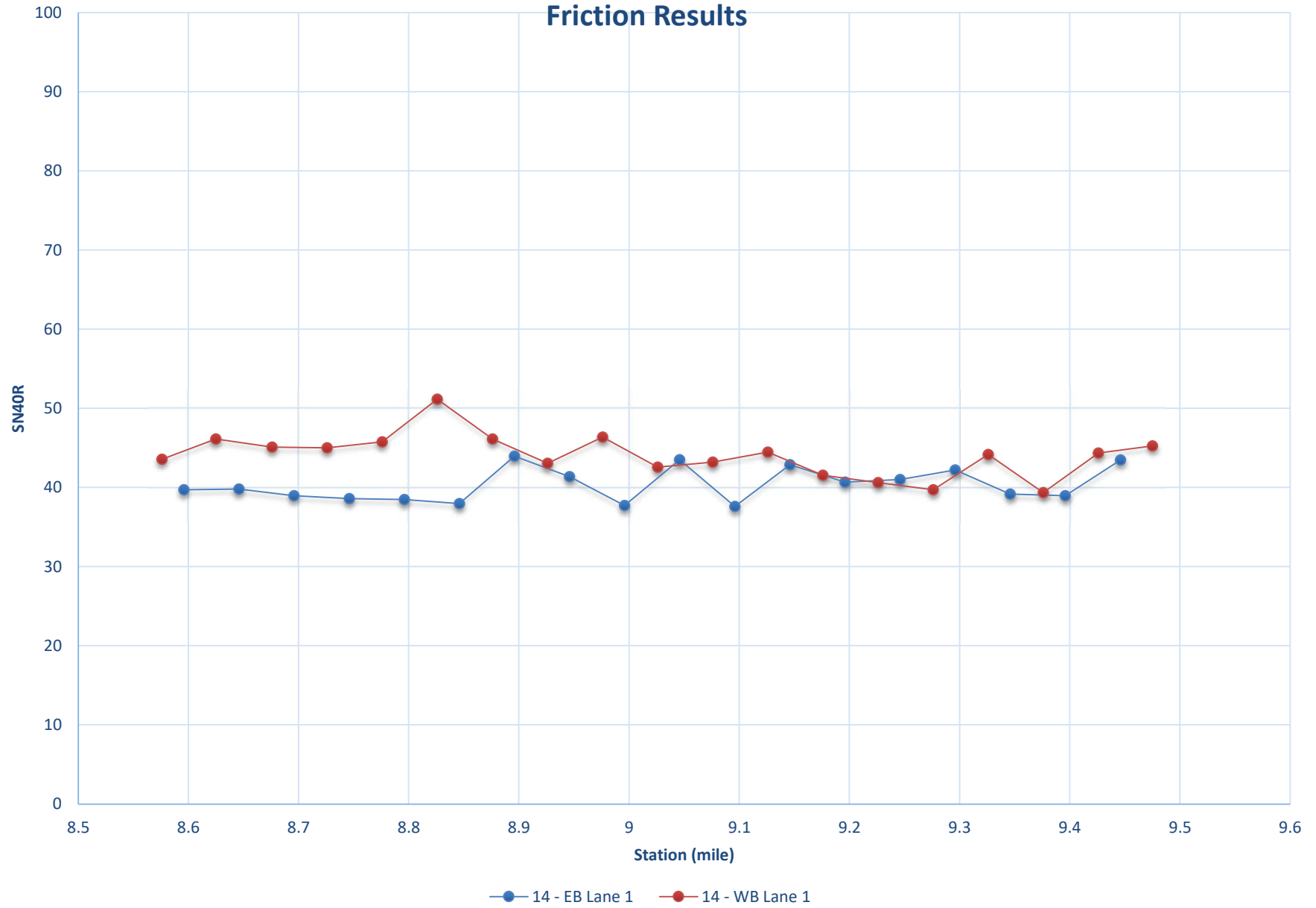
APPENDIX A

Test Site 13 - USH 18/151 SB
Friction Results

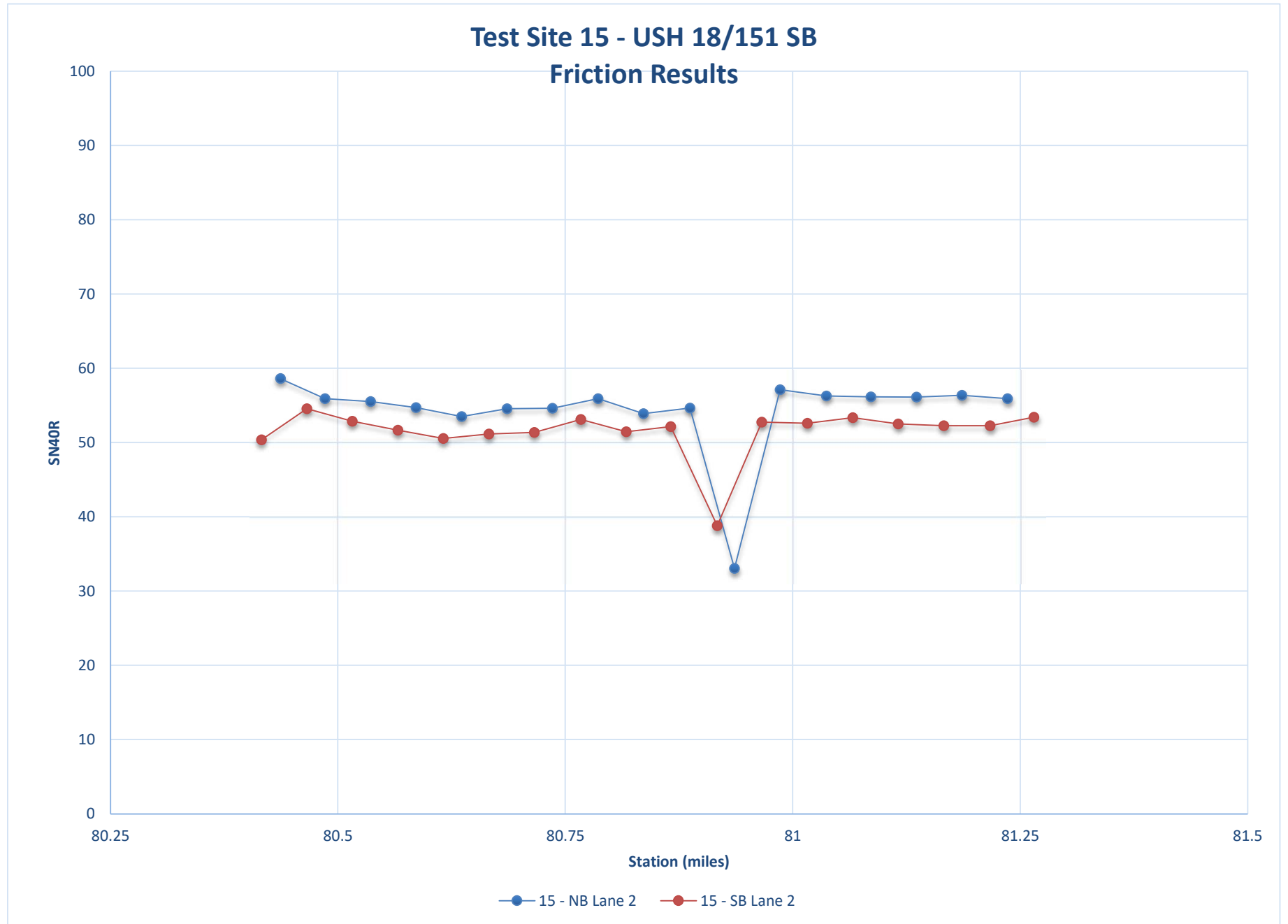


APPENDIX A

Test Site 14 - STH 19
Friction Results

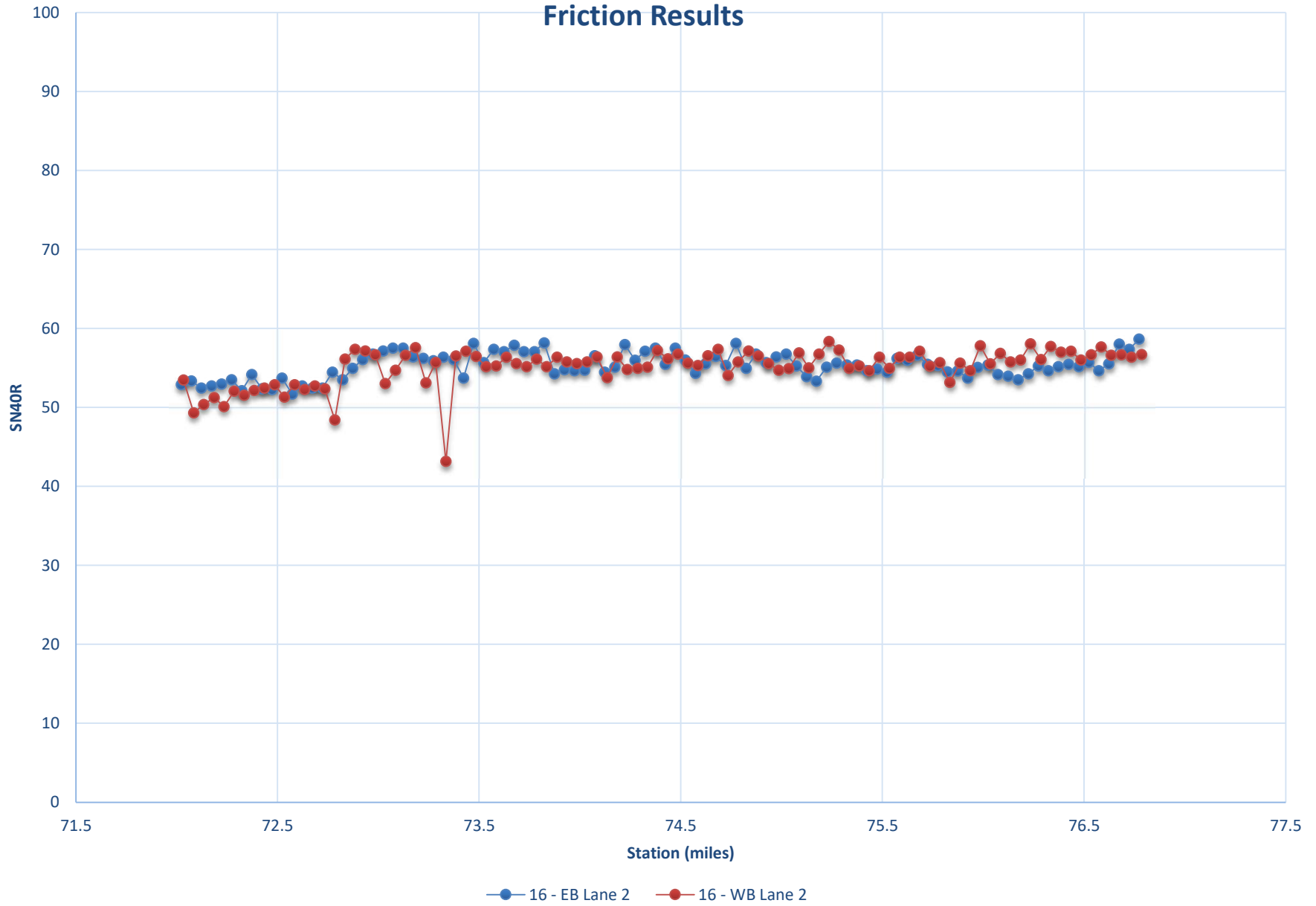


APPENDIX A

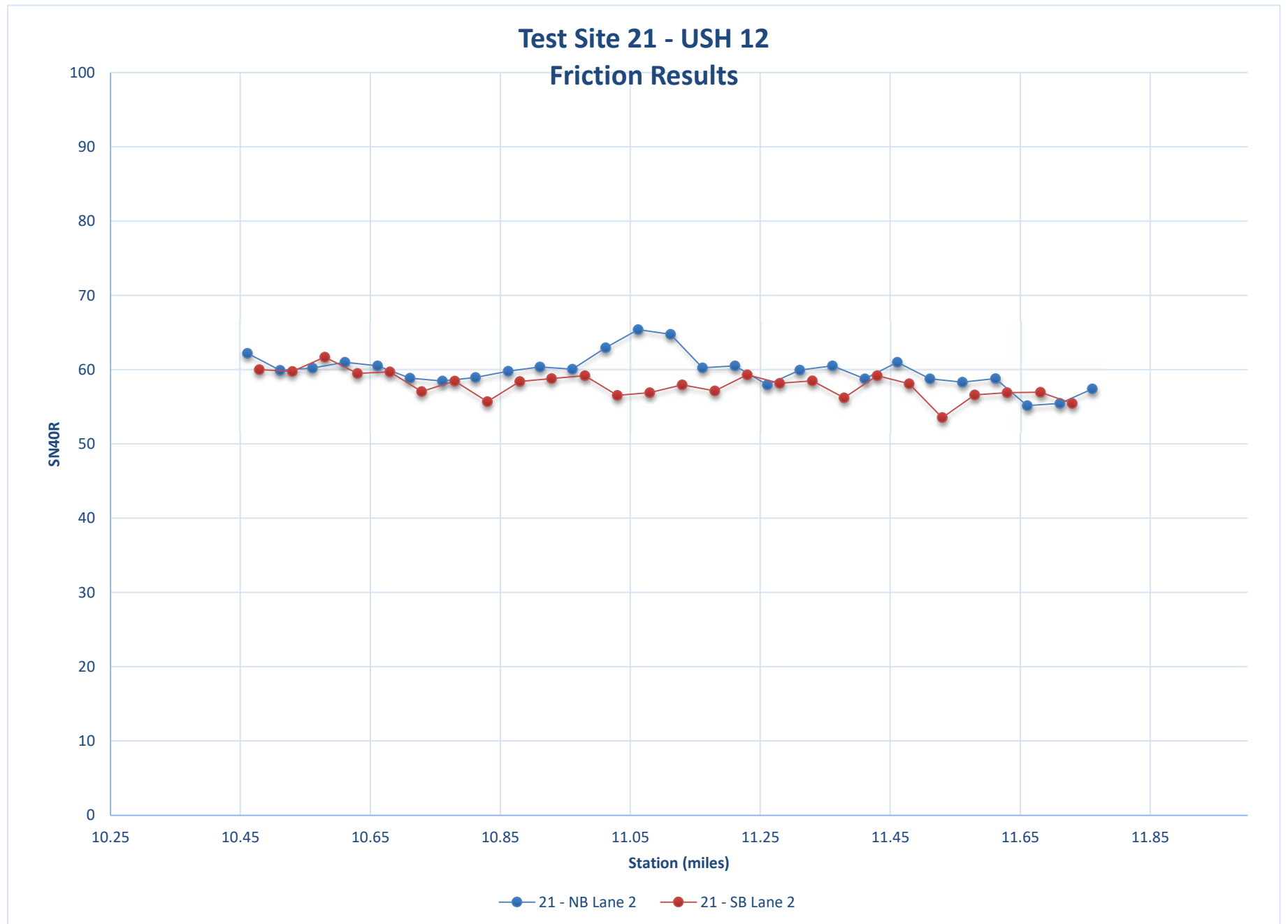


APPENDIX A

Test Site 16 - I-94
Friction Results

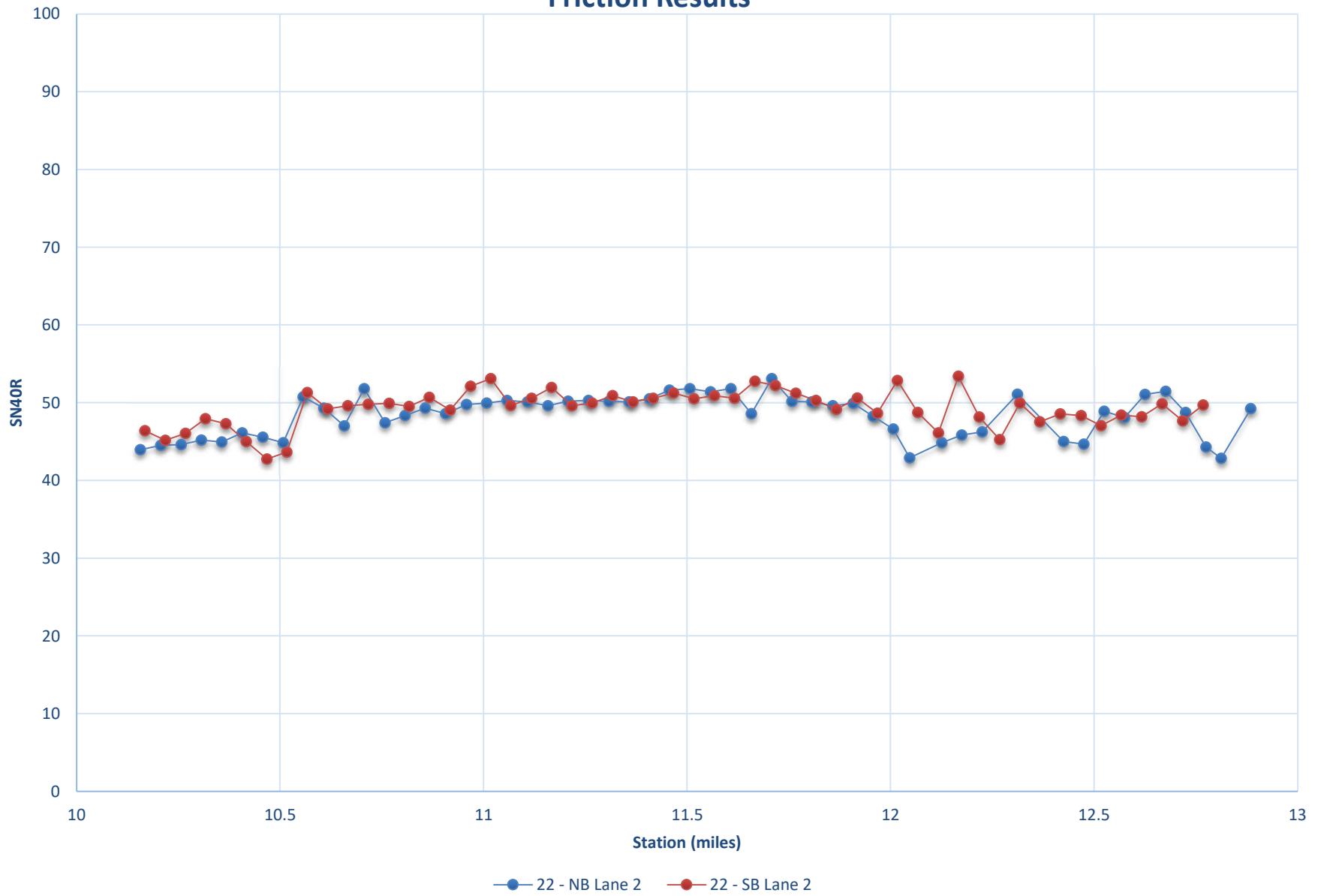


APPENDIX A



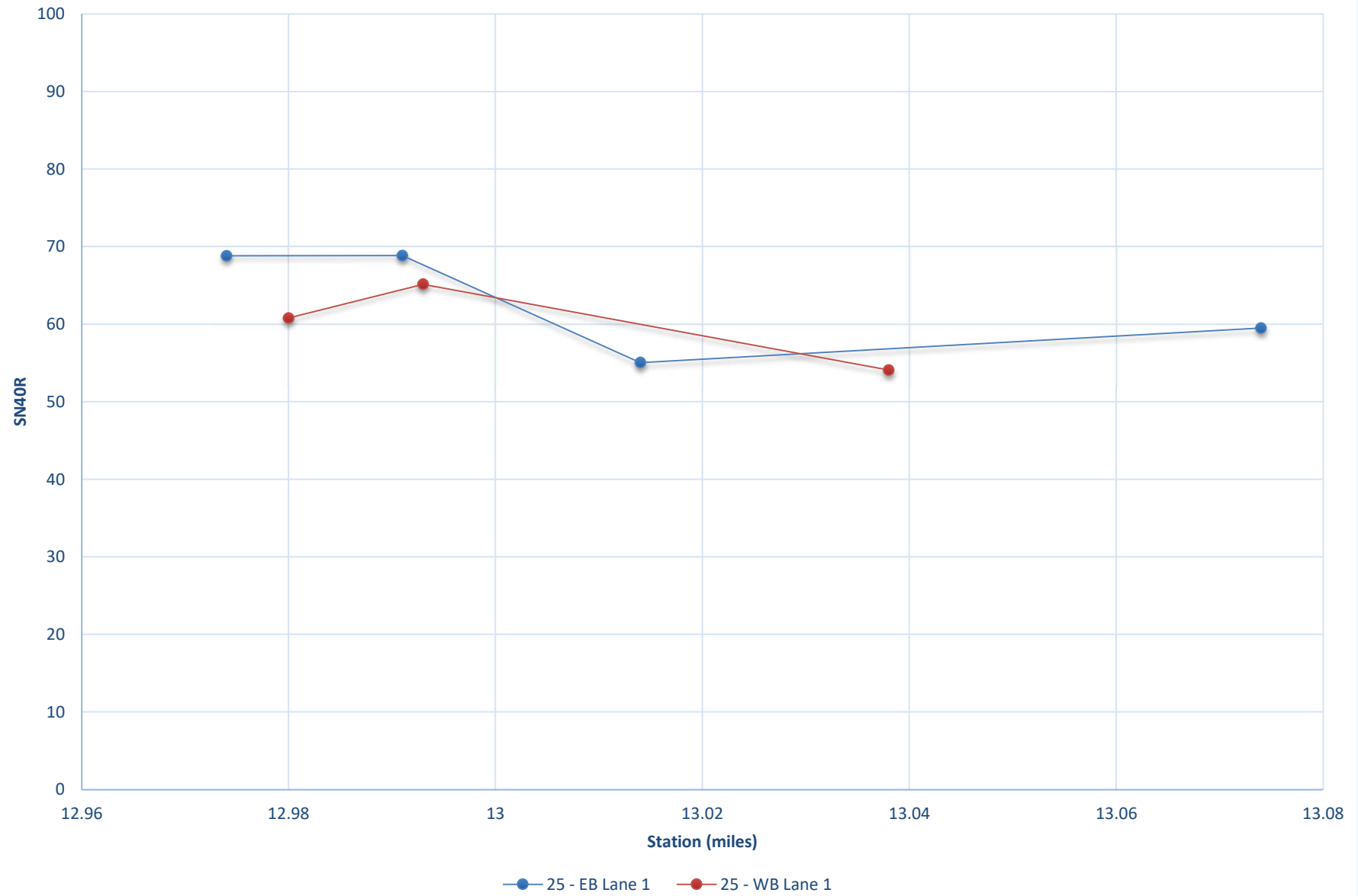
APPENDIX A

Test Site 22 - STH 16
Friction Results



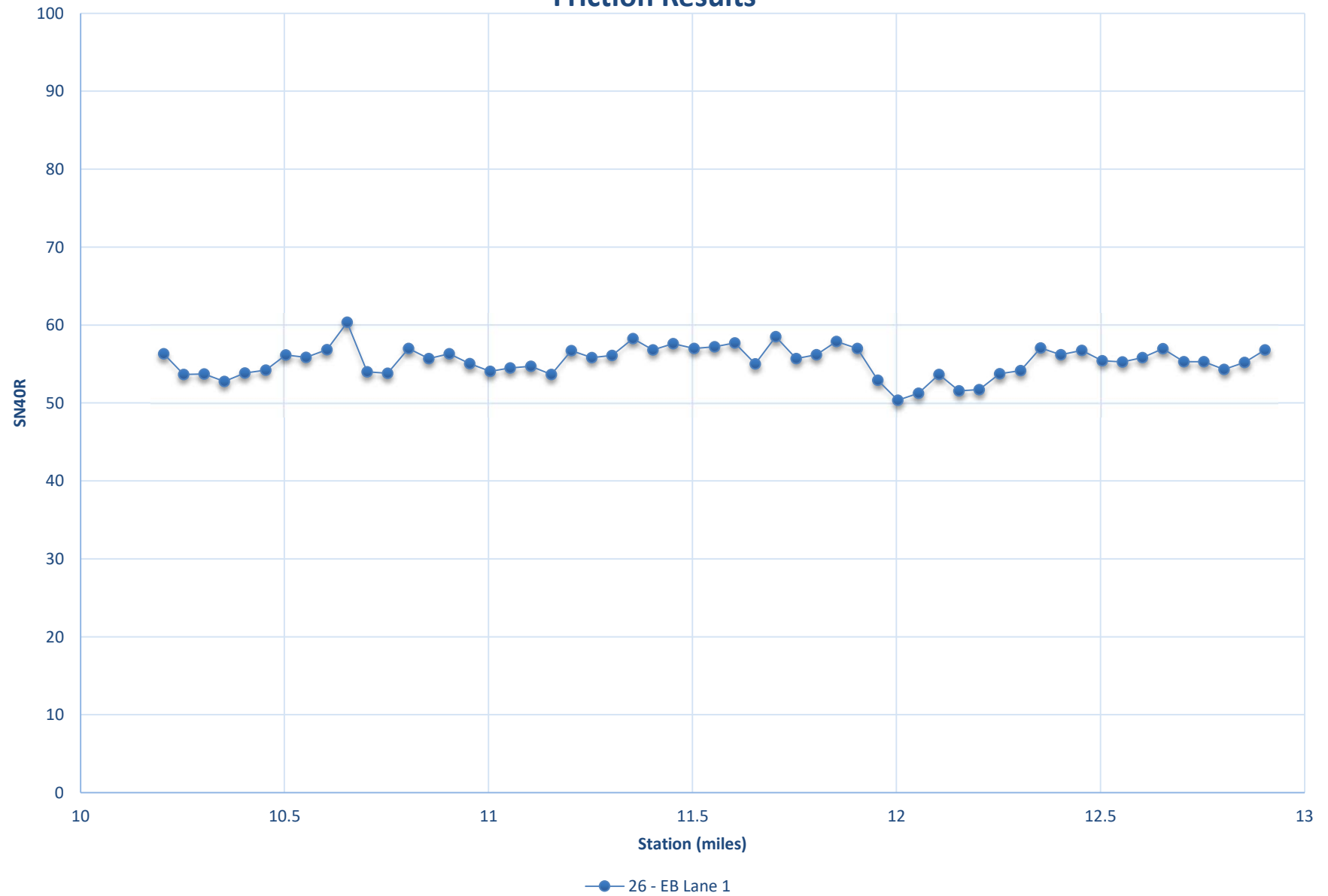
APPENDIX A

Test Site 25 - USH 14/61 Friction Results



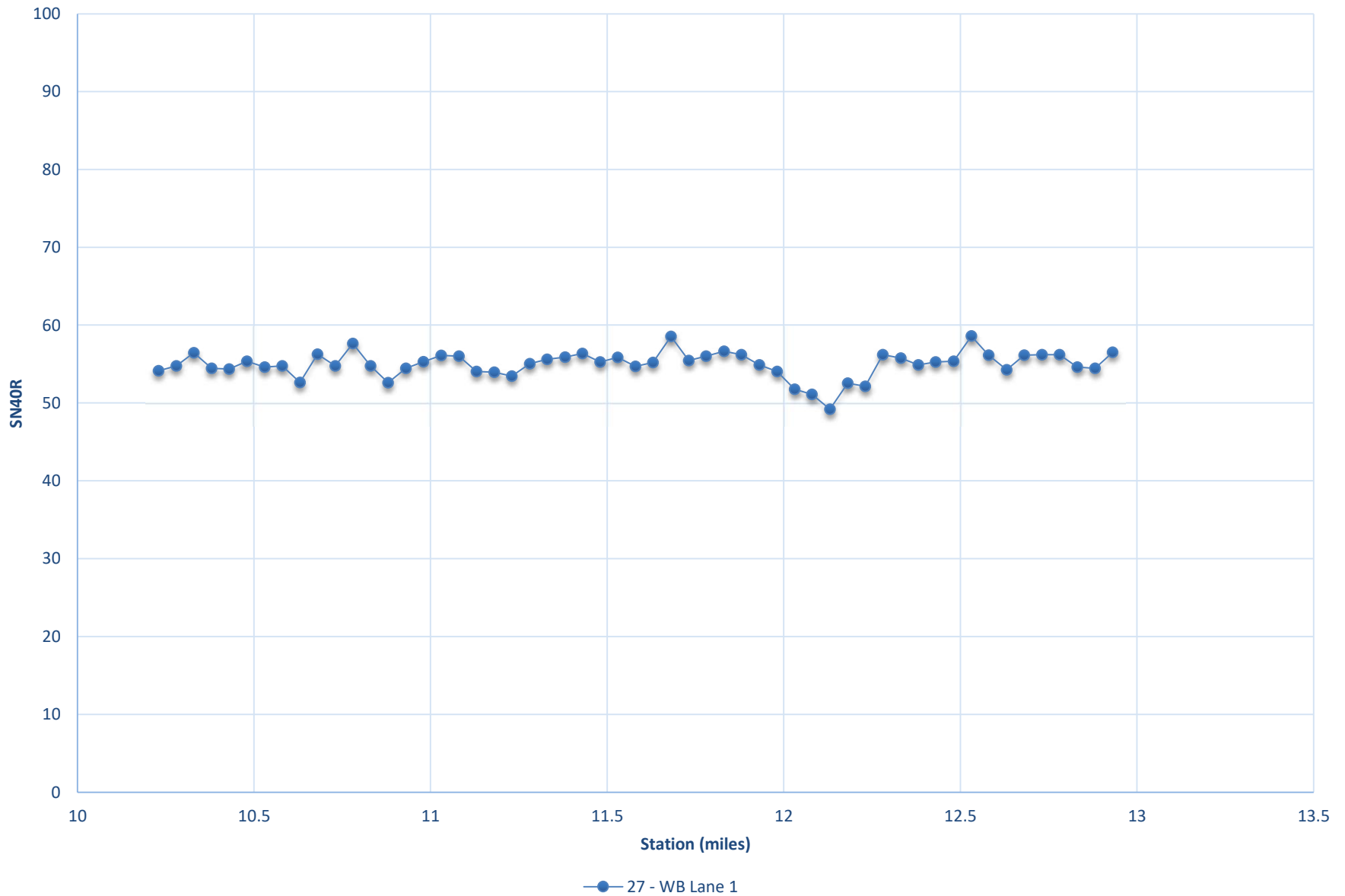
APPENDIX A

Test Site 26 - USH 14/61 EB
Friction Results



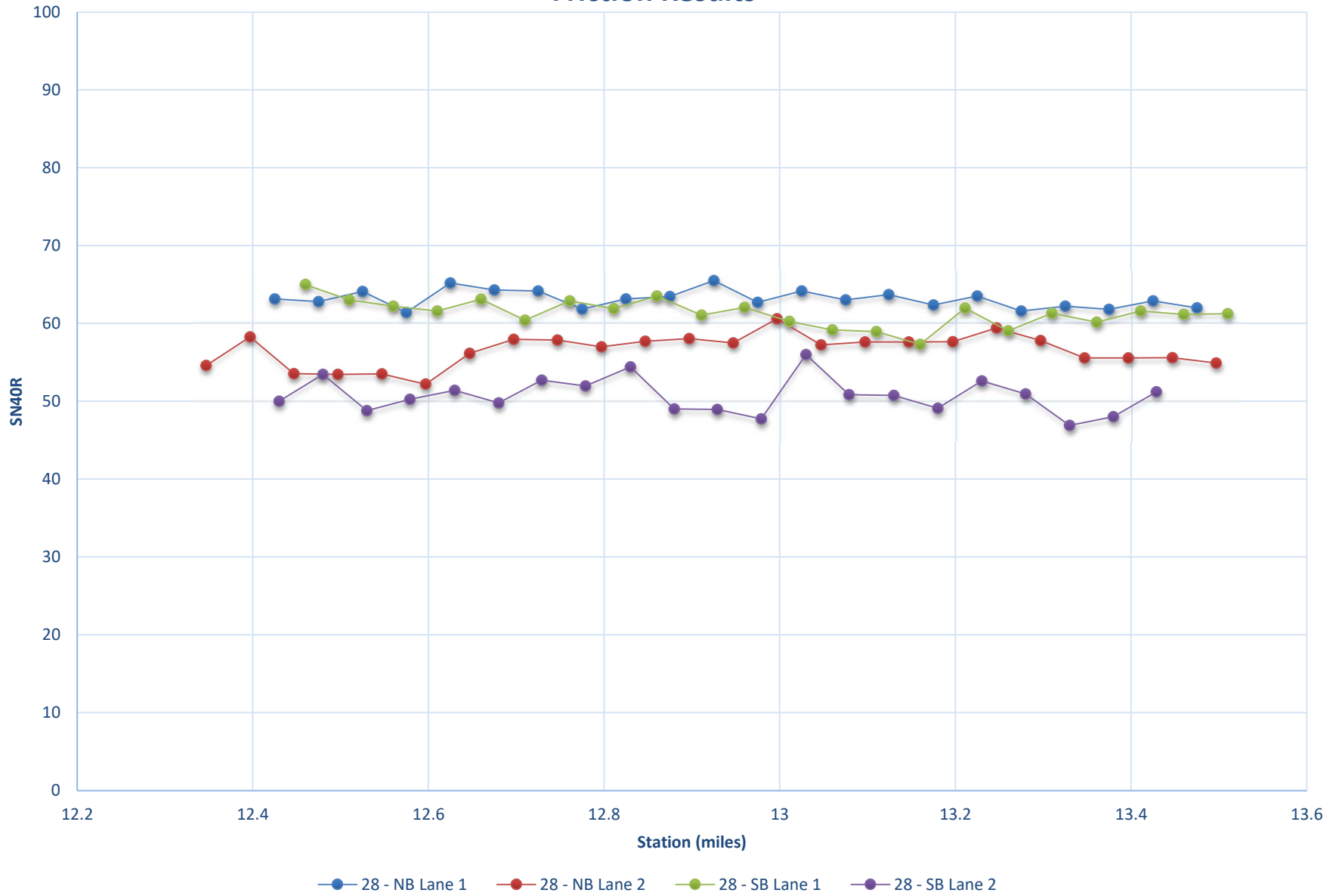
APPENDIX A

Test Site 27 - USH 14/61 WB Friction Results



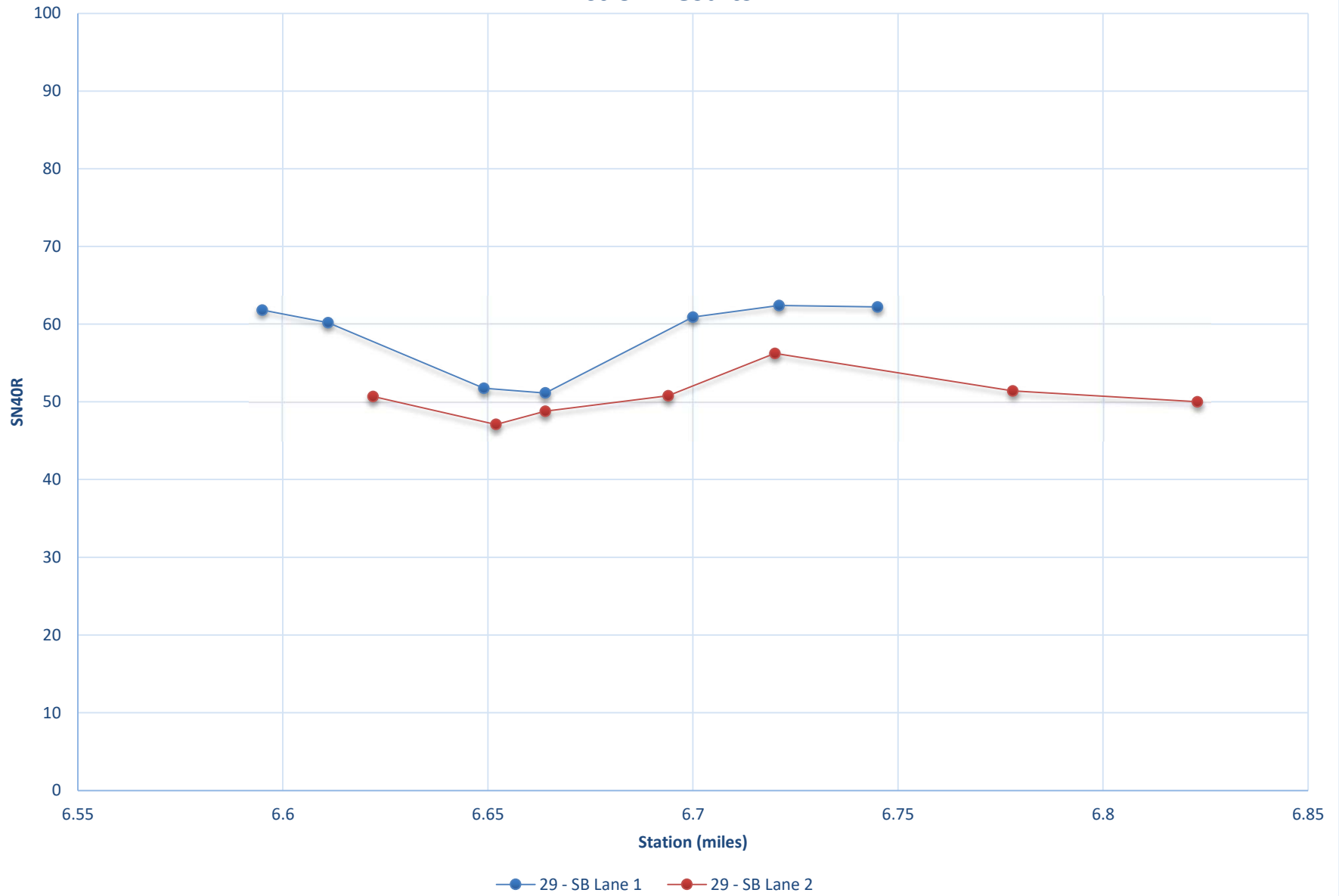
APPENDIX A

Test Site 28 - USH 53 Friction Results



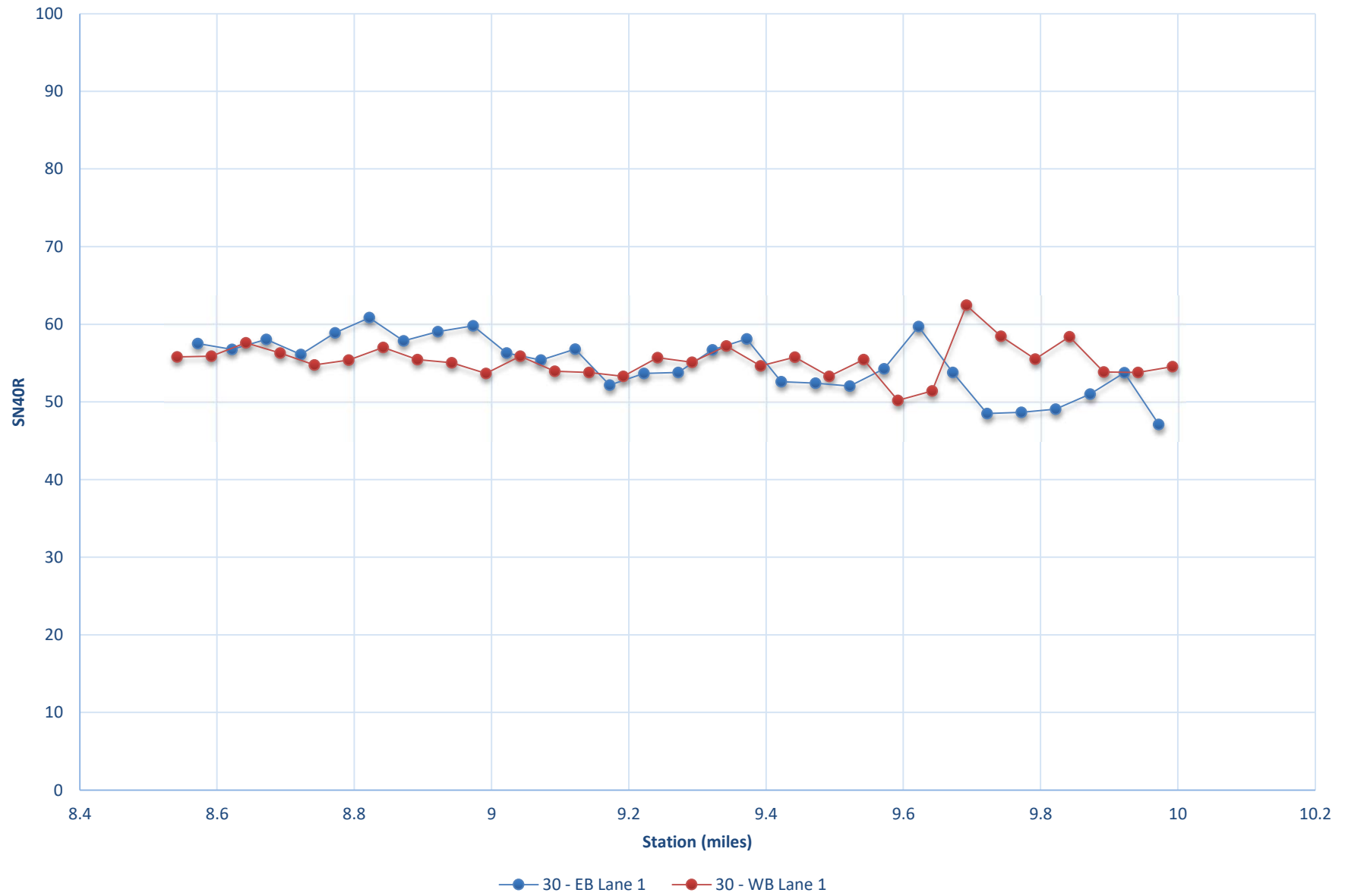
APPENDIX A

Test Site 29 - USH 53 Friction Results



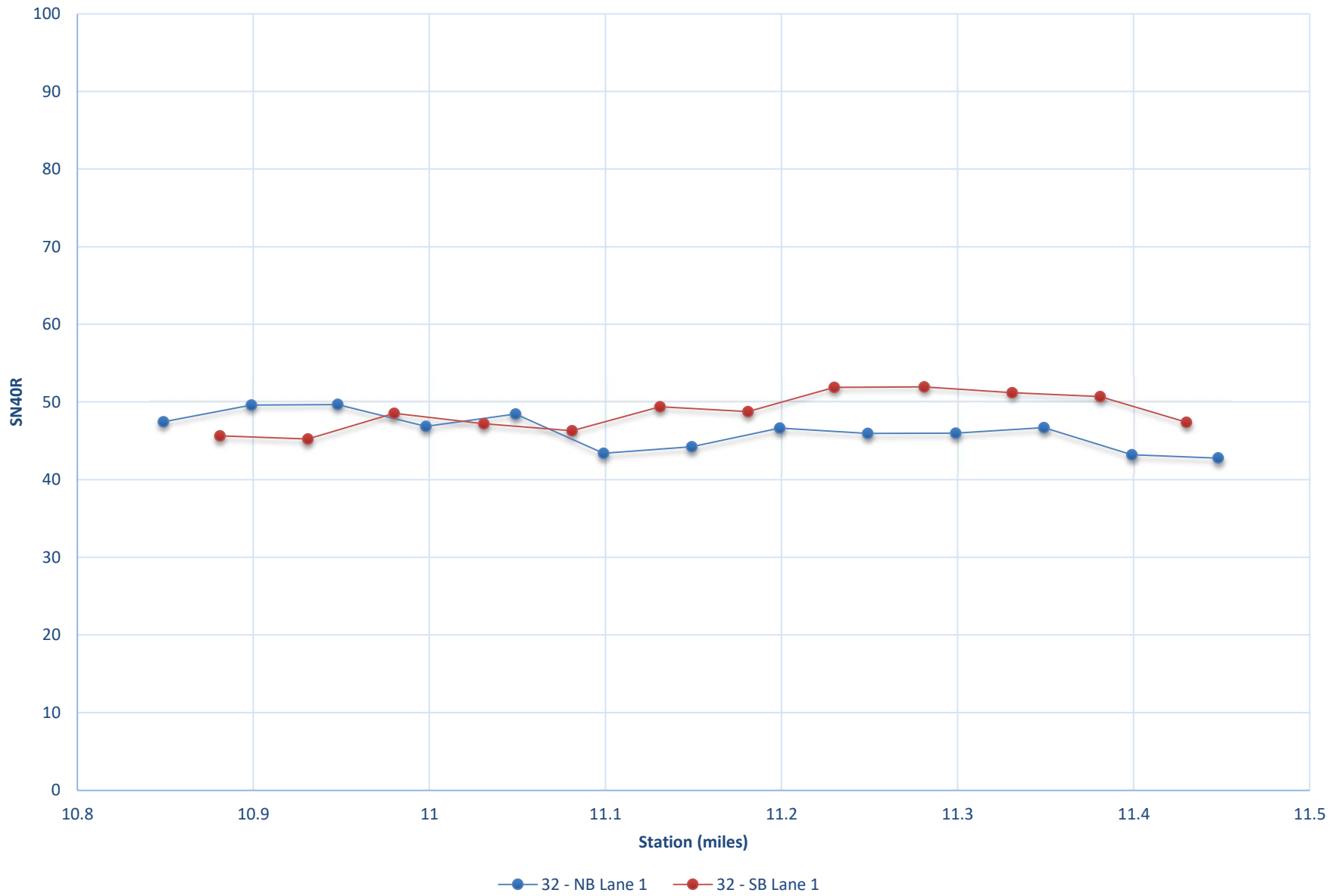
APPENDIX A

Test Site 30 - STH 35 Friction Results



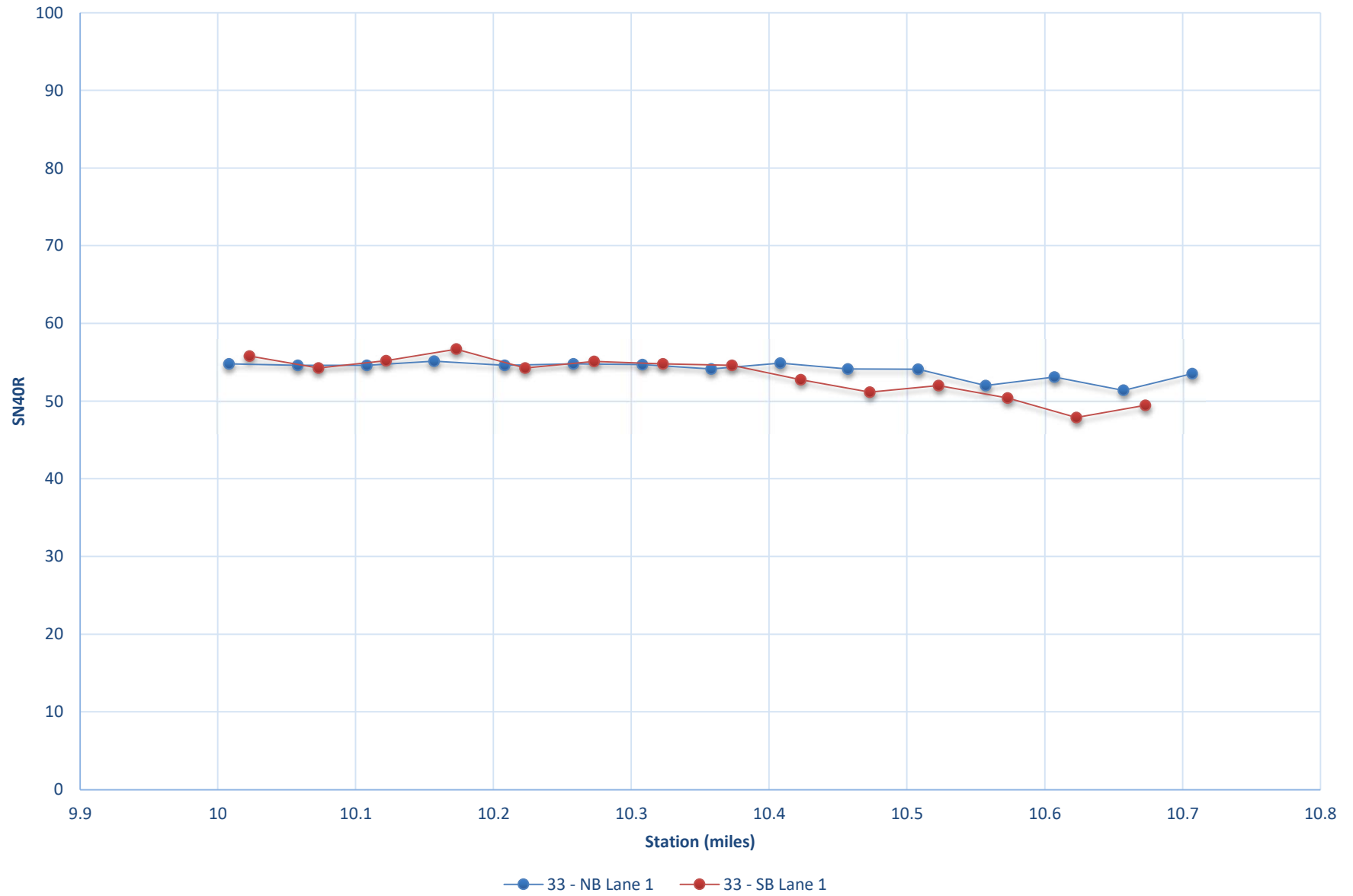
APPENDIX A

Test Site 32 - STH 35 Friction Results



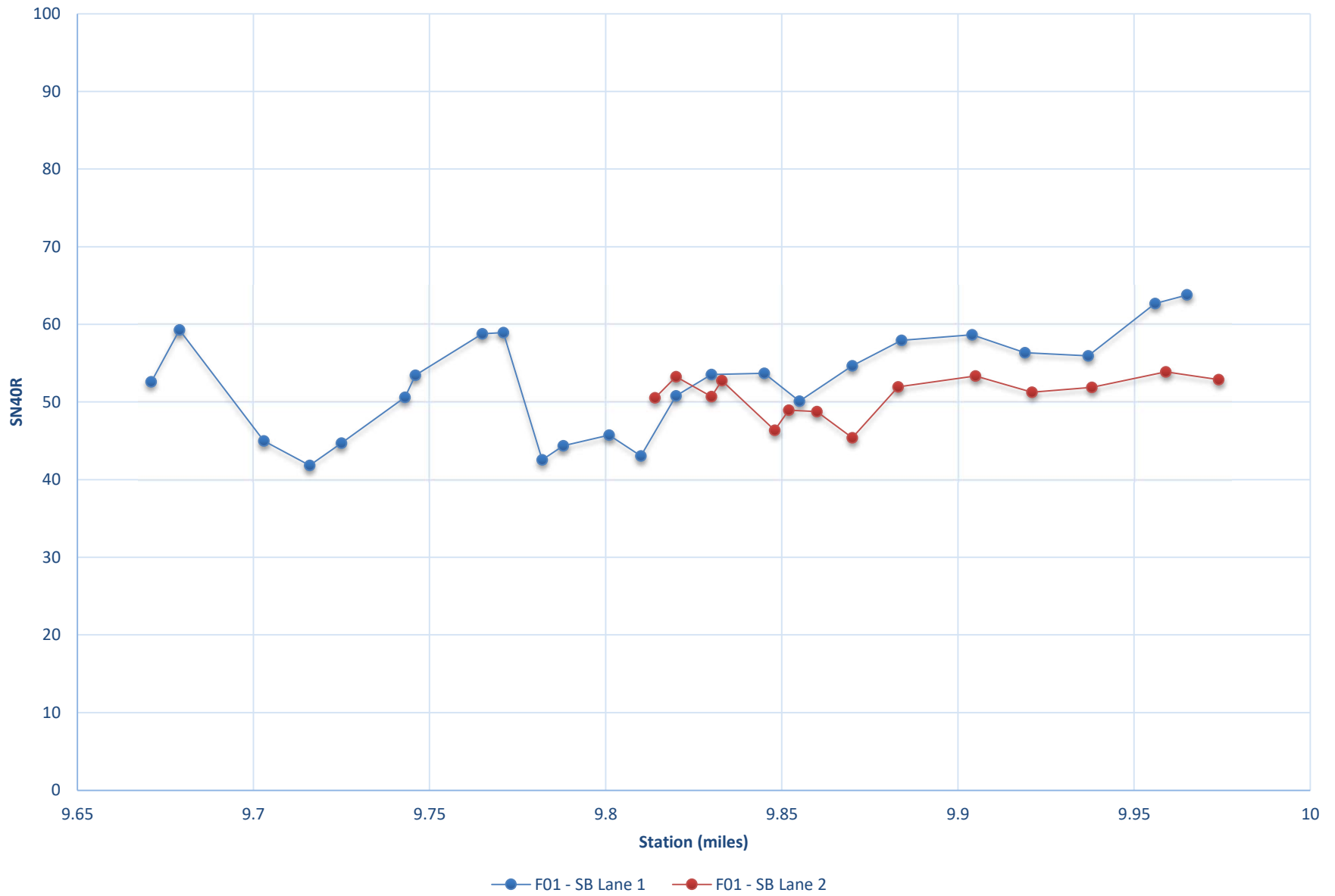
APPENDIX A

Test Site 33 - STH 35 Friction Results

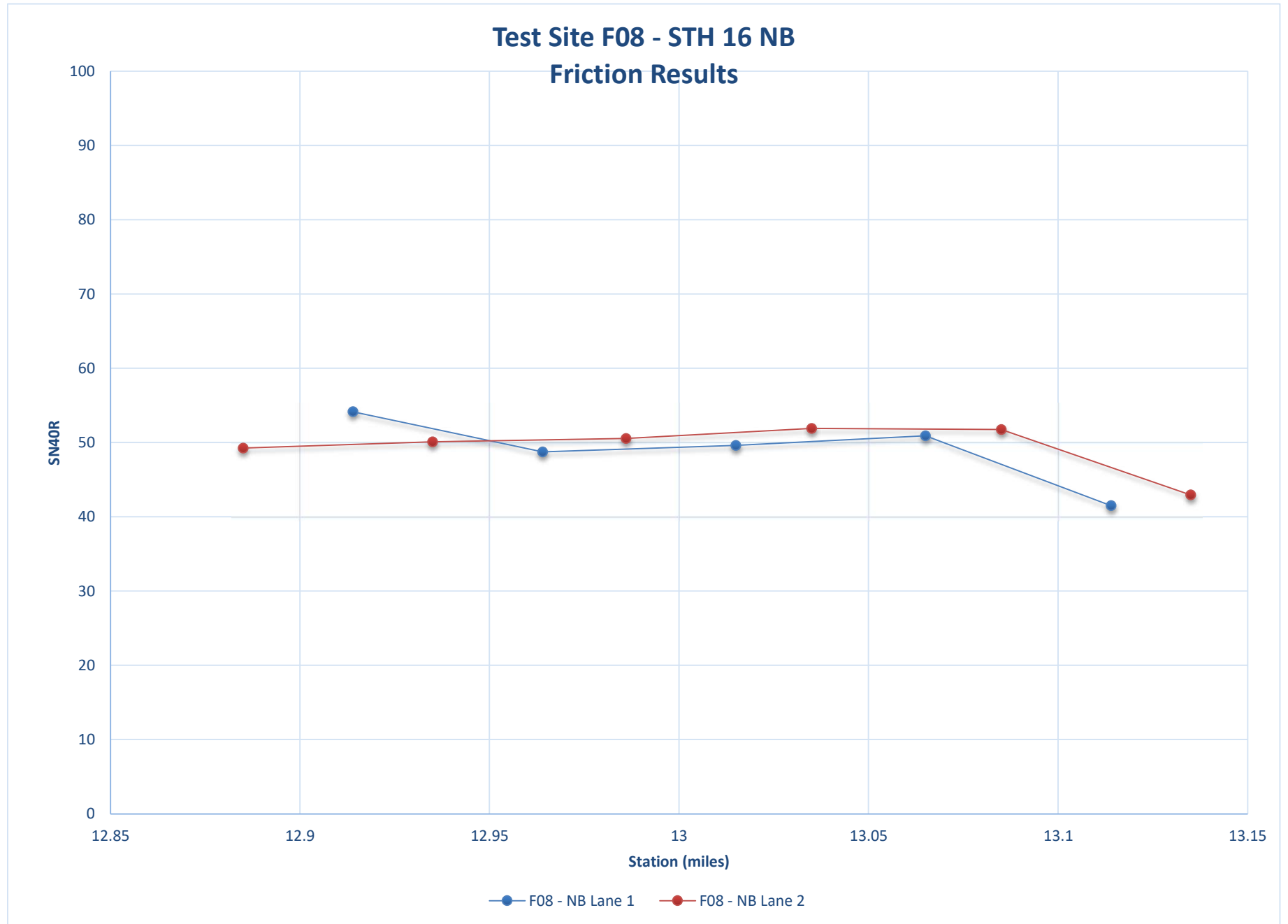


APPENDIX A

Test Site F01 - USH 53 Friction Results

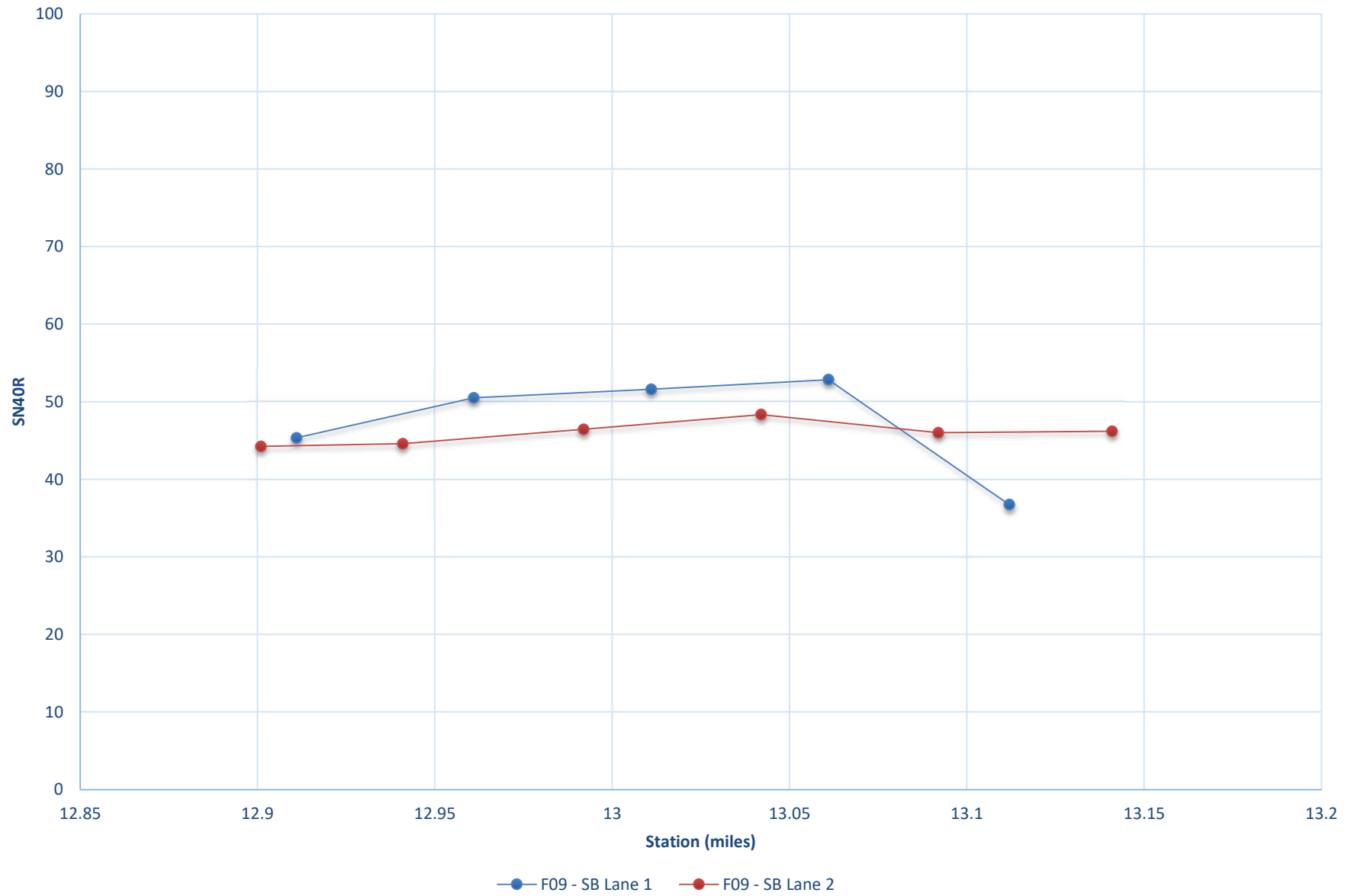


APPENDIX A



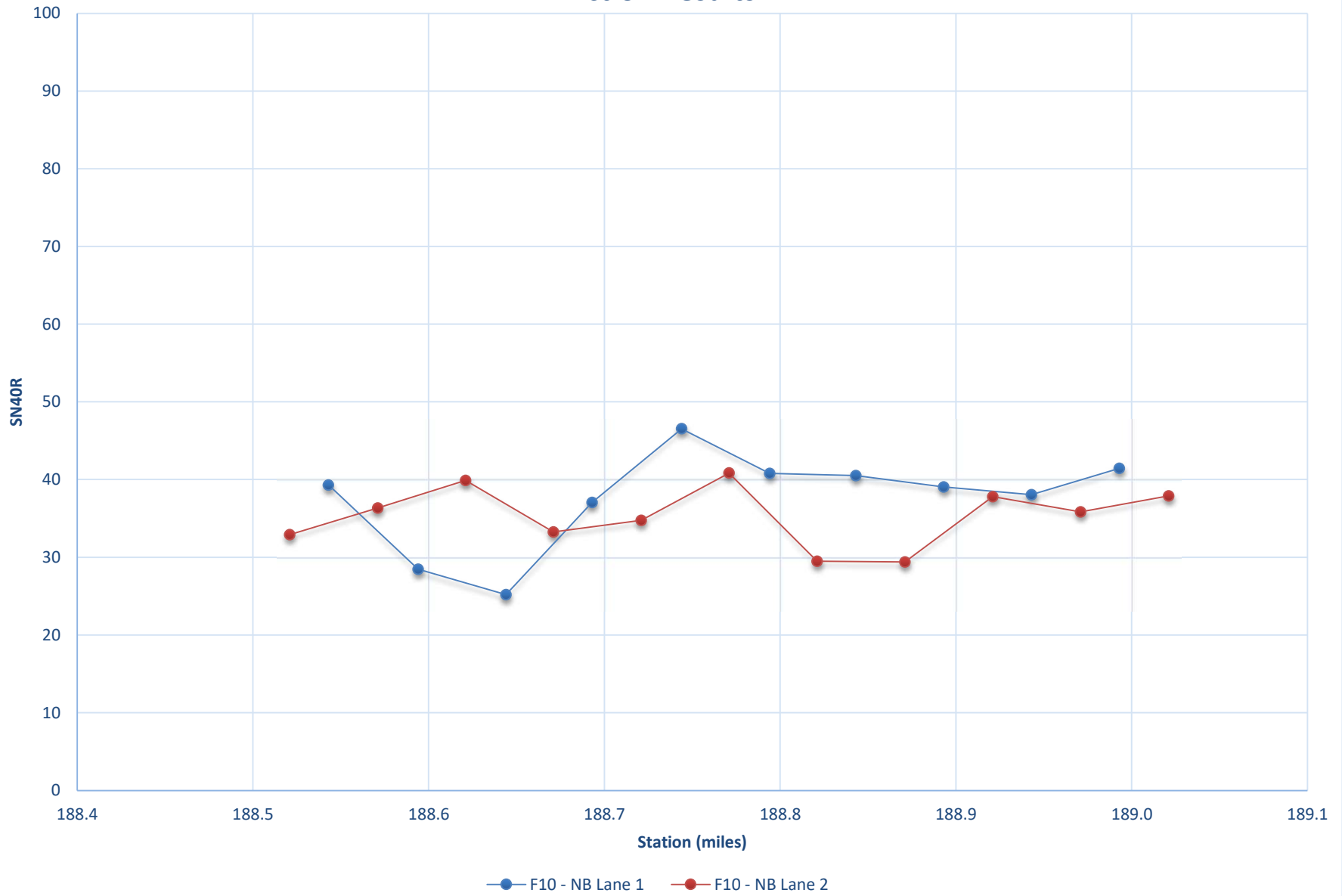
APPENDIX A

Test Site F09 - STH 16 SB Friction Results



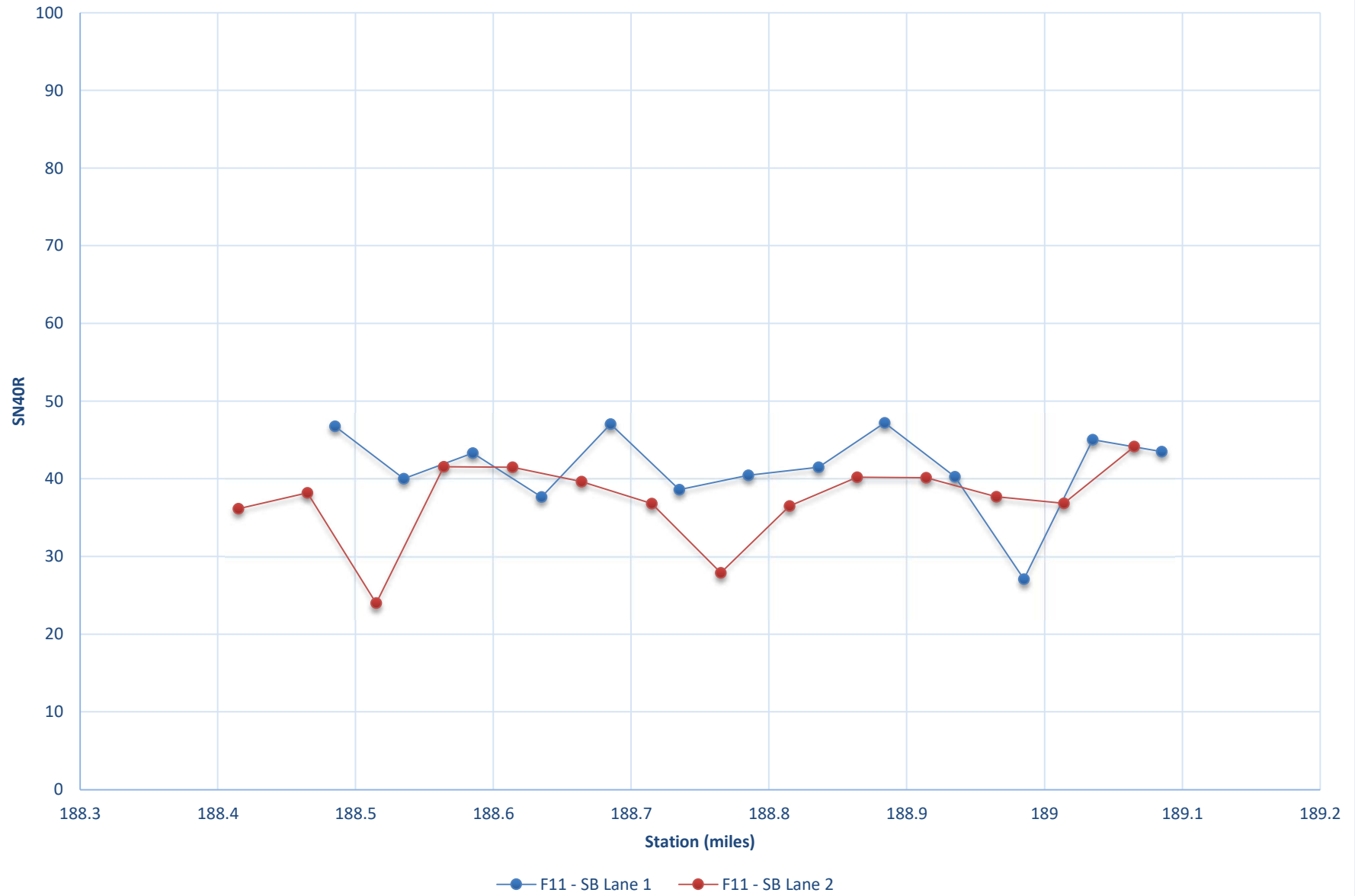
APPENDIX A

Test Site F10 - STH 16 NB
Friction Results

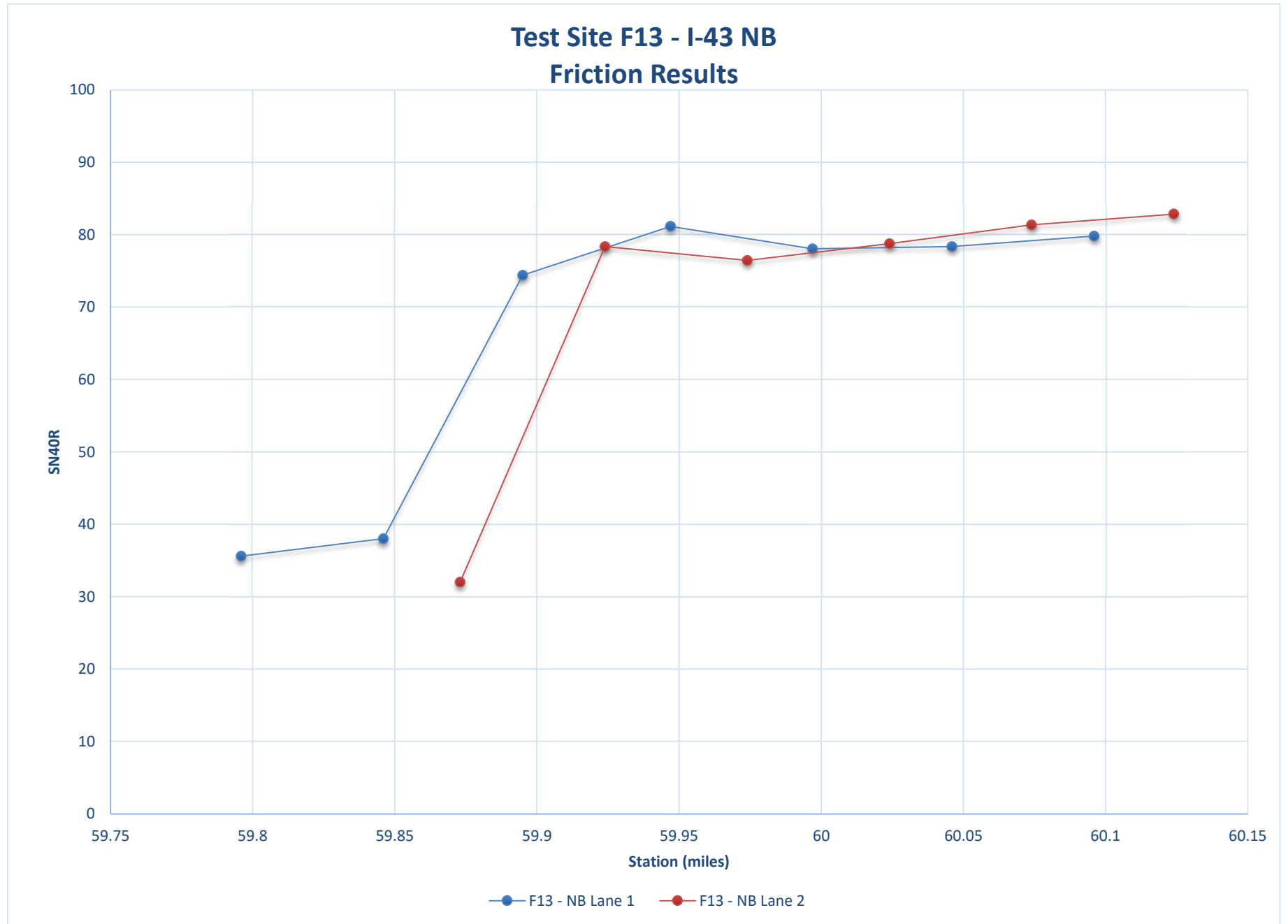


APPENDIX A

Test Site F11 - STH 16 SB Friction Results

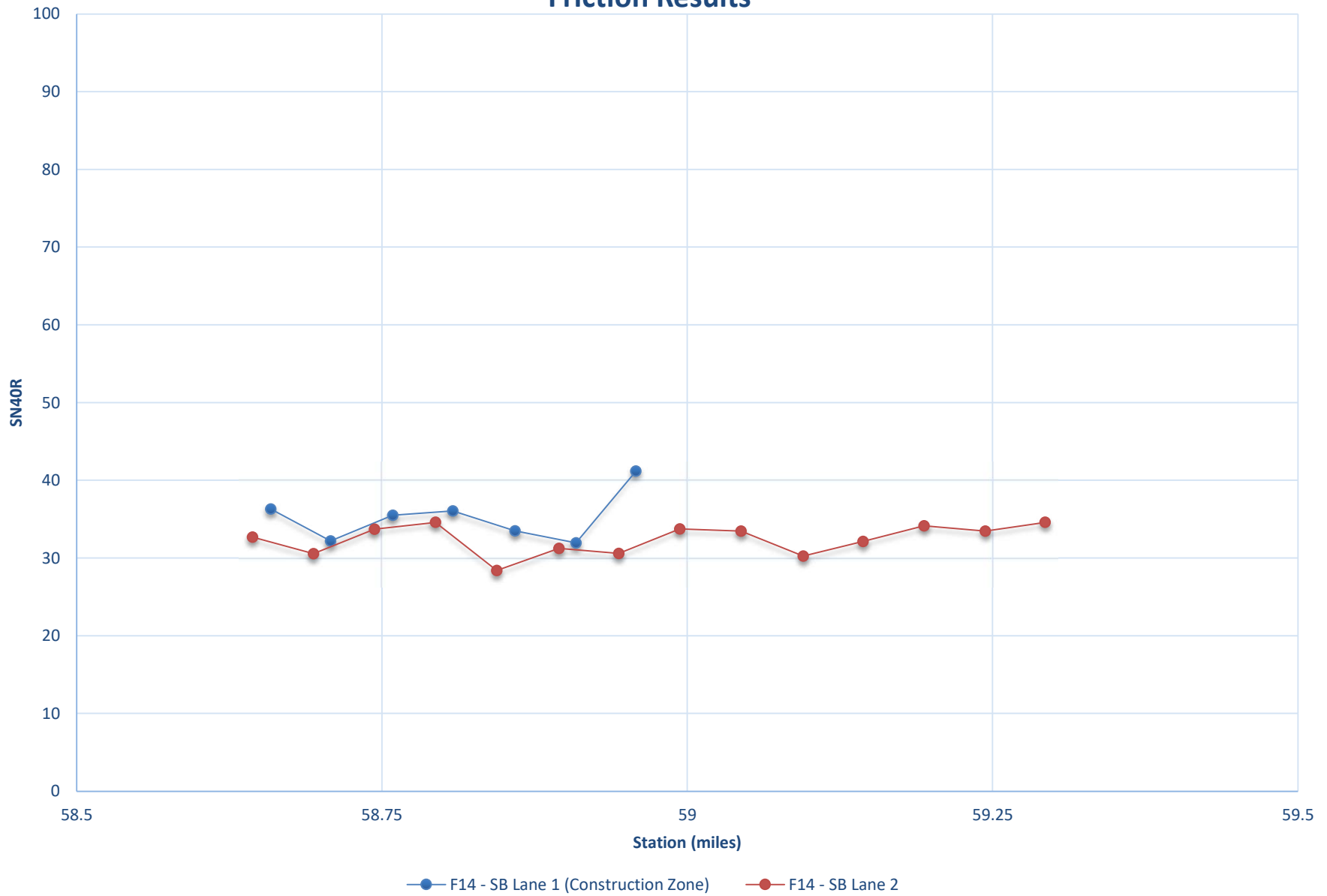


APPENDIX A



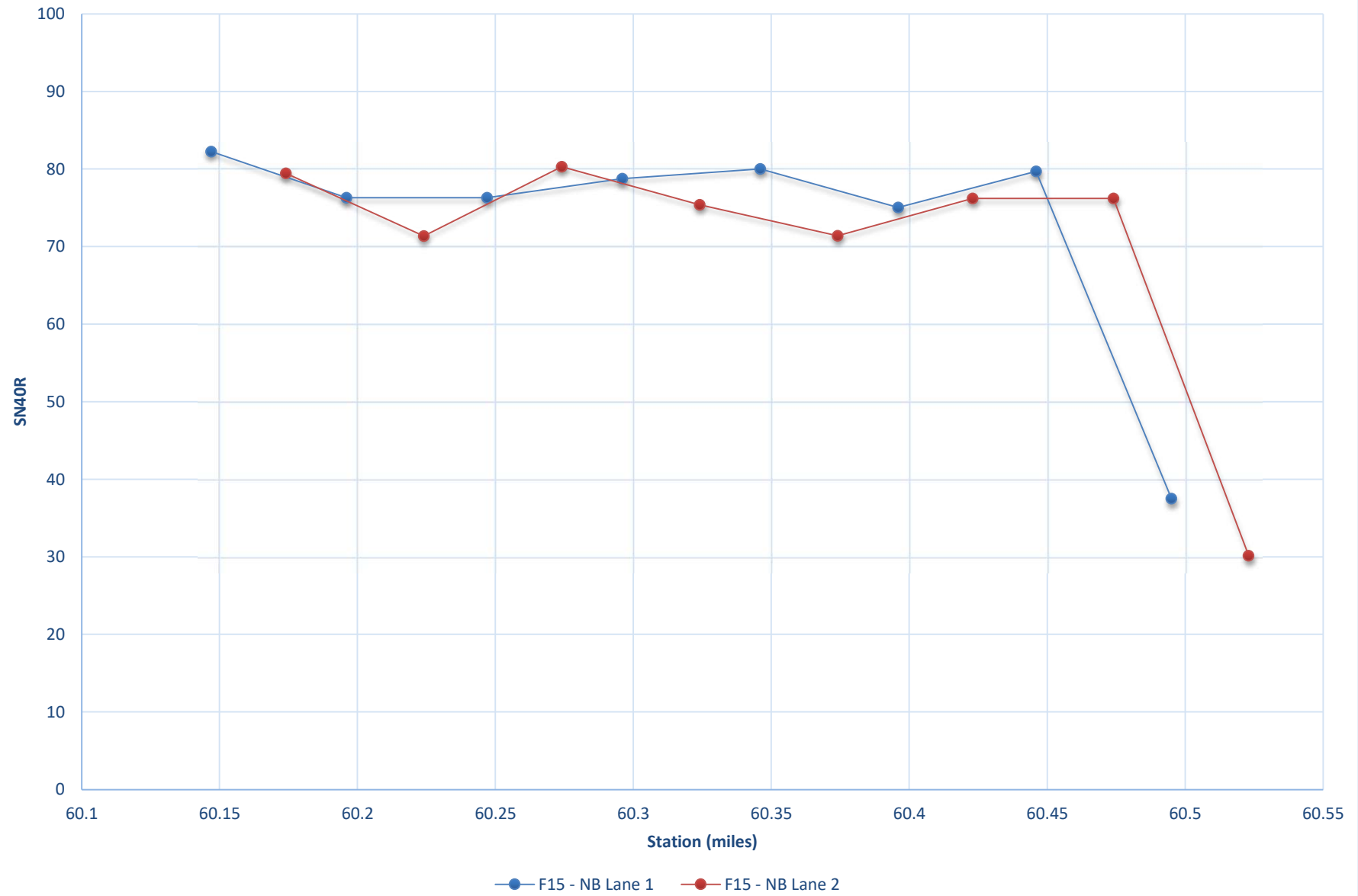
APPENDIX A

Test Site F14 - I-43 SB Friction Results



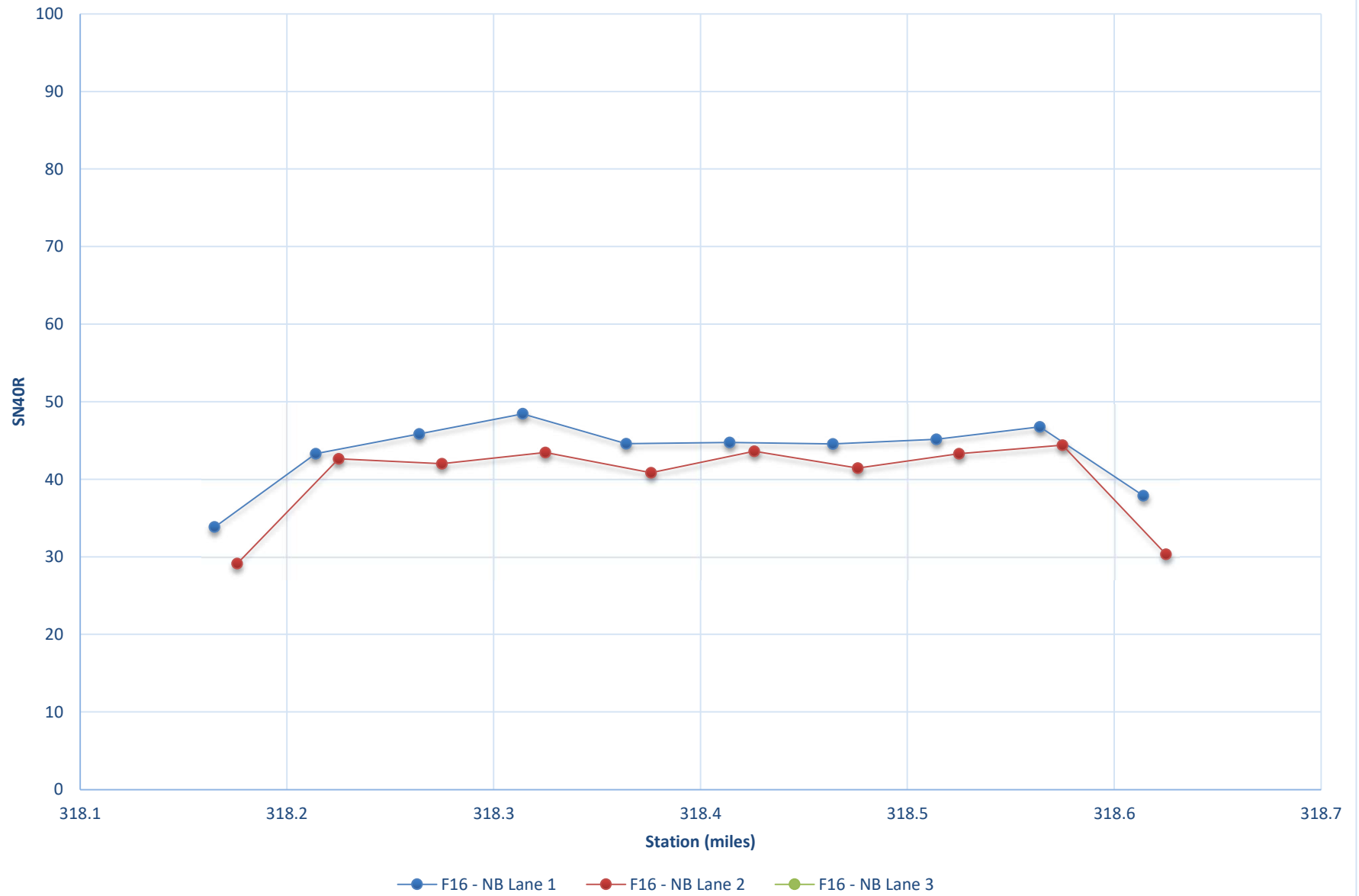
APPENDIX A

Test Site F15 - I-43 NB
Friction Results



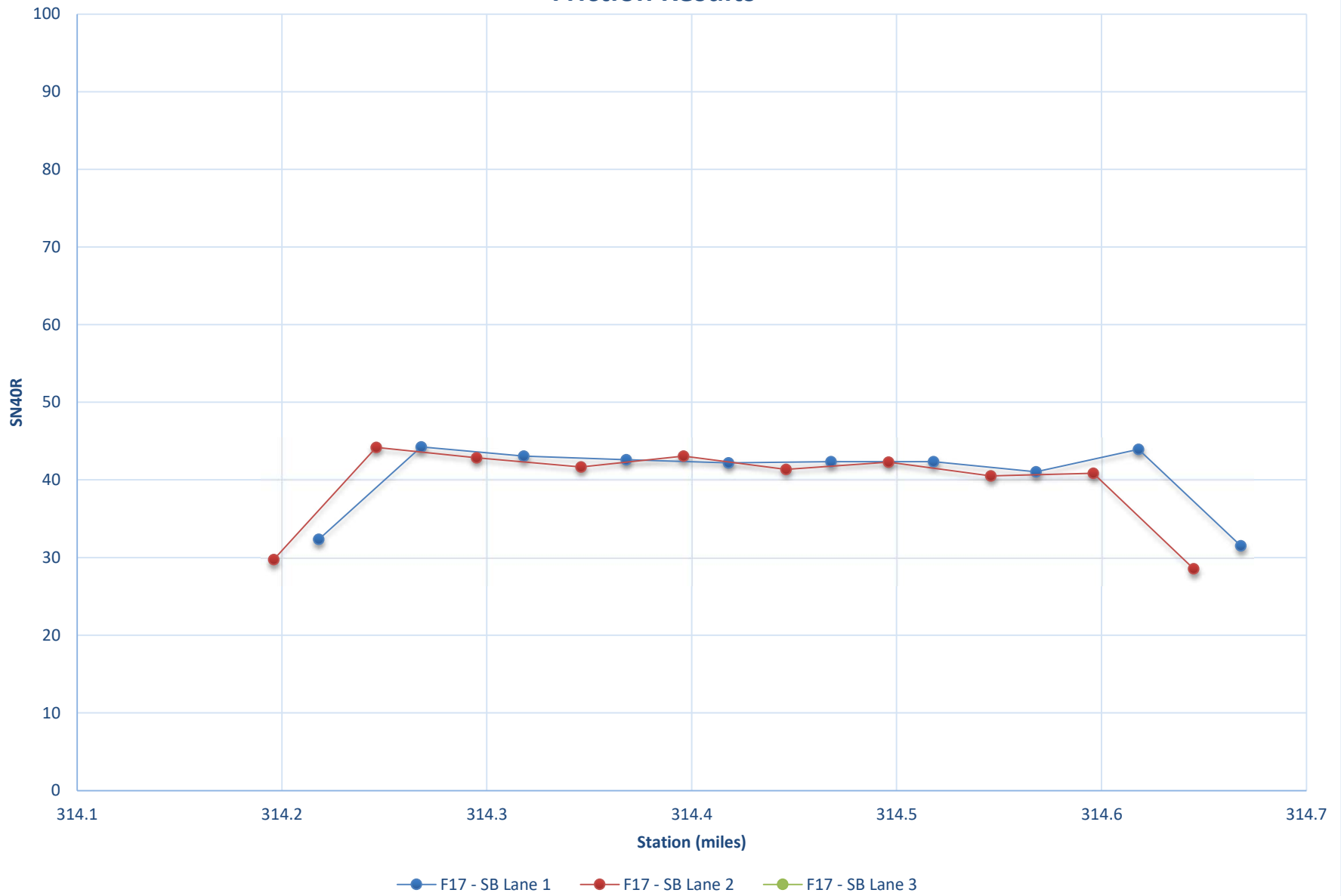
APPENDIX A

Test Site F16 - I-94/43 NB Friction Results



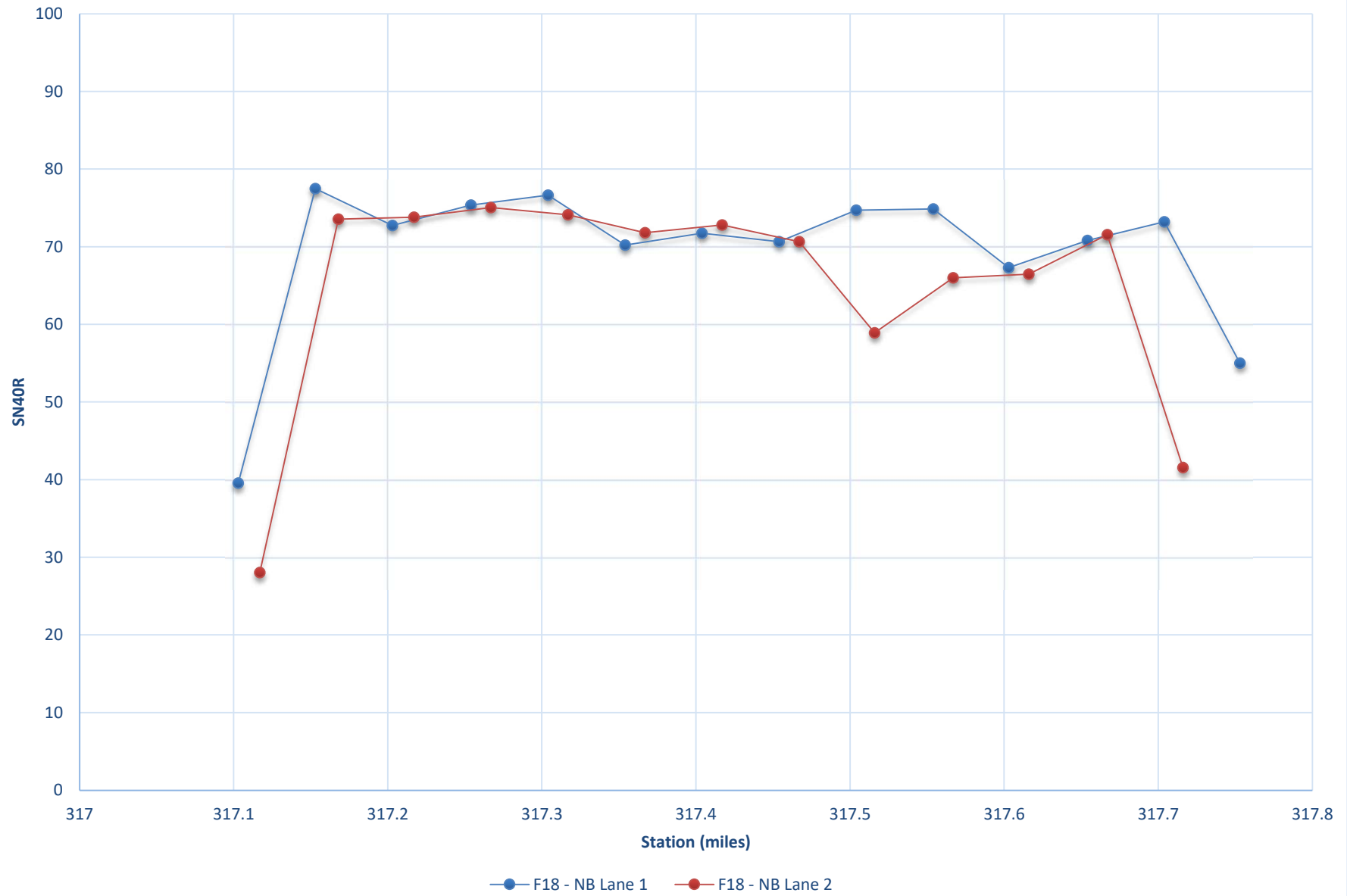
APPENDIX A

Test Site F17 - I-94/43 SB Friction Results



APPENDIX A

Test Site F18 - I-43 NB
Friction Results

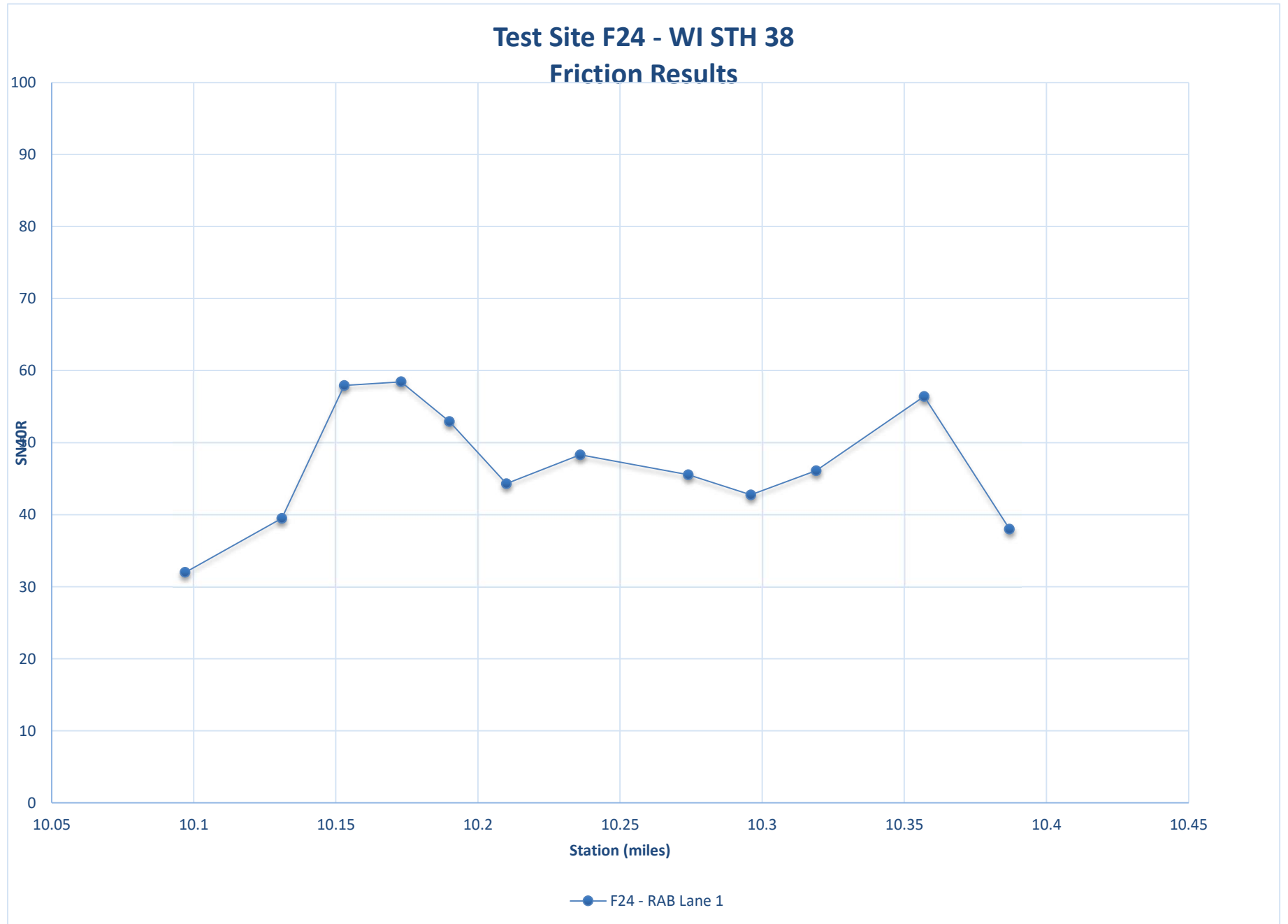


APPENDIX A

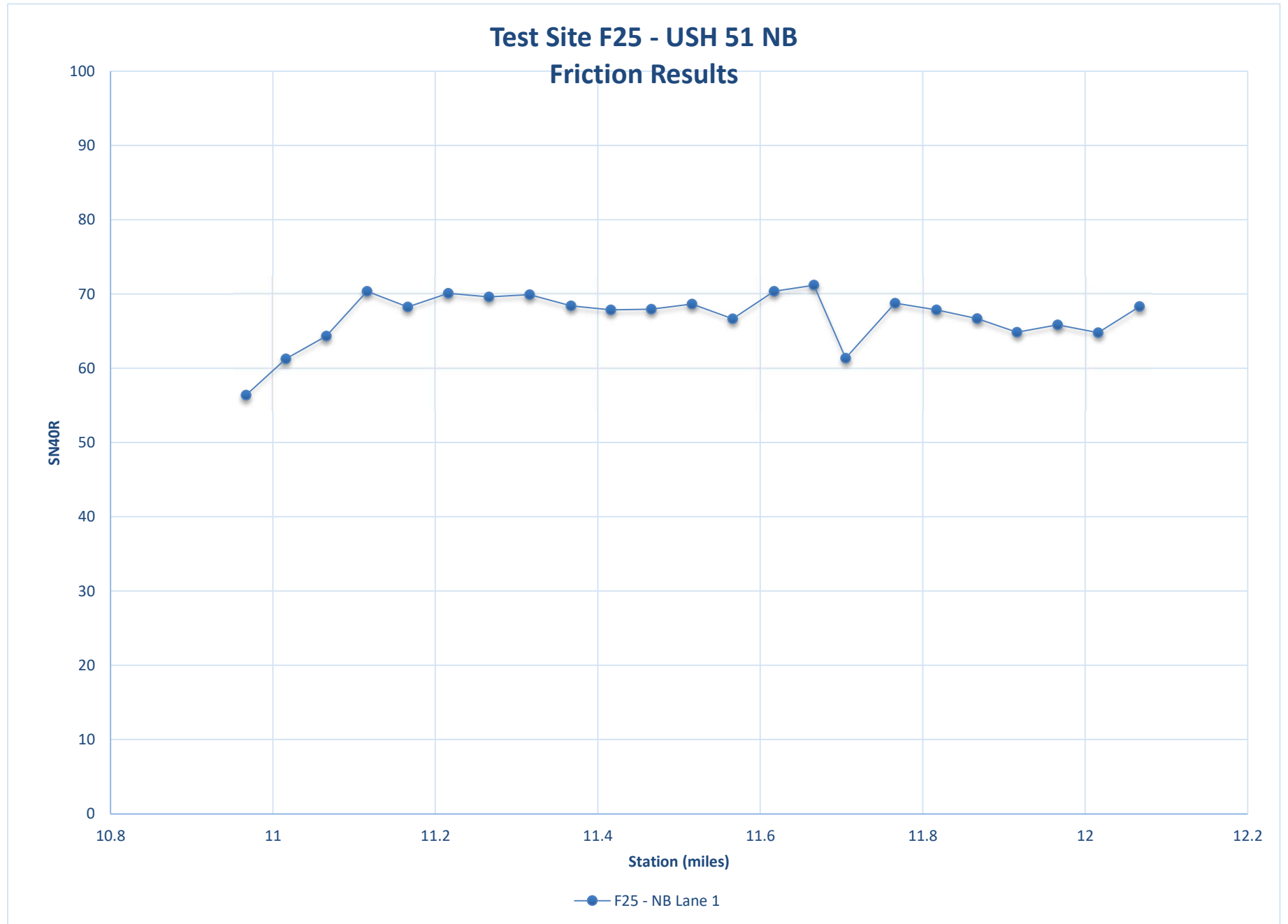
Test Site F22 - I-94 EB
Friction Results



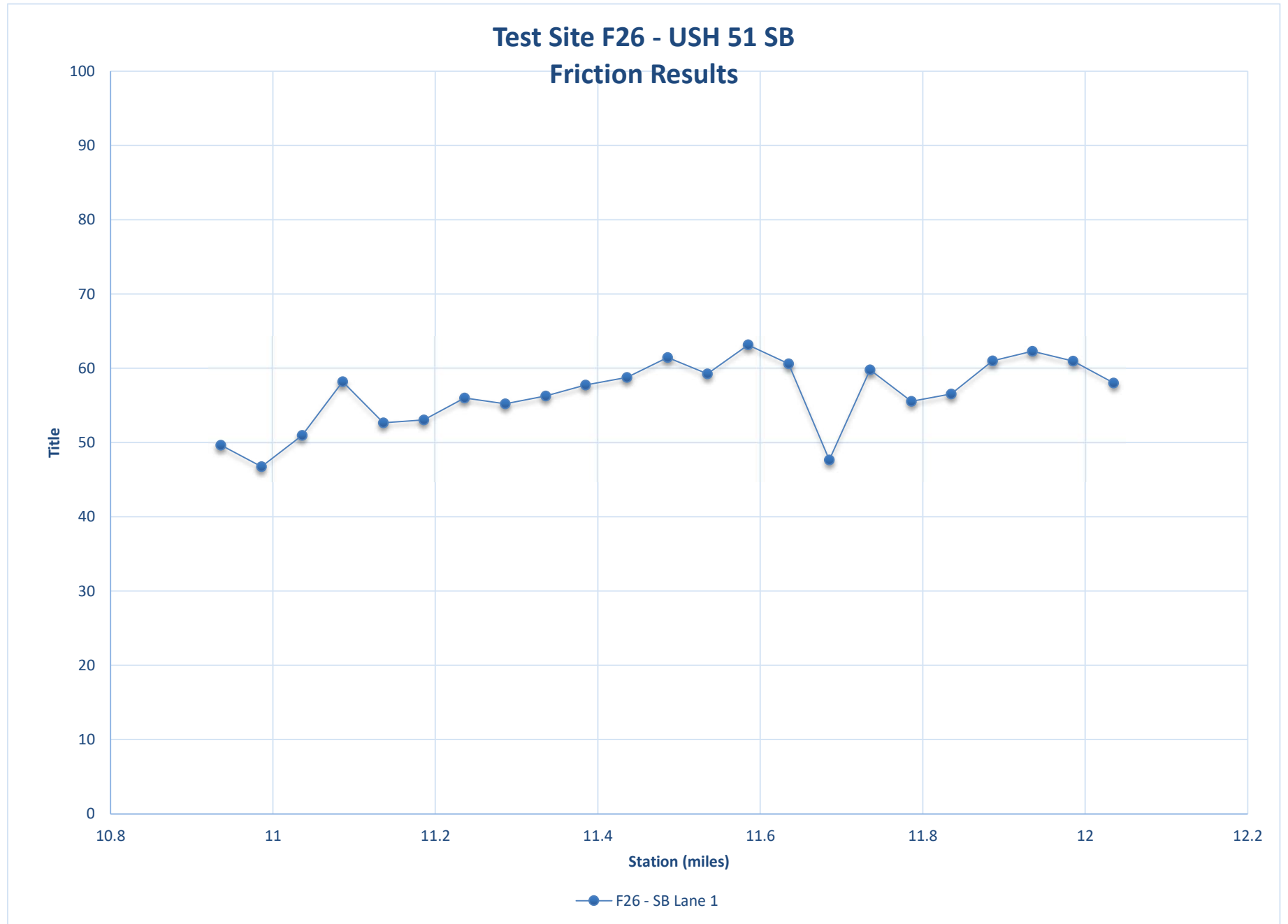
APPENDIX A



APPENDIX A

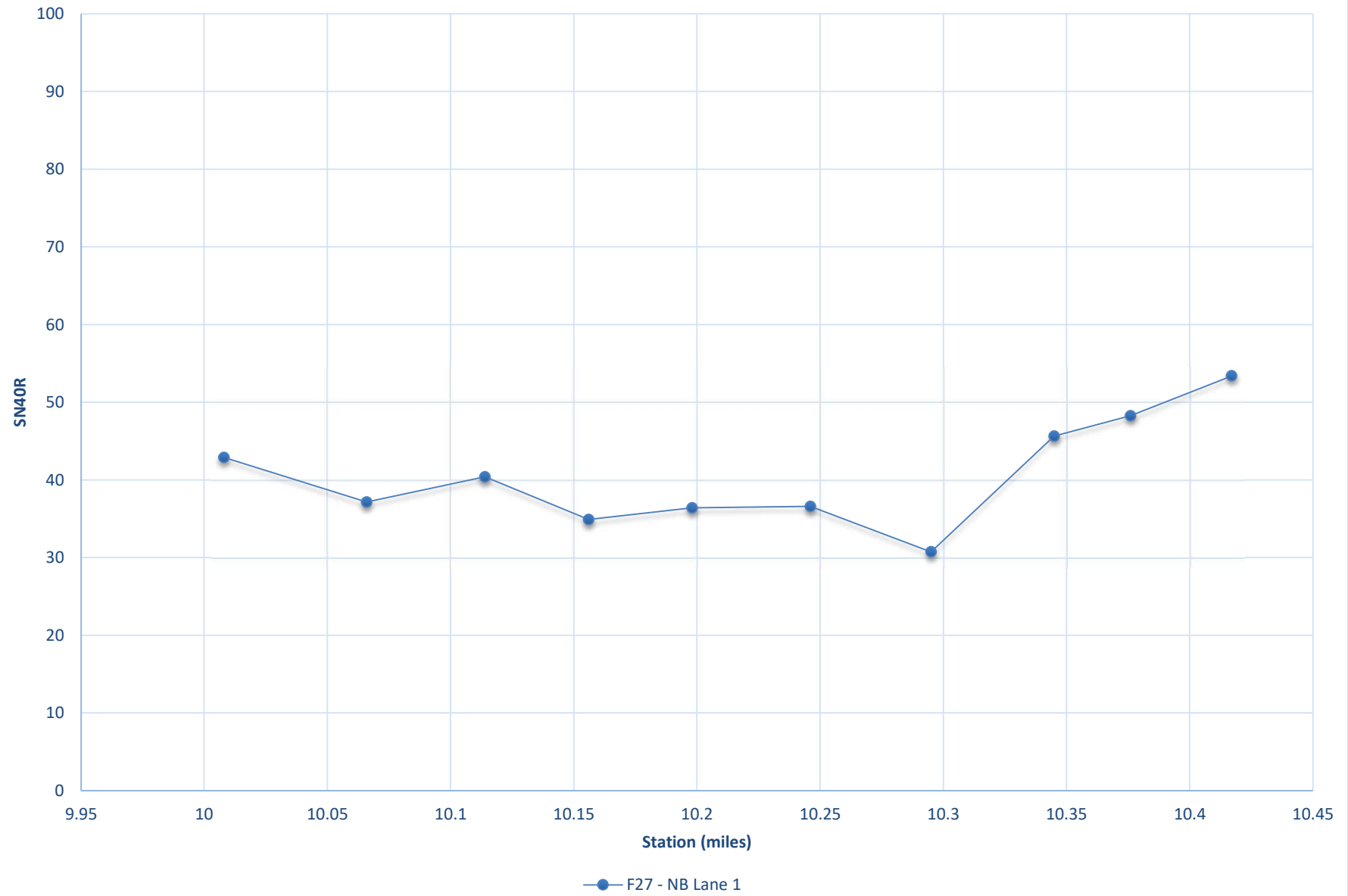


APPENDIX A



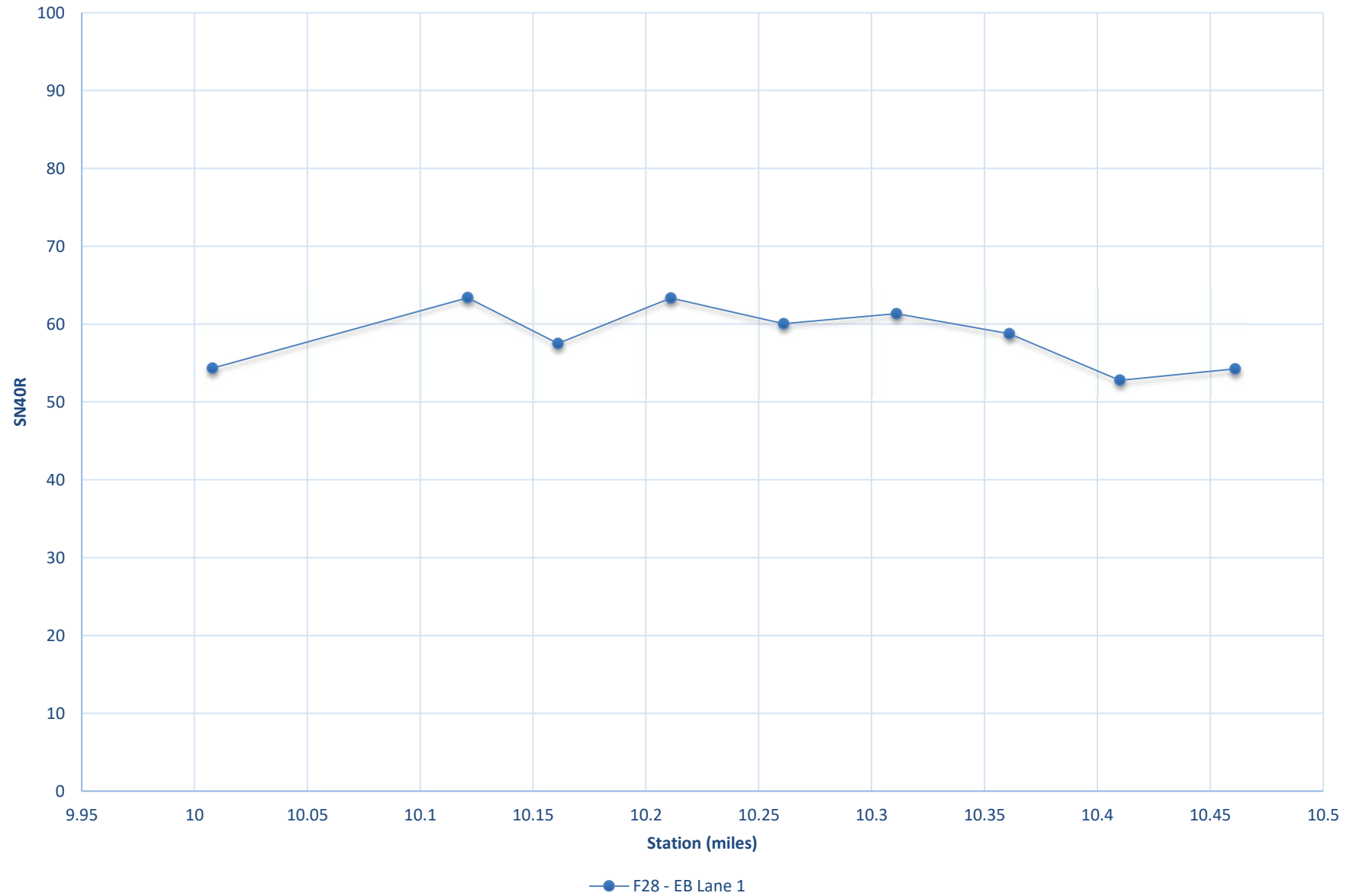
APPENDIX A

Test Site F27 - USH 41 NB Friction Results



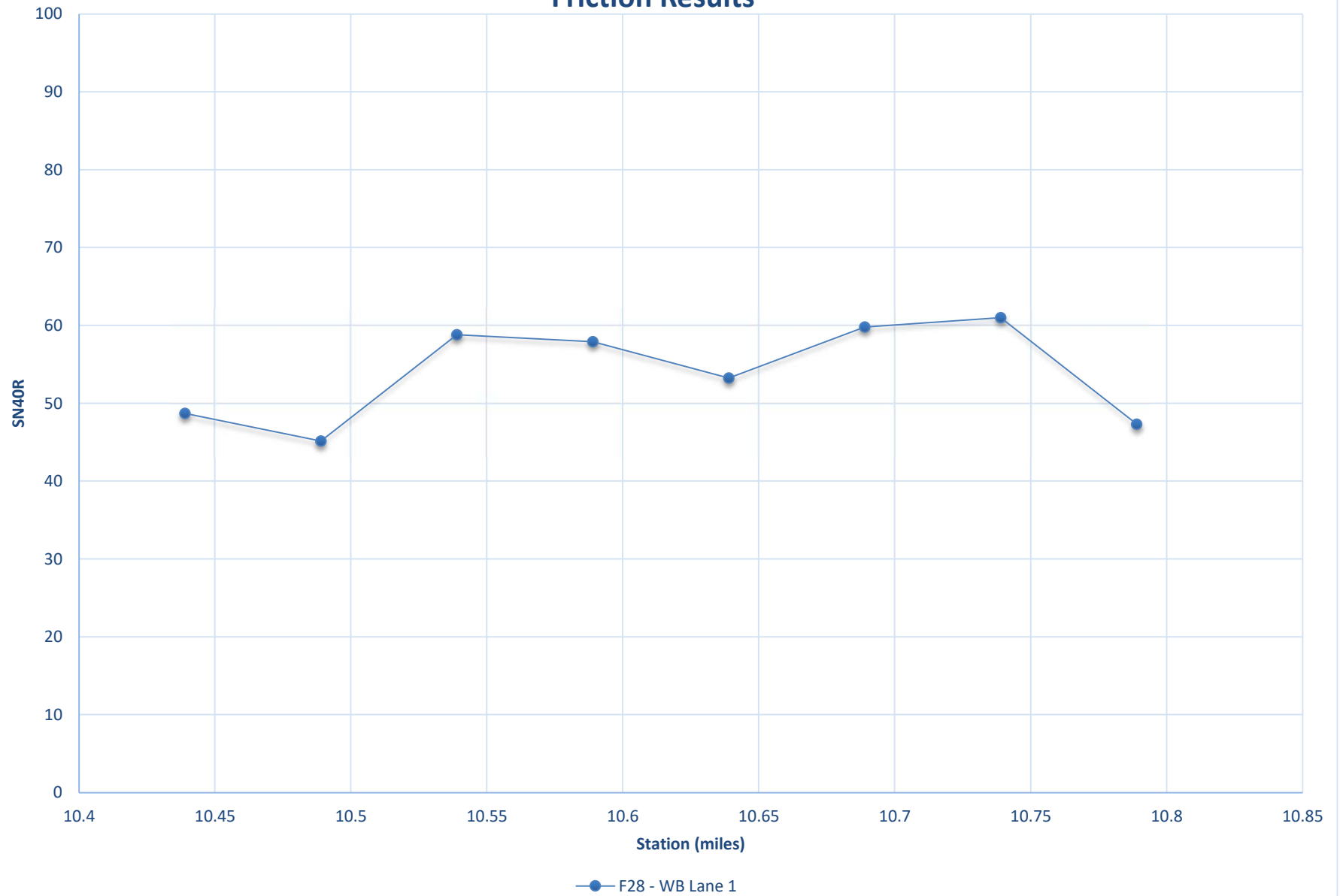
APPENDIX A

Test Site F28 - STH 59 EB Friction Results

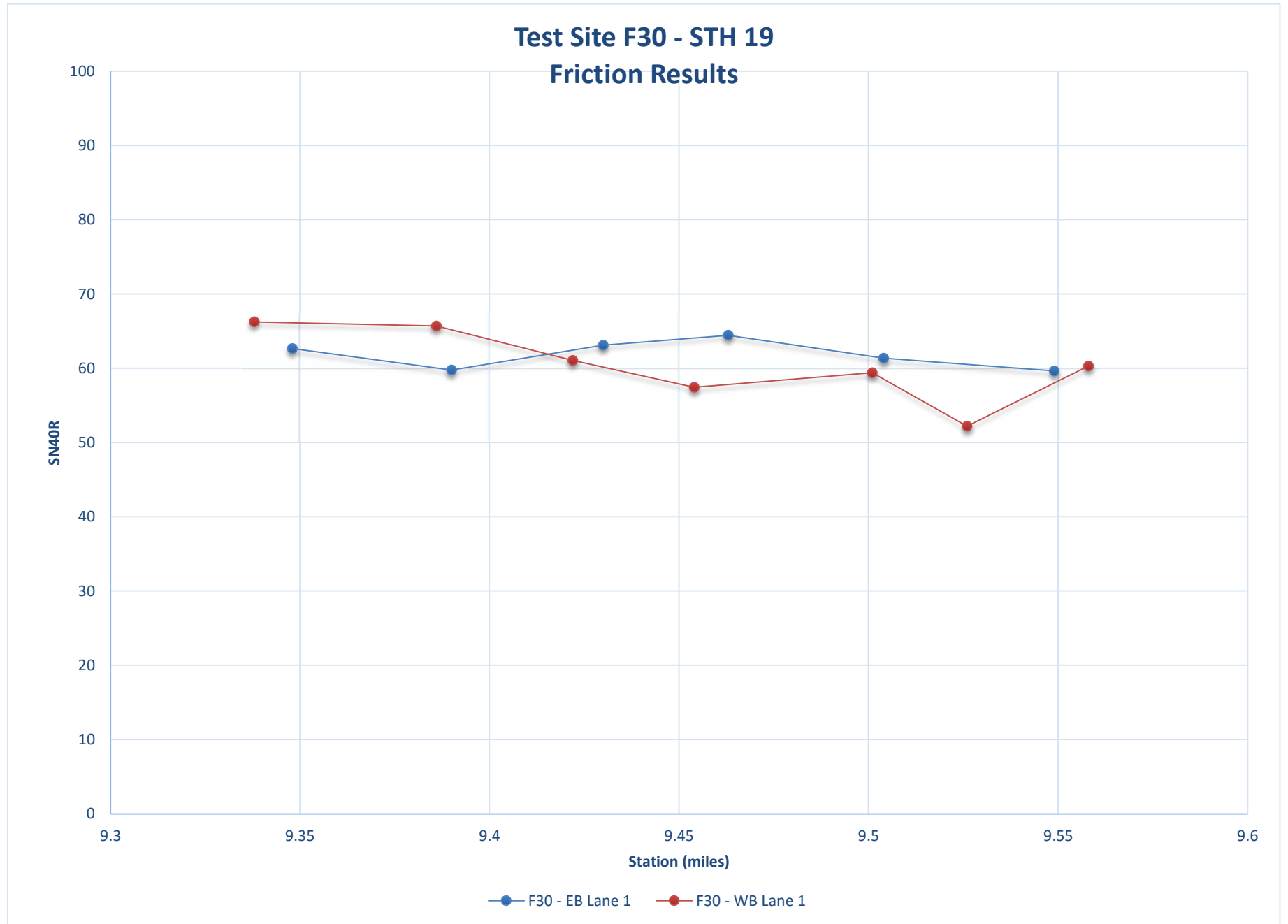


APPENDIX A

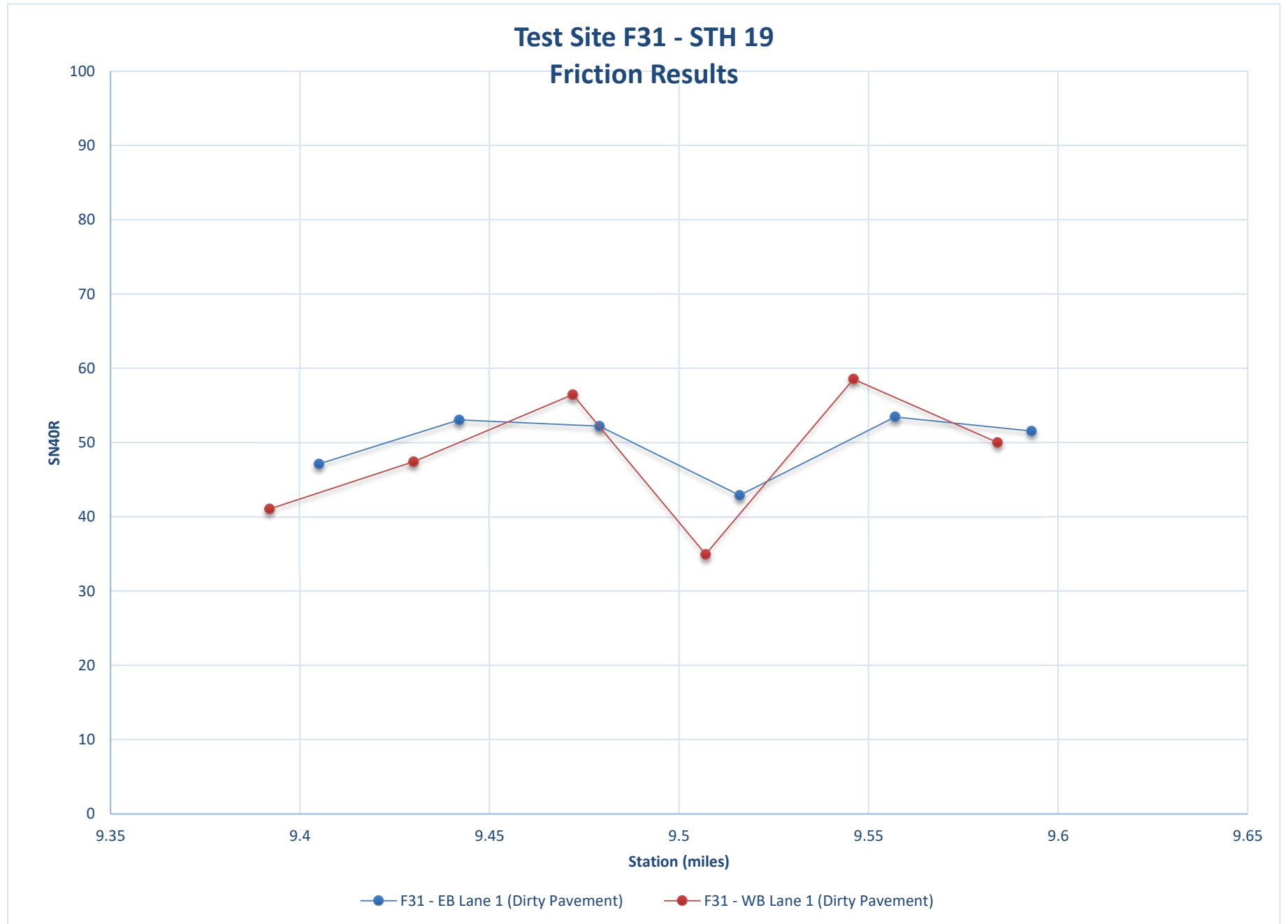
Test Site F29 - STH 59 WB
Friction Results



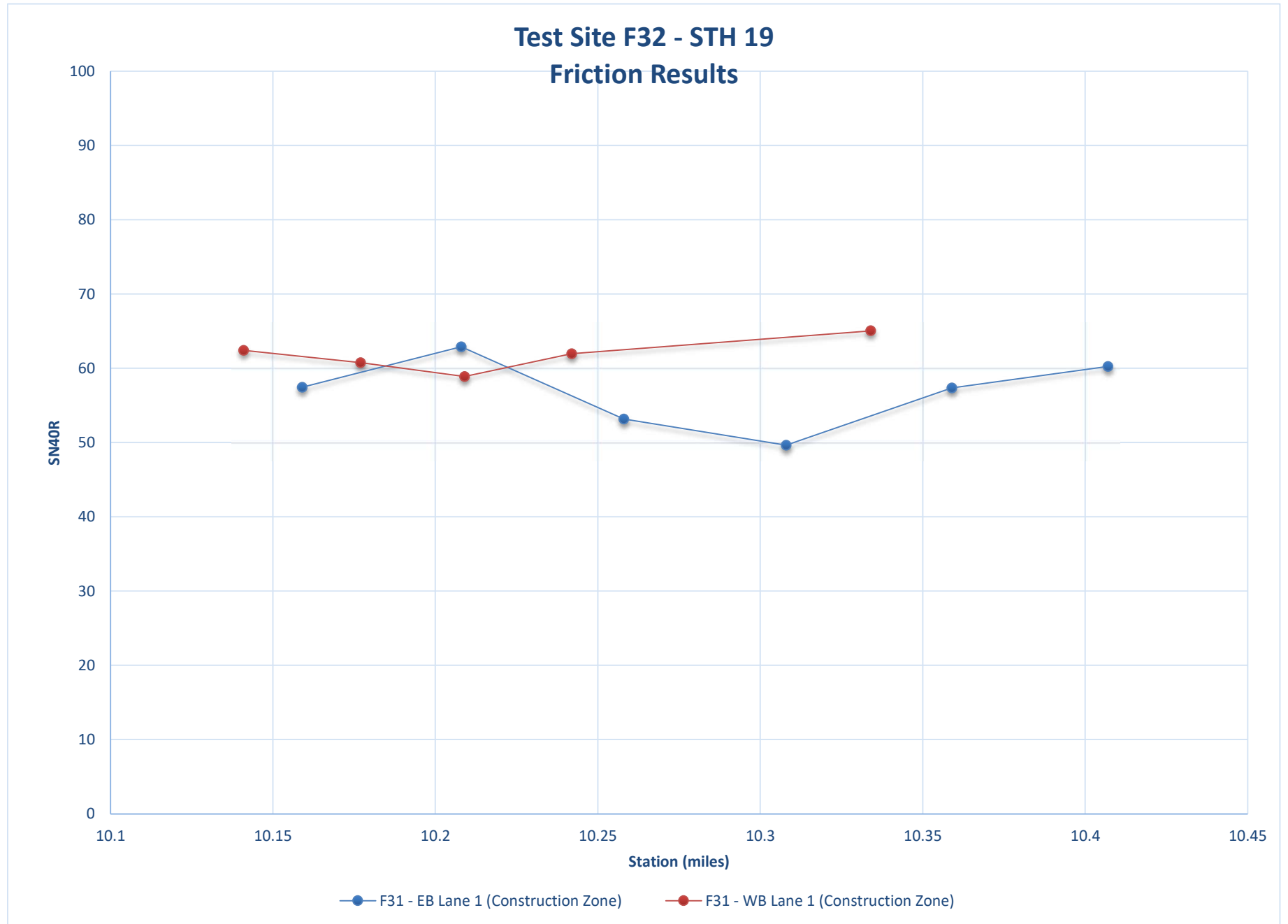
APPENDIX A



APPENDIX A

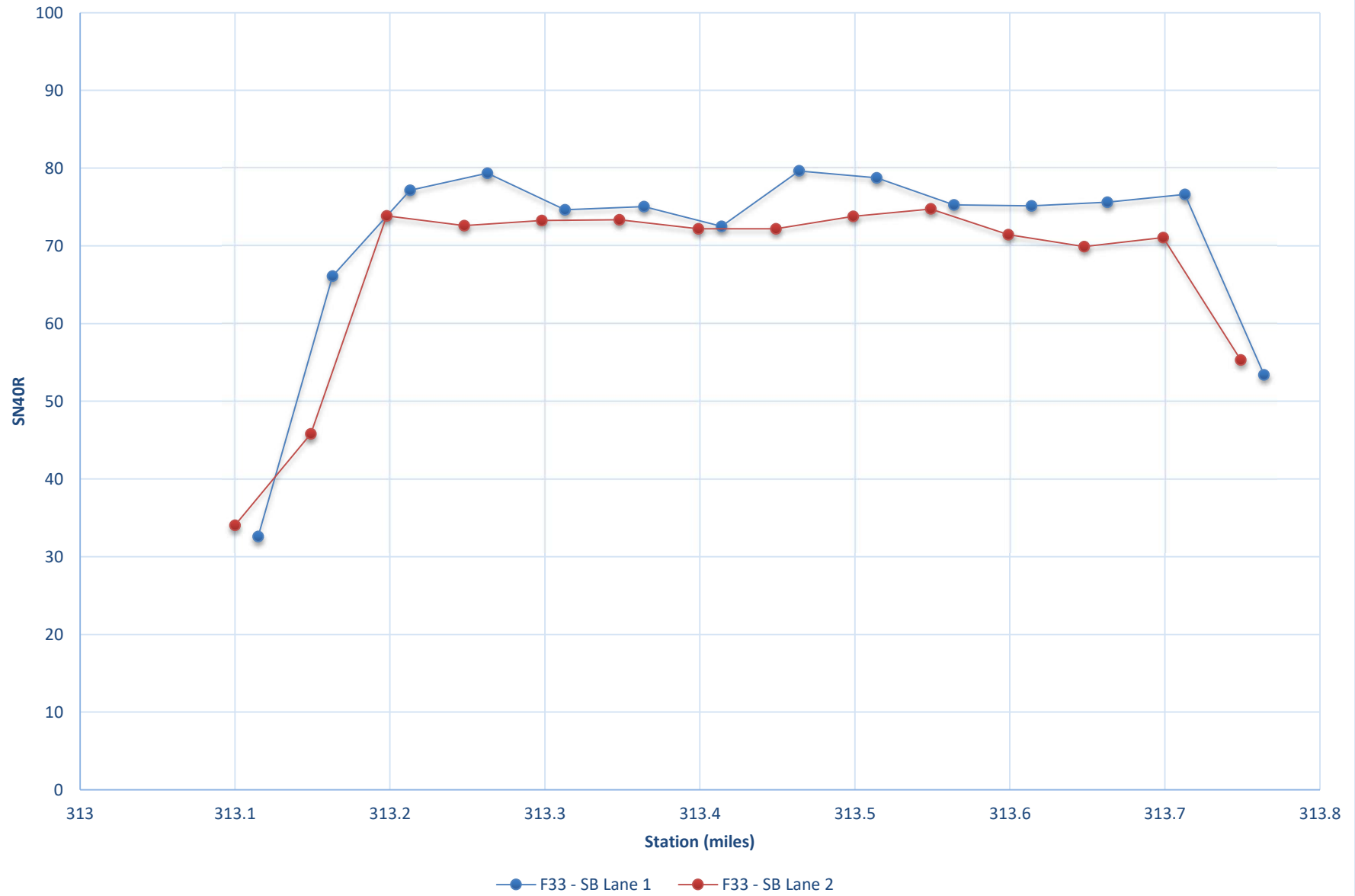


APPENDIX A



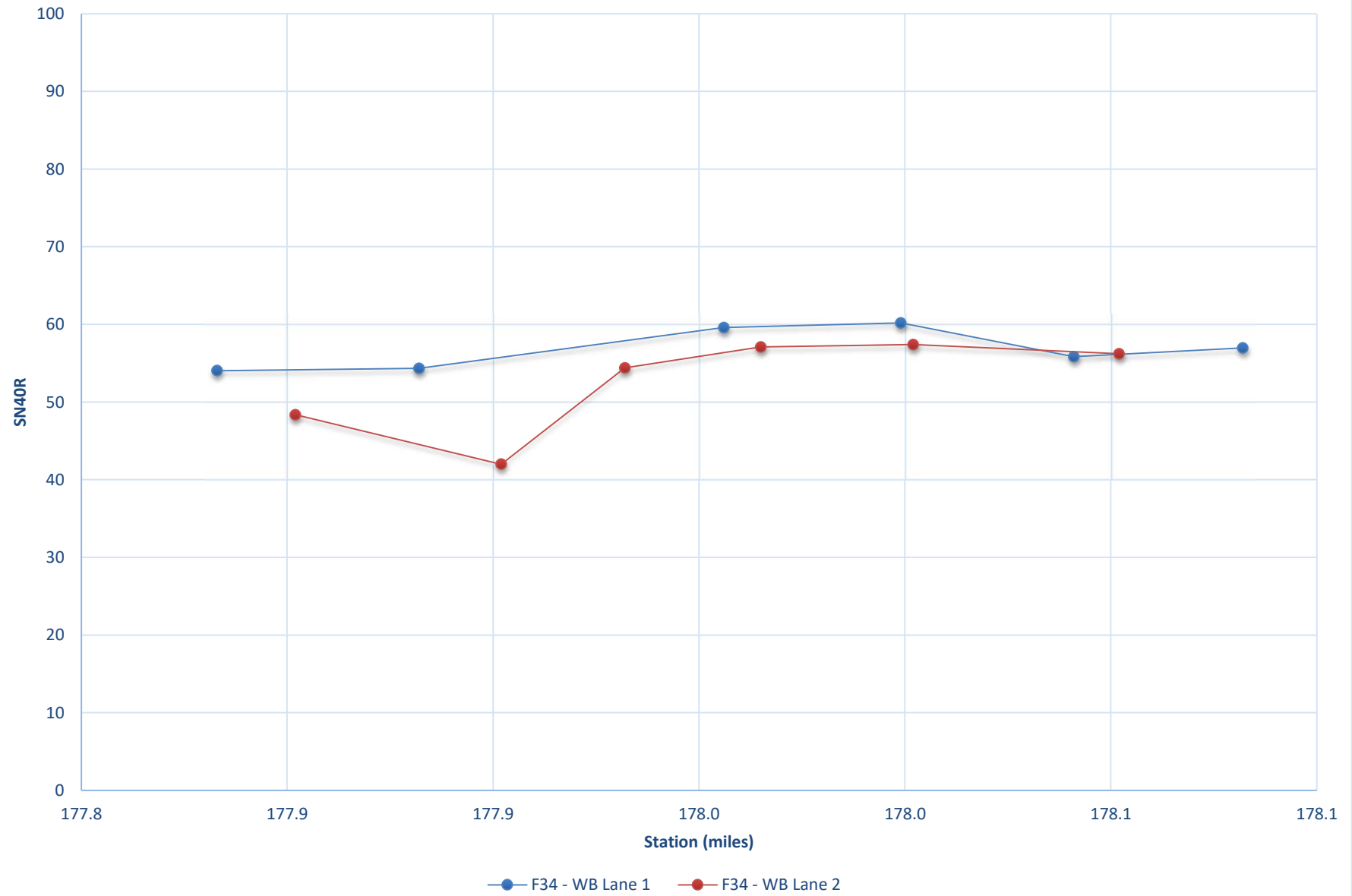
APPENDIX A

Test Site F33 - I-94/43 SB
Friction Results



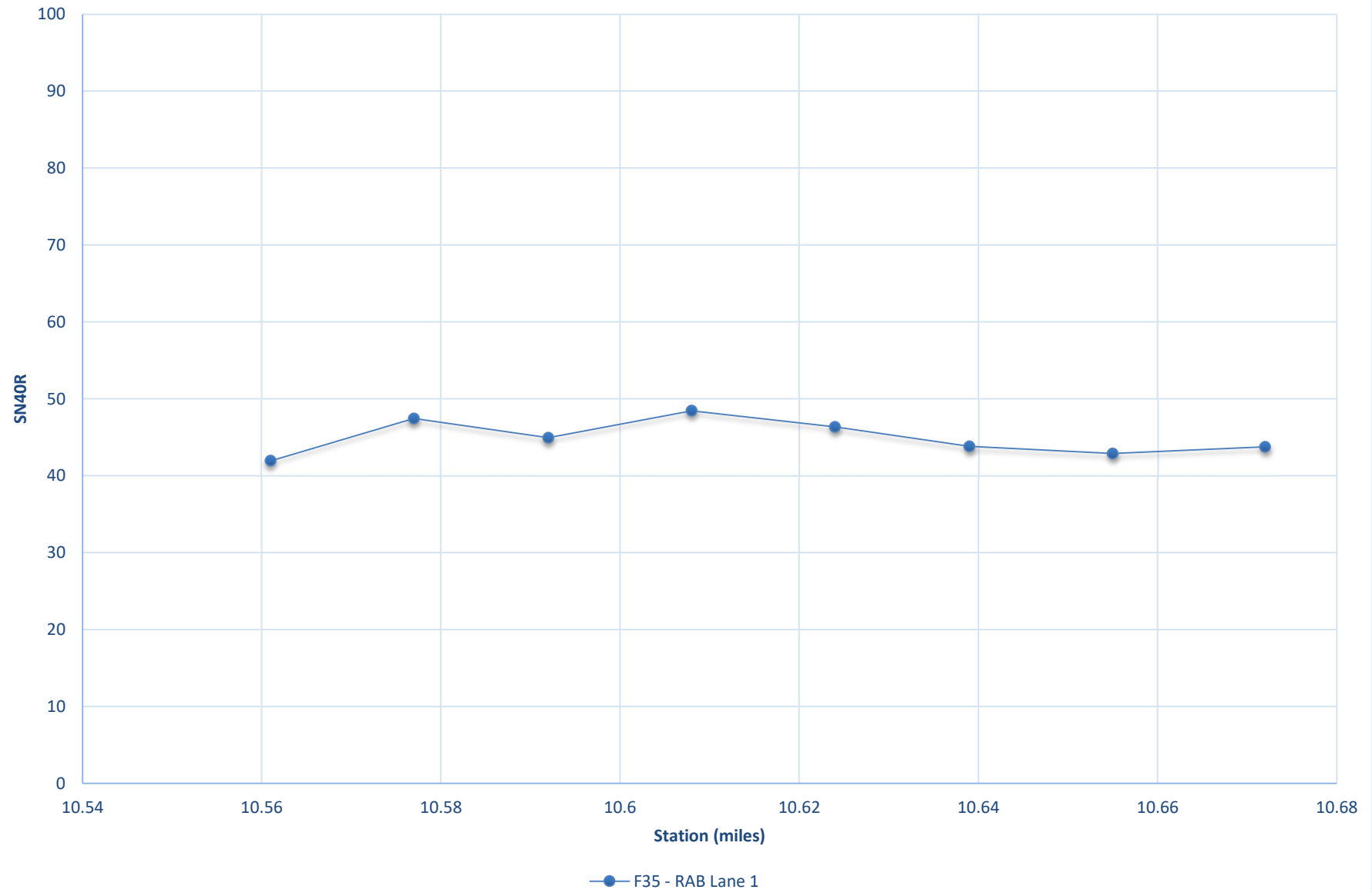
APPENDIX A

Test Site F34 - STH 16 WB Friction Results



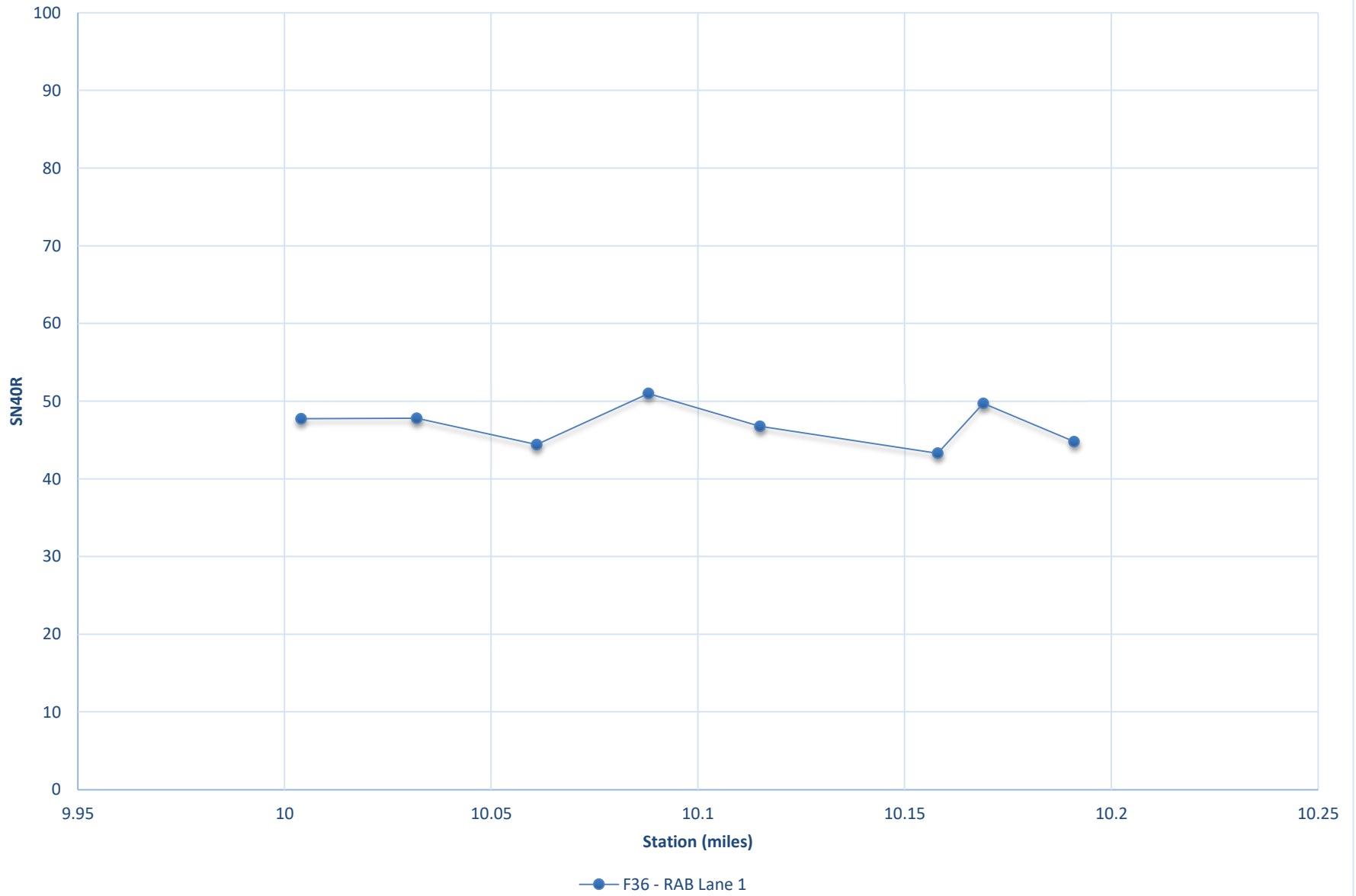
APPENDIX A

Test Site F35 - STH 178 Friction Results

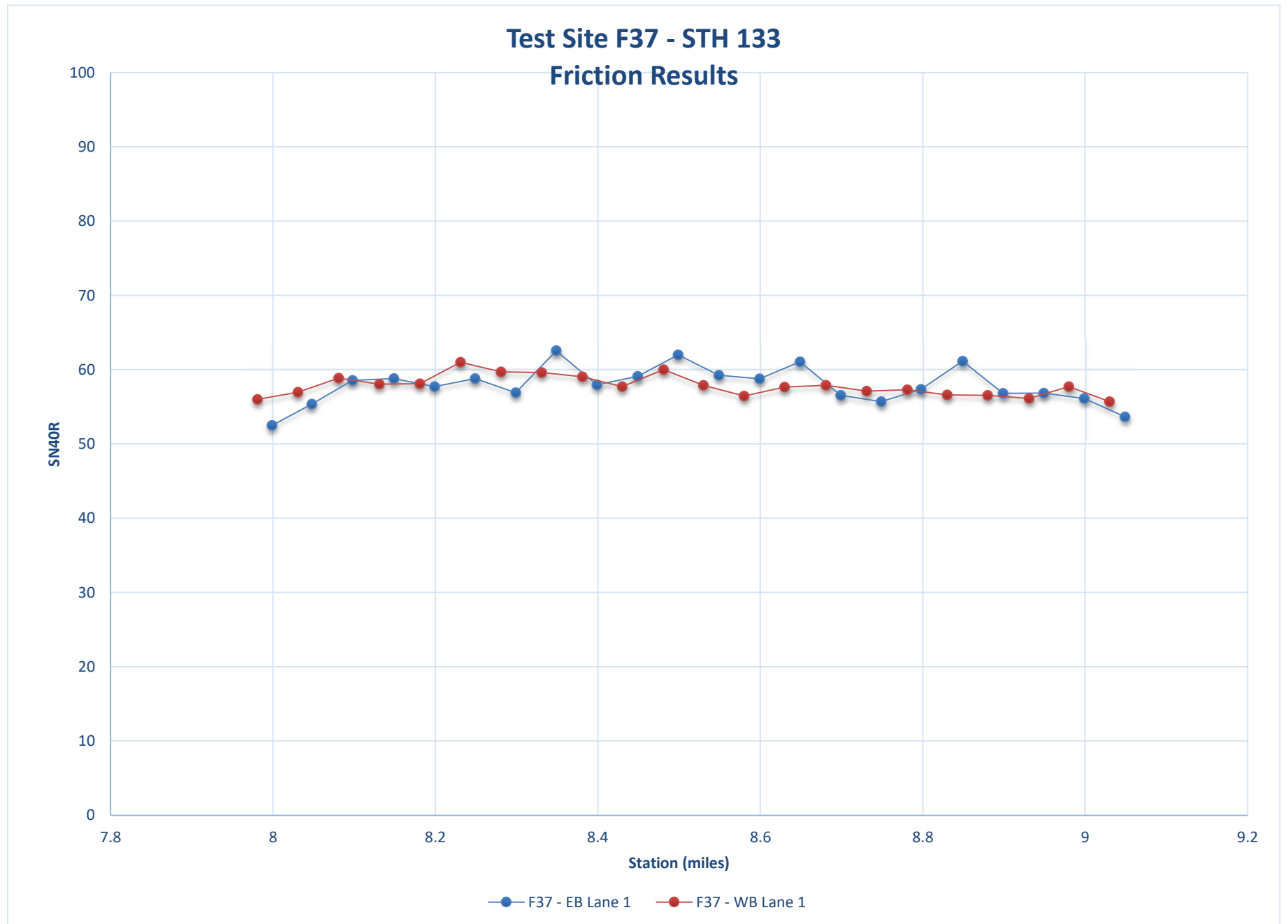


APPENDIX A

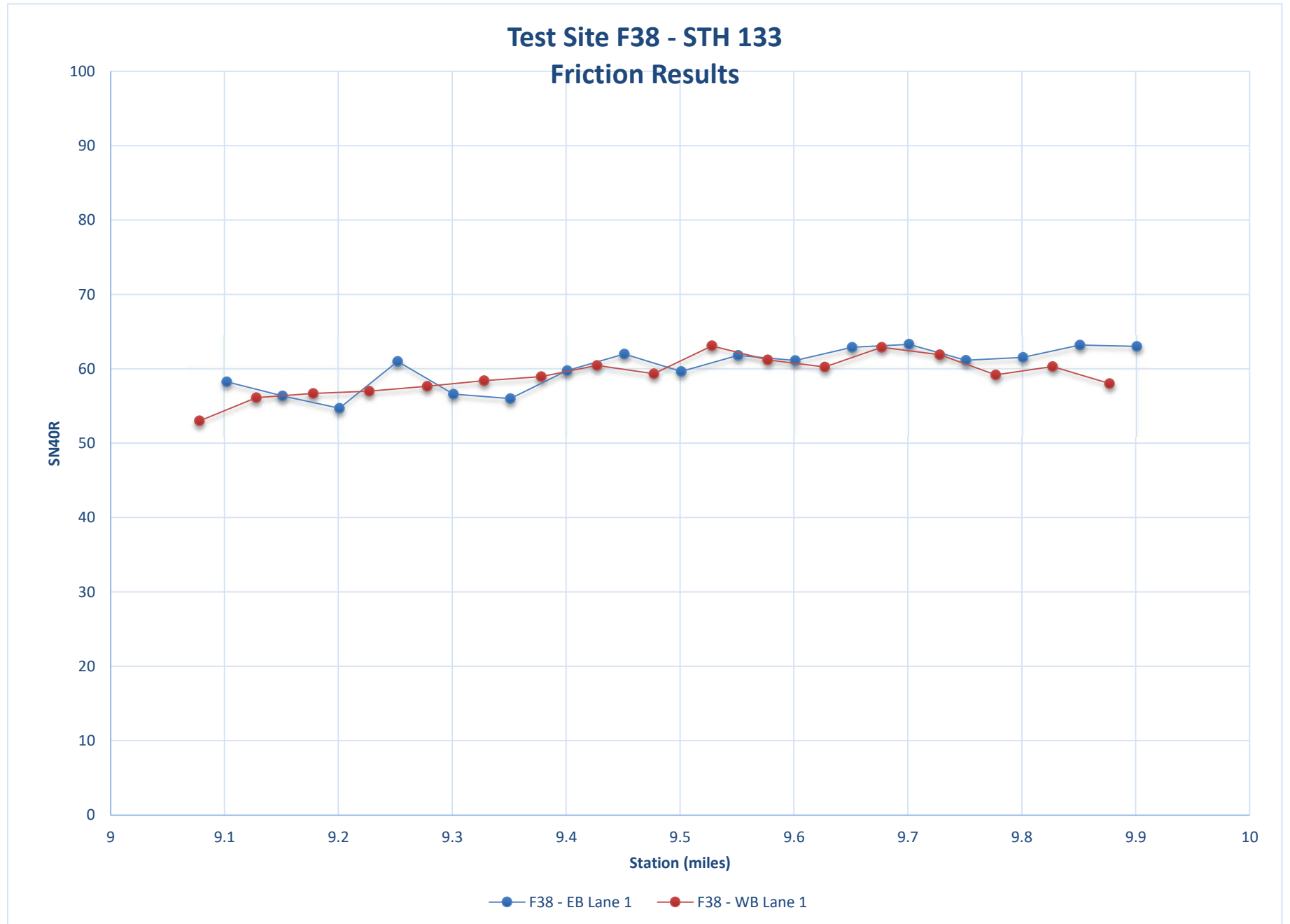
Test Site F36 - STH 124 & CTH S Friction Results



APPENDIX A

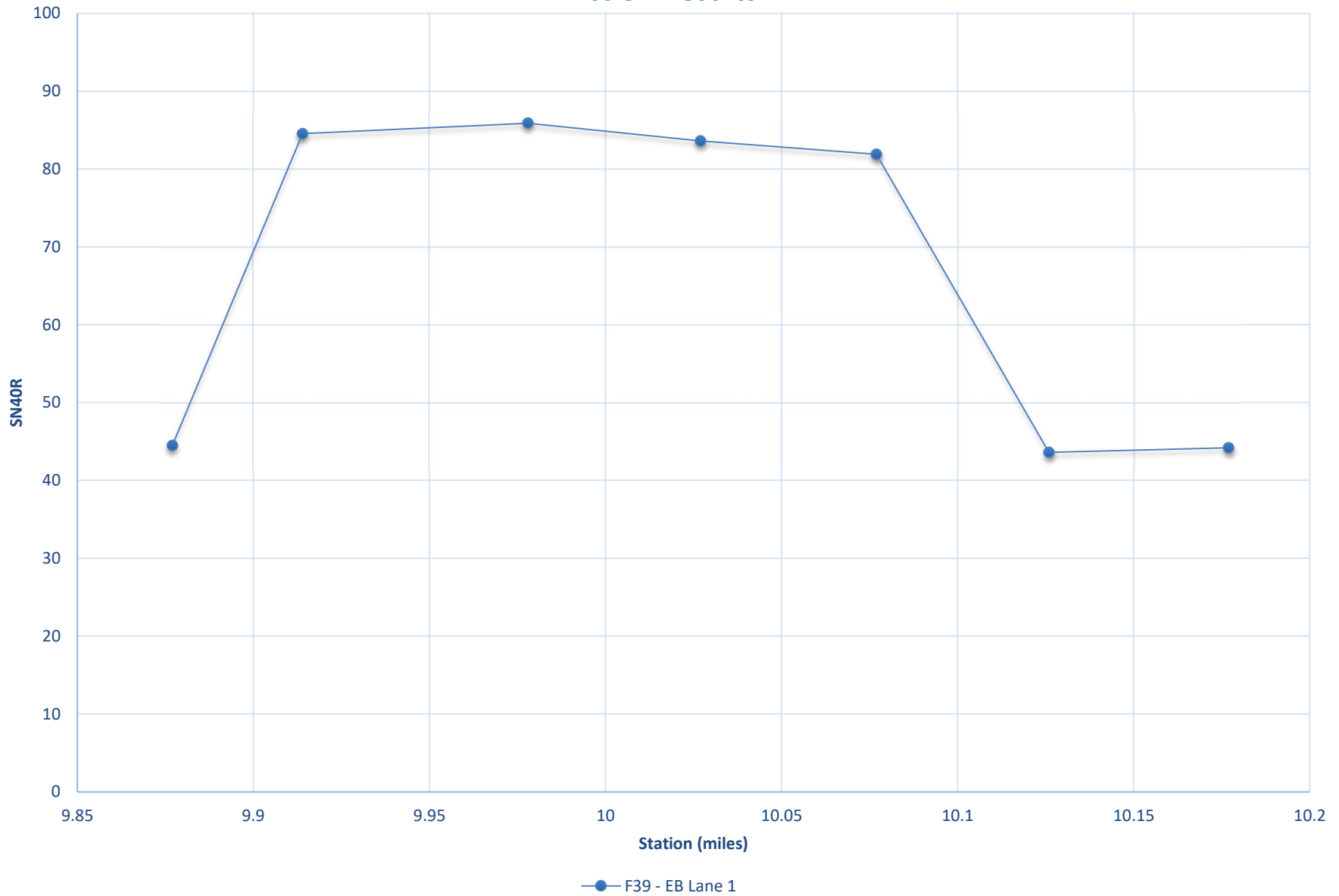


APPENDIX A



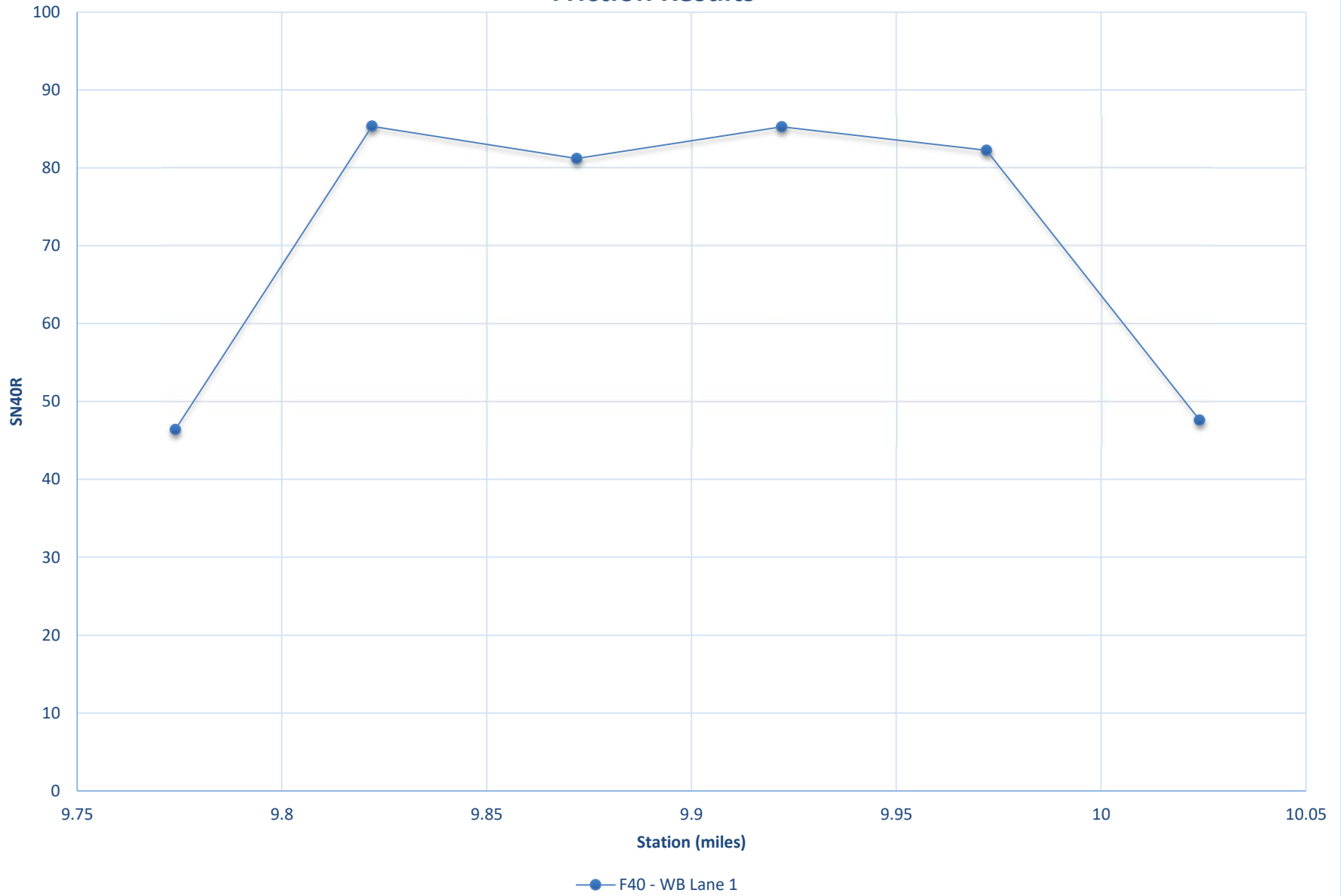
APPENDIX A

Test Site F39 - STH 20 EB
Friction Results



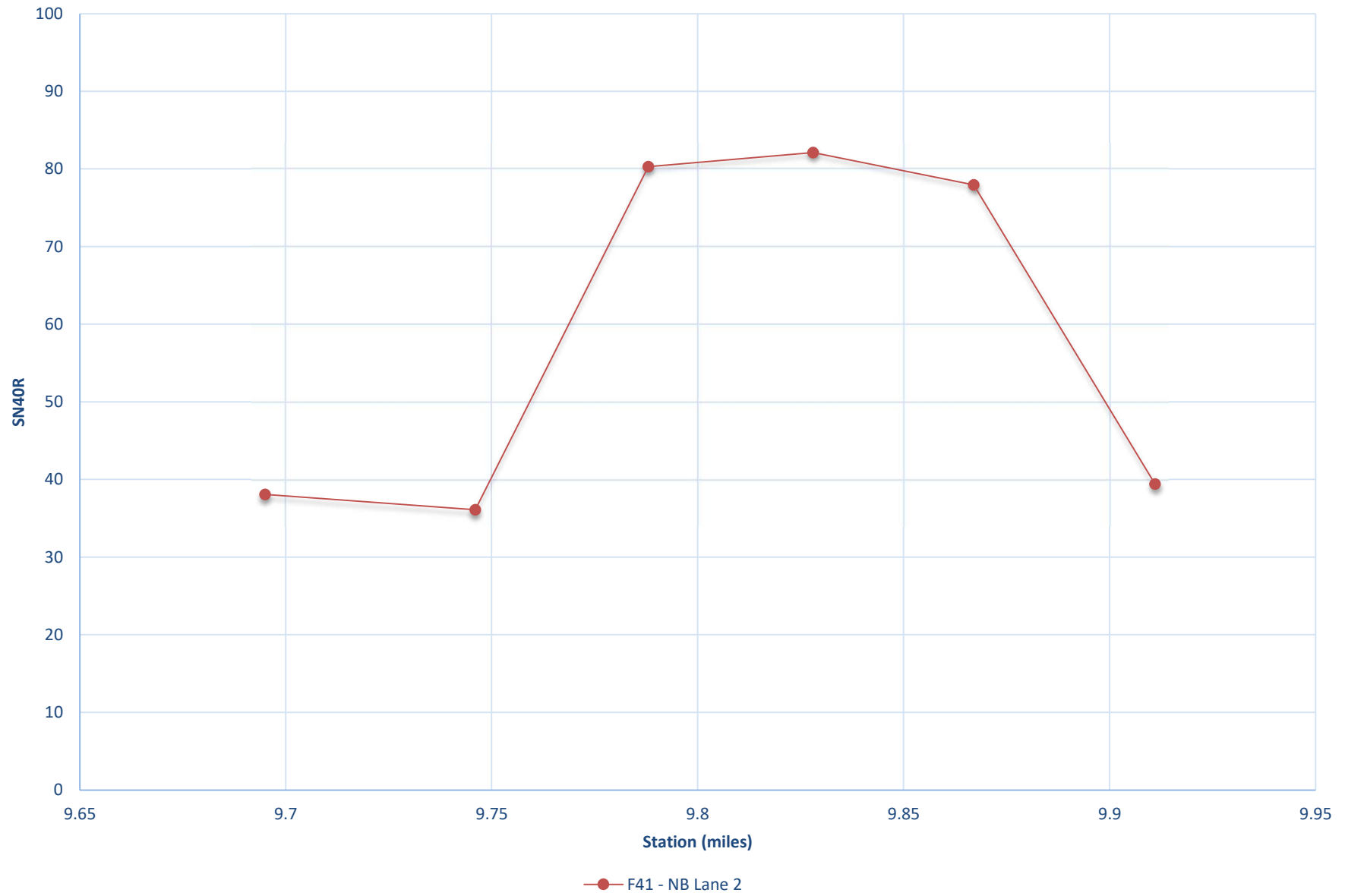
APPENDIX A

Test Site F40 - STH 20 WB
Friction Results



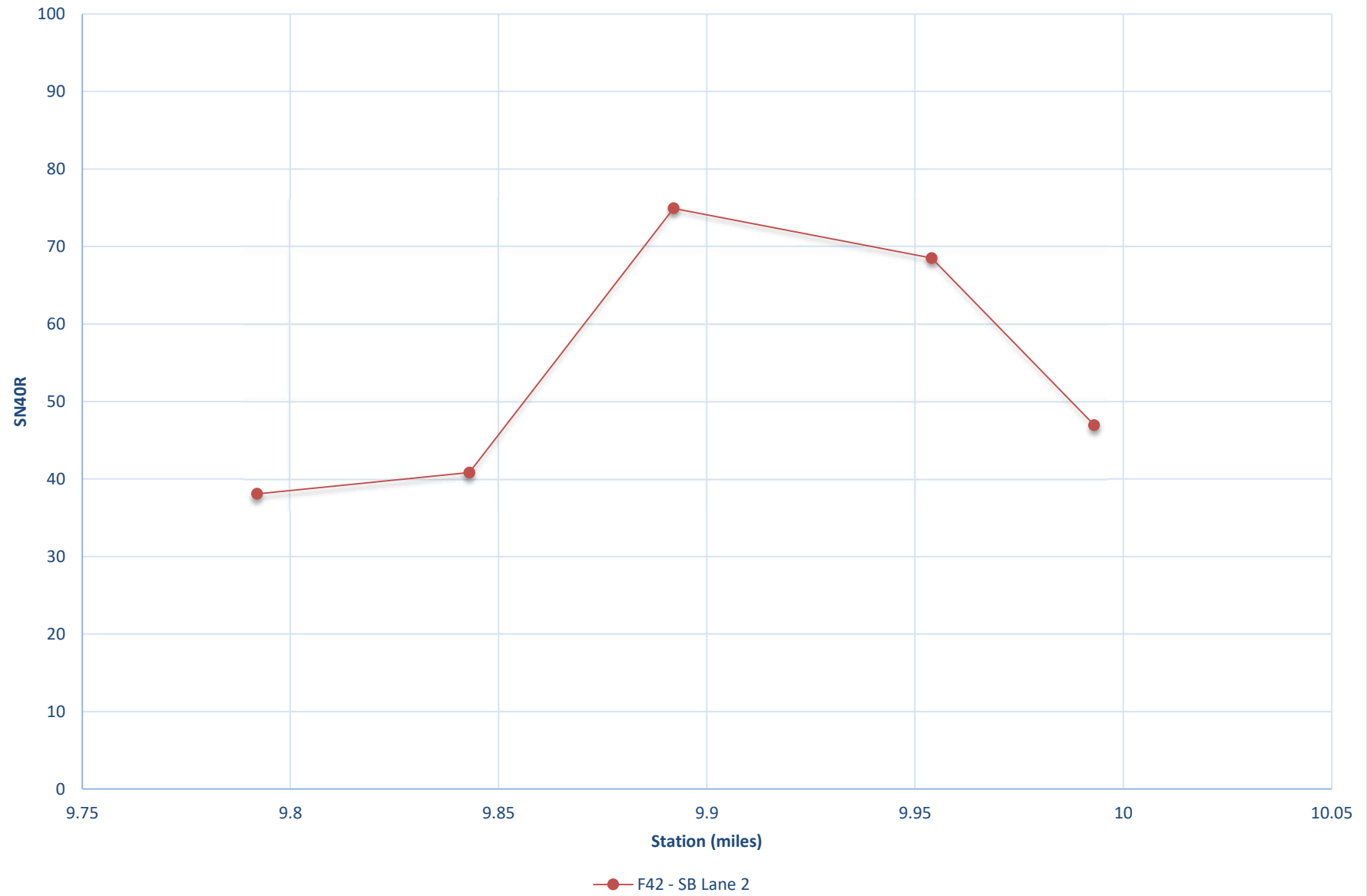
APPENDIX A

Test Site F41 - STH 32 NB Friction Results



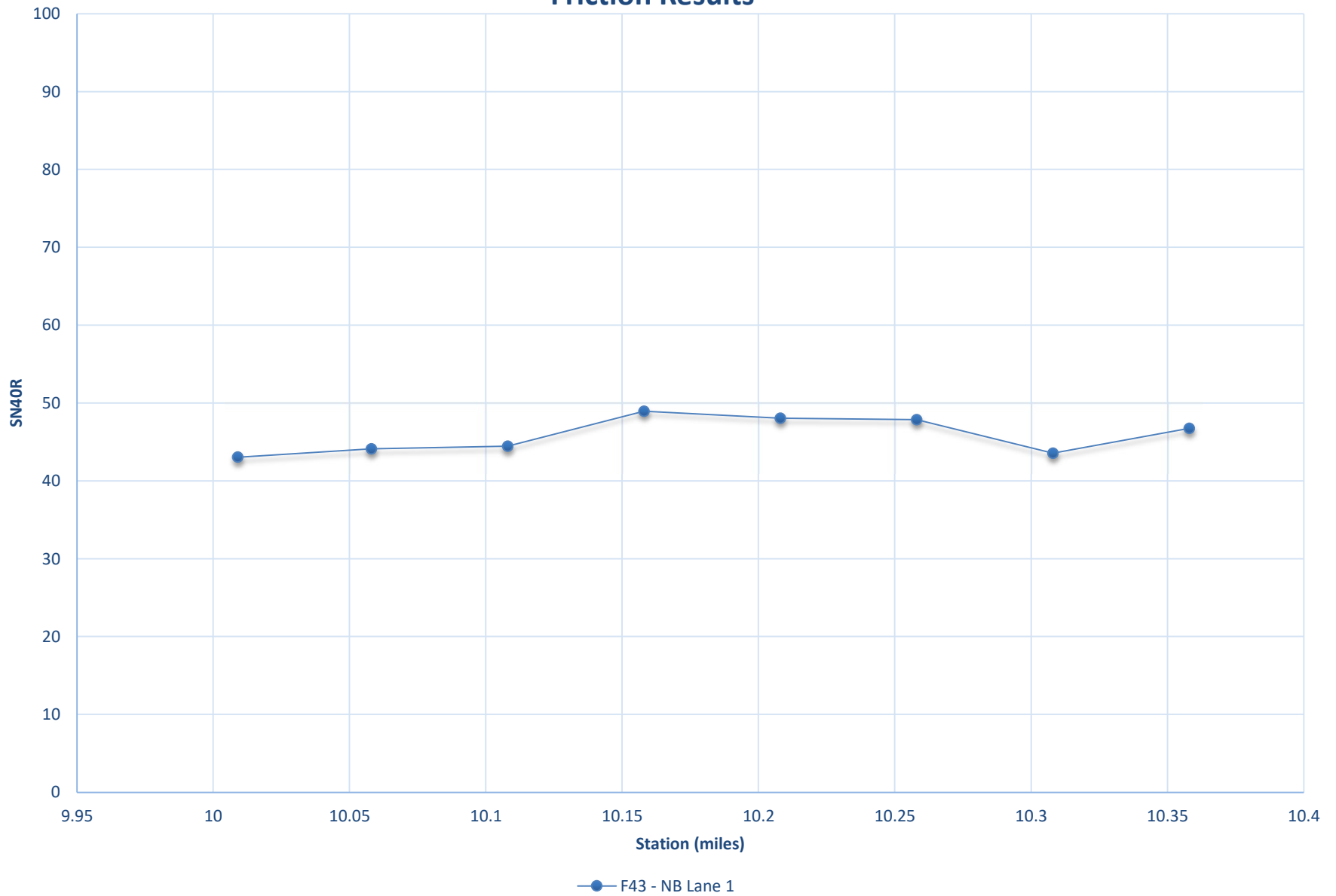
APPENDIX A

Test Site F42 - STH 32 SB Friction Results

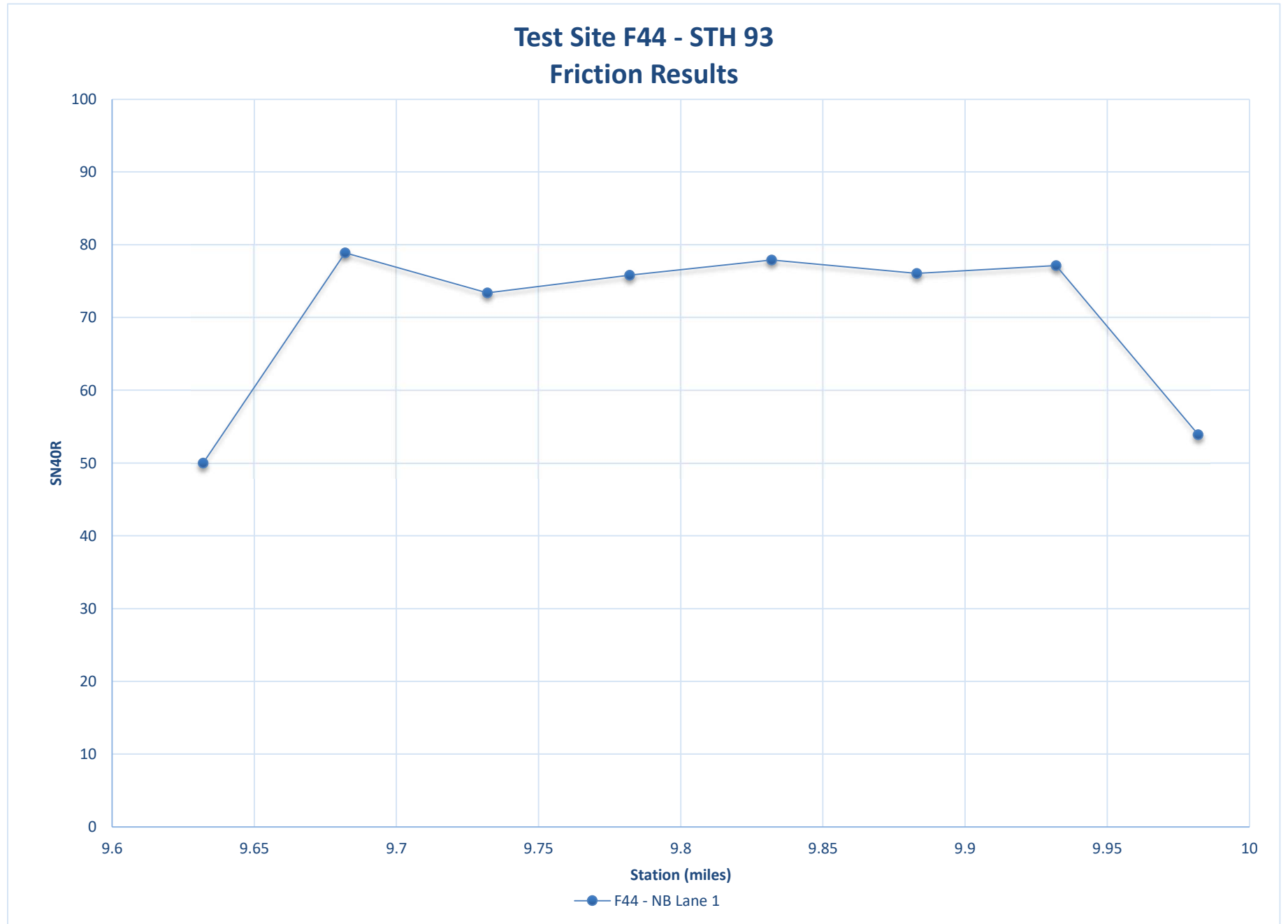


APPENDIX A

Test Site F43 - Milwaukee Ave NB Friction Results

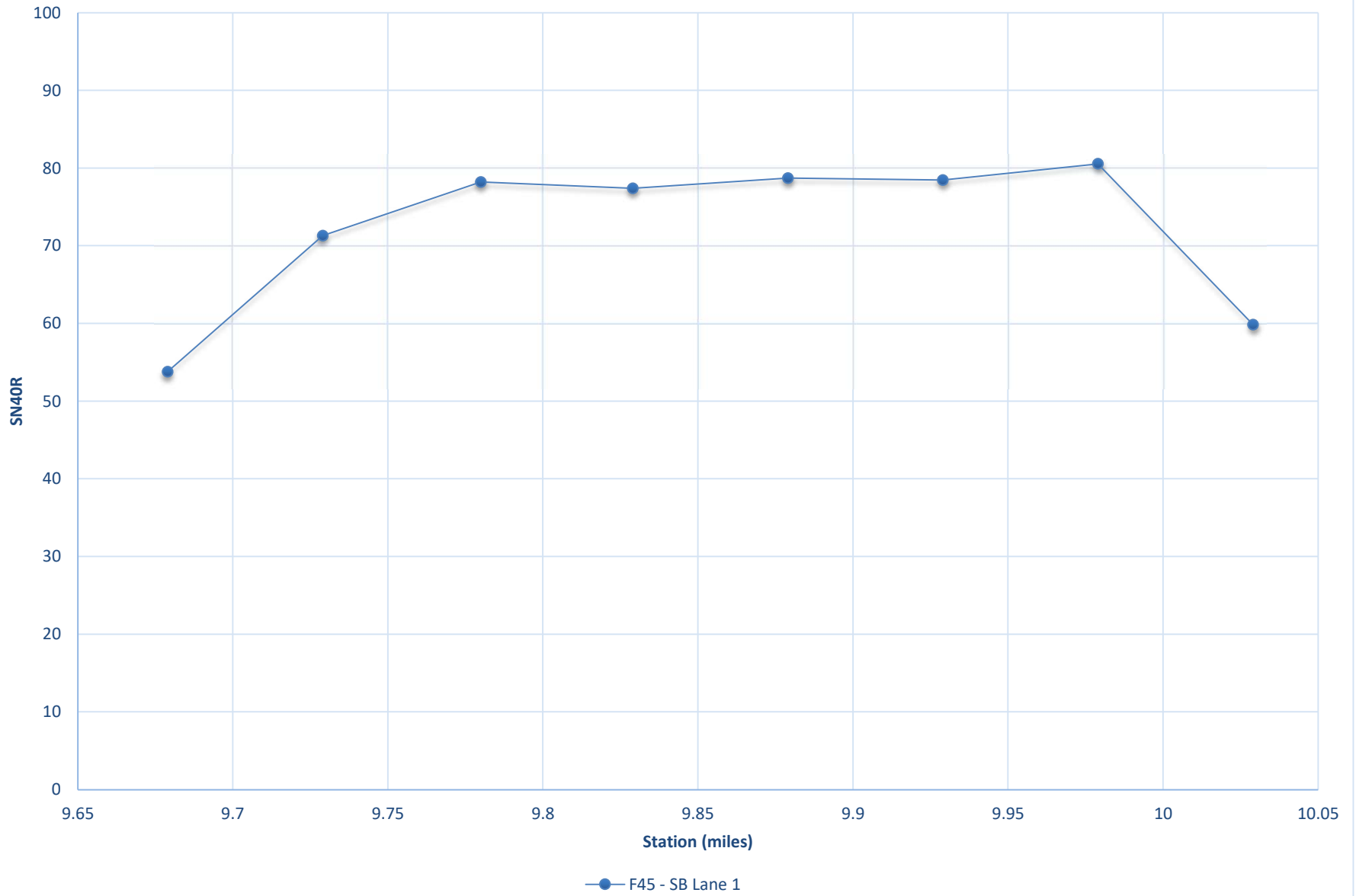


APPENDIX A



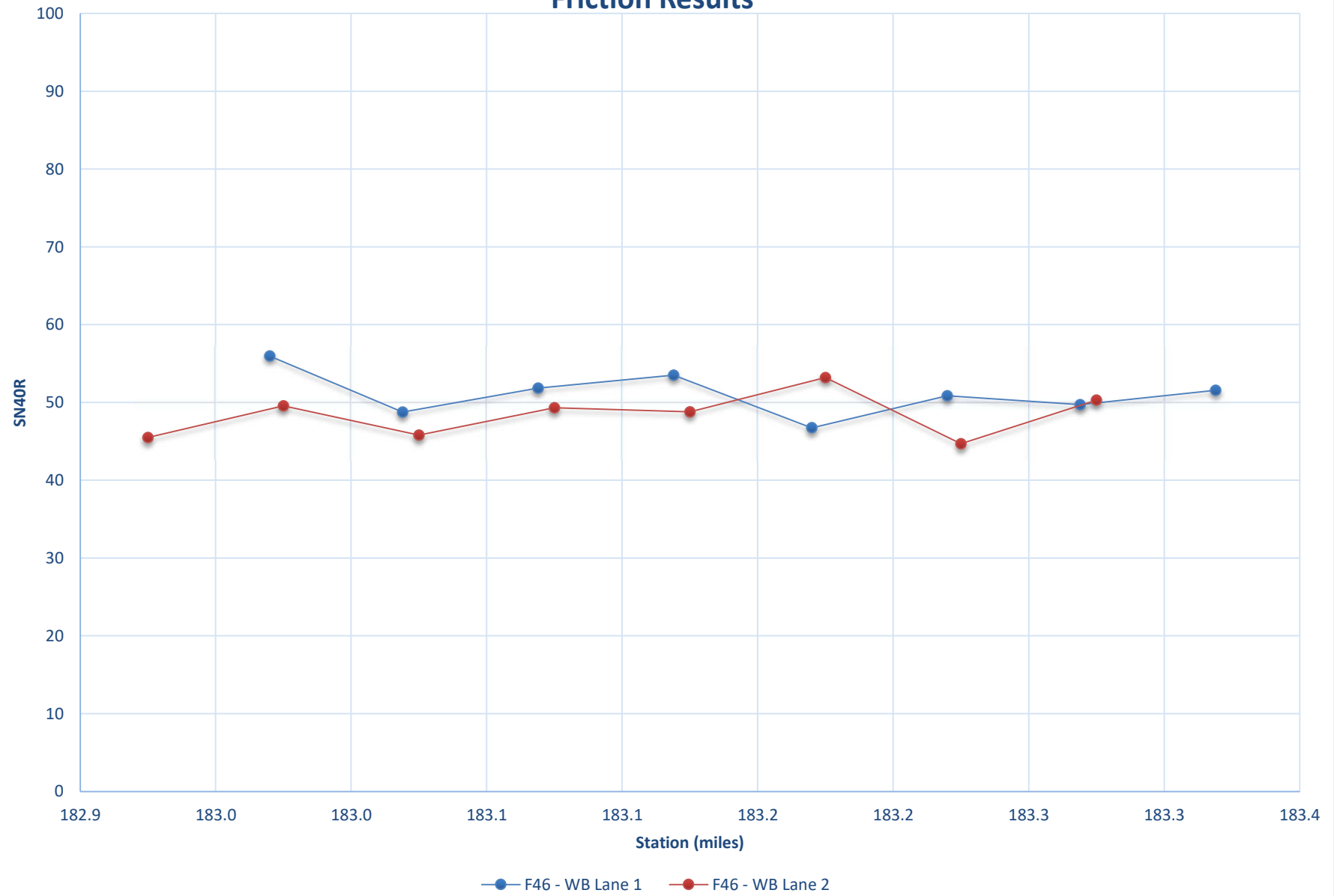
APPENDIX A

Test Site F45 - STH 93 Friction Results



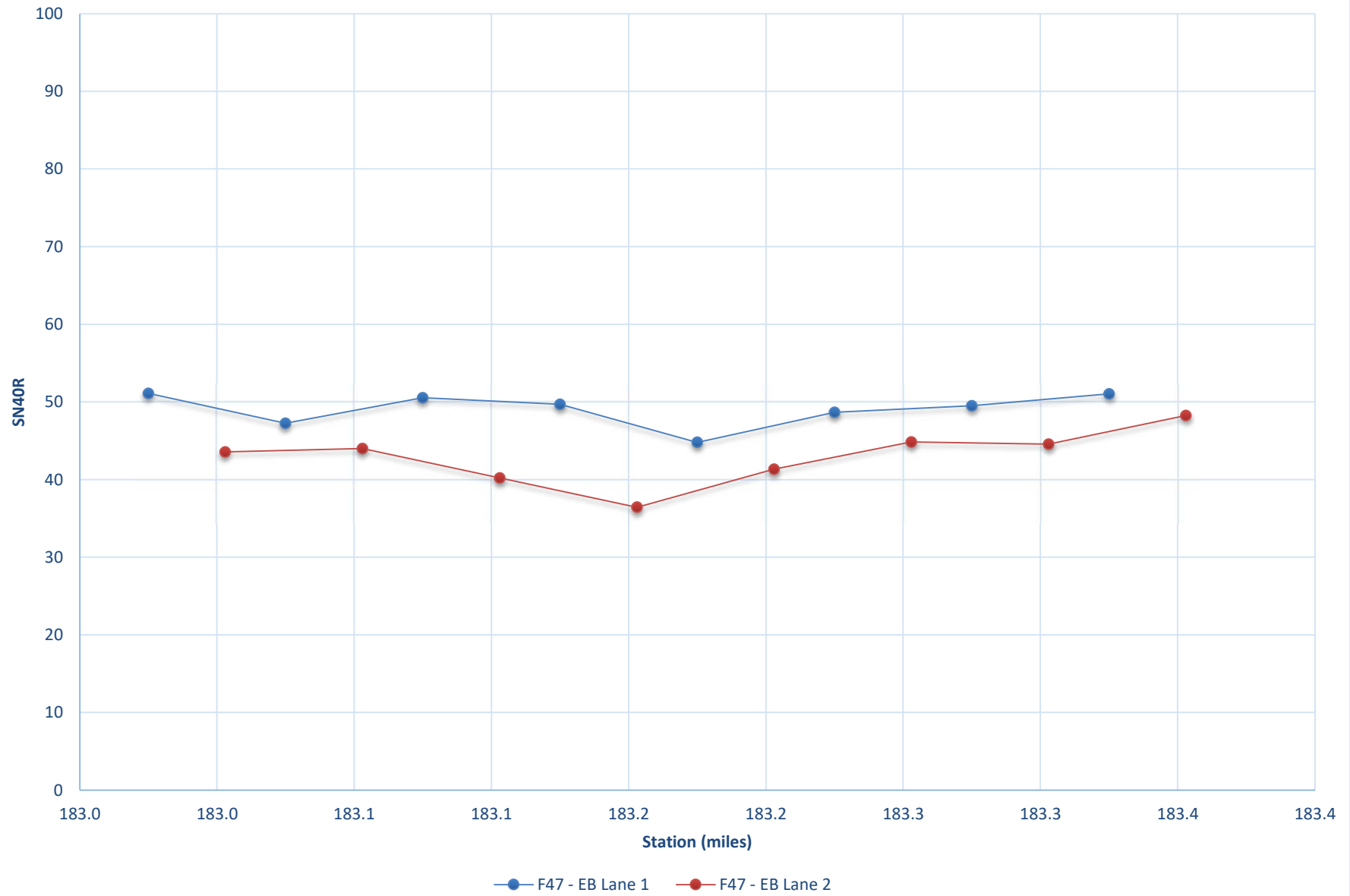
APPENDIX A

Test Site F46 - STH 16 WB Friction Results



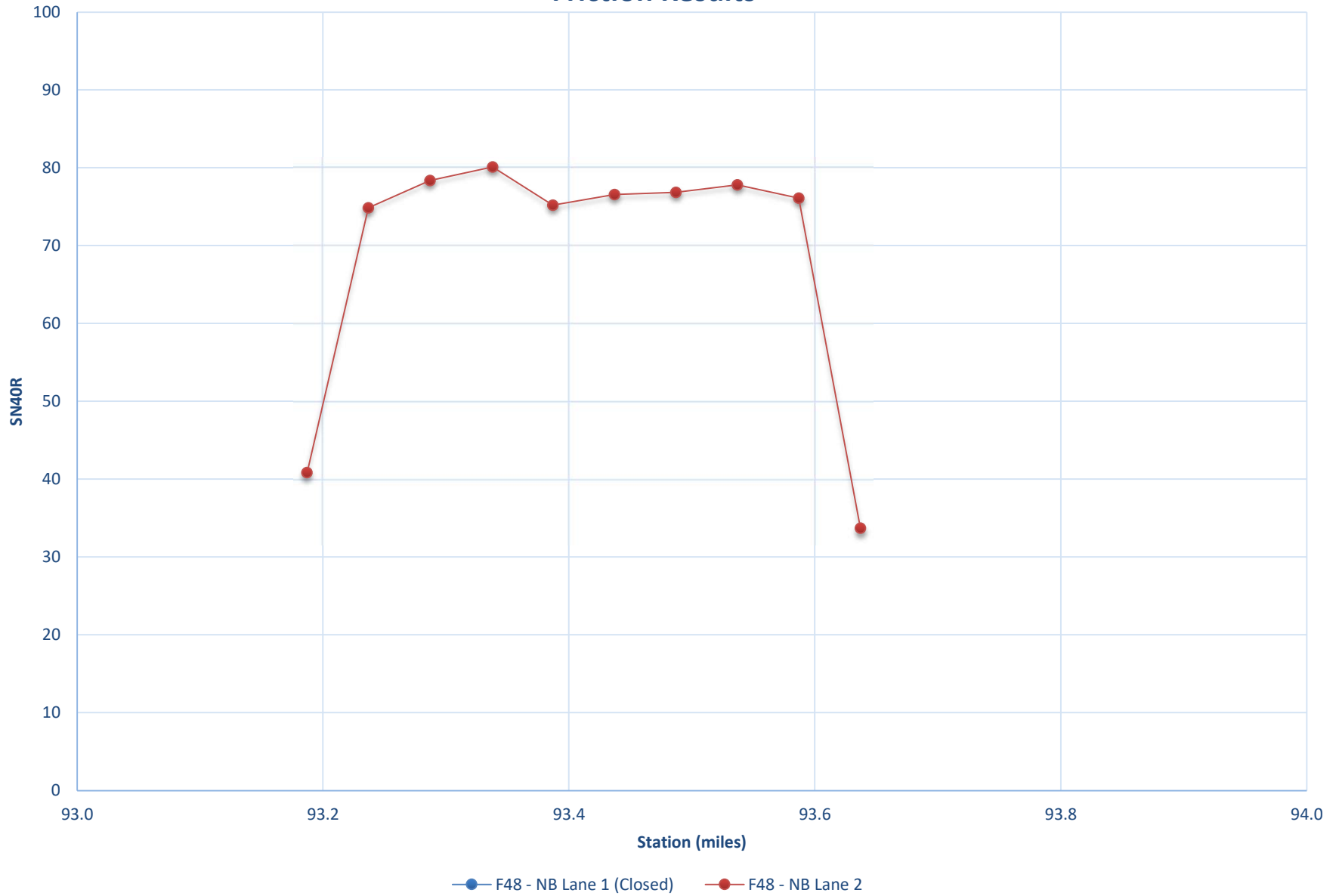
APPENDIX A

Test Site F47 - STH 16 EB Friction Results

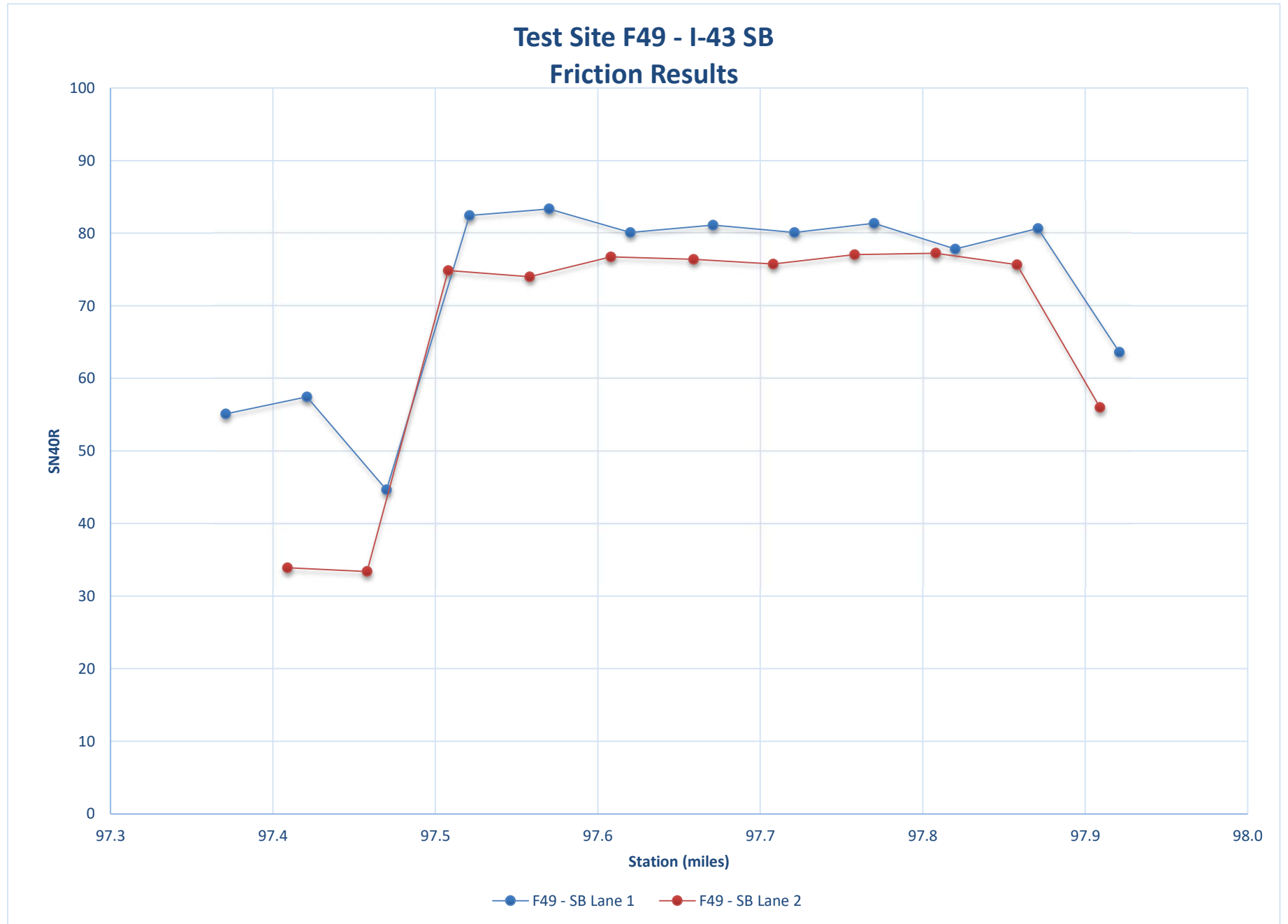


APPENDIX A

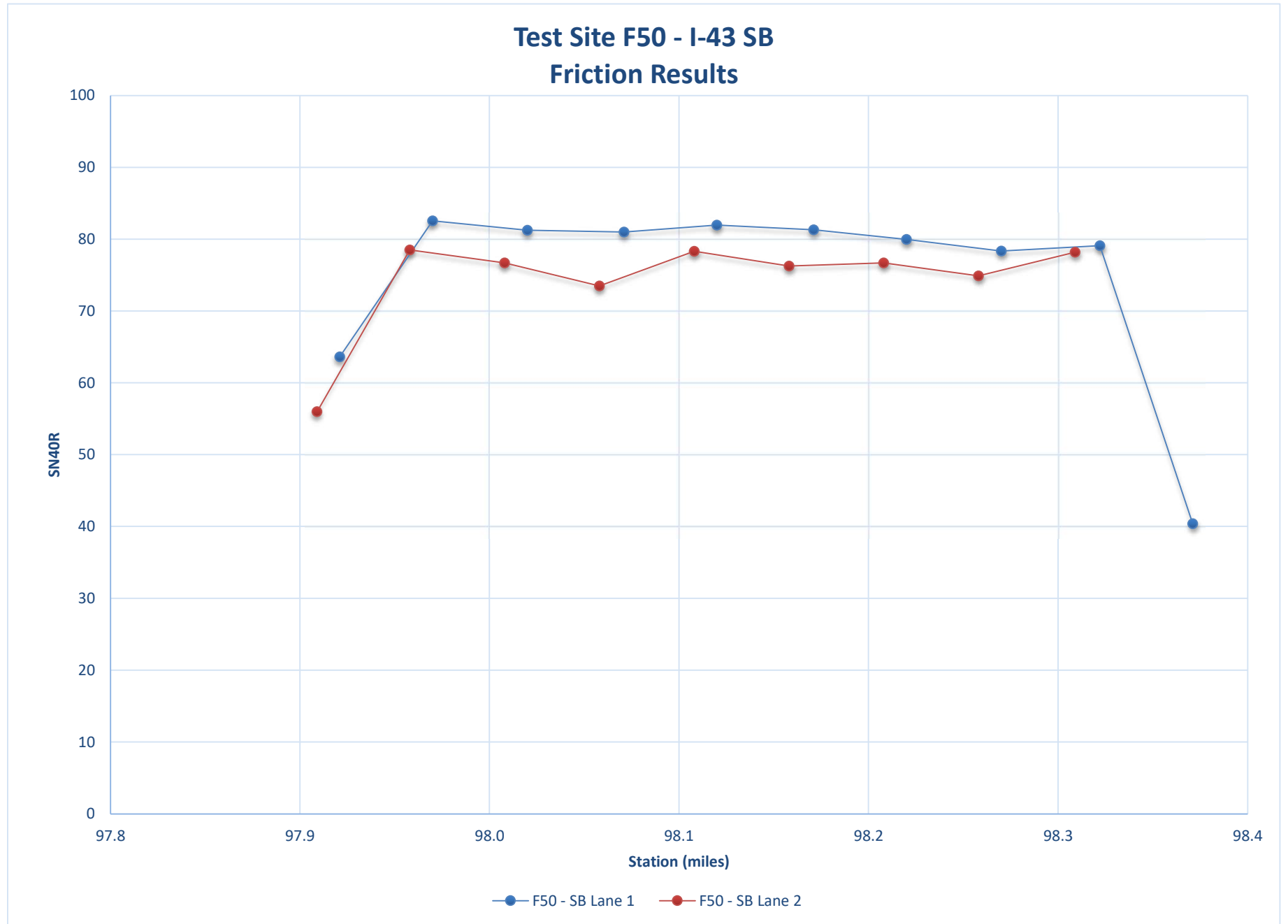
Test Site F48 - I-43 NB Friction Results



APPENDIX A

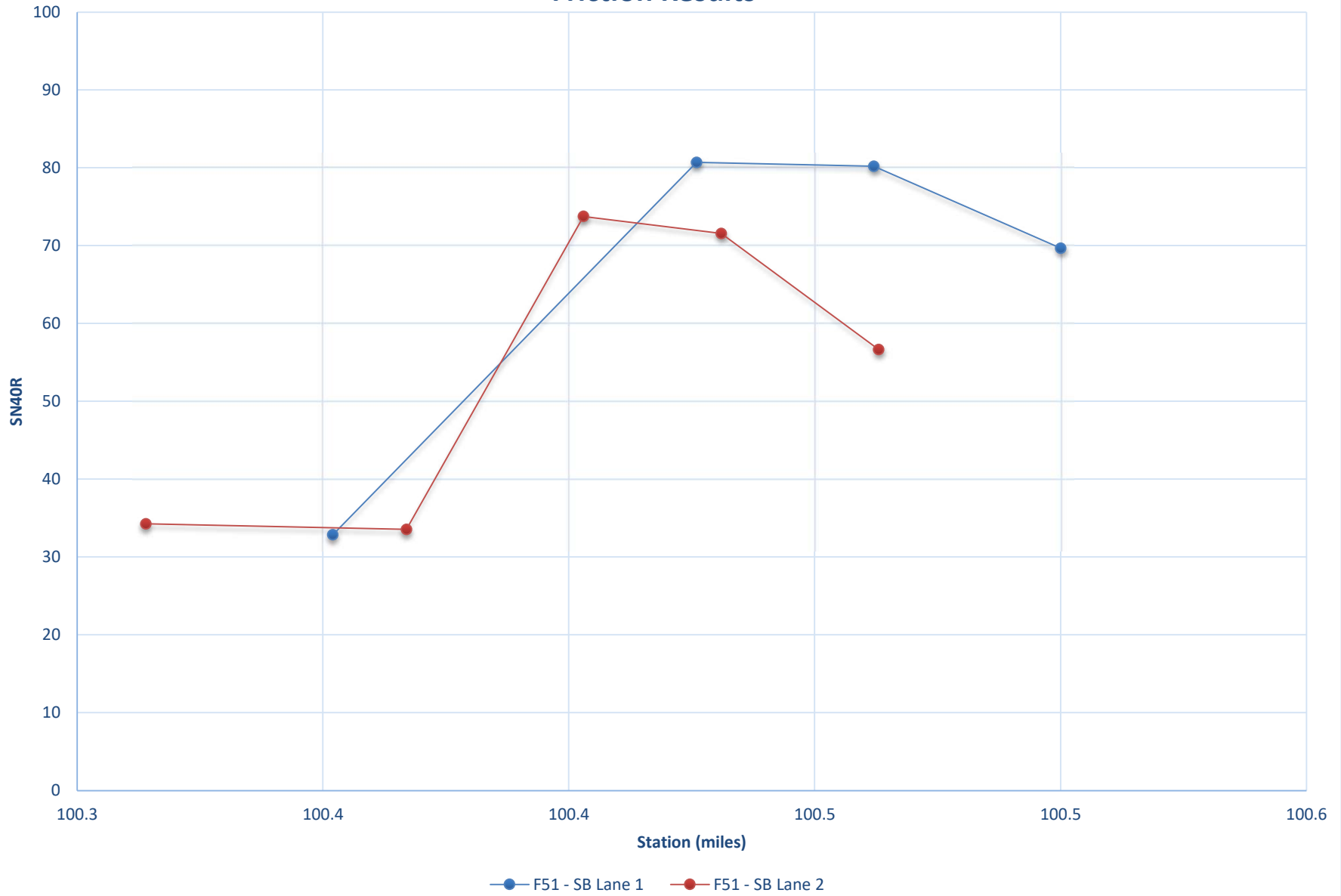


APPENDIX A



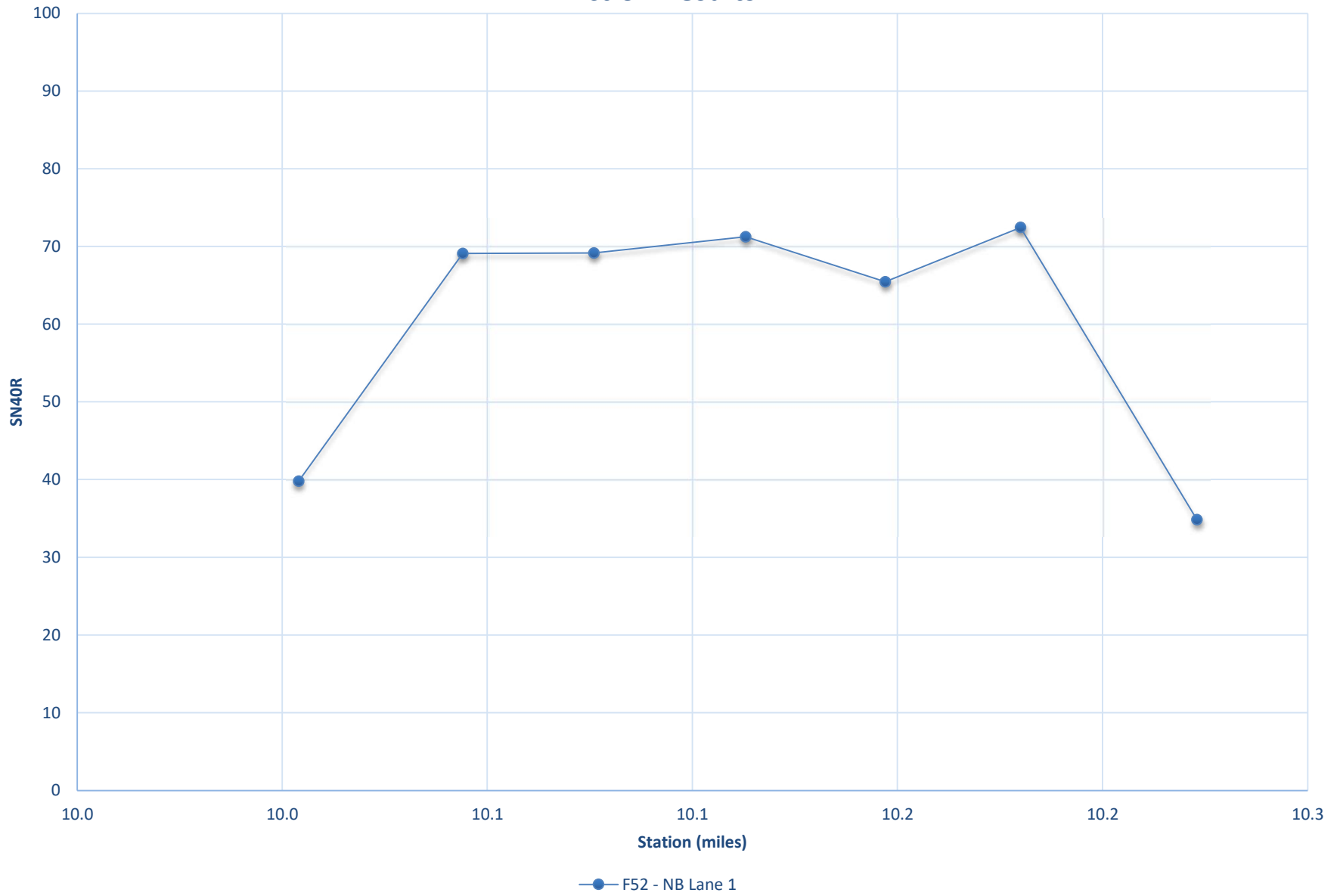
APPENDIX A

Test Site F51 - I-43 SB
Friction Results



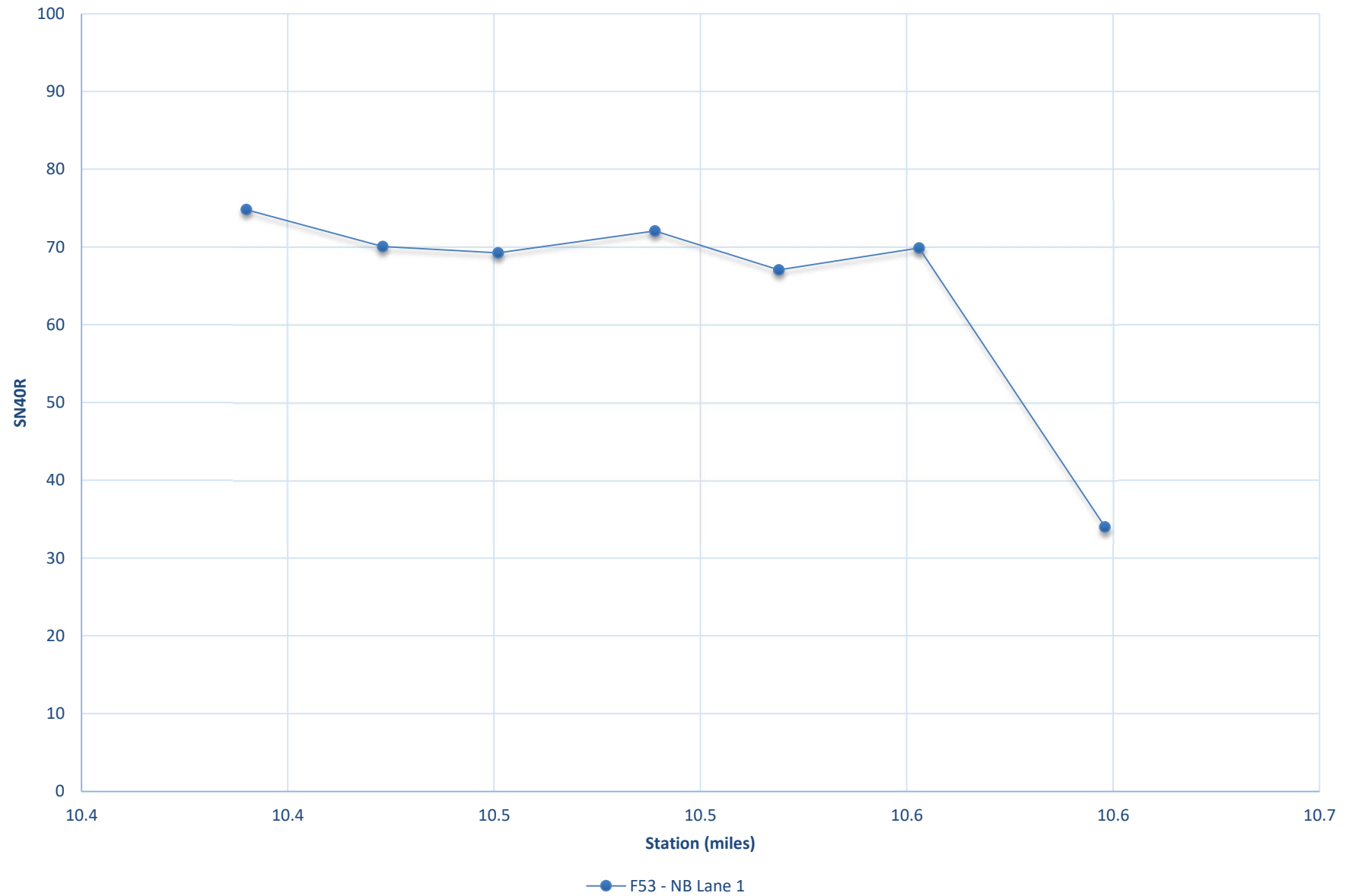
APPENDIX A

Test Site F52 - SH 32 NB
Friction Results



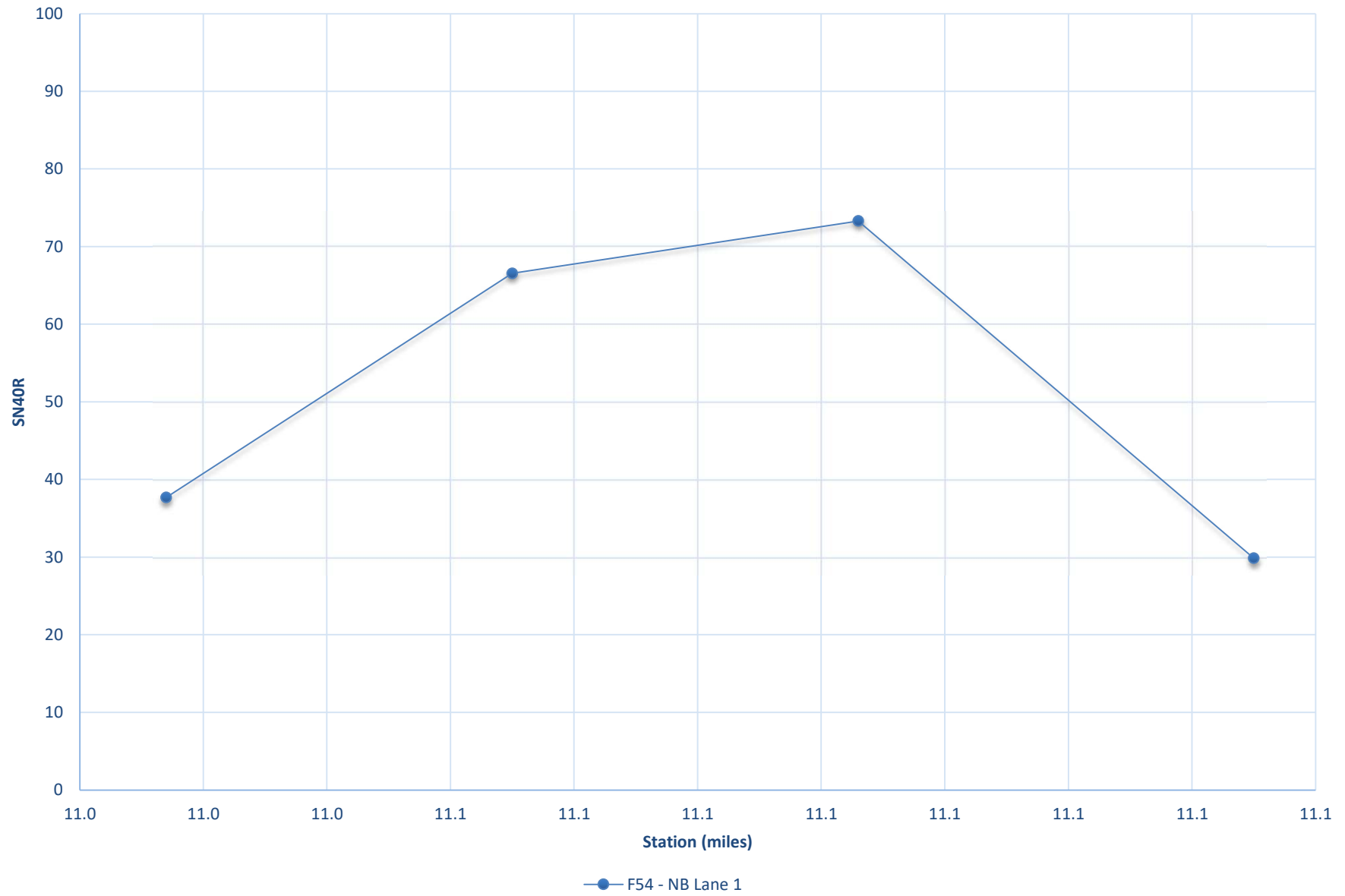
APPENDIX A

Test Site F53 - SH 32 NB
Friction Results



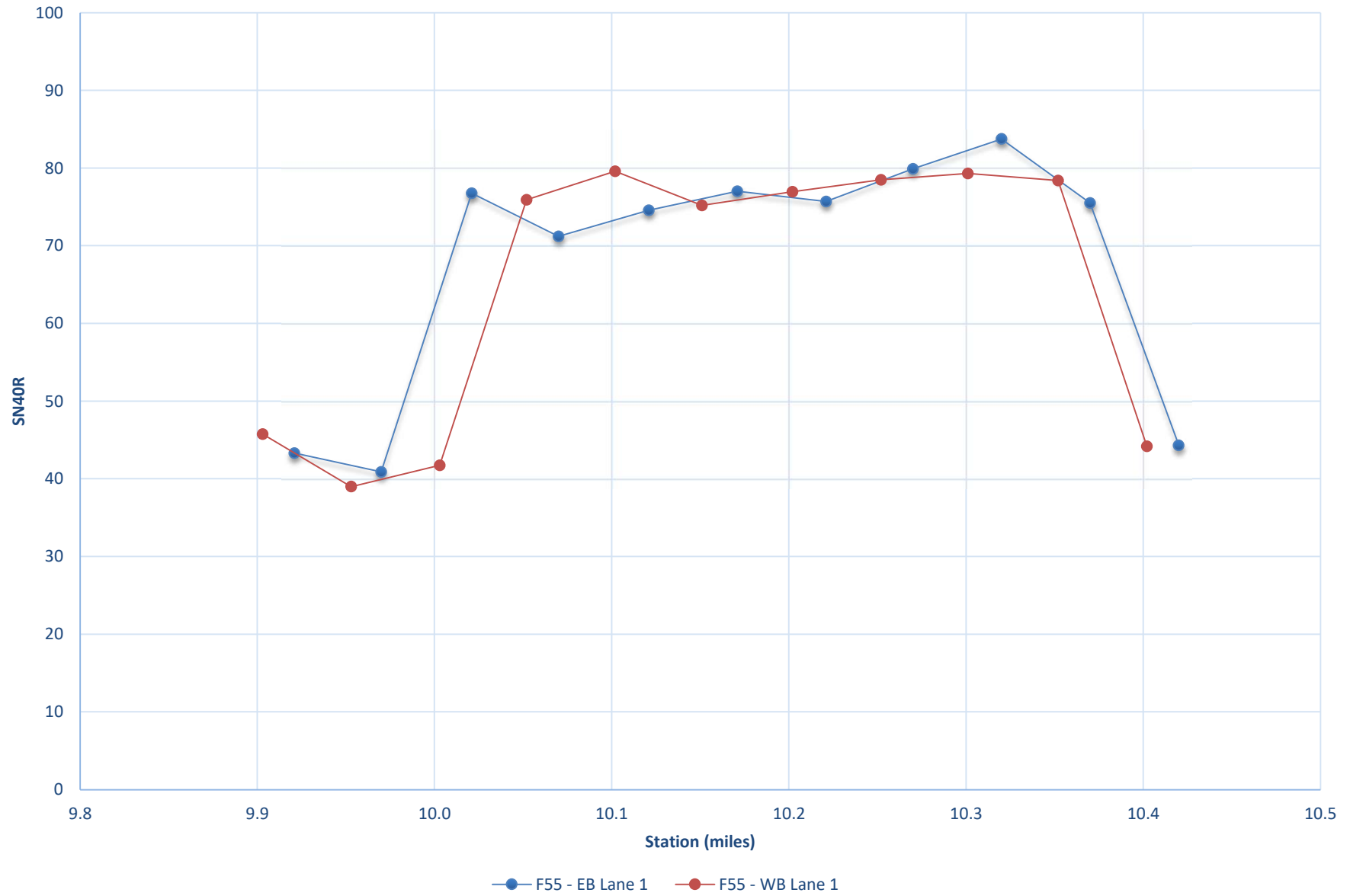
APPENDIX A

Test Site F54 - SH 32 NB Friction Results



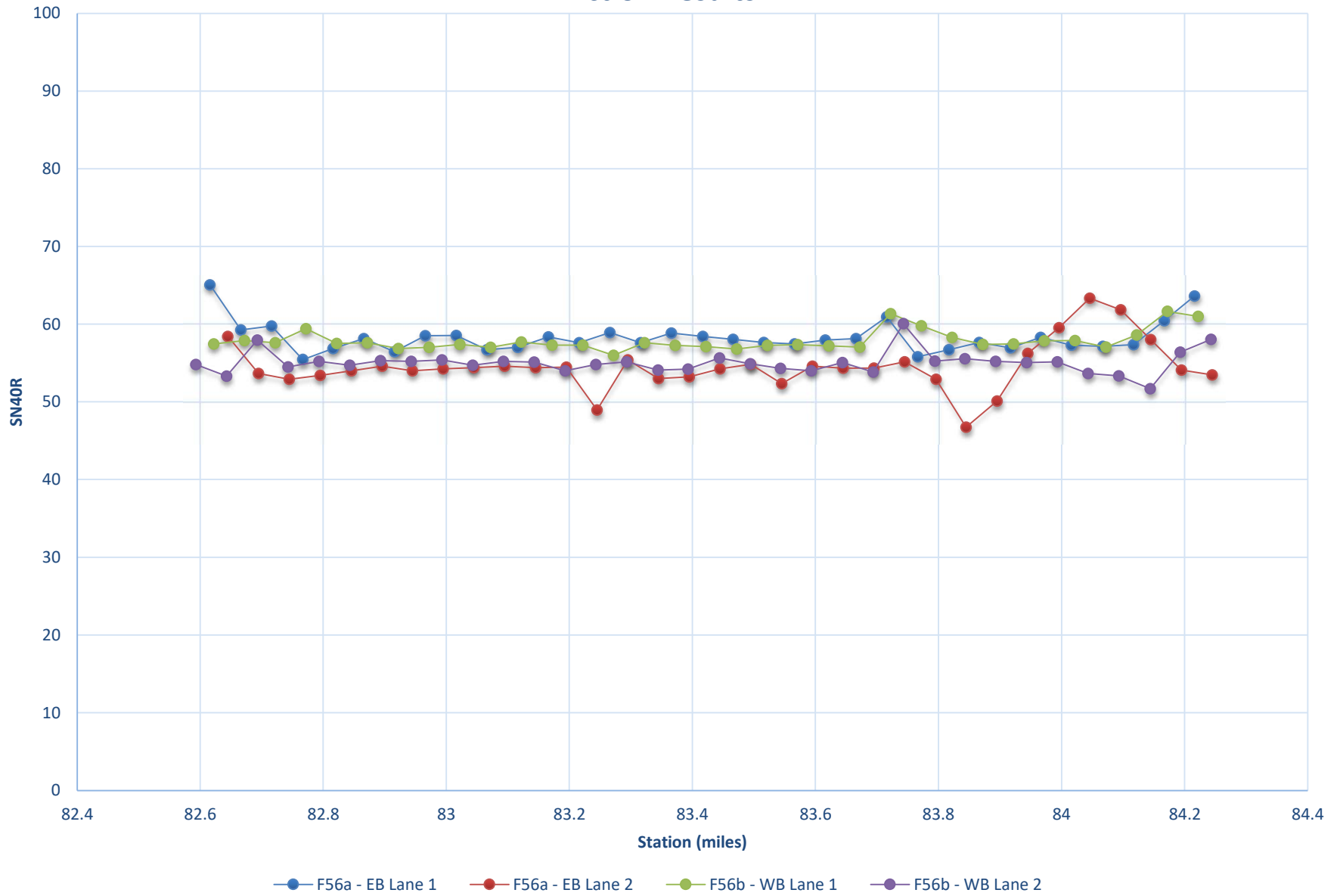
APPENDIX A

Test Site F55 - CTH H
Friction Results



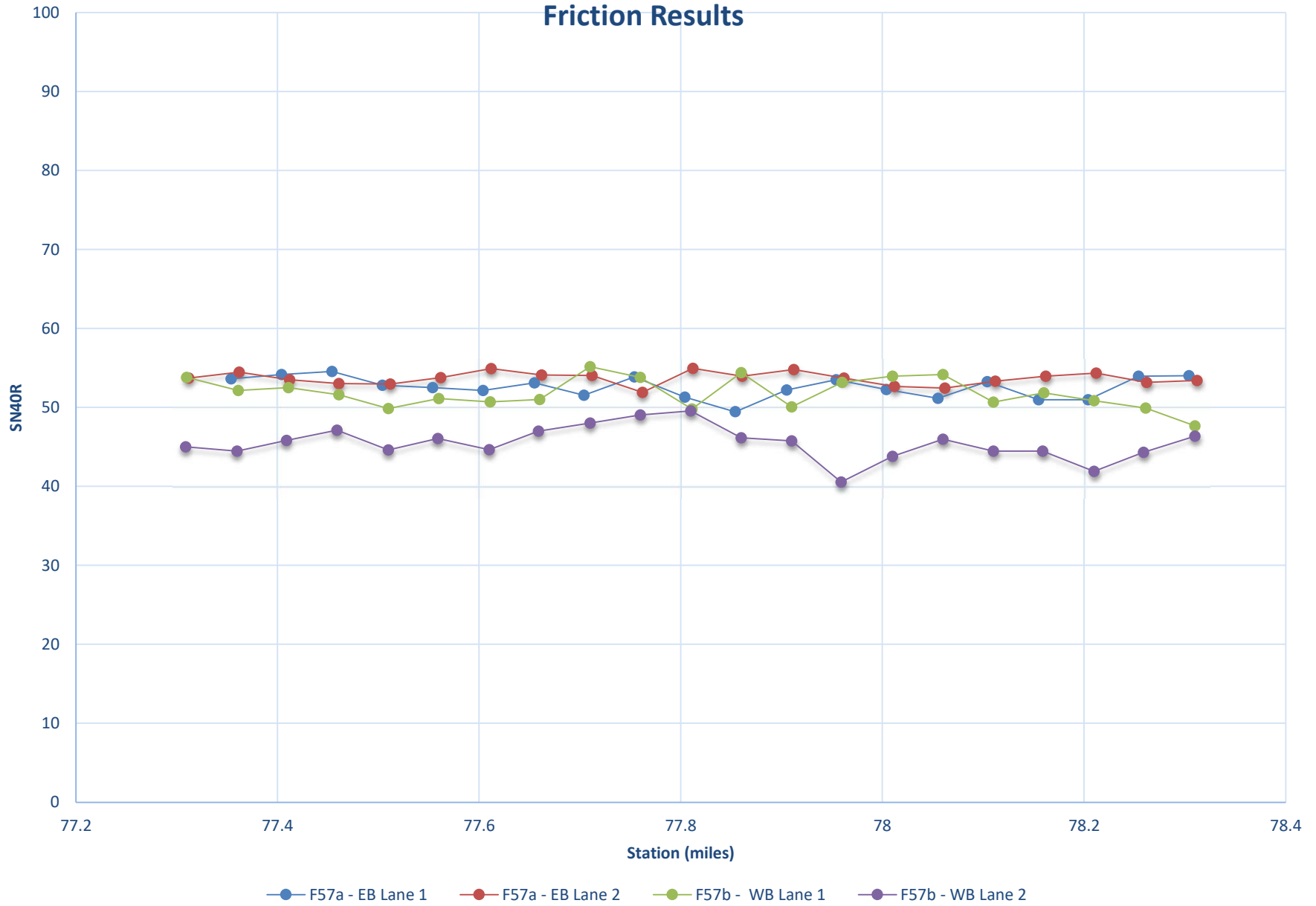
APPENDIX A

Test Site F56 - STH 29 Friction Results



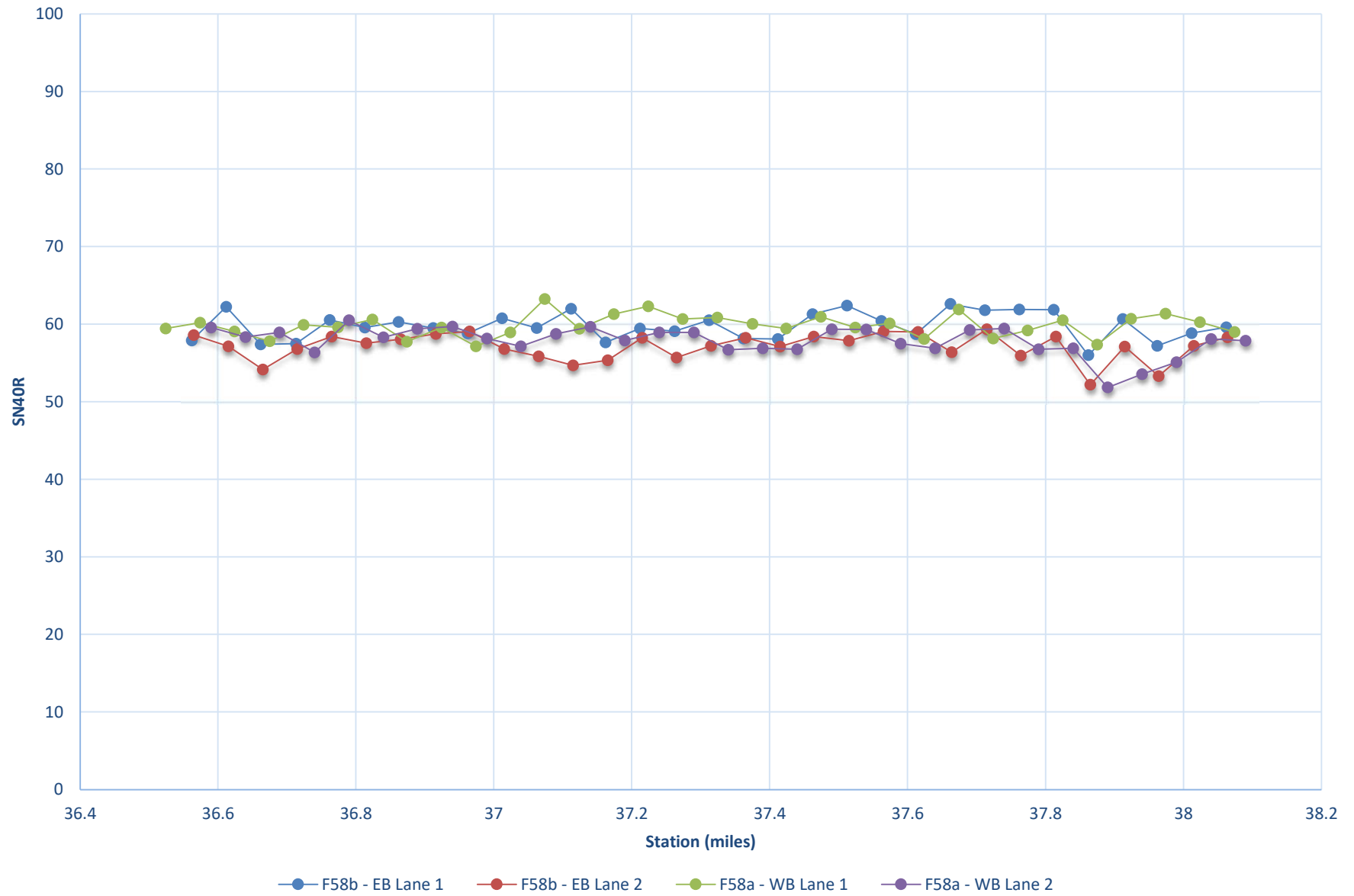
APPENDIX A

Test Site F57 - I-94
Friction Results



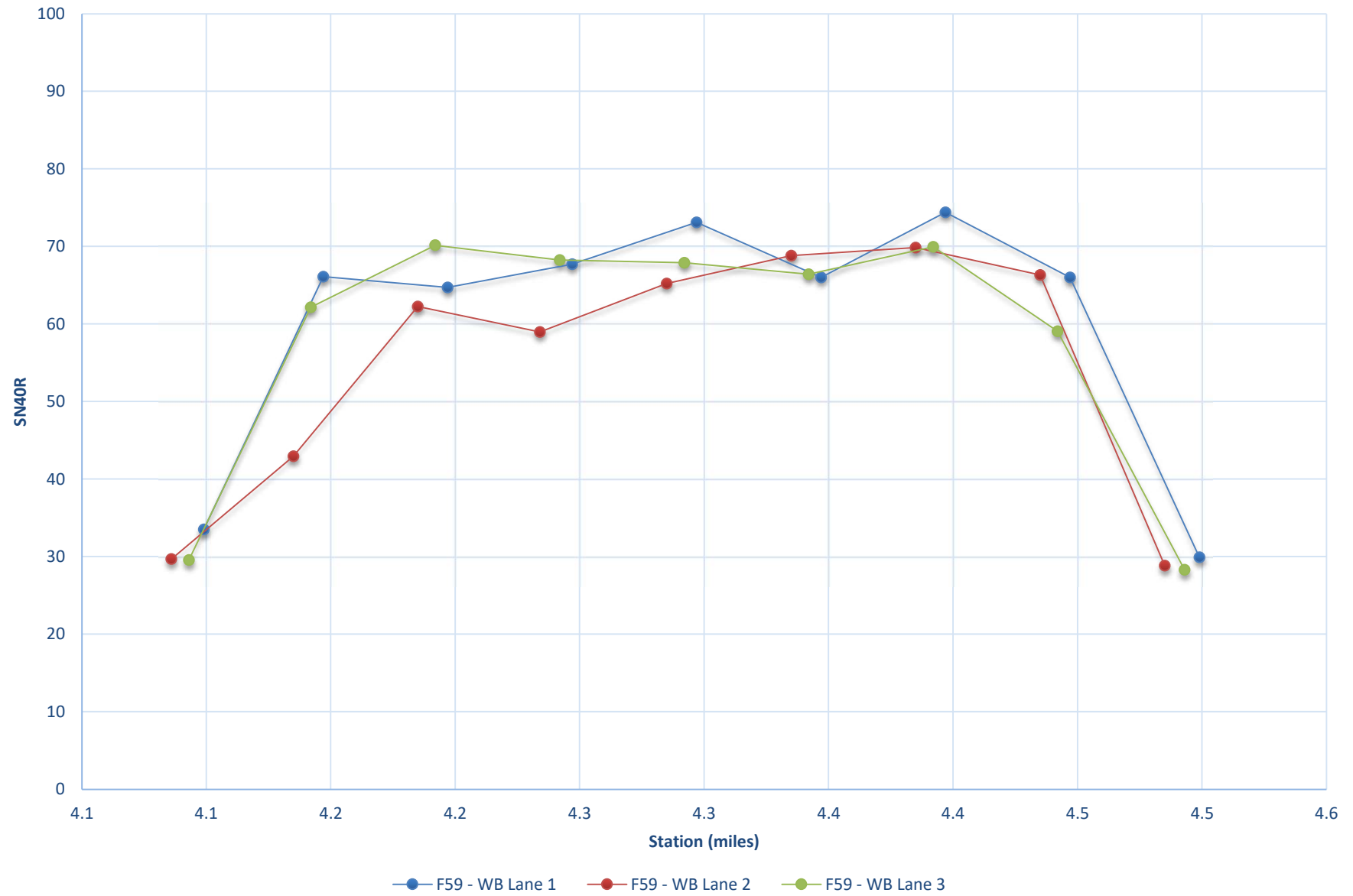
APPENDIX A

Test Site F58 - I-90 Friction Results

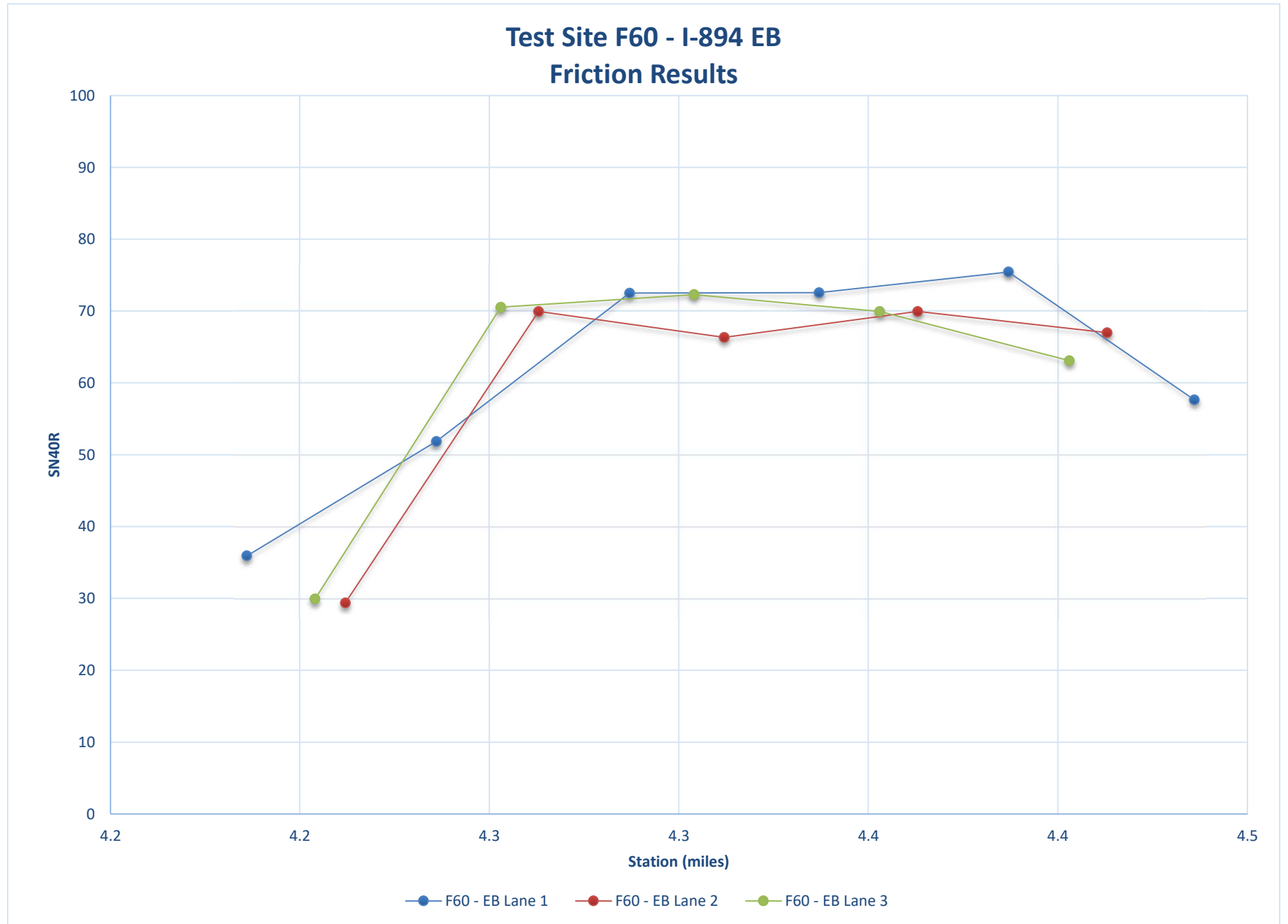


APPENDIX A

Test Site F59 - I-894 WB Friction Results

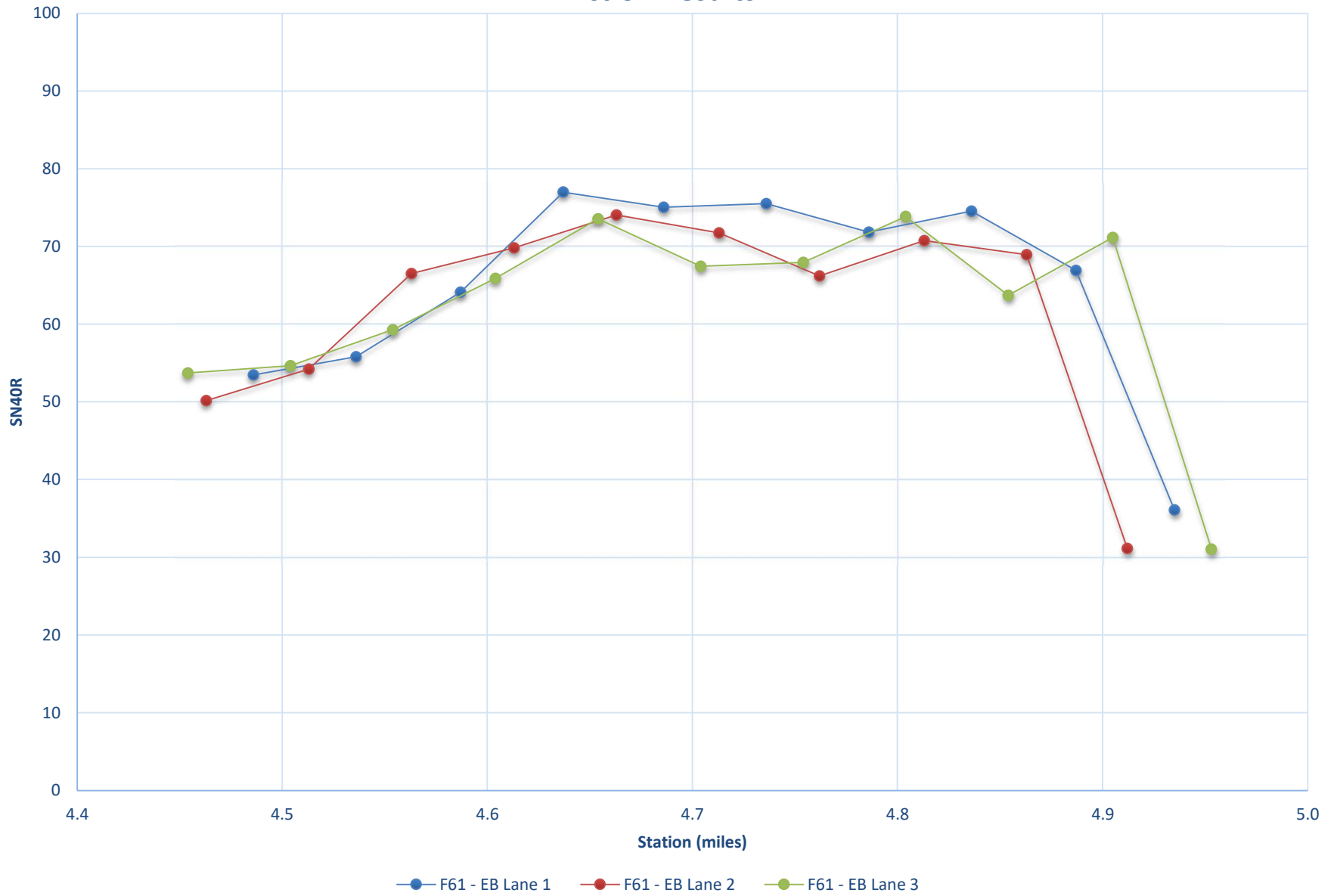


APPENDIX A



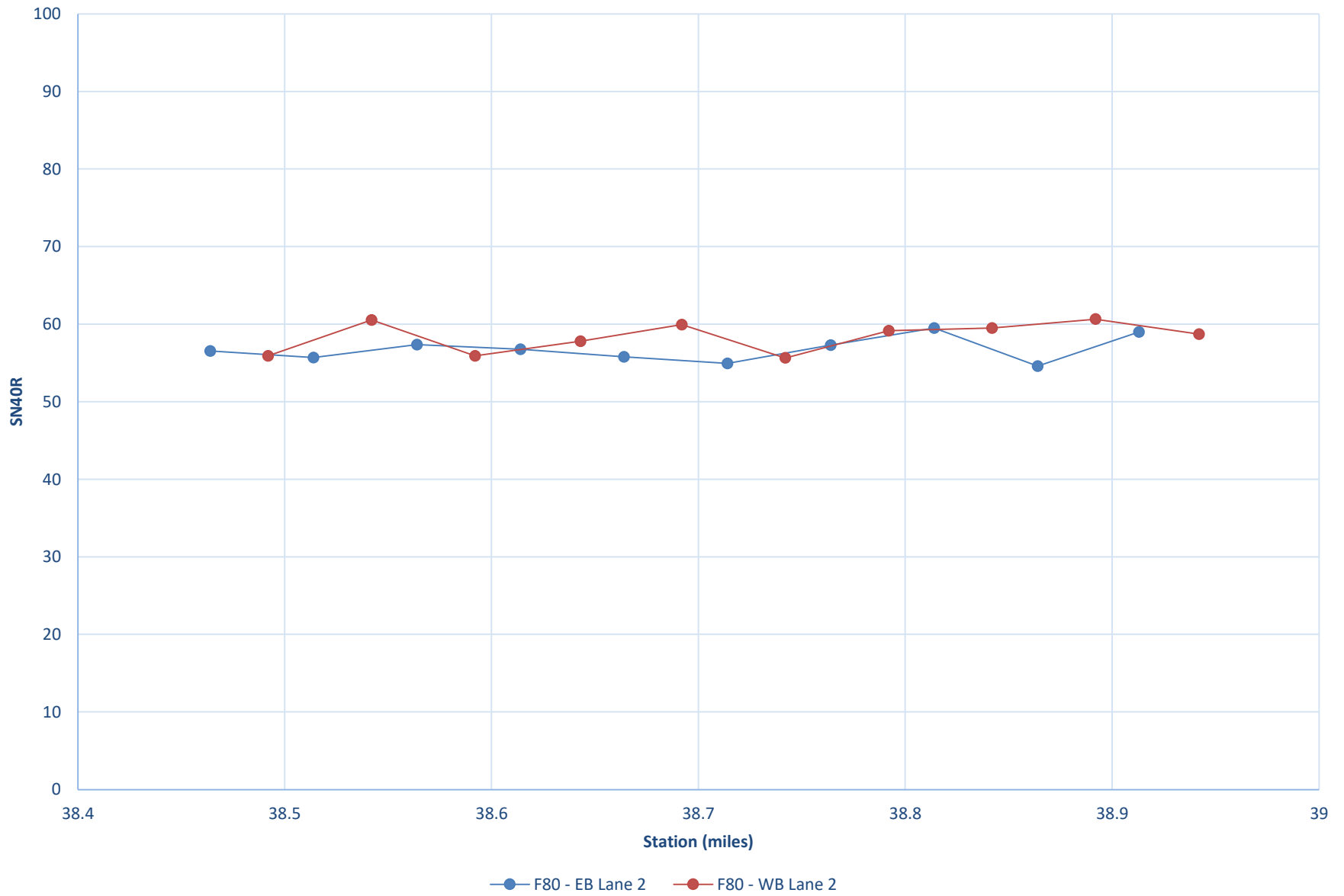
APPENDIX A

Test Site F61 - I-894 EB Friction Results



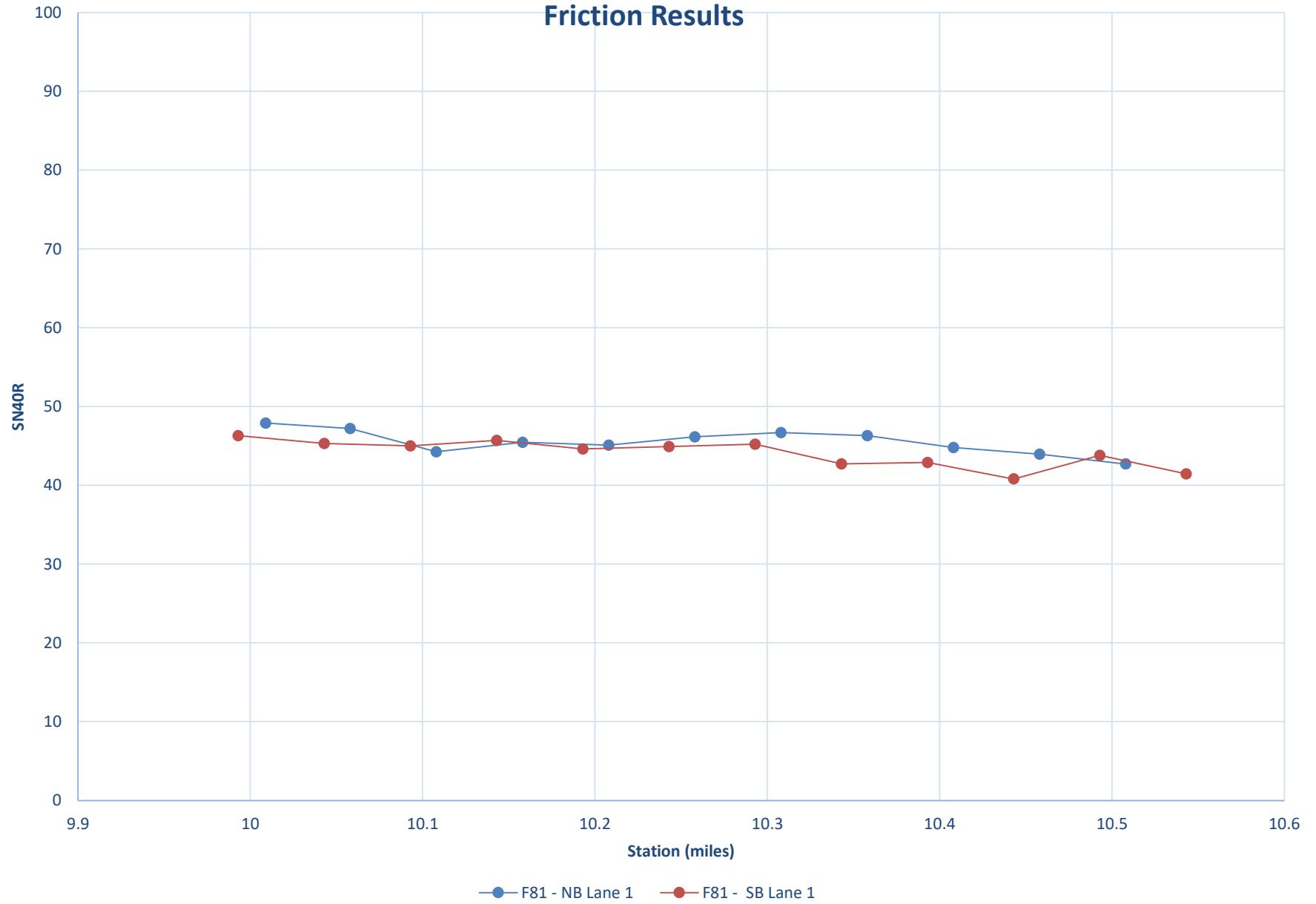
APPENDIX A

Test Site F80 - I-90 Friction Results

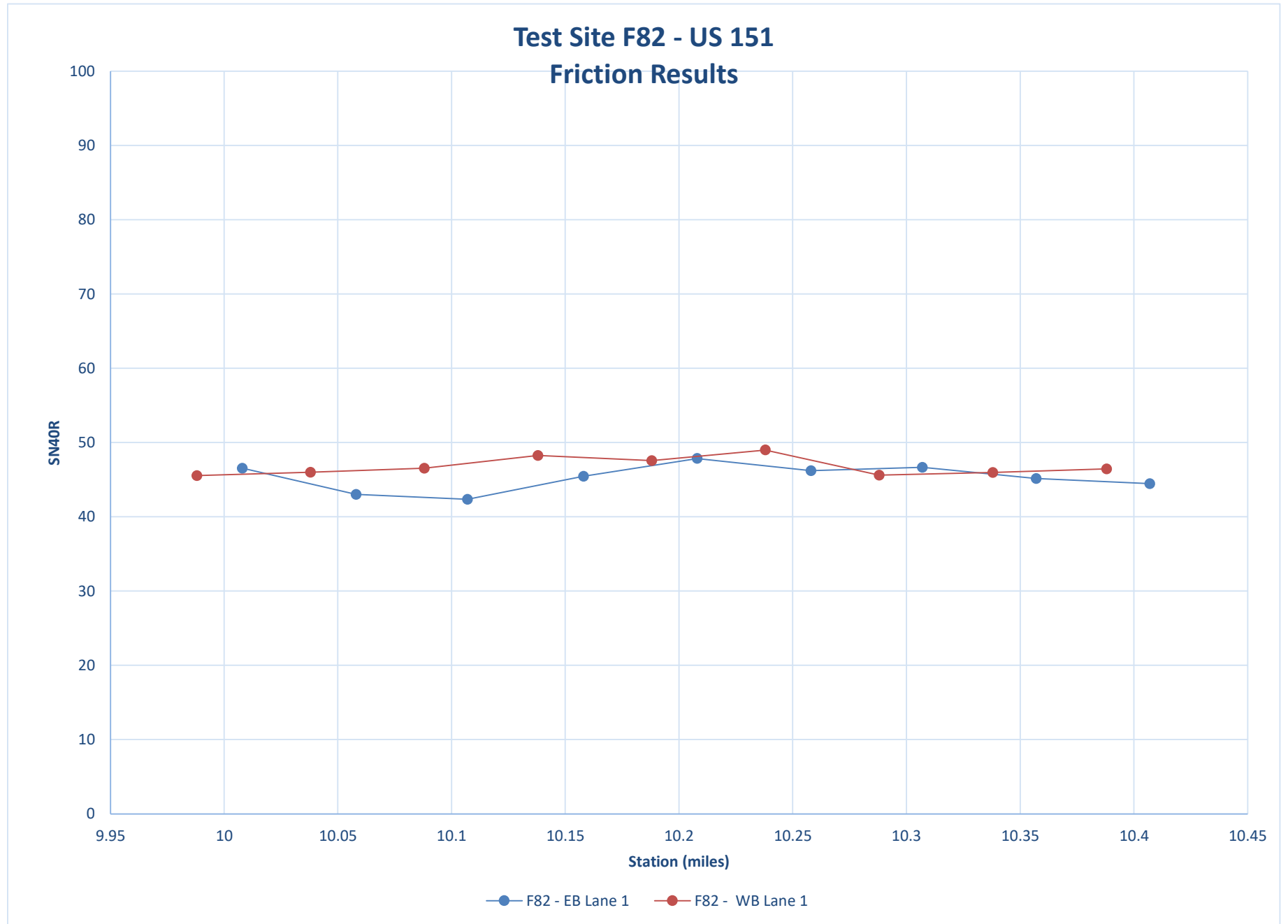


APPENDIX A

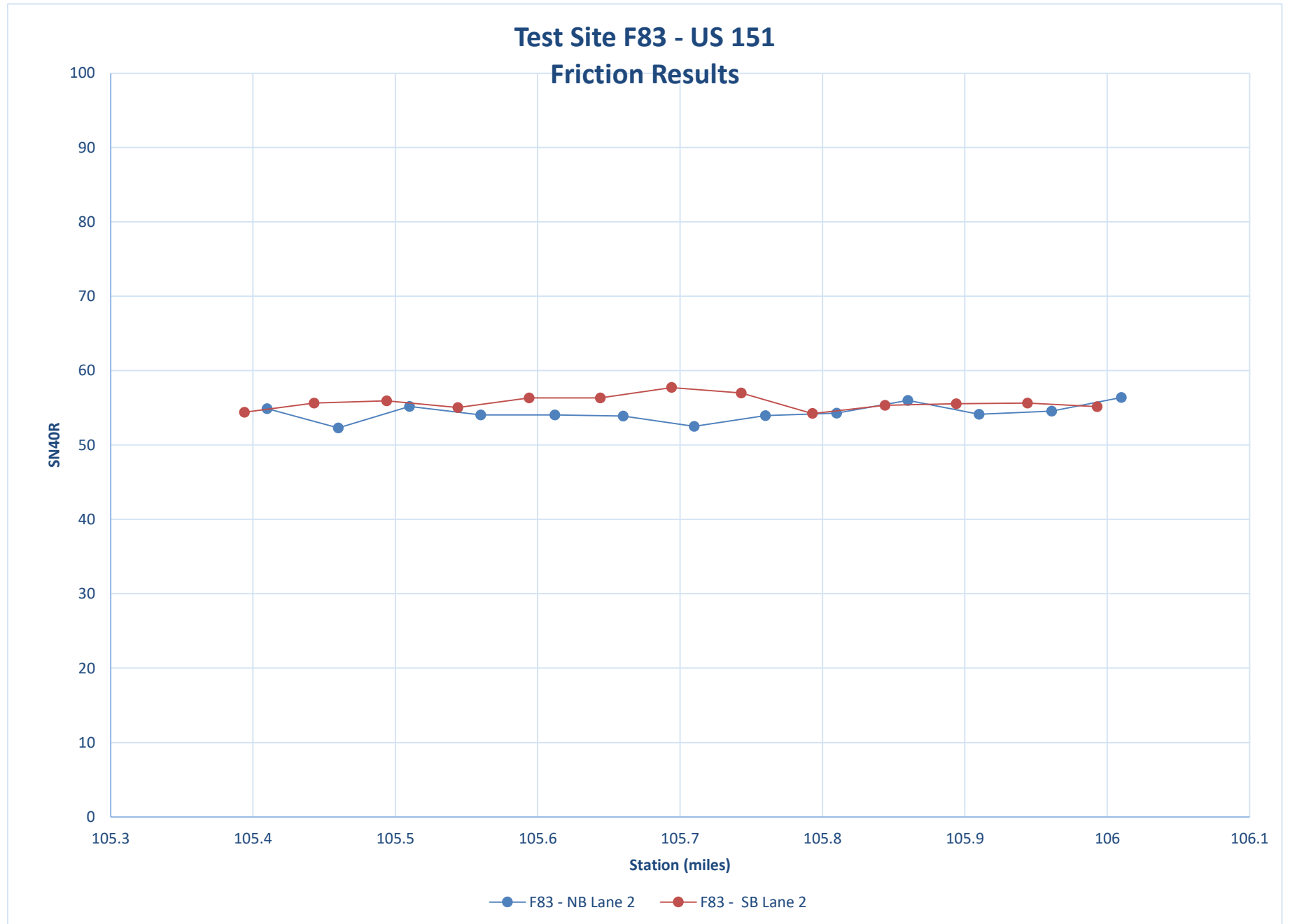
Test Site F81 - US 14
Friction Results



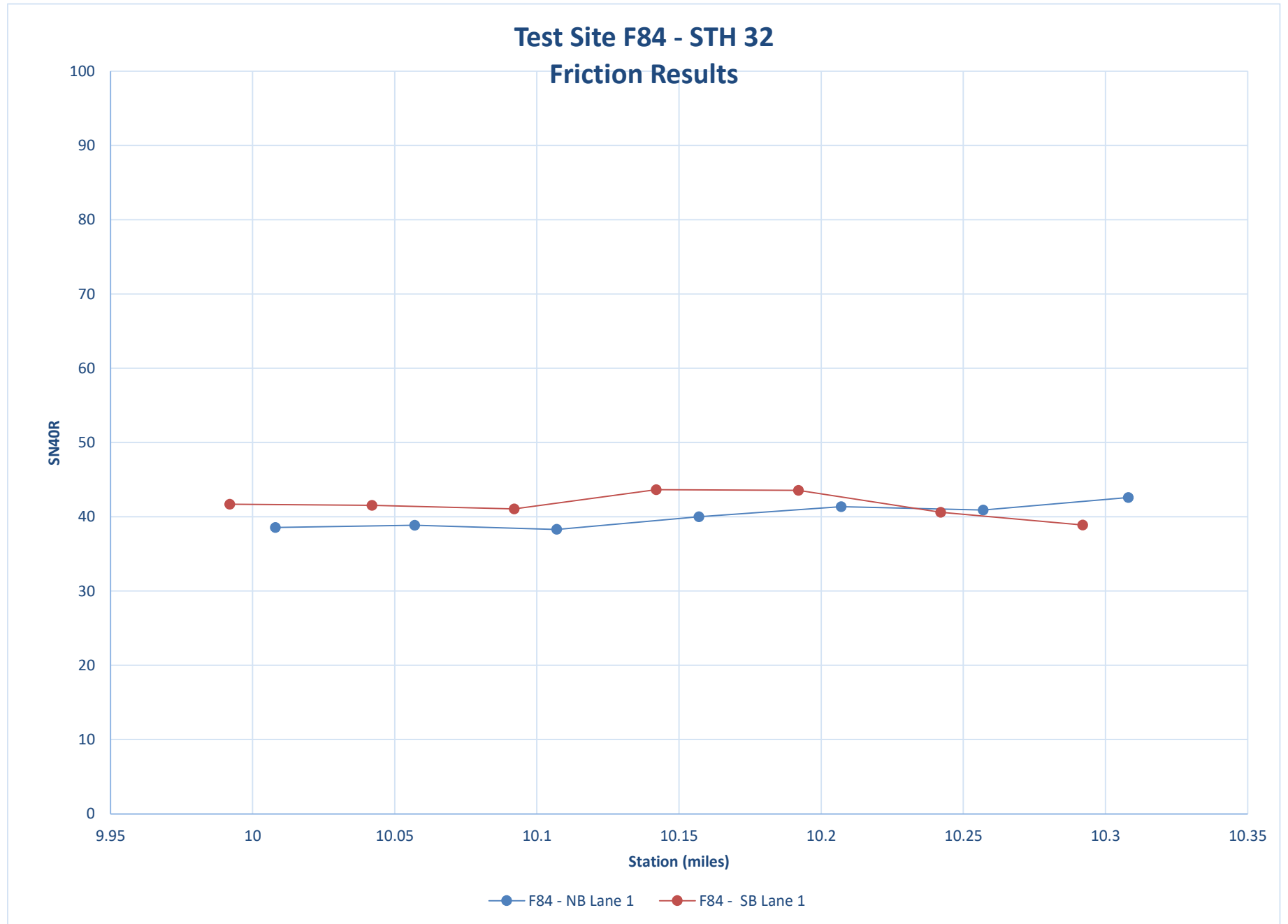
APPENDIX A



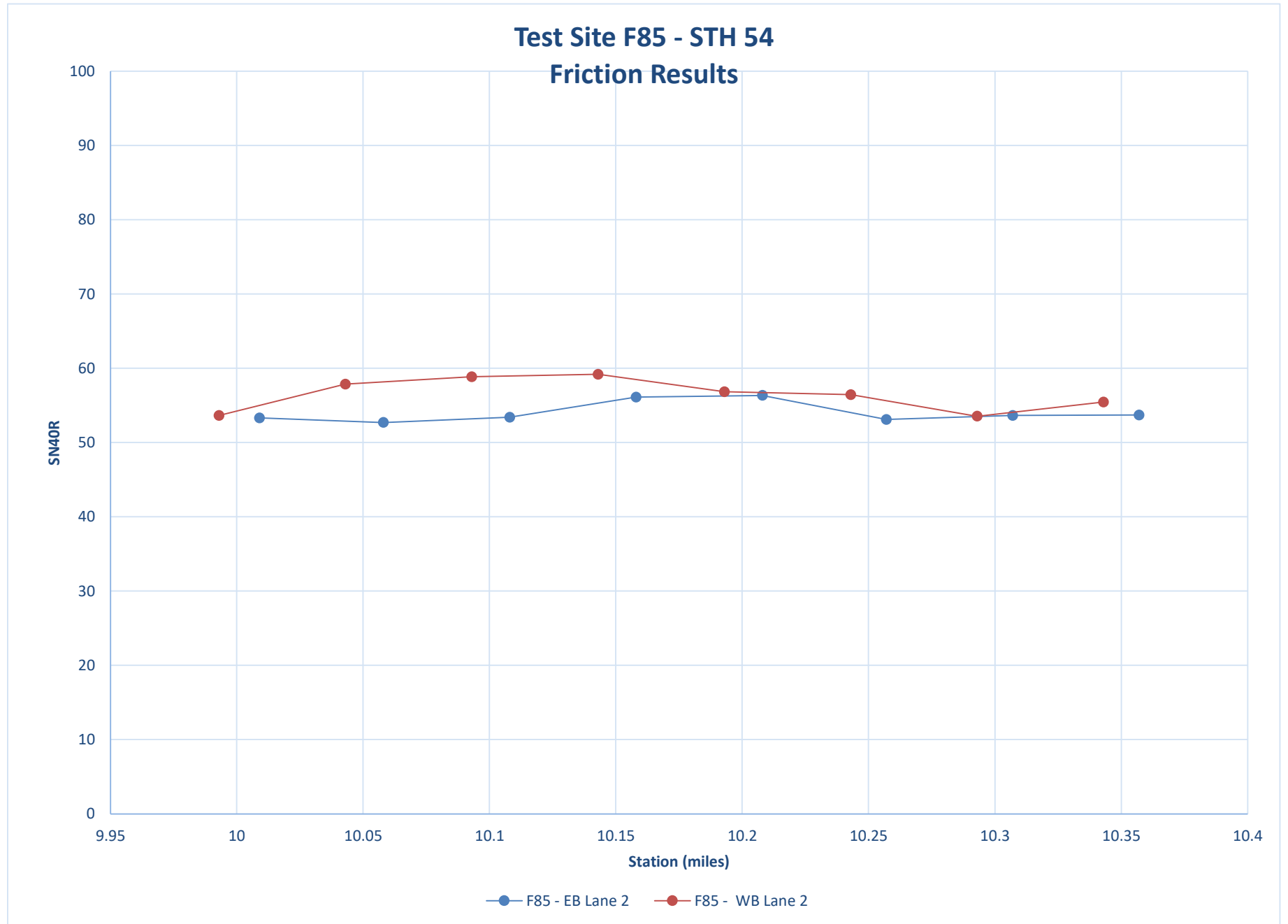
APPENDIX A



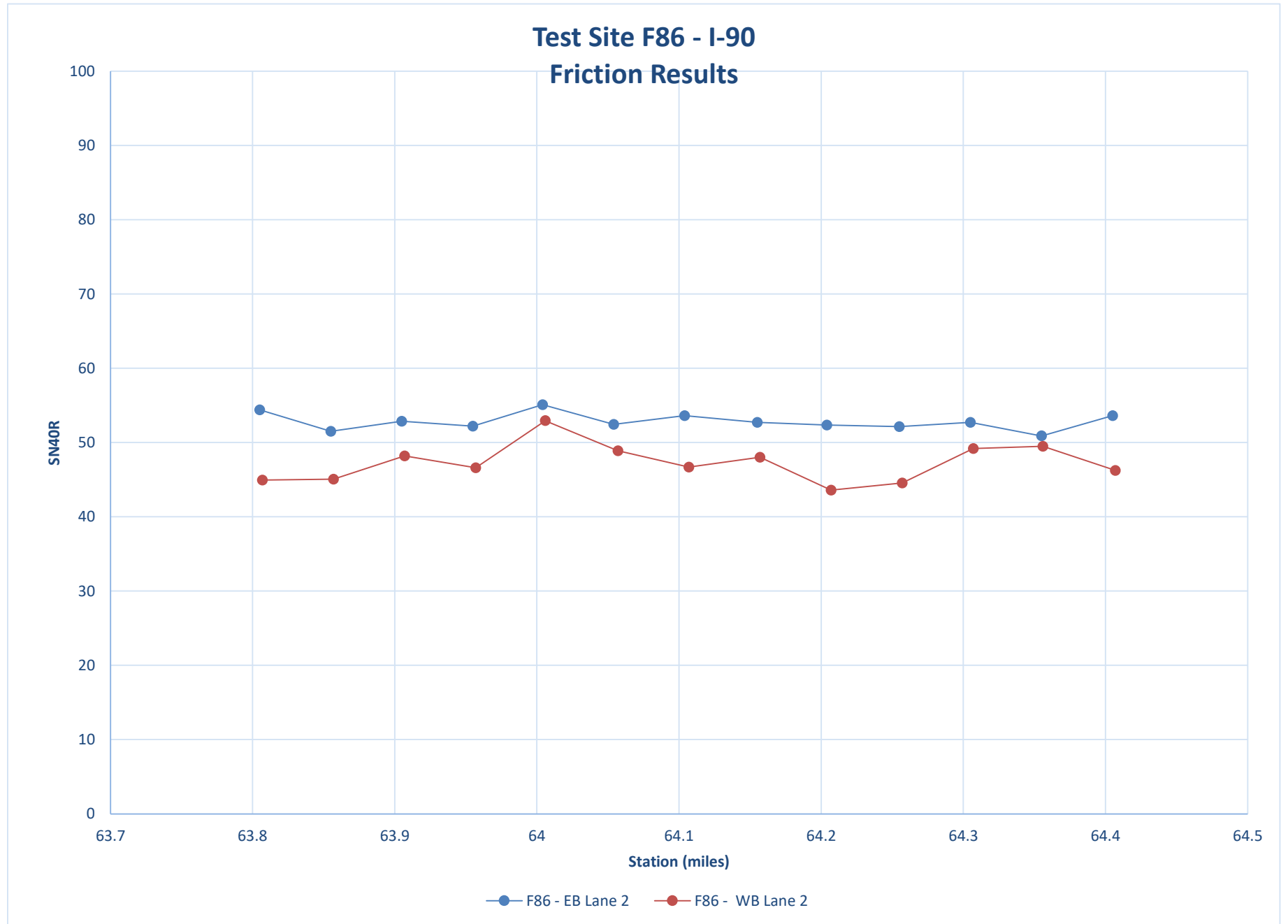
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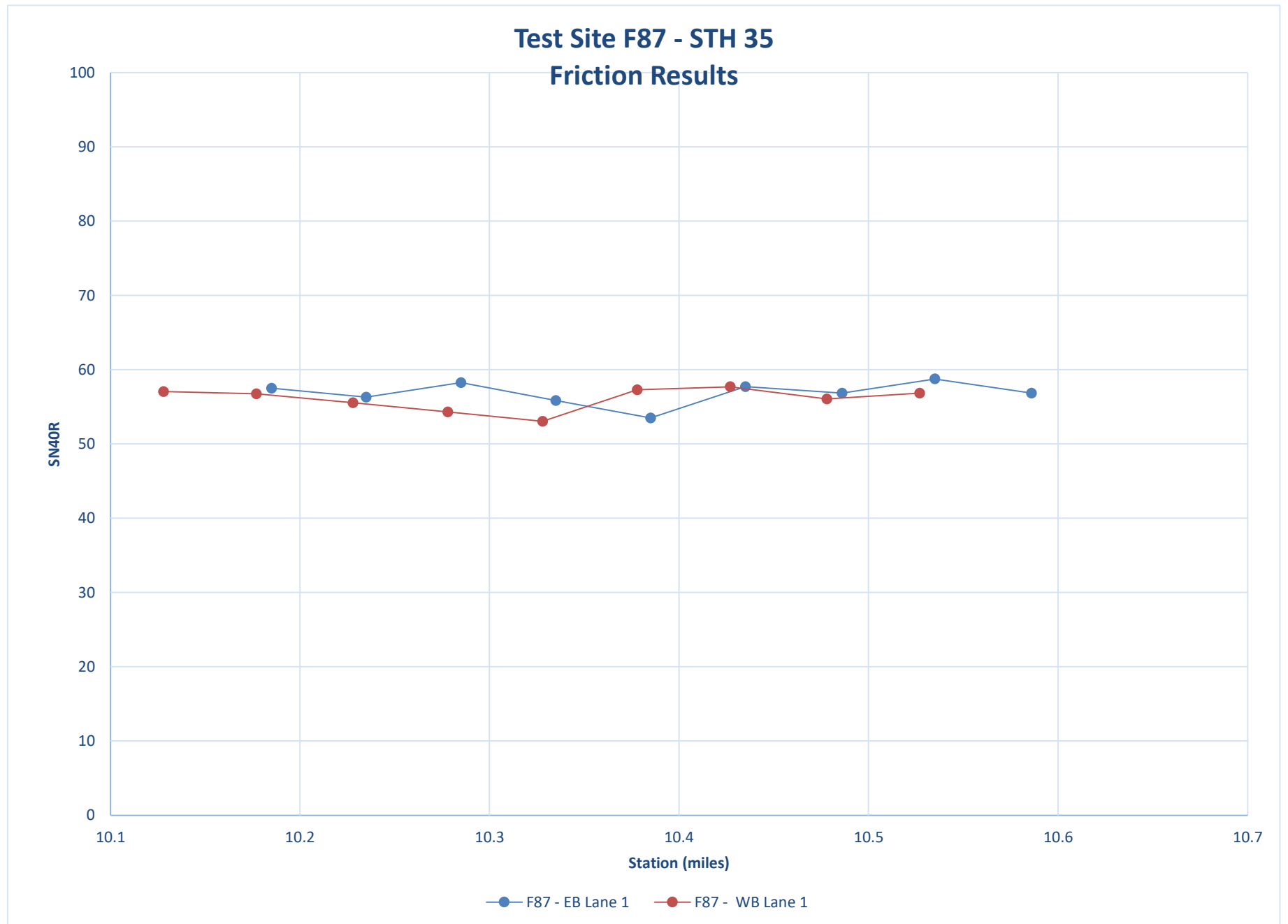
APPENDIX A



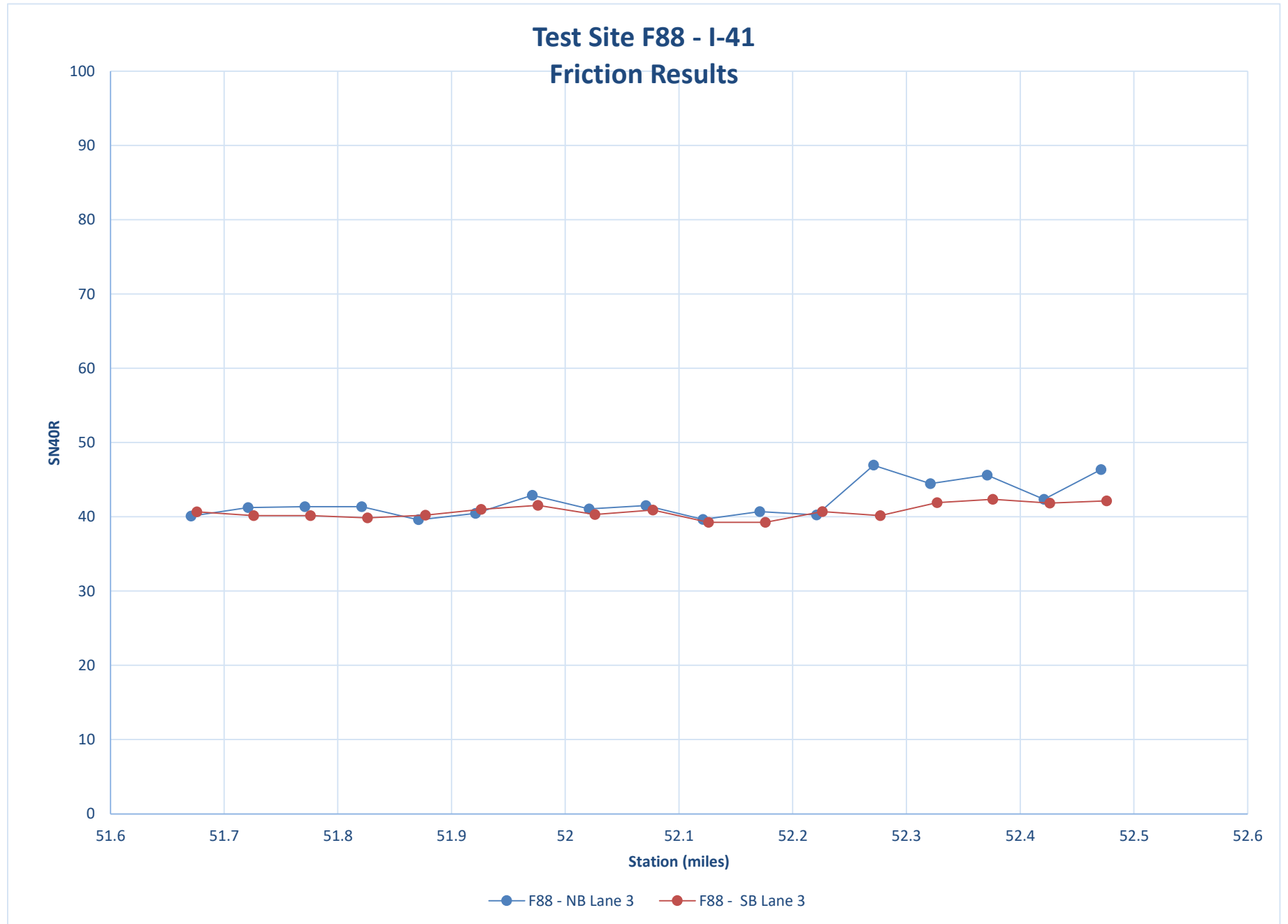
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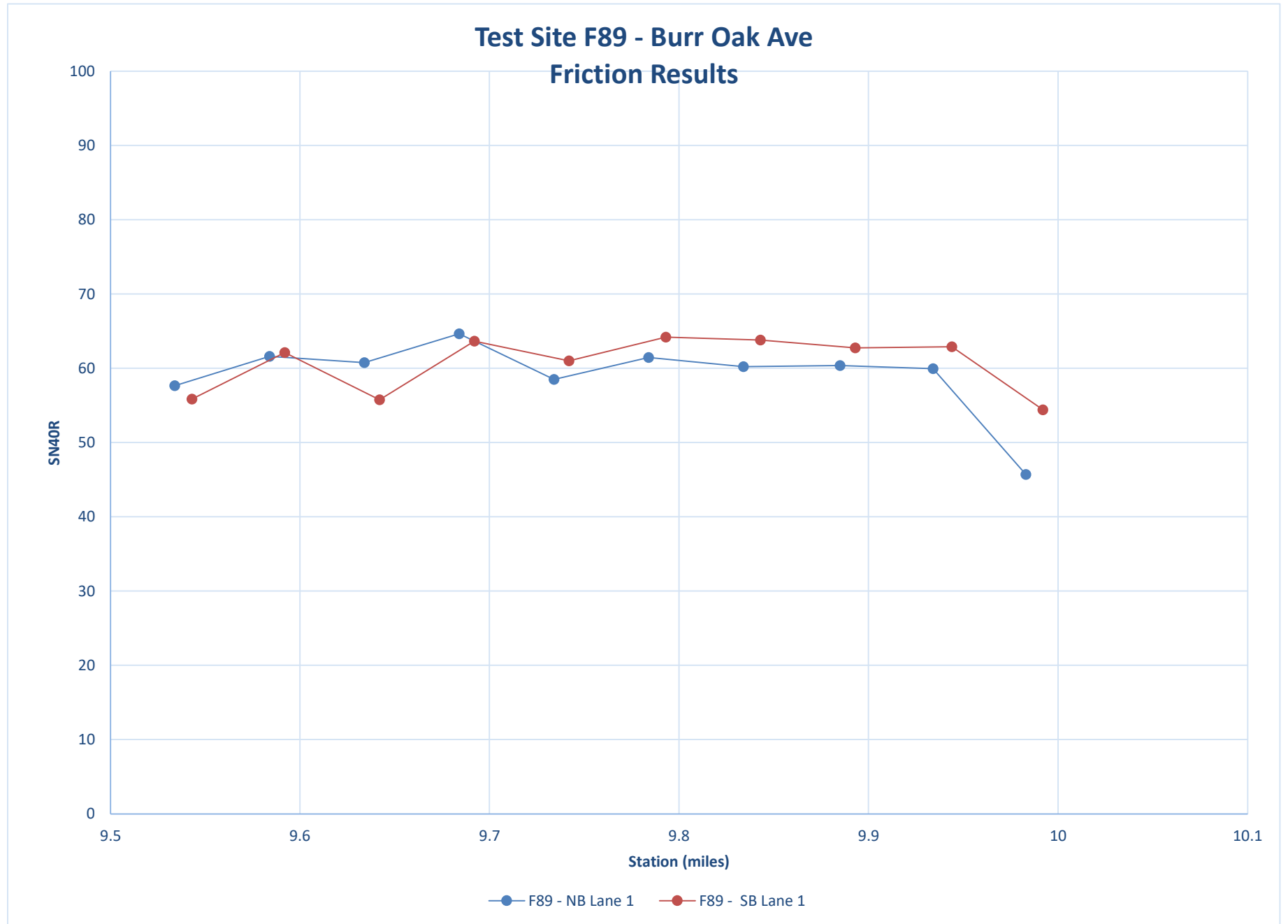
APPENDIX A



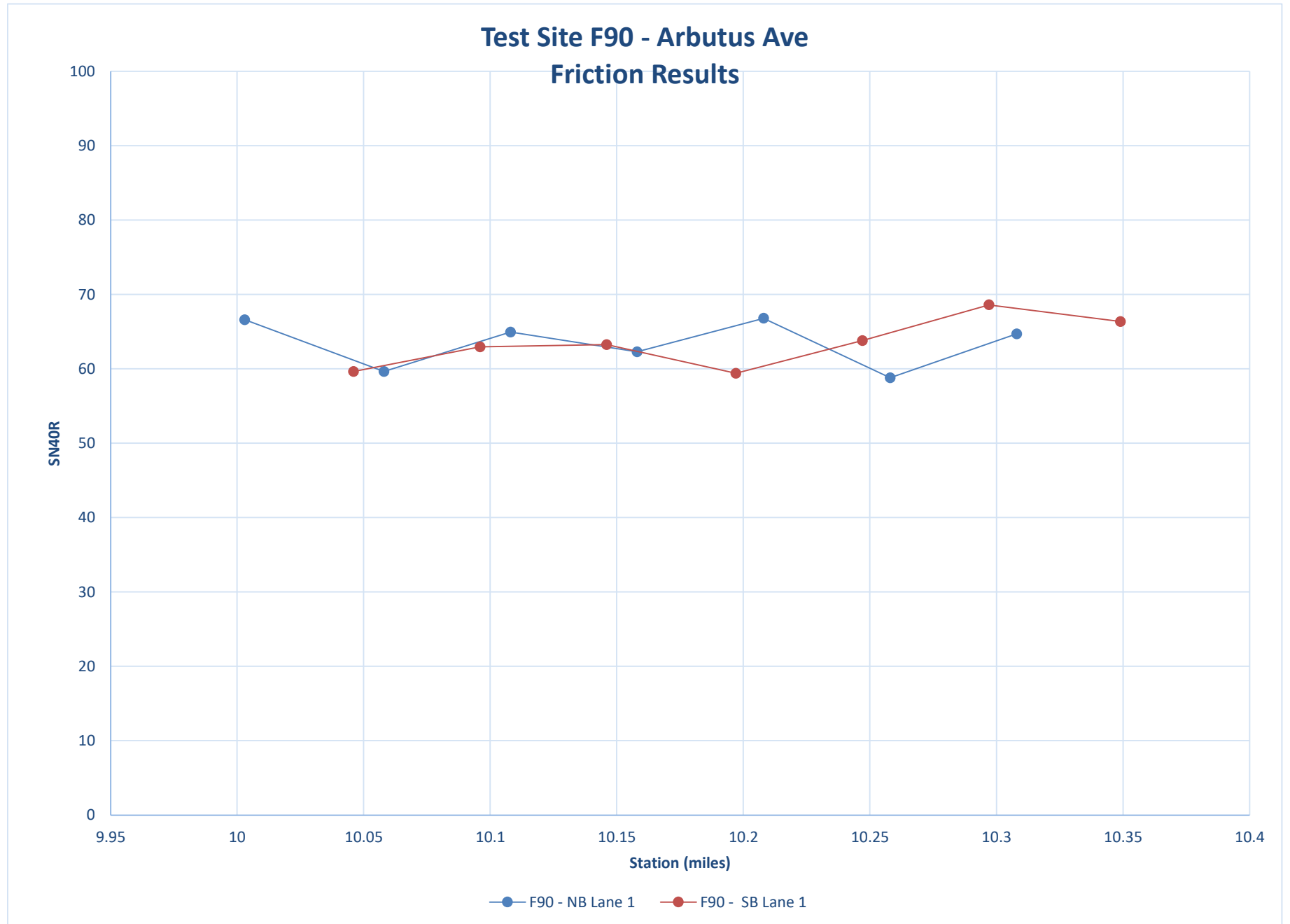
APPENDIX A



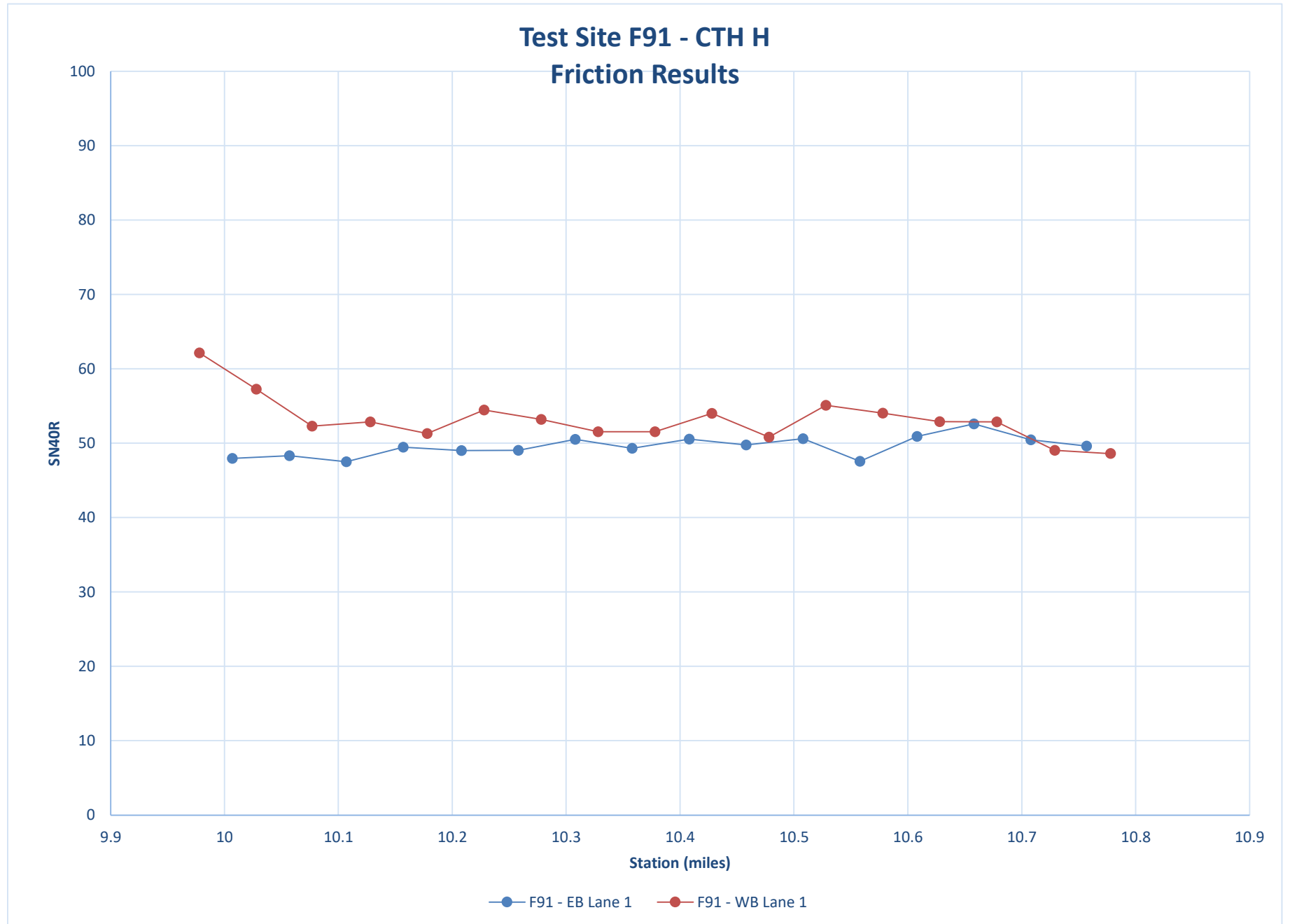
APPENDIX A



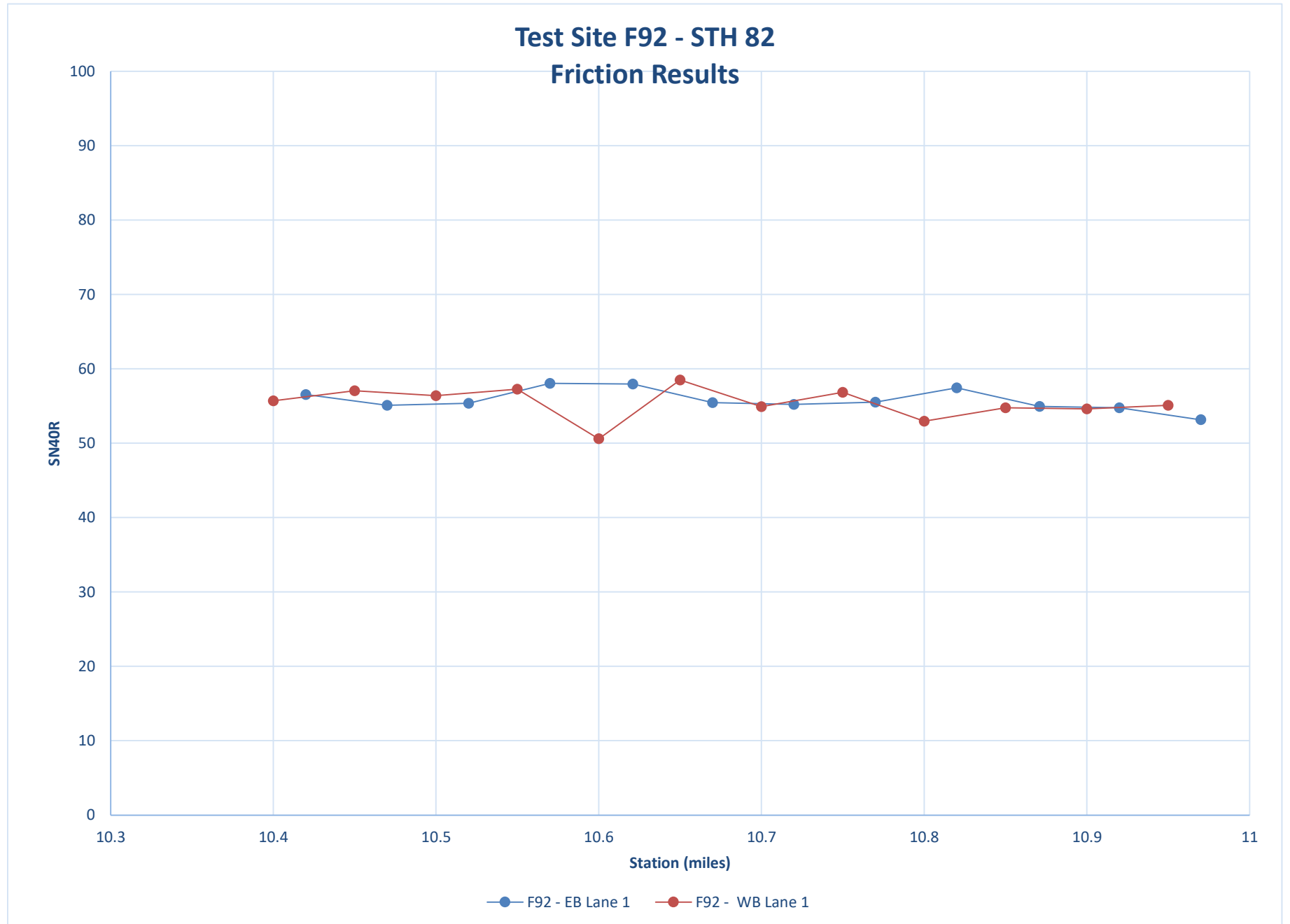
APPENDIX A



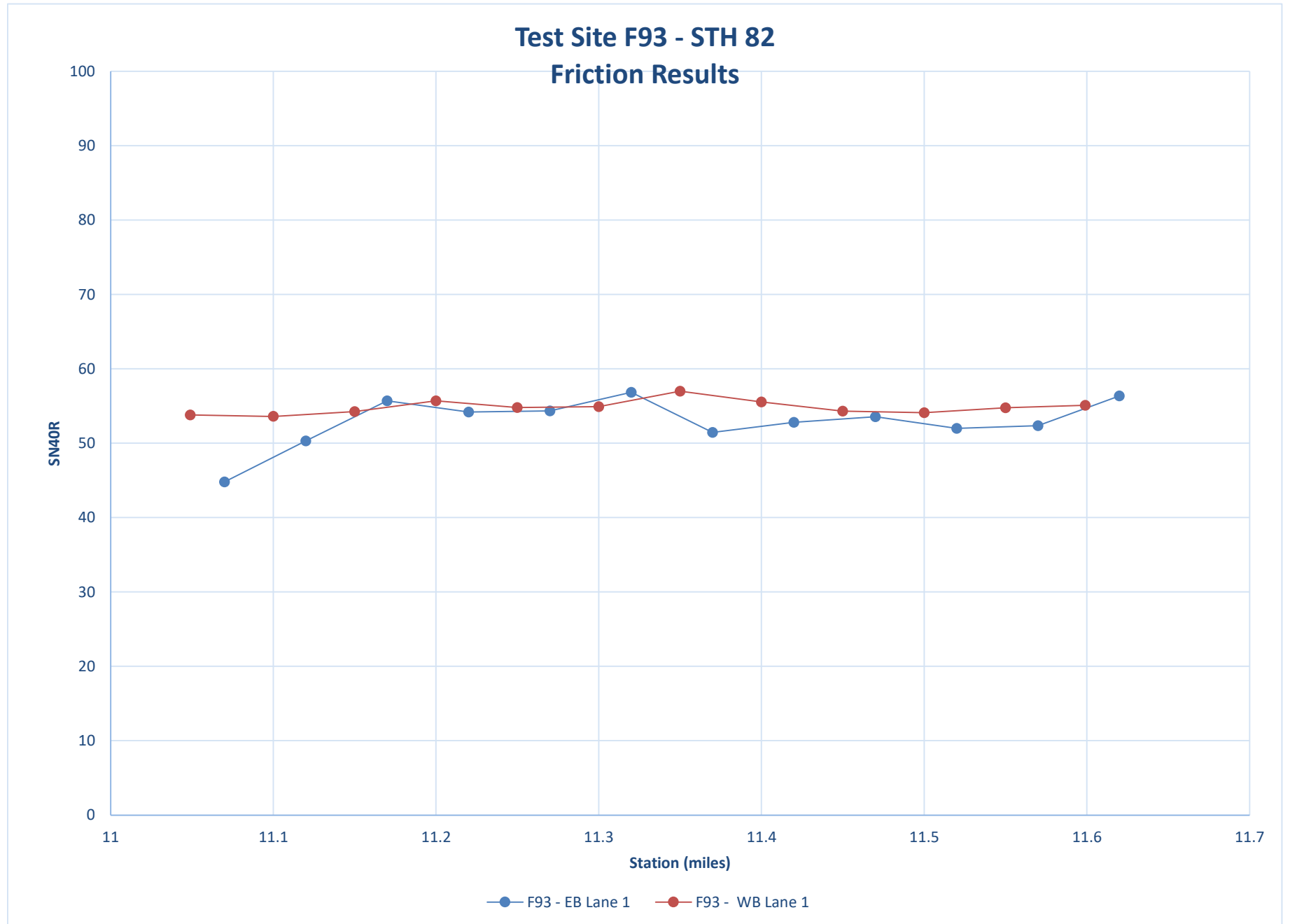
APPENDIX A



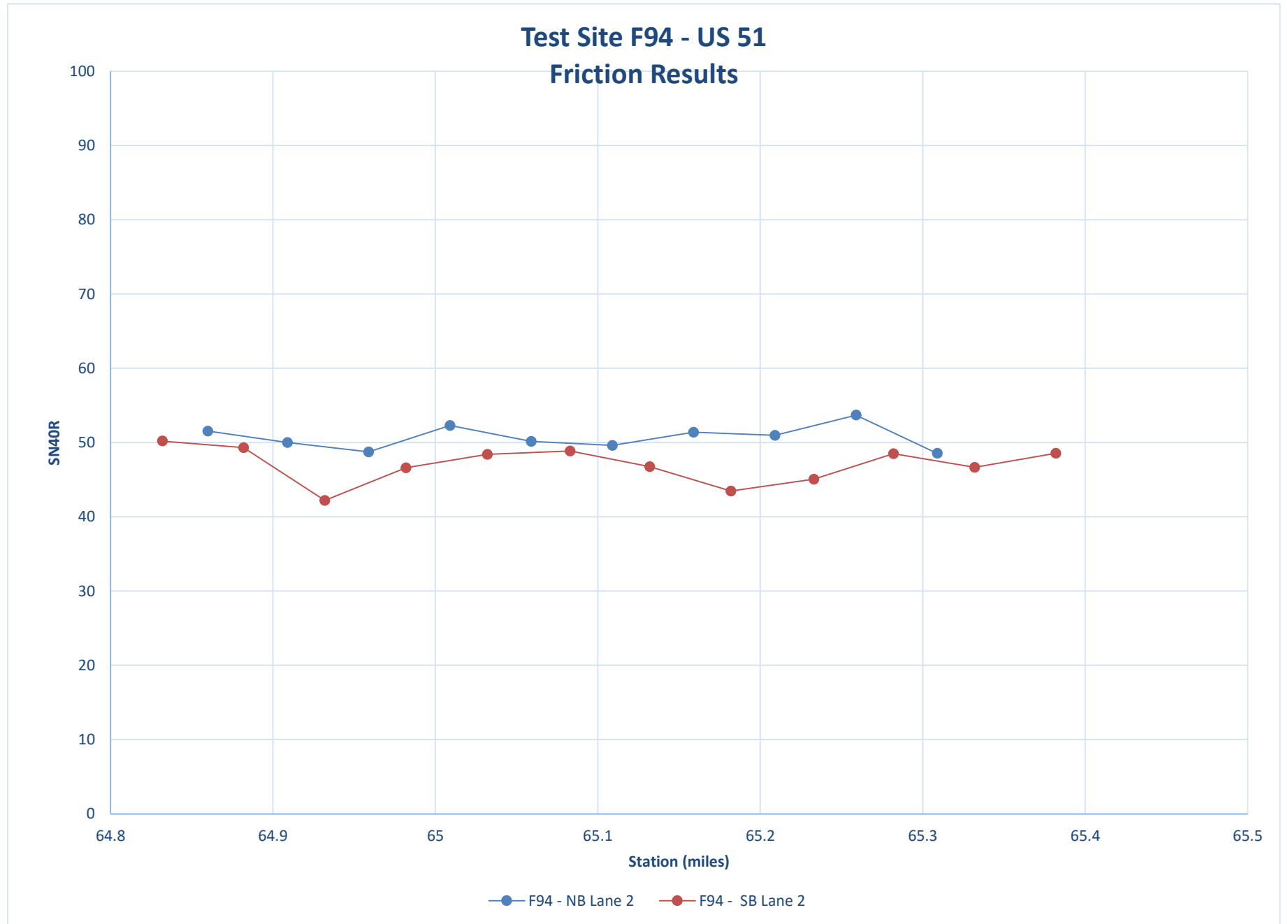
APPENDIX A



APPENDIX A



APPENDIX A



4.5 Departure Dynamic Correlation

The departure dynamic correlation was performed. It consisted of 12 skids on Pad 0, 12 skids on Pad 1, and 12 skids on Pad 2 at speeds of 40, 50, and 62 miles per hour leading to a total of 108 skids, leading to 9 combinations of pad and speed. During the correlation, both systems were operated simultaneously.

Left Wheel Findings

Left Wheel (524 tire)	
CUSTOMER was Higher than TRC system	6 of 9 cases
Average difference	-0.25 SN
Range	-2.38 to 0.71 SN

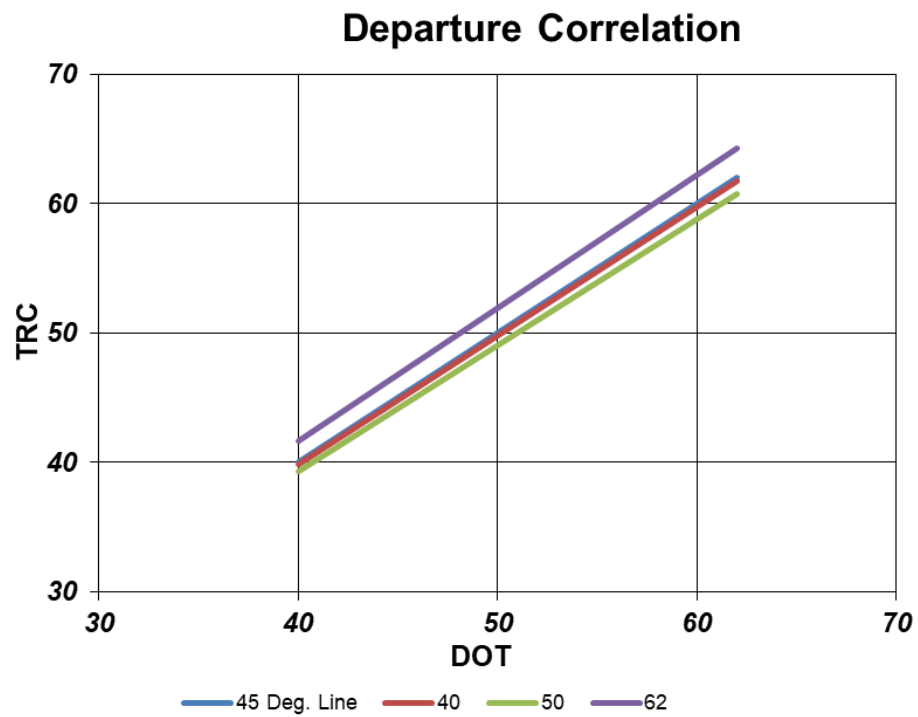
Skid Number Averages for Departure Dynamic Correlation
ARA Red, Left Wheel, 524 Tire

<u>Speed</u> <u>(mph)</u>	<u>Pad</u>	<u>TRC</u> <u>(SN)</u>	<u>ARA Red</u> <u>(SN)</u>	<u>ARA - TRC</u> <u>(SN)</u>
40	0	10.5	11.2	0.71
	1	32.3	31.3	-0.94
	2	52.4	53.0	0.62
50	0	8.5	8.7	0.17
	1	26.8	27.0	0.20
	2	33.9	34.2	0.27
62	0	7.3	7.7	0.41
	1	22.3	21.0	-1.31
	2	33.1	30.7	-2.38
Average		25.2	25.0	-0.25

The first order regression equations relating the measurements made by the Skid Measurement System to TRC have been calculated and are:

40	$SN(TRC) = 1.00 SN(ARA RED) - 0.05$
50	$SN(TRC) = 0.97 SN(ARA RED) + 0.41$
62	$SN(TRC) = 1.03 SN(ARA RED) + 0.53$

A graph of the 40 mph equation follows with a 45-degree line of equality:



Appendix C
Detailed Friction Results
Test Site 02

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/11/2024	2_NB_L1_02_20240711_110506.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:05:06	60.479	2880	33.8	3.818	83.7	39.7	0.24	24.8	Left	81.2	88.7	42.95627374	-88.04522726	752.2906	F	39.6	M	40	33.7		
7/11/2024	2_NB_L1_02_20240711_110506.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:05:11	60.529	2881	32.2	0.791	65.1	40	0.05	25.5	Left	81.1	87.8	42.95678323	-88.04454076	748.4936	F	39.9	M	40	32.2		
7/11/2024	2_NB_L1_02_20240711_110506.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:05:15	60.579	2882	31.9	0.472	54.2	40.2	0.1	25.8	Left	81	87.2	42.95729781	-88.0438615	746.1982	F	40.2	M	40	32.0		
7/11/2024	2_NB_L1_02_20240711_110506.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:05:20	60.629	2883	34	1.338	63.1	40.6	0.09	26.2	Left	81.2	87.3	42.95781249	-88.04316777	743.873	F	40.8	M	40	34.3		
7/11/2024	2_NB_L1_02_20240711_110506.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:05:24	60.679	2884	39.2	1.697	57.7	40.5	0.15	26	Left	81	85.2	42.9583264	-88.04246175	741.4146	F	40.3	M	40	39.5		
7/11/2024	2_NB_L1_02_20240711_110506.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:05:28	60.729	2885	34.3	4.154	56.8	40.5	0.09	25.8	Left	81	85.4	42.95883129	-88.04177764	740.6238	F	40.3	M	40	34.6		
7/11/2024	2_NB_L1_02_20240711_110506.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:05:33	60.779	2886	37.9	1.173	60	40.7	0.15	25.5	Left	81.1	86.4	42.9593711	-88.04110732	739.1178	F	40.5	M	40	38.3		
7/11/2024	2_NB_L1_02_20240711_110506.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:05:37	60.829	2887	38.6	0.74	57	40.8	0.11	26.1	Left	81.2	86.5	42.95992721	-88.04049093	737.443	F	40.7	M	40	39.0		
7/11/2024	2_NB_L1_02_20240711_110506.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:05:42	60.879	2888	36.2	0.699	57.8	40.7	0.14	26	Left	81.1	85.9	42.96050287	-88.03988828	735.5899	F	40.5	M	40	36.6		
NB Lane 1															Avg	35.4	1.5											NB Lane 1		Avg	35.7	No of Tests	
															St. Dev	3.1														St. Dev	3.2	7	
																													Min	32.0			
																													Max	39.5			

Appendix C																																	
Detailed Friction Results																																	
Test Site 03																																	
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/11/2024	3-5_EB_L1_01_20240711_102844.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:29:39	316.539	2836	25.3	0.893	44.6	40.3	0.05	24.4	Left	78.9	90.1	42.96235227	-87.93874584	692.4697	F	40	M	40	25.5		
7/11/2024	3-5_EB_L1_01_20240711_102844.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:29:43	316.591	2837	67.1	11.121	104.1	39.9	0.22	26	Left	78.9	91.9	42.96227743	-87.93774049	690.027	F	39.6	M	40	67.1		
7/11/2024	3-5_EB_L1_01_20240711_102844.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:29:48	316.641	2838	73	6.33	100.6	40.4	0.18	25.7	Left	78.8	91.9	42.9620269	-87.93679873	686.9839	F	40.2	M	40	73.2		
7/11/2024	3-5_EB_L1_01_20240711_102844.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:29:52	316.691	2839	70.5	2.573	103.8	41.2	0.24	26.1	Left	79	91.8	42.96162615	-87.93598369	681.9146	F	41	M	40	71.1		
7/11/2024	3-5_EB_L1_01_20240711_102844.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:29:56	316.741	2840	73.3	2.799	101.4	41	0.3	26.3	Left	78.8	84.8	42.96109738	-87.93532911	678.3033	F	40.8	M	40	73.8		
7/11/2024	3-5_EB_L1_01_20240711_102844.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:30:01	316.791	2841	68.4	2.433	101.2	40.1	0.22	25.9	Left	79	90.2	42.9604672	-87.93483023	666.0657	F	41.4	M	40	68.5		
EB Lane 1															Avg	70.5	5.1	EB Lane 1										Avg	70.7	No of Tests			
															St. Dev	2.7												St. Dev	2.9	5			
																												Min	67.1				
																												Max	73.8				
7/11/2024	3-5_EB_L2_01_20240711_100937.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:10:27	316.52	2823	21	0.952	44.8	40.3	0.05	26.5	Left	76.7	78	42.96232961	-87.93918223	695.0213	F	40.2	M	40	21.2		
7/11/2024	3-5_EB_L2_01_20240711_100937.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:10:32	316.571	2824	70.6	2.623	114	40.1	0.27	25.6	Left	76.7	86.5	42.96229691	-87.93817315	691.4043	F	39.8	M	40	70.7		
7/11/2024	3-5_EB_L2_01_20240711_100937.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:10:36	316.621	2825	70.9	2.356	107.3	40.3	0.2	25.7	Left	76.7	87.6	42.96212687	-87.93721533	689.6759	F	40.1	M	40	71.1		
7/11/2024	3-5_EB_L2_01_20240711_100937.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:10:41	316.671	2826	74	2.196	98.1	41	0.23	27	Left	76.7	87.4	42.96179052	-87.93634646	685.1432	F	40.9	M	40	74.5		
7/11/2024	3-5_EB_L2_01_20240711_100937.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:10:45	316.721	2827	70.8	3.287	102.3	41.1	0.22	26	Left	76.7	86.1	42.96131699	-87.93561938	679.6141	F	40.8	M	40	71.4		
7/11/2024	3-5_EB_L2_01_20240711_100937.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:10:49	316.771	2828	71.1	2.803	103.9	40.3	0.35	26.1	Left	76.9	80.9	42.96071166	-87.93507526	679.682	F	39.4	M	40	71.3		
EB Lane 2															Avg	71.5	2.7	EB Lane 2										Avg	71.8	No of Tests			
															St. Dev	1.4												St. Dev	1.6	5			
																												Min	70.7				
																												Max	74.5				
7/11/2024	3-5_EB_L3_01_20240711_094811.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:48:11	316.519	2800	25.8	0.669	84.4	40.3	0.16	25.1	Left	73.5	79.6	42.96229193	-87.93926857	694.8019	F	40	M	40	26.0		
7/11/2024	3-5_EB_L3_01_20240711_094811.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:48:15	316.57	2801	75	3.265	112.3	40.2	0.27	25.4	Left	73.5	84.2	42.96227584	-87.93827356	692.1799	F	39.9	M	40	75.1		
7/11/2024	3-5_EB_L3_01_20240711_094811.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:48:20	316.619	2802	72.9	2.838	109.9	40.2	0.19	26.2	Left	73.6	85.2	42.96211917	-87.93731634	689.0268	F	40	M	40	73.0		
7/11/2024	3-5_EB_L3_01_20240711_094811.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:48:24	316.67	2803	71.2	3.265	107.7	40.9	0.15	27.1	Left	73.6	84.4	42.96179381	-87.93643101	685.7132	F	40.8	M	40	71.7		
7/11/2024	3-5_EB_L3_01_20240711_094811.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:48:29	316.72	2804	68.9	4.787	107.7	41.1	0.26	27.6	Left	73.6	83.7	42.96131744	-87.93567821	680.5561	F	40.9	M	40	69.5		
7/11/2024	3-5_EB_L3_01_20240711_094811.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:48:33	316.77	2805	63.5	3.984	106.4	40.4	0.28	26.3	Left	73.6	77.4	42.96073268	-87.93512011	678.557	F	40.2	M	40	63.7		
EB Lane 3															Avg	70.3	3.6	EB Lane 3										Avg	70.6	No of Tests			
															St. Dev	4.4												St. Dev	4.4	5			
																												Min	63.7				
																												Max	75.1				

Appendix C																																			
Detailed Friction Results																																			
Test Site 04																																			
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN		
7/11/2024	4_WB_L2_01_20240711_100204.D01	IH 894	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:02:15	316.865	2812	21.7	4.557	42.6	40.6	0.05	26.8	Left	75.7	78.6	42.9593341	-87.93371048	687.3077	F	42.8	M	40	22.0				
7/11/2024	4_WB_L2_01_20240711_100204.D01	IH 894	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:02:19	316.825	2813	29.4	6.62	58	41.2	0.07	27.3	Left	75.5	83.5	42.95990178	-87.93377065	679.2058	F	41.4	M	40	30.0				
7/11/2024	4_WB_L2_01_20240711_100204.D01	IH 894	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:02:22	316.789	2814	25.3	4.319	56.8	40.9	0.12	26.7	Left	75.6	77.5	42.96041377	-87.93391297	678.4254	F	39.7	M	40	25.8				
7/11/2024	4_WB_L2_01_20240711_100204.D01	IH 894	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:02:25	316.754	2815	25.8	4.386	45.8	40.1	0.15	26	Left	75.7	76.9	42.96080794	-87.93429441	681.5798	F	40.1	M	40	25.9				
7/11/2024	4_WB_L2_01_20240711_100204.D01	IH 894	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:02:30	316.705	2816	26.7	4.816	54	39.6	0.11	25.7	Left	75.7	77.4	42.96133168	-87.93494262	686.2629	F	39.6	M	40	26.5				
7/11/2024	4_WB_L2_01_20240711_100204.D01	IH 894	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:02:34	316.654	2817	39.1	4.85	51.3	39.6	0.12	26.1	Left	75.7	85.6	42.96185742	-87.93555933	690.9638	F	39.1	M	40	38.9				
7/11/2024	4_WB_L2_01_20240711_100204.D01	IH 894	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:02:38	316.617	2818	36	5.95	60.4	40	0.05	26.2	Left	75.7	86.3	42.96220329	-87.93609873	687.586	F	39.7	M	40	36.0				
7/11/2024	4_WB_L2_01_20240711_100204.D01	IH 894	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:02:43	316.556	2819	28	3.587	41.6	41.7	0.12	27	Left	75.7	85.2	42.96244725	-87.93723796	689.701	F	41.3	M	40	28.9				
7/11/2024	4_WB_L2_01_20240711_100204.D01	IH 894	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:02:47	316.504	2820	27	0.636	43.9	41.2	0.14	27.4	Left	75.6	83.5	42.9624885	-87.93825655	690.7912	F	41.1	M	40	27.6				
WB Lane 2															Avg	30.0	4.9	WB Lane 2															Avg	30.3	No of Tests
															St. Dev	5.4																	St. Dev	5.2	7
																											Min	25.8							
																											Max	38.9							
7/11/2024	4_WB_L3_01_20240711_093849.D01	IH 894	West(-)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:40:14	316.885	2790	39.6	3.919	80.3	39.9	0.11	26.4	Left	71.7	74	42.95923574	-87.93366785	690.7472	F	39.2	M	40	39.6				
7/11/2024	4_WB_L3_01_20240711_093849.D01	IH 894	West(-)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:40:18	316.844	2791	44	4.829	75.4	40.9	0.04	26.2	Left	71.7	81.9	42.95981671	-87.93374663	685.4693	F	40	M	40	44.5				
7/11/2024	4_WB_L3_01_20240711_093849.D01	IH 894	West(-)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:40:21	316.803	2792	39.1	5.96	72.7	41	0.12	26.6	Left	71.7	75.3	42.96040735	-87.93385739	680.2656	F	39.4	M	40	39.6				
7/11/2024	4_WB_L3_01_20240711_093849.D01	IH 894	West(-)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:40:24	316.773	2793	31.6	4.185	56.4	40.3	0.16	26.2	Left	71.7	74.3	42.96075325	-87.93414535	686.6376	F	39.5	M	40	31.8				
7/11/2024	4_WB_L3_01_20240711_093849.D01	IH 894	West(-)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:40:28	316.729	2794	33	2.841	58.3	39.9	0.12	25.9	Left	71.9	75.2	42.96121647	-87.93472153	692.2608	F	39.8	M	40	33.0				
7/11/2024	4_WB_L3_01_20240711_093849.D01	IH 894	West(-)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:40:33	316.673	2795	35.9	4.971	62.9	39.5	0.11	25.2	Left	71.7	81.6	42.96180671	-87.93545557	699.4258	F	40.3	M	40	35.7				
7/11/2024	4_WB_L3_01_20240711_093849.D01	IH 894	West(-)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:40:37	316.624	2796	30.9	5.456	56	40.5	0.05	26.8	Left	71.9	84.8	42.96226663	-87.93613167	694.3146	F	40.3	M	40	31.2				
7/11/2024	4_WB_L3_01_20240711_093849.D01	IH 894	West(-)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:40:42	316.574	2797	29.1	4.65	42.9	41.4	0.08	27.3	Left	71.8	83.6	42.96246922	-87.93707117	696.9987	F	41.1	M	40	29.8				
7/11/2024	4_WB_L3_01_20240711_093849.D01	IH 894	West(-)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:40:46	316.523	2798	31.2	0.677	46.4	41.4	0.16	27.7	Left	71.8	81.7	42.9625252	-87.93805807	696.5	F	41.1	M	40	31.9				
WB Lane 3															Avg	34.8	4.7	WB Lane 3															Avg	35.1	No of Tests
															St. Dev	5.3																	St. Dev	5.3	7
																											Min	29.8							
																											Max	44.5							

Appendix C																																	
Detailed Friction Results																																	
Test Site 05																																	
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/11/2024	3-5_EB_L1_01_20240711_102844.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:30:05	316.841	2842	71.1	2.206	103.9	39.6	0.26	25.4	Left	78.9	90.8	42.95977376	-87.93460559	678.6587	F	39.3	M	40	70.9		
7/11/2024	3-5_EB_L1_01_20240711_102844.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:30:10	316.891	2843	52.3	21.581	102	39.8	0.09	25.3	Left	78.9	90.2	42.95903947	-87.93457722	686.4072	F	42.3	M	40	52.2		
7/11/2024	3-5_EB_L1_01_20240711_102844.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:30:14	316.94	2844	29.2	0.48	46.5	41.6	0.04	26.7	Left	79	90.3	42.95833885	-87.93466527	692.3754	F	41.4	M	40	30.0		
EB Lane 1															Avg	61.7	11.9											EB Lane 1		Avg	61.6	No of Tests	
															St. Dev	13.3														St. Dev	13.2	2	
																													Min	52.2			
																													Max	70.9			
7/11/2024	3-5_EB_L2_01_20240711_100937.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:10:54	316.821	2829	71.7	2.003	107.1	39.7	0.24	25.4	Left	76.8	86.1	42.96004307	-87.93470985	687.4709	F	39.6	M	40	71.6		
7/11/2024	3-5_EB_L2_01_20240711_100937.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:10:58	316.871	2830	69.8	2.403	100.7	39.4	0.12	26.1	Left	76.8	79.2	42.95933621	-87.93461219	688.4778	F	41.8	M	40	69.5		
7/11/2024	3-5_EB_L2_01_20240711_100937.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:11:03	316.919	2831	29.1	0.253	49.5	40.3	0.08	26.3	Left	76.9	85.5	42.95861374	-87.93466316	694.1646	F	40.6	M	40	29.3		
EB Lane 2															Avg	70.8	2.2											EB Lane 2		Avg	70.5	No of Tests	
															St. Dev	1.3														St. Dev	1.4	2	
																													Min	69.5			
																													Max	71.6			
7/11/2024	3-5_EB_L3_01_20240711_094811.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:48:38	316.82	2806	69.6	3.506	106.9	39.5	0.31	25.9	Left	73.6	84.1	42.9600653	-87.93476822	683.3671	F	39.3	M	40	69.4		
7/11/2024	3-5_EB_L3_01_20240711_094811.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:48:42	316.869	2807	74.9	2.546	106.1	39	0.25	25.6	Left	73.6	77.4	42.95936455	-87.93465333	686.5577	F	35.9	M	40	74.4		
7/11/2024	3-5_EB_L3_01_20240711_094811.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:48:47	316.918	2808	34.5	1.335	58.3	40.6	0.09	26.3	Left	73.6	82.8	42.95865706	-87.93472384	689.0328	F	39.4	M	40	34.8		
EB Lane 3															Avg	72.3	3.0											EB Lane 3		Avg	71.9	No of Tests	
															St. Dev	3.7														St. Dev	3.6	2	
																													Min	69.4			
																													Max	74.4			

Appendix C
Detailed Friction Results
Test Site 06

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN											
7/11/2024	6_EB_L1_01_20240711_122803.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:29:02	310.705	3016	26.6	4.11	42	42.2	0.05	28.1	Left	84.6	98.2	43.03533831	-87.9270799		616.7183	F	42.3	M	40	27.7												
7/11/2024	6_EB_L1_01_20240711_122803.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:29:06	310.757	3017	65.7	2.792	102.3	42.3	0.25	28.1	Left	84.6	97.6	43.03524274	-87.9260676		604.1583	F	42.2	M	40	66.9												
7/11/2024	6_EB_L1_01_20240711_122803.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:29:10	310.799	3018	67.2	2.098	99.8	41.1	0.24	27.2	Left	84.6	94.9	43.03535851	-87.92526971		598.2318	F	40.5	M	40	67.8												
7/11/2024	6_EB_L1_01_20240711_122803.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:29:13	310.835	3019	67.6	2.402	101.1	40.2	0.21	26.1	Left	84.6	83.4	43.03563348	-87.92469731		599.8027	F	39.2	M	40	67.7												
7/11/2024	6_EB_L1_01_20240711_122803.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:29:16	310.872	3020	65.7	2.968	98.6	40.1	0.14	26.2	Left	84.6	87.1	43.03610054	-87.92450389		560.3898	F	37.2	M	40	65.8												
7/11/2024	6_EB_L1_01_20240711_122803.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:29:19	310.905	3021	72.6	2.309	102.5	40.2	0.11	27	Left	84.6	90.9	43.0365122	-87.92436252		521.9186	F	33.6	M	40	72.7												
7/11/2024	6_EB_L1_01_20240711_122803.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:29:22	310.94	3022	73.5	2.357	100.3	39.8	0.23	25.9	Left	84.7	88.2	43.037067	-87.92433478		590.3423	F	39.6	M	40	73.4												
7/11/2024	6_EB_L1_01_20240711_122803.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:29:28	311.005	3023	28	0.728	52.5	40.2	0.08	26.2	Left	84.6	94.7	43.03803902	-87.92469689		552.3074	F	43.3	M	40	28.1												
EB Lane 1															Avg	68.7	2.5											EB Lane 1		Avg	69.0	No of Tests												
															St. Dev	3.5														St. Dev	3.2	6												
																														Min	65.8													
																														Max	73.4													
7/11/2024	6_EB_L2_01_20240711_121823.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:19:22	310.685	3005	23	1.719	57.9	42.1	0.12	26.2	Left	84.2	96.7	43.03534328	-87.92748258		622.523	F	42	M	40	24.1												
7/11/2024	6_EB_L2_01_20240711_121823.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:19:26	310.735	3006	66.2	22.767	47.9	42.3	0.1	27.6	Left	84.4	97.4	43.03522995	-87.92651687		611.9565	F	42.2	M	40	67.4												
7/11/2024	6_EB_L2_01_20240711_121823.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:19:29	310.774	3007	71.8	3.332	106.9	41.5	0.24	27	Left	84.2	89.2	43.03522196	-87.9257422		603.3786	F	41	M	40	72.6												
7/11/2024	6_EB_L2_01_20240711_121823.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:19:33	310.813	3008	73	5.84	99.4	40.8	0.22	25.4	Left	84.2	84.7	43.03540552	-87.9250356		600.2956	F	39.1	M	40	73.4												
7/11/2024	6_EB_L2_01_20240711_121823.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:19:37	310.858	3009	67.4	2.072	99.7	40.5	0.19	26.5	Left	84.2	85.8	43.03559818	-87.92469597		593.5295	F	38.4	M	40	67.7												
7/11/2024	6_EB_L2_01_20240711_121823.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:19:39	310.886	3010	70.1	2.318	97.4	39.8	0.12	25.1	Left	84.2	92.4	43.03559818	-87.92469597		593.5295	F	38.4	M	40	70.0												
7/11/2024	6_EB_L2_01_20240711_121823.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:19:43	310.929	3011	75.2	3.653	106.9	40.5	0.23	26.4	Left	84.2	92.7	43.03559818	-87.92469597		593.5295	F	38.4	M	40	75.5												
7/11/2024	6_EB_L2_01_20240711_121823.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:19:48	310.985	3012	25.8	1.228	47.1	39.9	0.18	26.5	Left	84.3	93.6	43.03559818	-87.92469597		593.5295	F	38.4	M	40	25.8												
EB Lane 2															Avg	71.5	3.4											EB Lane 2		Avg	71.8	No of Tests												
															St. Dev	2.9														St. Dev	3.0	5												
																														Min	67.7													
																														Max	75.5													

Appendix C

Detailed Friction Results

Collected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/8/2024	7_EB_L1_01_20240708_181341.D01	STH 167	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:13:41	8.93	1598	45.3	1.611	96.7	37.9	0.13	23.8	Left	88.7	91.7	43.25125963	-88.29317883	1031.5545	F	38.1		M	40	44.3	
7/8/2024	7_EB_L1_01_20240708_181341.D01	STH 167	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:13:46	8.979	1599	37.8	1.629	74.6	38.7	0.12	24.8	Left	88.7	100.2	43.25127177	-88.29219878	1034.4761	F	38.3		M	40	37.2	
7/8/2024	7_EB_L1_01_20240708_181341.D01	STH 167	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:13:50	9.03	1600	45.1	1.149	71.2	38.7	0.15	24.8	Left	88.8	103.1	43.25126029	-88.29120915	1041.0139	F	38.5		M	40	44.5	
7/8/2024	7_EB_L1_01_20240708_181341.D01	STH 167	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:13:55	9.079	1601	41.6	1.529	63.4	39	0.05	25.2	Left	88.6	101.8	43.25125997	-88.29022602	1056.1362	F	38.6		M	40	41.1	
7/8/2024	7_EB_L1_01_20240708_181341.D01	STH 167	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:14:00	9.13	1602	67.1	19.599	66	42.1	0.15	27.2	Left	88.7	102.2	43.25126295	-88.28923409	1060.5662	F	42.2		M	40	68.2	
7/8/2024	7_EB_L1_01_20240708_181341.D01	STH 167	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:14:04	9.18	1603	72.4	2.372	98.5	41.9	0.12	26.5	Left	88.7	102.5	43.25130607	-88.28823546	1060.1199	F	41.7		M	40	73.4	
7/8/2024	7_EB_L1_01_20240708_181341.D01	STH 167	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:14:08	9.231	1604	76.8	3.49	100.9	41.8	0.23	26.5	Left	88.7	102.5	43.25160745	-88.28732706	1052.9405	F	41.8		M	40	77.7	
7/8/2024	7_EB_L1_01_20240708_181341.D01	STH 167	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:14:12	9.278	1605	74.4	2.847	106.2	43.7	0.09	29	Left	88.8	98.1	43.25203499	-88.2865995	1036.2519	F	43.8		M	40	76.3	
7/8/2024	7_EB_L1_01_20240708_181341.D01	STH 167	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:14:16	9.328	1606	73.2	2.128	86.7	41.2	0.27	26.4	Left	88.7	99.4	43.25227592	-88.28570767	1013.4766	F	41.2		M	40	73.8	
7/8/2024	7_EB_L1_01_20240708_181341.D01	STH 167	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:14:21	9.379	1607	37.2	1.683	65.2	41.9	0.04	27.2	Left	88.7	94.9	43.25206492	-88.28473395	999.3709	F	41.5		M	40	38.2	
7/8/2024	7_EB_L1_01_20240708_181341.D01	STH 167	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:14:25	9.43	1608	40.4	1.502	65.6	43.9	0.13	29.1	Left	88.7	96.6	43.25183111	-88.28378677	981.6099	F	43.9		M	40	42.4	
7/8/2024	7_EB_L1_01_20240708_181341.D01	STH 167	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:14:29	9.481	1609	34.9	2.71	63.1	44.7	0.42	28.2	Left	88.7	101	43.25159975	-88.28282653	966.5329	F	44.4		M	40	37.3	
7/8/2024	7_EB_L1_01_20240708_181341.D01	STH 167	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:14:34	9.53	1610	43.6	1.114	67.6	41.1	0.25	25.9	Left	88.7	101.5	43.25142213	-88.28190113	972.6344	F	40.9		M	40	44.2	
7/8/2024	7_EB_L1_01_20240708_181341.D01	STH 167	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:14:38	9.58	1611	43.5	1.326	66.6	40.8	0.08	26.3	Left	88.8	101.3	43.2513519	-88.28091837	978.5751	F	40.5		M	40	43.9	
7/8/2024	7_EB_L1_01_20240708_181341.D01	STH 167	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:14:42	9.63	1612	41.2	1.92	62.2	42.2	0.25	28.2	Left	88.6	99.6	43.25134366	-88.27992638	974.6342	F	42.1		M	40	42.3	
7/8/2024	7_EB_L1_01_20240708_181341.D01	STH 167	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:14:47	9.68	1613	43.4	2.506	71.8	42.4	0.03	27.7	Left	88.6	98.7	43.25133119	-88.27894136	966.0971	F	42.3		M	40	44.6	
7/8/2024	7_EB_L1_01_20240708_181341.D01	STH 167	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:14:51	9.73	1614	39.3	1.388	64.8	41.4	0.31	26.2	Left	88.7	100	43.25132011	-88.27795237	959.6408	F	41		M	40	40.0	
7/8/2024	7_EB_L1_01_20240708_181341.D01	STH 167	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:14:55	9.78	1615	44.7	1.078	72	40.5	0.05	26.6	Left	88.7	99.2	43.25131918	-88.27696246	958.8134	F	40.5		M	40	45.0	
EB Lane 1 (treated surfaces only)														Avg	74.2	2.7	EB Lane 1 (treated surfaces only)														Avg	75.3	No of Tests
														St. Dev	1.9																St. Dev	2.1	4
																															Min	73.4	
																															Max	77.7	
7/8/2024	7_WB_L1_01_20240708_181012.D01	STH 167	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:10:32	9.759	1580	40.9	1.228	81.4	40.1	0.11	24.9	Left	89.1	96	43.25134807	-88.27735296	959.2864	F	40		M	40	41.0	
7/8/2024	7_WB_L1_01_20240708_181012.D01	STH 167	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:10:37	9.71	1581	37.9	1.027	74	40.2	0.16	25.1	Left	89	97.6	43.25135555	-88.27832686	960.2818	F	40.1		M	40	38.0	
7/8/2024	7_WB_L1_01_20240708_181012.D01	STH 167	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:10:41	9.659	1582	45.1	0.987	76.7	39	0.15	24.7	Left	89.1	96.3	43.25136575	-88.2793147	971.0189	F	38.7		M	40	44.6	
7/8/2024	7_WB_L1_01_20240708_181012.D01	STH 167	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:10:46	9.61	1583	46.8	1.669	77.3	40.6	0.09	26.3	Left	89	98.9	43.25137635	-88.28029655	978.1428	F	40.4		M	40	47.1	
7/8/2024	7_WB_L1_01_20240708_181012.D01	STH 167	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:10:50	9.559	1584	41.7	1.704	72.6	42.4	0.12	26.2	Left	89.1	99.5	43.25138858	-88.28129762	976.4882	F	42.3		M	40	42.9	
7/8/2024	7_WB_L1_01_20240708_181012.D01	STH 167	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:10:55	9.509	1585	41.2	2.476	72.3	41.7	0.23	27	Left	89	99.3	43.25150662	-88.28226923	969.5566	F	41.5		M	40	42.1	
7/8/2024	7_WB_L1_01_20240708_181012.D01	STH 167	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:10:59	9.459	1586	48.1	1.267	70.5	40.5	0.14	26.2	Left	89	98.4	43.25127197	-88.28321178	970.2569	F	39.7		M	40	48.4	
7/8/2024	7_WB_L1_01_20240708_181012.D01	STH 167	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:11:04	9.41	1587	44.9	0.862	72.1	38.1	0.19	24.2	Left	89	98.1	43.25194725	-88.28413163	988.6781	F	37.6		M	40	44.0	
7/8/2024	7_WB_L1_01_20240708_181012.D01	STH 167	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:11:08	9.359	1588	44.8	1.63	73.4	41.2	0.05	27.2	Left	89.1	97.7	43.25217761	-88.28507825	1006.0811	F	41.2		M	40	45.4	
7/8/2024	7_WB_L1_01_20240708_181012.D01	STH 167	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:11:12	9.312	1589	76.2	4.687	100.8	40.3	0.42	25.5	Left	88.8	94.7	43.25230894	-88.28598121	1019.8166	F	39.5		M	40	76.4	
7/8/2024	7_WB_L1_01_20240708_181012.D01	STH 167	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:11:17	9.262	1590	81.1	2.687	105	40.3	0.21	26.1	Left	88.9	96.7	43.25194865	-88.28679802	1040.3602	F	39.9		M	40	81.3	
7/8/2024	7_WB_L1_01_20240708_181012.D01	STH 167	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:11:21	9.215	1591	75.9	5.258	109.6	42	0.09	27.3	Left	89	100.7	43.25154459	-88.28754286	1054.1541	F	42.1		M	40	76.9	
7/8/2024	7_WB_L1_01_20240708_181012.D01	STH 167	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:11:25	9.164	1592	69.3	9.242	105.2	41.5	0.36	27.1	Left	89.1	102.7	43.25130631	-88.28847961	1061.964	F	41.3		M	40	70.1	
7/8/2024	7_WB_L1_01_20240708_181012.D01	STH 167	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:11:28	9.126	1593	58	24.117	110.8	42	0.16	27.8	Left	88.8	101.3	43.25129235	-88.28923626	1061.429	F	41.9		M	40	59.0	
7/8/2024	7_WB_L1_01_20240708_181012.D01	STH 167	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:11:34	9.059	1594	40.1	1.695	63.5	43.7	0.05	28.8	Left	88.9	100.6	43.25129278	-88.29056761	1052.2426	F	43.6		M	40	42.0	
7/8/2024	7_WB_L1_01_20240708_181012.D01	STH 167	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:11:38	9.008	1595	45.7	3.14	71.3	44.2	0.22	28.4	Left	89	99.1	43.25129172	-88.29156987	1038.5893	F	44		M	40	47.8	
7/8/2024	7_WB_L1_01_20240708_181012.D01	STH 167	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:11:43	8.959	1596	41.2	1.745	63.1	42.4	0.33	26.9	Left	88.9	98.4	43.25129309	-88.29255029	1032.1519	F	42.3		M	40	42.4	
WB Lane 1 (treated surfaces only)														Avg	75.6	5.5	WB Lane 1 (treated surfaces only)														Avg	76.1	No of Tests
														St. Dev	4.8																St. Dev	4.6	4
																															Min	70.1	
																															Max	81.3	

Appendix C																																	
Detailed Friction Results																																	
Test Site 08																																	
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:21:38	56.723	2431	42.3	1.379	74.7	40.3	0.14	25.5	Left	83.4	93.4	43.23653317	-88.17453978	973.7484	F	40.1	M	40	42.5		
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:21:43	56.773	2432	48.9	1.56	74	40.5	0.19	25.8	Left	83.6	93.5	43.23707893	-88.17518775	976.7075	F	40.3	M	40	49.2		
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:21:47	56.823	2433	43.5	0.827	69.7	40.7	0.19	26.5	Left	83.4	93.2	43.23762355	-88.17582374	980.6896	F	40.5	M	40	43.9		
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:21:51	56.873	2434	43.4	0.462	65.4	40.8	0.17	26	Left	83.4	92.5	43.23817163	-88.17646821	985.4965	F	40.6	M	40	43.8		
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:21:56	56.923	2435	44.4	1.205	71.1	40.7	0.19	26.1	Left	83.5	93.5	43.23872381	-88.17711536	990.5024	F	40.4	M	40	44.8		
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:22:00	56.974	2436	74.8	2.412	109.6	40.5	0.27	26.4	Left	83.5	95.5	43.2392848	-88.17777274	995.6605	F	40.4	M	40	75.1		
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:22:05	57.023	2437	75.9	2.225	101.6	41	0.23	26.6	Left	83.4	93.9	43.23983806	-88.17838679	997.8399	F	40.8	M	40	76.4		
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:22:09	57.074	2438	74.7	2.789	104.8	41.4	0.26	26.2	Left	83.4	92.4	43.24043694	-88.17896943	997.2724	F	41.3	M	40	75.4		
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:22:13	57.124	2439	75.2	2.17	99.1	41.5	0.25	26.9	Left	83.2	92.4	43.24104851	-88.17949071	994.2208	F	41.5	M	40	76.0		
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:22:18	57.174	2440	72.5	2.166	97.5	41.6	0.21	25.4	Left	83.5	94.7	43.24168199	-88.17995732	988.3863	F	41.5	M	40	73.3		
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:22:22	57.224	2441	74.1	2.381	103.9	41.3	0.25	26.6	Left	83.5	96	43.24234432	-88.18037573	980.825	F	41.2	M	40	74.8		
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:22:27	57.274	2442	75.6	2.563	99.3	41	0.24	26.2	Left	83.4	96.2	43.2430146	-88.18073454	973.0969	F	40.9	M	40	76.1		
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:22:31	57.323	2443	74	3.022	99	40.8	0.27	26.2	Left	83.5	93.9	43.24369527	-88.18103083	965.3787	F	40.7	M	40	74.4		
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:22:35	57.373	2444	74.6	3.019	100.3	40.3	0.28	25.7	Left	83.4	93.7	43.24439663	-88.18127637	960.039	F	40.1	M	40	74.8		
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:22:40	57.423	2445	73.4	2.708	103.9	40	0.28	26.4	Left	83.4	95	43.2451052	-88.18146037	958.6994	F	39.8	M	40	73.4		
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:22:44	57.473	2446	77.1	1.941	105.3	40	0.23	25.2	Left	83.5	95.1	43.24582463	-88.18158563	961.2582	F	39.7	M	40	77.1		
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:22:49	57.523	2447	71.6	3.323	104.6	39.8	0.23	25.7	Left	83.5	95.9	43.24654351	-88.18164929	967.25	F	39.8	M	40	71.5		
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:22:54	57.574	2448	77.2	2.974	102.8	40.2	0.15	25.9	Left	83.5	94.6	43.2472716	-88.18165918	972.2193	F	40	M	40	77.3		
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:22:58	57.624	2449	75.7	2.935	105.9	41.6	0.1	26.9	Left	83.4	94.4	43.247994	-88.18166019	973.3836	F	41.5	M	40	76.5		
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:23:02	57.674	2450	56.1	20.293	103.7	41.9	0.23	27.3	Left	83.7	93	43.24871123	-88.1816559	970.099	F	41.9	M	40	57.1		
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:23:07	57.723	2451	38.5	1.601	70.4	41.9	0.13	26.8	Left	83.6	91.4	43.2494305	-88.18165572	962.5584	F	41.8	M	40	39.5		
7/10/2024	8_NB_L1_01_20240710_122035.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:23:11	57.773	2452	42.5	1.004	69.7	41.5	0.17	26.1	Left	83.6	91.9	43.25015514	-88.18165232	954.5717	F	41.4	M	40	43.3		
NB Lane 1															Avg	74.7	2.6	NB Lane 1										Avg	75.1	No of Tests			
															St. Dev	1.6												St. Dev	1.6	14			
																												Min	71.5				
																												Max	77.3				
7/10/2024	8_NB_L2_01_20240710_123856.D01	USH 41	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:40:00	56.731	2478	39.8	0.918	69.6	40.3	0.19	26.1	Left	85.7	96.2	43.23669833	-88.17467201	973.1737	F	40.2	M	40	40.0		
7/10/2024	8_NB_L2_01_20240710_123856.D01	USH 41	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:40:05	56.781	2479	42.3	1.64	68.4	40.7	0.15	25.9	Left	85.8	95.2	43.23724649	-88.17531814	978.138	F	40.5	M	40	42.7		
7/10/2024	8_NB_L2_01_20240710_123856.D01	USH 41	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:40:09	56.831	2480	42.5	0.909	69.4	40.7	0.16														

Appendix C
Detailed Friction Results
Test Site 09

Collected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:12:37	57.775	2407	42.6	0.788	77.9	39.8	0.12	25.5	Left	82.6	91.2	43.25023143	-88.18186622	955.168	F	39.6	M	40	42.5		
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:12:42	57.725	2408	42	0.94	74.7	40.2	0.08	25.2	Left	82.7	91.5	43.24951657	-88.18186477	963.7531	F	40	M	40	42.1		
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:12:46	57.675	2409	73.8	10.937	65.2	40.6	0.16	25.7	Left	82.6	91.9	43.24879009	-88.18186546	970.8692	F	40.5	M	40	74.1		
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:12:51	57.624	2410	76.2	5.043	106.8	41.2	0.16	26.1	Left	82.7	92.5	43.2480497	-88.18186889	975.124	F	41.1	M	40	76.8		
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:12:55	57.574	2411	72.8	4.033	102	41.9	0.27	26.9	Left	82.6	92.4	43.24732308	-88.18186847	974.7069	F	41.8	M	40	73.8		
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:12:59	57.524	2412	78.9	2.666	99.6	41.7	0.23	26	Left	82.7	93.3	43.24660463	-88.18186211	970.6046	F	41.7	M	40	79.8		
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:13:04	57.474	2413	73.7	2.236	99.6	41.1	0.26	25.9	Left	82.4	92.4	43.24587817	-88.18180319	964.2833	F	40.8	M	40	74.3		
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:13:08	57.424	2414	72.6	3.158	99.2	40.3	0.27	25.8	Left	82.6	92.6	43.24517018	-88.18169246	960.7827	F	40	M	40	72.8		
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:13:13	57.374	2415	75.7	2.904	103.1	39.9	0.31	25.9	Left	82.5	92.9	43.24445422	-88.18151258	961.5517	F	39.6	M	40	75.7		
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:13:17	57.325	2416	76.3	2.41	101.6	39.8	0.26	24.7	Left	82.5	93.9	43.24376328	-88.18128285	965.2252	F	39.6	M	40	76.2		
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:13:22	57.274	2417	73.2	2.385	102.4	39.4	0.27	25.8	Left	82.6	93.4	43.24307336	-88.1809901	972.0466	F	39.2	M	40	72.9		
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:13:26	57.224	2418	77.7	2.654	102	40.2	0.16	25.8	Left	82.7	94.2	43.24239492	-88.18063764	979.6308	F	39.8	M	40	77.8		
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:13:31	57.174	2419	71.9	3.26	101.3	40.8	0.23	26.7	Left	82.6	93.8	43.24173637	-88.18023266	987.8982	F	40.5	M	40	72.3		
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:13:35	57.124	2420	76.1	2.774	100.9	41.1	0.25	26.4	Left	82.7	95.4	43.2410949	-88.17977153	994.256	F	40.9	M	40	76.7		
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:13:39	57.074	2421	74.5	1.944	99.8	41.4	0.28	27	Left	82.7	95	43.24047881	-88.17926277	997.6117	F	41.2	M	40	75.2		
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:13:44	57.024	2422	72.6	3.801	99.2	41.5	0.28	26.2	Left	82.8	95.1	43.23988157	-88.17869599	998.8024	F	41.4	M	40	73.4		
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:13:48	56.973	2423	72.6	2.742	101.8	41.4	0.27	26.5	Left	82.7	94.8	43.23931006	-88.17808201	996.7416	F	41.2	M	40	73.3		
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:13:53	56.925	2424	39.7	0.823	59.3	41.8	0.11	27.1	Left	82.7	92.7	43.23877655	-88.17745996	992.622	F	41.8	M	40	40.6		
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:13:57	56.875	2425	40	0.91	63.5	41.4	0.19	26.6	Left	82.7	93.7	43.23822964	-88.17681678	987.8232	F	41.4	M	40	40.7		
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:14:01	56.825	2426	43.4	0.884	66.4	40.8	0.16	26.5	Left	82.7	93.9	43.23767461	-88.17616579	983.2403	F	40.6	M	40	43.8		
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:14:06	56.774	2427	42.1	1.105	68.6	40.8	0.15	26.2	Left	82.6	93.2	43.23712541	-88.17551715	978.7365	F	40.7	M	40	42.5		
7/10/2024	9_SB_L1_01_20240710_121128.D01	USH 41	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:14:10	56.725	2428	40.5	1.159	65.8	40.9	0.15	25.9	Left	82.6	93.2	43.23658198	-88.17487332	973.8757	F	40.6	M	40	41.0		
SB Lane 1															Avg	74.6	3.5	SB Lane 1										Avg	75.0	No of Tests			
															St. Dev	2.1												St. Dev	2.1	15			
																												Min	72.3				
																												Max	79.8				
7/10/2024	9_SB_L2_01_20240710_123122.D01	USH 41	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:31:43	57.758	2455	41.2	0.711	67.1	40	0.11	26	Left	84.7	95.4	43.24998259	-88.18191009	961.7289	F	39.7	M	40	41.2		
7/10/2024	9_SB_L2_01_20240710_123122.D01	USH 41	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:31:47	57.708	2456	40.4	0.742	69.6	40.5	0.09	26.8	Left	84.8	95.4	43.24926019	-88.18191297	967.7485	F	40.2	M	40	40.7		
7/10/2024	9_SB_L2_01_20240710_123122.D01	USH 41	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:31:52	57.657	2457	69.7	2.491	102.8	40.9	0.18	26.5	Left	84.6	97	43.2485235	-88.18191468	973.7081	F	40.6	M	40	70.2		
7/10/2024	9_SB_L2_01_20240710_123122.D01	USH 41	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:31:56	57.607	2458	72.7	2.385	104.6	41.6	0.3	26.4	Left	84.8	97.1	43.24780022	-88.18191473	975.5833	F	41.5	M	40	73.5		
7/10/2024	9_SB_L2_01_20240710_123122.D01	USH 41	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:32:01	57.558	2459	69.1	2.914	101																

Appendix C
Detailed Friction Results
Test Site 10

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/8/2024	10-11_L1_01_20240708_163921.D01	CTH Y	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:39:23	10.02	1526	65.6	14.281	84.4	23.3	0.59	11.1	Left	91.5	104.5	42.93185272	-88.15895034	855.9727	F	22.7	M	40	57.25		
7/8/2024	10-11_L1_01_20240708_163921.D01	CTH Y	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:39:28	10.05	1527	59.7	14.512	113.9	20.9	0.35	9.5	Left	91.5	107.5	42.93225545	-88.158831	859.5873	F	20.2	M	40	50.2		
7/8/2024	10-11_L1_01_20240708_163921.D01	CTH Y	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:39:32	10.071	1528	80.5	2.404	108.6	17.3	0.51	6.7	Left	91.4	107.5	42.93252314	-88.15890827	862.629	F	16.5	M	40	69.2		
7/8/2024	10-11_L1_01_20240708_163921.D01	CTH Y	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:39:36	10.092	1529	76.6	8.807	95.3	17.9	0.22	7.5	Left	91.4	99.4	42.93243895	-88.15925525	860.6027	F	17.3	M	40	65.6		
7/8/2024	10-11_L1_01_20240708_163921.D01	CTH Y	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:39:40	10.112	1530	66.9	18.016	97.2	18.4	0.31	7.5	Left	91.3	104.2	42.93219596	-88.15913602	857.7629	F	17.6	M	40	56.1		
7/8/2024	10-11_L1_01_20240708_163921.D01	CTH Y	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:39:44	10.129	1531	80.8	2.212	85	18	0.13	7.5	Left	91.3	104.5	42.93224038	-88.15883966	859.4008	F	17.6	M	40	69.8		
7/8/2024	10-11_L1_01_20240708_163921.D01	CTH Y	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:39:47	10.147	1532	78.8	8.336	81.4	18	0.51	7.2	Left	91.3	108.3	42.93247287	-88.15882919	861.9736	F	16.9	M	40	67.8		
7/8/2024	10-11_L1_01_20240708_163921.D01	CTH Y	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:39:52	10.167	1533	79.4	4.589	100.7	18.6	0.23	8.1	Left	91.4	103.3	42.93250507	-88.15918396	861.6208	F	18.1	M	40	68.7		
7/8/2024	10-11_L1_01_20240708_163921.D01	CTH Y	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:39:58	10.2	1534	63.4	14.97	78.2	19.2	0.27	8.6	Left	91.4	104.1	42.93217932	-88.15900159	858.0325	F	18.6	M	40	53.0		
7/8/2024	10-11_L1_01_20240708_163921.D01	CTH Y	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:40:04	10.235	1535	79	1.641	110.3	24.8	0.39	13.6	Left	91.5	106.4	42.93258014	-88.1588265	863.2126	F	24.8	M	40	71.4		
7/8/2024	10-11_L1_01_20240708_163921.D01	CTH Y	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:41:10	10.254	1549	48.3	13.859	72.4	25.6	0.33	13.3	Left	91.4	105.6	42.93268012	-88.15897062	863.9351	F	25.3	M	40	41.1		
RAB Lane 1															Avg	73.3	9.2											RAB Lane 1			Avg	62.5	No of Tests
															St. Dev	8.5															St. Dev	8.1	8
																														Min	50.2		
																														Max	69.8		
7/8/2024	10-11_NB_L2_01_20240708_163128.D01	CTH Y	RAB(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:31:28	10.005	1511	44.5	2.706	94.8	25.7	0.48	12.2	Left	91.1	104.4	42.93163865	-88.15885223	853.3933	F	25.4	M	40	37.4		
7/8/2024	10-11_NB_L2_01_20240708_163128.D01	CTH Y	RAB(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:31:34	10.047	1512	70.3	8.015	83.1	25.4	0.1	13.3	Left	91.3	107.7	42.93222793	-88.15878948	859.593	F	25.2	M	40	63.0		
7/8/2024	10-11_SB_L2_01_20240708_163358.D01	CTH Y	RAB(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:34:43	10.268	1523	68.9	12.474	90.7	17.8	0.44	7.5	Left	91.3	106.9	42.93255266	-88.15920123	862.0171	F	18.3	M	40	57.8		
7/8/2024	10-11_SB_L2_01_20240708_163358.D01	CTH Y	RAB(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:34:48	10.3	1524	74.8	3.142	94.7	27.6	0.43	15.9	Left	91.3	106.9	42.93214722	-88.15925221	857.8823	F	27.6	M	40	68.6		
7/8/2024	10-11_SB_L2_01_20240708_163358.D01	CTH Y	RAB(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:34:53	10.343	1525	43.2	1.4	70.1	34.1	0.04	20.7	Left	91.4	103.4	42.9315455	-88.15906906	851.7377	F	34.3	M	40	40.3		
RAB Lane 2															Avg	71.3	7.9											RAB Lane 2			Avg	63.1	No of Tests
															St. Dev	3.1															St. Dev	5.4	3
																														Min	57.8		
																														Max	68.6		

Appendix C
Detailed Friction Results
Test Site 11

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN											
7/8/2024	10-11_L1_01_20240708_163921.D01	CTH Y	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:40:16	10.323	1538	64.6	12.989	74.6	22.9	0.39	11.4	Left	91.5	107.3	42.93385697	-88.15877027	870.498	F	22.6	M	40	56.05													
7/8/2024	10-11_L1_01_20240708_163921.D01	CTH Y	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:40:20	10.347	1539	71.2	4.853	83.8	19.4	0.49	8.1	Left	91.4	109.1	42.93415043	-88.15854843	871.2417	F	18.4	M	40	60.9													
7/8/2024	10-11_L1_01_20240708_163921.D01	CTH Y	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:40:24	10.368	1540	74.4	6.156	98.2	17.7	0.05	7.4	Left	91.3	108.4	42.93427217	-88.15885884	871.547	F	17.3	M	40	63.3													
7/8/2024	10-11_L1_01_20240708_163921.D01	CTH Y	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:40:27	10.385	1541	56.2	11.902	64.3	18.9	0.17	8.3	Left	91.3	104.4	42.9340879	-88.15903305	870.9751	F	18.3	M	40	45.7													
7/8/2024	10-11_L1_01_20240708_163921.D01	CTH Y	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:40:31	10.405	1542	72	10.128	83.2	18.3	0.19	7.7	Left	91.3	107.4	42.93393585	-88.15876257	870.3712	F	17.4	M	40	61.2													
7/8/2024	10-11_L1_01_20240708_163921.D01	CTH Y	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:40:35	10.424	1543	75	4.287	90.5	17.9	0.43	7.5	Left	91.5	108.1	42.93413275	-88.15854195	871.2198	F	16.9	M	40	64.0													
7/8/2024	10-11_L1_01_20240708_163921.D01	CTH Y	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:40:39	10.442	1544	67.8	7.736	91.3	18.2	0	7.5	Left	91.4	108.3	42.93427737	-88.15878162	871.821	F	17.8	M	40	56.9													
7/8/2024	10-11_L1_01_20240708_163921.D01	CTH Y	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:40:45	10.476	1545	85.1	3.775	103.5	18.5	0.19	7.7	Left	91.4	105	42.93395022	-88.15890525	870.3875	F	17.7	M	40	74.4													
7/8/2024	10-11_L1_01_20240708_163921.D01	CTH Y	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:41:01	10.558	1546	72.4	4.37	102	26.1	0.65	14.6	Left	91.4	106.8	42.93386251	-88.15894591	870.5237	F	26.4	M	40	65.5													
RAB Lane 1															Avg	71.7	7.0											RAB Lane 1		Avg	60.9	No of Tests												
															St. Dev	8.7														St. Dev	8.6	7												
																														Min	45.7													
																														Max	74.4													
7/8/2024	10-11_SB_L2_01_20240708_163358.D01	CTH Y	RAB(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:33:58	10.447	1518	41.8	4.668	86.5	33.1	1.37	18.4	Left	91.3	104.4	42.93539593	-88.15896096	868.969	F	32.4	M	40	38.35													
7/8/2024	10-11_SB_L2_01_20240708_163358.D01	CTH Y	RAB(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:34:18	10.518	1519	73.4	4.182	110.5	17.3	0.32	7.2	Left	91.3	105.7	42.93436886	-88.15892427	871.9416	F	17.5	M	40	62.05													
7/8/2024	10-11_SB_L2_01_20240708_163358.D01	CTH Y	RAB(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:34:22	10.541	1520	66.5	8.801	95.6	23.4	0.27	11.5	Left	91.3	107.7	42.93408459	-88.15908317	871.3196	F	23.3	M	40	58.2													
7/8/2024	10-11_SB_L2_01_20240708_163358.D01	CTH Y	RAB(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:34:25	10.565	1521	65.2	15.763	95.2	29	0.31	17.3	Left	91.2	106.1	42.9337567	-88.15897146	870.0868	F	29.1	M	40	59.7													
7/8/2024	10-11_NB_L2_01_20240708_163128.D01	CTH Y	RAB(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:31:50	10.331	1515	67.4	12.427	101.1	24.3	0.18	12.1	Left	91.3	109.3	42.93392411	-88.15862411	871.1542	F	24	M	40	59.6													
7/8/2024	10-11_NB_L2_01_20240708_163128.D01	CTH Y	RAB(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:31:54	10.36	1516	75.6	2.598	89.8	25.7	0.38	13.9	Left	91.2	107.4	42.93431254	-88.15855641	872.04	F	26	M	40	68.5													
7/8/2024	10-11_NB_L2_01_20240708_163128.D01	CTH Y	RAB(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:31:59	10.397	1517	39.5	2.603	80	32.2	0.23	19.7	Left	91.3	105.6	42.93482665	-88.158712	869.9145	F	32.2	M	40	35.6													
RAB Lane 2															Avg	69.6	8.8											RAB Lane 2		Avg	61.6	No of Tests												
															St. Dev	4.6														St. Dev	4.1	5												
																														Min	58.2													
																														Max	68.5													

Appendix C Detailed Friction Results Test Site 12																																		
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN	
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:07:52	10.771	221	52.5	0.747	106.7	38.4	0.17	19.8	Left	74.6	82.3	43.30774816	-89.68015238	871.6733	F	38.2	M			40	51.7	
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:07:56	10.821	222	54.6	1.098	91.7	38.8	0.11	20.5	Left	74.8	85.9	43.30800348	-89.67924232	878.0693	F	38.7	M	40		54.0		
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:08:01	10.871	223	55.7	1.163	82.5	39.4	0.12	21.2	Left	74.8	85.5	43.30840796	-89.67842379	884.6581	F	39.2	M	40		55.4		
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:08:06	10.921	224	57.3	1.36	86.9	39.5	0.19	21.2	Left	74.8	85.1	43.30887614	-89.6776691	891.0443	F	39.3	M	40		57.1		
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:08:10	10.971	225	54.9	1.471	84.5	39.5	0.2	20.3	Left	74.8	84.4	43.30933946	-89.67691574	897.5046	F	39.2	M	40		54.7		
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:08:15	11.022	226	54.7	0.97	81.9	39.5	0.18	20.7	Left	74.8	83.4	43.30981031	-89.67615205	904.2497	F	39.3	M	40		54.5		
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:08:19	11.072	227	53.3	1.042	76.8	39.6	0.16	21.1	Left	74.8	83.8	43.3101778	-89.67531111	909.7745	F	39.5	M	40		53.1		
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:08:24	11.122	228	50.3	1.25	78.7	40	0.15	20.8	Left	74.7	84.3	43.31028337	-89.67433784	913.2034	F	39.9	M	40		50.3		
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:08:28	11.172	229	50.9	1.526	78.5	39.9	0.2	21.6	Left	74.7	83.9	43.31010364	-89.67337771	914.6269	F	39.9	M	40		50.9		
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:08:33	11.221	230	58.3	1.014	85.4	39.7	0.2	21.3	Left	74.7	82.9	43.30969819	-89.67256933	916.2674	F	39.6	M	40		58.2		
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:08:37	11.271	231	56.8	0.963	82.7	39.7	0.17	20.4	Left	74.9	83.4	43.30924372	-89.67180171	917.2828	F	39.5	M	40		56.7		
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:08:42	11.322	232	56	1.293	86.7	39.6	0.21	20.9	Left	74.8	83.3	43.30879044	-89.67102593	918.3708	F	39.5	M	40		55.8		
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:08:47	11.371	233	56.2	1.032	83.5	39.5	0.16	20.7	Left	74.8	79.3	43.30834196	-89.67025711	919.6122	F	39.3	M	40		56.0		
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:08:51	11.421	234	55.3	1.09	83.3	39.3	0.23	20.1	Left	74.6	76.7	43.30785738	-89.66952513	921.2387	F	39.3	M	40		55.0		
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:08:56	11.472	235	55.6	1.119	82.7	38.5	0.04	21	Left	74.8	79	43.30729019	-89.66890189	926.1419	F	38.3	M	40		54.9		
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:09:00	11.522	236	57.9	0.957	87.1	39.5	0.26	21	Left	74.9	84.5	43.30666522	-89.66841969	935.8327	F	39.3	M	40		57.7		
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:09:05	11.572	237	60.2	0.878	94.1	39.4	0.17	21.2	Left	74.7	76.4	43.30598849	-89.6680787	948.5525	F	39	M	40		59.9		
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:09:09	11.622	238	52.4	0.937	75.3	40.2	0.05	21.4	Left	74.8	78.6	43.30530043	-89.6678006	961.3381	F	39.5	M	40		52.5		
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:09:14	11.672	239	52.6	0.812	80.5	40.3	0.17	21.4	Left	74.8	83.5	43.30470133	-89.66726142	972.7045	F	39.9	M	40		52.8		
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:09:18	11.721	240	52.8	1.297	78.6	40.5	0.05	21.7	Left	74.7	84.2	43.30430606	-89.66646317	983.5062	F	40.2	M	40		53.1		
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:09:23	11.771	241	51.6	1.177	82.9	41.2	0.3	22.6	Left	74.9	84.1	43.30415259	-89.66549798	991.8157	F	41	M	40		52.2		
5/1/2024	12_EB_L1_01_20240501_180648.D01	STH 60	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:09:27	11.821	242	52	1.137	84.5	40.3	0.23	21.6	Left	74.8	81											

Appendix C
Detailed Friction Results
Test Site 13

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNSStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN	
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:56:03	79.051	58	48.9	5.723	99.7	49.3	0.6	27.5	Left	80.5	89.7	42.97293024		-89.5236231		990.5465	F	50.9	M		40	53.6	
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:56:07	79.1	59	53.4	0.599	87.5	44.3	0.52	24.1	Left	80.5	90.8	42.97298137		-89.52246902		989.2882	F	44.2	M		40	55.6	
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:56:11	79.149	60	54.7	0.467	90.6	40.4	0.41	21.3	Left	80.4	91.8	42.97303412		-89.52149814		999.7588	F	40.4	M		40	54.9	
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:56:16	79.199	61	58.5	0.709	86.1	39.9	0.05	21	Left	80.2	91.9	42.97308476		-89.52051746		1006.1097	F	39.8	M		40	58.5	
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:56:20	79.249	62	57	0.509	81.9	39.6	0.33	20.3	Left	80.4	92.1	42.97313027		-89.51953115		1012.2615	F	39.3	M		40	56.8	
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:56:25	79.299	63	58.5	0.486	83.6	39.3	0.05	21.1	Left	80.4	91.6	42.97318189		-89.51855565		1019.0131	F	39	M		40	58.2	
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:56:29	79.349	64	58.6	0.476	85.8	41.4	0.05	22.4	Left	80.4	91.1	42.97329422		-89.5175844		1025.2649	F	41	M		40	59.3	
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:56:33	79.399	65	57.7	0.9	80.3	41.5	0.05	22.1	Left	80.3	90.3	42.97350758		-89.51664788		1031.2252	F	41.2	M		40	58.5	
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:56:38	79.449	66	55.3	0.684	80.8	40.5	0.27	21.8	Left	80.5	92.3	42.97381227		-89.51575513		1036.9884	F	40.5	M		40	55.6	
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:56:42	79.498	67	56.2	0.933	83.1	39.4	0.12	20.8	Left	80.4	93.8	42.97419461		-89.51493754		1041.7981	F	39.2	M		40	55.9	
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:56:47	79.549	68	59.5	1.134	86.7	40.3	0.08	19.9	Left	80.3	92.3	42.97465518		-89.51417744		1045.5297	F	40.3	M		40	59.7	
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:56:51	79.599	69	56.3	1.093	83.7	40.8	0.32	21.5	Left	80.3	91.3	42.9751996		-89.51351427		1047.2586	F	40.6	M		40	56.7	
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:56:56	79.65	70	66.9	18.569	121.6	40	0.34	21.4	Left	80.4	89.5	42.97580099		-89.51295603		1047.7794	F	39.7	M		40	66.9	
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:57:00	79.699	71	57.1	2.947	87.8	40.5	0.16	21.7	Left	80.5	89.8	42.97643584		-89.51252024		1047.0668	F	40.3	M		40	57.4	
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:57:05	79.749	72	59.3	2.384	86.5	40.1	0.19	20.8	Left	80.3	88	42.97712433		-89.51219898		1044.8267	F	39.8	M		40	59.4	
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:57:09	79.799	73	55.8	3.097	83.3	40.1	0.12	20.9	Left	80.3	88.1	42.97782705		-89.51200949		1042.4781	F	39.9	M		40	55.9	
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:57:14	79.849	74	46	1.882	88.5	41.4	0.12	22	Left	80.4	90.5	42.97855439		-89.51195476		1039.5184	F	41.3	M		40	46.7	
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:57:18	79.899	75	52.8	4.555	81.5	41.5	0.18	21.6	Left	80.3	89.2	42.97927657		-89.51200308		1035.957	F	41.5	M		40	53.6	
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:57:23	79.949	76	59.2	0.947	85.2	40.6	0.29	21.3	Left	80.4	94.3	42.97999087		-89.51206392		1032.0206	F	40.5	M		40	59.5	
NB Lane 2															Avg	56.7	2.4	NB Lane 2															Avg	57.0	No of Tests
															St. Dev	4.2																	St. Dev	4.0	17
																																	Min	46.7	
																																	Max	66.9	
5/1/2024	15-13_WB_L2_01_20240501_144859.D01	USH 18/151	South(-)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:51:48	79.877	39	56.1	1.315	85.3	40.9	0.31	21.8	Left	80.9	89	42.97919465		-89.51231058		1032.7008	F	40.6	M		40	56.6	
5/1/2024	15-13_WB_L2_01_20240501_144859.D01	USH 18/151	South(-)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:51:52	79.827	40	52.5	0.808	82.9	39.1	0.21	20.9	Left	80.7	90.1	42.97847966		-89.51226473		1035.9352	F	38.9	M		40	52.1	
5/1/2024	15-13_WB_L2_01_20240501_144859.D01	USH 18/151	South(-)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:51:57	79.777	41	53	1.123	86.4	39.9	0.01	21.6	Left	80.8	89.7	42.97776427		-89.51233951		1039.4801	F	39.8	M		40	53.0	
5/1/2024	15-13_WB_L2_01_20240501_144859.D01	USH 18/151	South(-)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:52:01	79.728	42	52.5	0.655	80.4	40.3	0.27	21.2	Left	80.7	90.9	42.97706181		-89.51254985		1043.1109	F	40.2	M		40	52.7	
5/1/2024	15-13_WB_L2_01_20240501_144859.D01	USH 18/151	South(-)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:52:06	79.677	43	51.5	0.79	77.8	39.4	0.15	20.2	Left	80.9	92	42.97638032		-89.51289821		1045.4349	F	39.3	M		40	51.2	
5/1/2024	15-13_WB_L2_01_20240501_144859.D01	USH 18/151	South(-)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:52:11	79.626	44	80.8	2.342	113.6	40	0.26	20.5	Left	80.9	87.8	42.97572894		-89.51338211		1046.185	F	40	M		40	80.8	
5/1/2024	15-13_WB_L2_01_20240501_144859.D01	USH 18/151	South(-)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:52:15	79.577	45	52	0.675	81.3	39.5	0.21	20.7	Left	80.9	90.8	42.9751661		-89.51395892		1045.6621	F	39.5	M		40	51.8	
5/1/2024	15-13_WB_L2_01_20240501_144859.D01	USH 18/151	South(-)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:52:20	79.527	46	53	0.437	75.7	39.9	0.12	20.8	Left	80.8	90.3	42.97465284		-89.51464761		1043.4287	F	39.7	M		40	53.0	
5/1/2024	15-13_WB_L2_01_20240501_144859.D01	USH 18/151	South(-																																

Appendix C
Detailed Friction Results
Test Site 14

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNSStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:50:12	8.496	147	41.2	2.307	97.1	38.8	0.19	19.9	Left	76.6	82.4	43.19203804	-89.39669299	987.0509	F	38.5	M	40	40.6		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:50:17	8.546	148	38.3	1.3	65.4	40.2	0.08	21.3	Left	76.9	80.9	43.19203653	-89.39570616	989.959	F	40	M	40	38.4		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:50:21	8.596	149	39.3	1.918	68.2	40.8	0.32	20.8	Left	76.8	83.5	43.19203083	-89.39471681	990.5337	F	40.7	M	40	39.7		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:50:25	8.646	150	39.2	1.004	63.1	41.2	0.19	22.2	Left	76.8	80.9	43.19202826	-89.39373345	988.9962	F	41.2	M	40	39.8		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:50:30	8.696	151	38.4	1.268	65.5	41.1	0.23	21.8	Left	76.7	80.8	43.19202512	-89.39274543	985.195	F	41	M	40	39.0		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:50:34	8.746	152	38.4	1.264	64.7	40.4	0.16	21.2	Left	76.9	80.8	43.19202263	-89.39174988	979.1707	F	40.3	M	40	38.6		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:50:39	8.796	153	38.2	1.97	62	40.5	0.13	20.9	Left	76.7	83.6	43.19201589	-89.39075736	970.7341	F	40.5	M	40	38.5		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:50:43	8.846	154	37.6	4.147	62.2	40.7	0.13	21.4	Left	76.7	85.5	43.19201148	-89.38976669	961.0872	F	40.6	M	40	38.0		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:50:48	8.896	155	43.6	2.941	66.1	40.7	0.15	21.5	Left	76.8	84.5	43.19206114	-89.38878154	951.5103	F	40.6	M	40	44.0		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:50:52	8.946	156	41	3.023	71.9	40.7	0.15	21.3	Left	76.6	84.3	43.19224084	-89.38782911	942.6141	F	40.6	M	40	41.4		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:50:56	8.996	157	37.2	4.616	49.9	41	0.11	21.7	Left	76.6	85.2	43.1925447	-89.38693966	935.6485	F	40.9	M	40	37.7		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:51:01	9.046	158	43.4	2.164	63.7	40.2	0.25	21.7	Left	76.6	83.4	43.1929627	-89.38613992	930.8799	F	40.2	M	40	43.5		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:51:05	9.096	159	37.9	1.877	63.6	39.4	0.08	20.5	Left	76.6	84	43.19348294	-89.38545128	928.071	F	39.4	M	40	37.6		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:51:10	9.146	160	43.1	3.416	70.9	39.5	0.16	20.7	Left	76.7	86.8	43.19403946	-89.38481761	925.7053	F	39.3	M	40	42.9		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:51:15	9.196	161	40.6	3.96	70.1	40.1	0.21	21.3	Left	76.8	88.1	43.19459087	-89.38417935	923.4132	F	39.9	M	40	40.7		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:51:19	9.246	162	41	4.178	76.8	40	0.24	20.6	Left	76.6	87.9	43.19506473	-89.38343824	920.7721	F	39.9	M	40	41.0		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:51:24	9.296	163	42.2	5.397	80.1	40	0.19	21.4	Left	76.6	86.1	43.1954382	-89.38258333	918.2533	F	39.9	M	40	42.2		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:51:28	9.346	164	39.1	1.374	65.5	40.1	0.12	21.3	Left	76.6	87.4	43.19568867	-89.38165995	915.5448	F	40	M	40	39.2		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:51:33	9.396	165	39.1	2.863	67	39.7	0.23	21.2	Left	76.7	88.6	43.19580877	-89.38068778	912.7344	F	39.7	M	40	39.0		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:51:37	9.446	166	43.7	0.972	69.8	39.5	0.17	21.3	Left	76.8	84.3	43.19581402	-89.37969838	910.2249	F	39.4	M	40	43.5		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:51:42	9.496	167	45.3	1.326	69.5	39.7	0.07	20.1	Left	76.6	85.3	43.19578805	-89.37870763	908.8182	F	39.6	M	40	45.2		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:51:46	9.546	168	42.6	1.239	68.4	40.7	0.32	21.1	Left	76.7	83.6	43.19576097	-89.37771897	908.7352	F	40.6	M	40	43.0		
5/1/2024	14_EB_L1_01_20240501_155012.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:51:51	9.596	169	44.3	3.226	69.8	41.4	0.35	21.9	Left	76.5	83	43.19573604	-89.37673222	909.7677	F	41.3	M	40	45.0		
EB Lane 1															Avg	40.2	2.7	EB Lane 1										Avg	40.3	No of Tests			
															St. Dev	2.2												St. Dev	2.1	18			
																												Min	37.6				
																												Max	44.0				
5/1/2024	14_WB_L1_01_20240501_155314.D01	STH 19	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:53:51	9.575	170	44.7	1.169	94.1	39	0.2	20.5	Left	76.6	84.7	43.19577398	-89.37706939	909.0926	F	38.9	M	40	44.2		
5/1/2024	14_WB_L1_01_20240501_155314.D01	STH 19	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:53:56	9.526	171	49.3	4.177	76.4	39	0.19	20.6	Left	76.5	84.8	43.19579568	-89.37803695	908.4245	F	38.8	M	40	48.8		
5/1/2024	14_WB_L1_01_20240501_155314.D01	STH 19	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:54:01	9.475	172	45.7	1.857	76.5	39.1	0.19	20	Left	76.6	85.1	43.195824	-89.37903202	909.2318	F	38.9	M	40	45.3		
5/1/2024	14_WB_L1_01_20240501_155314.D01	STH 19	West(-)																														

Appendix C
Detailed Friction Results
Test Site 15

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN		
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:58:06	80.437	77	58.8	2.096	119.3	39.6	0.2	20.7	Left	80.3	91.2	42.98707179	-89.51267973	983.3415	F	39.4	M	40	58.6				
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:58:11	80.486	78	56	0.88	83.2	39.8	0.14	20.1	Left	80.5	93.8	42.98777606	-89.51274233	978.7402	F	39.7	M	40	55.9				
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:58:15	80.536	79	55.3	0.511	82.7	40.4	0.12	21.2	Left	80.3	93.7	42.98849759	-89.51280472	972.907	F	40.3	M	40	55.5				
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:58:20	80.586	80	54.7	1.004	87.9	40	0.22	20.9	Left	80.4	92.7	42.98921908	-89.51281885	967.9514	F	39.9	M	40	54.7				
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:58:24	80.636	81	53.8	0.756	79.9	39.4	0.2	20.9	Left	80.5	92.2	42.98993941	-89.51269134	966.9875	F	39.2	M	40	53.5				
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:58:29	80.686	82	54.7	1.061	79.1	39.7	0.15	21	Left	80.4	92.2	42.99063301	-89.51243077	968.8236	F	39.5	M	40	54.6				
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:58:33	80.736	83	54.6	0.674	85.2	40	0.2	21	Left	80.5	92.5	42.991297	-89.51203912	970.6519	F	39.9	M	40	54.6				
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:58:38	80.786	84	55.8	0.703	77.6	40.2	0.17	21.1	Left	80.3	91.9	42.99190765	-89.51152393	972.7337	F	40.1	M	40	55.9				
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:58:42	80.836	85	53.8	0.757	81	40.2	0.17	20.8	Left	80.5	92	42.99246699	-89.51089453	974.8379	F	40	M	40	53.9				
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:58:47	80.887	86	54.5	1.215	79.3	40.3	0.17	21.1	Left	80.2	90.2	42.99295968	-89.51015424	976.2679	F	40.4	M	40	54.7				
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:58:51	80.936	87	32.7	1.149	59.6	40.7	0.04	21.6	Left	80.4	88.4	42.99335554	-89.50935924	976.3379	F	40.7	M	40	33.1				
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:58:56	80.986	88	56.9	0.846	84.8	40.4	0.19	21	Left	80.4	92.3	42.99370055	-89.50848583	975.9071	F	40.2	M	40	57.1				
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:59:00	81.037	89	55.9	0.857	83.7	40.7	0.16	21.1	Left	80.4	92.1	42.99404307	-89.50760888	973.1835	F	40.7	M	40	56.3				
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:59:05	81.086	90	55.9	0.761	81.5	40.5	0.21	21.7	Left	80.3	91.1	42.99437872	-89.50674494	969.6003	F	40.3	M	40	56.2				
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:59:09	81.136	91	56.1	0.726	88.3	40	0.23	20.9	Left	80.3	92.2	42.99471728	-89.50587423	967.086	F	39.8	M	40	56.1				
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:59:14	81.186	92	56.5	0.587	89.7	39.7	0.21	21.1	Left	80.3	93.1	42.99505926	-89.50500312	967.4631	F	39.6	M	40	56.4				
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:59:18	81.236	93	55.9	0.495	86.2	40	0.17	20.4	Left	80.4	94.5	42.99540319	-89.50414606	968.645	F	39.9	M	40	55.9				
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:59:23	81.286	94	53.6	0.714	88.4	40	0.2	21	Left	80.3	92.5	42.99575647	-89.5032896	969.9267	F	39.8	M	40	53.6				
5/1/2024	13-15_EB_L2_01_20240501_145603.D01	USH 18/151	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:59:27	81.336	95	56.8	0.644	83.7	40.2	0.18	21	Left	80.4	91.8	42.99611967	-89.50243115	971.0886	F	40.1	M	40	56.9				
NB Lane 2															Avg	54.2	0.9	NB Lane 2															Avg	54.3	No of Tests
															St. Dev	5.7																	St. Dev	5.6	17
																																	Min	33.1	
																																	Max	58.6	
5/1/2024	15-13_WB_L2_01_20240501_144859.D01	USH 18/151	South(-)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:49:52	81.265	19	52.9	1.32	102.8	41	0.35	21.2	Left	81.2	91.2	42.99578714	-89.50384989	969.57	F	40.8	M	40	53.4				
5/1/2024	15-13_WB_L2_01_20240501_144859.D01	USH 18/151	South(-)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:49:56	81.217	20	52.2	0.665	80	40.1	0.23	21.1	Left	81	92	42.99544351	-89.50469038	968.2971	F	40.1	M	40	52.3				
5/1/2024	15-13_WB_L2_01_20240501_144859.D01	USH 18/151	South(-)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:50:01	81.166	21	52.3	0.546	80.7	39.9	0.12	21.4	Left	81.1	90.2	42.99509749	-89.50556527	967.0636	F	39.7	M	40	52.3				
5/1/2024	15-13_WB_L2_01_20240501_144859.D01	USH 18/151	South(-)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:50:05	81.116	22	52.3	0.818	81	40.4	0.28	20	Left	81.1	88.4	42.99476075	-89.50643049	967.7073	F	40.4	M	40	52.5				
5/1/2024	15-13_WB_L2_01_20240501_144859.D01	USH 18/151	South(-)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:50:10	81.066	23	53	0.496	84.8	40.7	0.19	21.8	Left	81.1	88.7	42.99442247	-89.50729716	970.9349	F	40.6	M	40	53.4				
5/1/2024	15-13_WB_L2_01_20240501_144859.D01	USH 18/151	South(-)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:50:14	81.016	24	52.1	0.424	79.8	41	0.12	20.9	Left	81.1	91.5	42.99408658	-89.5081692	973.9699	F	40.8	M	40	52.6				
5/1/2024	15-13_WB_L2_01_20240501_144859.D01	USH 18/151	South(-)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:50:19	80.966	25	52	0.697	82.5	41.5	0.17	21.8	Left	81	91.3	42.99373956	-89.5090495	976.4035	F	41.2	M	40	52.8				
5/1/2024	15-13_WB_L2_01_20240501_144859.D01	USH 18/151	South(-)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:50:23	80.917	26	37.9	1.482	64.7	41.8	0.07	22.5	Left	81	86.9	42.99338707	-89.50988315	976.8991	F	41.6	M	40	38.8				
5/1/2024	15-13_WB_L2_01_20240501_144859.D01	USH 18/151	South(-)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:50:27	80.866	27	51.7	0.925	82.5	40.9	0.24	21.9	Left	81	91.9	42.99294339	-89.51067076	975.3412	F	40.7	M	40	52.2				
5/1/2024	15-13_WB_L2_01_20240501_144859.D01																																		

Appendix C
Detailed Friction Results
Test Site 16

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:26:57	72.023	1844	52.9	0.985	75.4	40	0.15	25.7	Left	88.1	100.7	43.7742083	-90.01262158		861.8366	F	39.9	M		40	52.9	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:27:01	72.073	1845	53.3	1.042	79.5	40.1	0.19	24.8	Left	88.3	101.1	43.77389537	-90.01172819		862.4272	F	40	M		40	53.4	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:27:06	72.123	1846	52.4	1.663	76.4	40.1	0.16	26.1	Left	88.3	100	43.77357926	-90.01083288		862.8537	F	40.1	M		40	52.5	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:27:10	72.173	1847	52.6	1.395	75.4	40.2	0.17	25.8	Left	88.1	99.8	43.77325938	-90.00993422		863.1818	F	40	M		40	52.7	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:27:15	72.223	1848	52.9	1.29	76.1	40.1	0.22	25.1	Left	88.1	100.6	43.77294039	-90.00903422		862.9809	F	40.1	M		40	53.0	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:27:19	72.273	1849	53.4	1.545	79	40.2	0.2	25.5	Left	88.1	101.2	43.77262516	-90.00814626		862.4928	F	40	M		40	53.5	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:27:24	72.323	1850	52	1.353	77.2	40.2	0.24	25.5	Left	88.1	100.5	43.77231056	-90.00725531		861.2018	F	40	M		40	52.1	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:27:28	72.373	1851	54.1	1.552	76.7	40.1	0.19	26.1	Left	88.1	100.5	43.77198829	-90.00634633		859.9669	F	40	M		40	54.2	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:27:33	72.423	1852	52.3	1.328	77.2	40.1	0.19	25.7	Left	88.3	101.4	43.77167111	-90.00545158		858.7214	F	40.2	M		40	52.4	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:27:37	72.473	1853	52.2	1.48	78.4	40.1	0.15	26	Left	88.1	100.8	43.77135658	-90.00456216		857.8668	F	40	M		40	52.3	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:27:42	72.523	1854	53.7	1.72	76.7	40	0.19	25.4	Left	88.2	100.4	43.77104298	-90.00366662		857.4403	F	39.8	M		40	53.7	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:27:46	72.573	1855	51.7	1.514	74.1	40	0.19	26	Left	88.1	100	43.77073624	-90.00276918		858.2791	F	39.8	M		40	51.7	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:27:51	72.623	1856	52.7	1.293	72.9	40	0.19	26	Left	88.3	100.4	43.77043431	-90.00185253		859.6765	F	40.1	M		40	52.7	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:27:55	72.673	1857	52.5	1.433	76.3	39.9	0.16	25.6	Left	88.1	100	43.77014478	-90.00094908		861.3421	F	39.7	M		40	52.5	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:28:00	72.723	1858	52.4	1.416	76.5	40.1	0.19	26.3	Left	88.2	100.5	43.76985824	-90.00002764		862.9309	F	40	M		40	52.5	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:28:04	72.773	1859	54.4	2.178	79.4	40.1	0.19	25.3	Left	88.3	100.2	43.76957626	-89.99910079		864.4197	F	40	M		40	54.5	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:28:09	72.823	1860	53.5	1.649	77.4	40	0.17	26.2	Left	88.2	99.7	43.76930121	-89.998176		865.87	F	39.9	M		40	53.5	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:28:13	72.873	1861	54.9	1.308	79.9	40.1	0.19	25.7	Left	88.2	99.5	43.76902373	-89.99725898		867.1492	F	40	M		40	55.0	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:28:18	72.923	1862	56	0.754	78.1	40.1	0.17	25.5	Left	88.2	99	43.76874706	-89.99634754		868.2158	F	40	M		40	56.1	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:28:22	72.973	1863	56.7	0.618	77.9	40.1	0.19	26.1	Left	88.4	100.4	43.76846708	-89.99542303		869.532	F	40.1	M		40	56.8	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:28:27	73.024	1864	57.1	1.347	77.3	40.1	0.18	26.6	Left	88.4	100.4	43.76818676	-89.99449139		871	F	40.1	M		40	57.2	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:28:31	73.073	1865	57.4	1.163	79.4	40.2	0.21	25.9	Left	88.3	100	43.7679098	-89.99358032		872.3313	F	40	M		40	57.5	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:28:36	73.123	1866	57.4	1.366	81.4	40.2	0.15	25.6	Left	88.2	99.6	43.76763139	-89.99266129		873.5752	F	40.1	M		40	57.5	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:28:40	73.173	1867	56.3	0.866	82.1	40.2	0.18	26.7	Left	88.2	100.3	43.76734515	-89.99173954		874.9588	F	40.2	M		40	56.4	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:28:45	73.223	1868	56.1	1.431	79	40.2	0.2	25	Left	88.4	100.2	43.76705713	-89.99082578		875.7474	F	40.1	M		40	56.2	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:28:49	73.273	1869	55.8	0.971	78.4	40.2	0.18	25.9	Left	88.4	99.5	43.76676458	-89.98991733		876.0613	F	40.1	M		40	55.9	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:28:54	73.323	1870	56.3	1.223	78.9	40.1	0.21	26.2	Left	88.3	93.4	43.76646598	-89.98901023		876.7152	F	39.8	M		40	56.4	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:28:58	73.374	1871	56	0.534	77	40.1	0.23	25.6	Left	88.2	99.1	43.76617247	-89.98809237		876.5368	F	39.9	M		40	56.1	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:29:03	73.423	1872	53.7	0.668	75.6	40	0.17	26.1	Left	88.4	99.6	43.76587461	-89.98719606		877.2442	F	39.9	M		40	53.7	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:29:07	73.473	1873	58.1	1.544	81.8	40	0.23	25.4	Left	88.4	99.6	43.76557351	-89.98628711		878.2408	F	39.9	M		40	58.1	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:29:12	73.523	1874	55.6	0.855	78.6	40.1	0.21	25.5	Left	88.3	100.1	43.76527207	-89.98537839		879.1911	F	39.9	M		40	55.7	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:29:16	73.573	1875	57.3	1.649	76.4	40.1	0.21	26.2	Left	88.4	99.2	43.76497196	-89.984469		880.3454	F	39.9	M		40	57.4	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:29:21	73.623	1876	57	1.281	79.6	40.1	0.23	25.7	Left	88.3	98.8	43.76467518	-89.98357069		881.7397	F	39.9	M		40	57.1	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:29:25	73.674	1877	57.8	1.607	77.8	40.1	0.19	25.5	Left	88.3	99.6	43.76437195	-89.98264639		883.1441	F	40	M		40	57.9	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:29:30	73.723	1878	57	1.692	77.8	40.1	0.2	25.9	Left	88.3	100.3	43.76407616	-89.98174943		884.2768	F	40	M		40	57.1	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:29:34	73.774	1879	57	1.562	80	40.1	0.19	25.9	Left	88.2	99.8	43.76377435	-89.98083449		885.207	F	40	M		40	57.1	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:29:39	73.823	1880	58.1	0.943	79.4	40.1	0.25	25.9	Left	88.3	99.9	43.76347643	-89.97993324		886.3461	F	40	M		40	58.2	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed																								

Appendix C
Detailed Friction Results
Test Site 16

7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:32:39	75.823	1920	54.4	0.822	80.1	40.2	0.22	25.7	Left	88.5	98.8	43.74736101	-89.94702722	906.3256	F	40.2	M	40	54.5
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:32:43	75.873	1921	54.6	0.869	82	40	0.21	26.2	Left	88.4	98.7	43.74691747	-89.94624226	900.7048	F	39.9	M	40	54.6
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:32:48	75.923	1922	53.8	0.558	79.2	39.8	0.19	25.1	Left	88.5	97.8	43.74647476	-89.94546104	896.8711	F	39.8	M	40	53.7
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:32:52	75.973	1923	55.2	0.765	76.3	39.7	0.21	25.6	Left	88.5	96.6	43.74602492	-89.94466684	893.7555	F	39.6	M	40	55.1
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:32:57	76.023	1924	55.4	2.025	72.7	39.9	0.19	25.7	Left	88.5	97.9	43.74558632	-89.94388021	891.4521	F	39.9	M	40	55.4
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:33:01	76.073	1925	54.1	0.981	76.3	40.1	0.16	25.7	Left	88.5	98.8	43.74514914	-89.94307624	889.2116	F	40	M	40	54.2
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:33:06	76.123	1926	53.9	1.181	76.6	40.1	0.16	25.2	Left	88.5	98.6	43.7447217	-89.94227446	886.8022	F	40	M	40	54.0
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:33:10	76.173	1927	53.5	2.379	79.9	40	0.17	25.7	Left	88.6	98.9	43.74429964	-89.94146035	884.0243	F	39.9	M	40	53.5
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:33:15	76.224	1928	54.3	0.955	77	39.9	0.19	26.1	Left	88.6	96.9	43.74388541	-89.94064113	882.3111	F	39.7	M	40	54.3
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:33:19	76.273	1929	55.3	1.713	74.6	39.9	0.21	25	Left	88.4	97.1	43.74347888	-89.93981955	881.6201	F	39.7	M	40	55.3
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:33:24	76.323	1930	54.7	0.735	76.4	39.9	0.19	25.3	Left	88.6	97.6	43.7430731	-89.93899534	881.6309	F	39.7	M	40	54.7
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:33:28	76.373	1931	55.2	0.751	75.1	39.9	0.21	25.3	Left	88.4	96.7	43.7426709	-89.93817798	882.4144	F	39.7	M	40	55.2
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:33:33	76.423	1932	55.5	0.973	78.9	39.9	0.21	25.2	Left	88.5	96.8	43.74226347	-89.93735095	884.0698	F	39.8	M	40	55.5
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:33:37	76.474	1933	55.2	0.794	78.9	39.9	0.16	26.4	Left	88.5	96.6	43.74185302	-89.93651815	886.5073	F	39.9	M	40	55.2
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:33:42	76.524	1934	55.7	0.699	79.2	40	0.2	26.5	Left	88.6	96.1	43.74144929	-89.93569749	888.9516	F	39.9	M	40	55.7
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:33:46	76.573	1935	54.6	1.36	78.1	40.1	0.22	26	Left	88.5	95.8	43.74104486	-89.93487462	891.3261	F	39.7	M	40	54.7
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:33:51	76.623	1936	55.4	1.657	77.5	40.2	0.21	26	Left	88.6	95.7	43.74063978	-89.93404995	893.3791	F	40.2	M	40	55.5
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:33:55	76.674	1937	57.8	1.258	75.4	40.4	0.23	26.1	Left	88.6	97.1	43.74023214	-89.93322459	894.0545	F	40.3	M	40	58.0
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:34:00	76.724	1938	57.1	0.943	77.9	40.5	0.21	25.2	Left	88.5	96.1	43.73981943	-89.93239747	893.792	F	40.4	M	40	57.4
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:34:04	76.773	1939	58.4	1.129	82	40.5	0.23	26.3	Left	88.5	96.4	43.7394037	-89.93158955	892.0792	F	40.4	M	40	58.7

EB Lane 2	Avg St. Dev	55.2 1.6	1.3	EB Lane 2	Avg St. Dev	55.3 1.6	No of Tests 96
						51.7 58.7	

7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:11:23	76.785	1740	57.2	1.389	117.4	39	0.24	24	Left	86.8	96.3	43.739511	-89.93111038	889.4277	F	38.8	M	40	56.7
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:11:27	76.735	1741	56.5	1.091	82.8	39.7	0.12	25.9	Left	87	98.3	43.73995014	-89.93189829	892.6575	F	39.5	M	40	56.4
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:11:32	76.685	1742	56.6	1.585	80.8	40.1	0.16	25.7	Left	86.9	97.3	43.74038745	-89.93268095	895.398	F	40	M	40	56.7
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:11:36	76.635	1743	56.4	1.852	80.8	40.4	0.16	25.6	Left	87	96.4	43.74083048	-89.93347374	896.5495	F	40.3	M	40	56.6
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:11:41	76.585	1744	57.4	1.688	75.5	40.5	0.19	26.6	Left	86.9	96.1	43.74127032	-89.93426045	896.6135	F	40.4	M	40	57.7
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:11:45	76.535	1745	56.3	1.546	81.5	40.7	0.18	26.5	Left	86.9	96.5	43.74171656	-89.93505723	895.0575	F	40.6	M	40	56.7
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:11:50	76.485	1746	55.7	1.641	77.1	40.6	0.19	25.9	Left	86.8	96.7	43.74215046	-89.93583471	892.1666	F	40.4	M	40	56.0
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:11:54	76.435	1747	56.9	1.005	79.2	40.4	0.18	26.4	Left	86.8	97	43.74259592	-89.93663057	888.1778	F	40.4	M	40	57.1
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:11:59	76.385	1748	56.9	1.612	82.6	40.2	0.2	26.2	Left	86.7	97.9	43.74303466	-89.93741527	884.862	F	40.2	M	40	57.0
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:12:03	76.335	1749	57.7	1.324	80.5	40	0.21	25.4	Left	86.8	97.2	43.74347774	-89.93820725	882.0274	F	39.9	M	40	57.7
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:12:08	76.286	1750	56.2	1.43	79.1	39.7	0.19	25.6	Left	86.9	96.6	43.74391752	-89.93898769	880.4463	F	39.5	M	40	56.1
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:12:12	76.235	1751	58.2	1.888	79.6	39.7	0.19	25.3	Left	87	96	43.74436441	-89.93978401	879.75	F	39.6	M	40	58.1
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:12:17	76.185	1752	56.1	0.635	79.5	39.8	0.16	25.9	Left	86.9	98	43.74480532	-89.9405725	879.6188	F	39.8	M	40	56.0
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:12:21	76.135	1753	55.7	1.072	79.5	40.1	0.17	26.1	Left	87	98.3	43.74524633	-89.94136103	879.6516	F	39.9	M	40	55.8
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:12:26	76.085	1754	56.9	1.028	75.3	39.9	0.19	25.2	Left	87	98.7	43.74568547	-89.94214884	880.4122	F	39.8	M	40	56.9
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:12:30	76.035	1755	55.7	1.364	79.2	39.6	0.19	25.9	Left	86.8	98.5	43.74613261	-89.94294431	883.5286	F	39.6	M	40	55.5
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:12:35	75.986	1756	58.1	1.266	73.8	39.4	0.2	25.2	Left	87	99	43.74656629	-89.94372056	889.0204	F	39.1	M	40	57.8
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:12:39	75.936	1757	55.1	1.173	73.2	39.1	0.15	25	Left	86.8	98.4	43.74700534	-89.94450238	896.7919	F	38.9	M	40	54.7
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:12:44	75.885	1758	56.3	1.178	74.6	38.6	0.17	25.2	Left	87.1	98.7	43.74745028	-89.94529726	905.0532	F	38.3	M	40	55.6
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:12:49	75.835	1759	53.4	1.202	78.2	39.5	0.01	26.2	Left	86.9	98.2	43.74788968	-89.94608358	912.8529	F	39.2	M	40	53.2
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:12:53	75.785	1760	55.4	2.127	71.2	40.5	0.19	26.1	Left	87	98.1	43.74833232	-89.94687535	920.4498	F	40.2	M	40	55.7
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:12:58	75.735	1761	54.9	1.39	77.6	40.6	0.16	25.7	Left	86.9	97.7	43.7487717	-89.94765735	926.0189	F	40.6	M	40	55.2
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:13:02	75.685	1762	56.7	2.414	75.2	40.8	0.18	26	Left	87	97.3	43.74921319	-89.94844622	929.4297	F	40.7	M	40	57.1
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:13:07	75.635	1763	56	1.402	72.2	40.7	0.2	26.7	Left	87.1	98.1	43.74965679	-89.9492376	930.6358	F	40.6	M	40	56.4
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:13:11	75.585	1764	56	1.741	77.5	40.7	0.15	26.7	Left	86.9	97.7	43.75009857	-89.95002695	930.3413	F	40.6	M	40	56.4
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:13:16	75.535	1765	54.7	1.629	79.5	40.5	0.2	25.9	Left	87	97	43.75054266	-89.9508198	929.4875	F	40.5	M	40	55.0
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:13:20	75.485	1766	56.2	1.088	75.6	40.3	0.21	26	Left	87	98.3	43.75098049	-89.951606	928.3016	F	40.1	M	40	56.4
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:13:25	75.435	1767	54.6	0.877	77.1	40.1	0.18	25.7	Left	87	98.6	43.75142501	-89.95239873	926.9613	F	40	M	40	54.7
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:13:29	75.385	1768	55.2	1.195	78.9	40.1	0.19	26.2	Left	87.1	99.3	43.7518668	-89.95318653	925.8282	F	39.9	M	40	55.3
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:13:34	75.335	1769	54.9	1.205	74.2	40.1	0.17	26.1	Left	86.9	98.8	43.75230828	-89.95397249	924.8944	F	40.1	M	40	55.0
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:13:38	75.285	1770	57.2	1.263	81.5	40.1	0.17	25.1	Left	87	98.9	43.75274891	-89.95476062	923.7461	F	39.9	M	40	57.3
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:13:43	75.235	1771	58.3	2.12	78.3	40.1	0.21	26.4	Left	87	99.2	43.75319125	-89.9555502	922.5913	F	39.9	M	40	58.4
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:13:47	75.185	1772	56.7	1.695	79.2	40.1	0.19	25.4	Left	86.9	98.5	43.75363391	-89.95634037	921.6706	F	40	M	40	56.8
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:13:52	75.135	1773	55.1	1.504	79.3	40	0.17	25.2	Left	87.1	99.1	43.75407818	-89.95713701	920.7054	F	39.9	M	40	55.0
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:13:56	75.086	1774	56.9	0.922	71.6	40	0.18	26.3	Left	87	98.3	43.75451401	-89.95791495	919.9027	F	39.8	M	40	56.9
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:14:01	75.036	1775	54.9	0.929	77.6	40	0.16	26.2	Left	87	98.7	43.75495526	-89.95870672	919.3704	F	39.7	M	40	54.9
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:14:05	74.986	1776	54.7	1.085	74.8	40	0.21	25.7	Left	86.9	98.5	43.75539726	-89.95949598	919.1713	F	39.9	M	40	54.7
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:14:10	74.935	1777	55.5	1.668	72.6	40.1	0.15	25	Left	87.1	99.4	43.75584077	-89.96029209	919.2173	F	40	M	40	55.6
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:14:14	74.885	1778	56.5	1.239	79.1	40	0.18	25.7	Left	87.1	99.8	43.75628183	-89.9610797	919.3497	F	39.9	M	40	56.5
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:14:19	74.836	1779	57.2	1.784	79	39.9	0.22	26.2	Left	87	99.6	43.75672297	-89.96186281	920.1343	F	39.8	M	40	57.2
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:14:																			

Appendix C
Detailed Friction Results
Test Site 16

7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:15:13	74.235	1791	54.7	2.033	72.2	40.2	0.2	25.7	Left	86.9	98.5	43.76117771	-89.97209991	904.2907	F	40	M	40	54.8
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:15:17	74.185	1792	56.3	0.997	78.5	40.2	0.18	26	Left	87.1	99.9	43.76148008	-89.97301239	902.5858	F	40	M	40	56.4
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:15:22	74.135	1793	53.7	0.978	72.4	40.1	0.19	25.5	Left	87	99.5	43.76177408	-89.97391066	900.9645	F	40	M	40	53.8
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:15:26	74.085	1794	56.3	0.998	77.8	40.2	0.23	25.6	Left	87.1	99.6	43.76207221	-89.97481934	899.0629	F	40.1	M	40	56.4
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:15:31	74.035	1795	55.7	1.708	79.5	40.1	0.17	26.3	Left	87	99.7	43.76237652	-89.97573173	896.3154	F	40.1	M	40	55.8
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:15:35	73.985	1796	55.5	0.894	78	40.1	0.2	25.9	Left	87.1	99.4	43.76267715	-89.97664514	894.2027	F	39.9	M	40	55.6
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:15:40	73.935	1797	55.7	1.151	76.4	40.1	0.16	26	Left	87.1	99.2	43.76297392	-89.97755592	893.3327	F	40.1	M	40	55.8
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:15:44	73.886	1798	56.3	1.529	77.4	40.1	0.19	25.5	Left	87	98.6	43.76326847	-89.97844995	890.8612	F	39.8	M	40	56.4
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:15:49	73.835	1799	55.1	1.682	73.9	40.1	0.19	25.6	Left	87	98.8	43.76357186	-89.97937134	888.6893	F	40	M	40	55.2
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:15:53	73.785	1800	56.1	1.583	74.6	40	0.18	26.1	Left	87	98.5	43.76386982	-89.9802785	887.2303	F	39.9	M	40	56.1
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:15:58	73.735	1801	55.1	1.004	77.7	40.1	0.18	26.1	Left	87	98.6	43.76416676	-89.98118342	887.3287	F	40	M	40	55.2
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:16:02	73.685	1802	55.5	2.159	79.3	40.1	0.16	26.5	Left	87	99.8	43.7644654	-89.98209239	886.3226	F	40	M	40	55.6
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:16:07	73.635	1803	56.3	1.435	76.2	40.1	0.16	26	Left	87	101	43.76476486	-89.98300122	885.4992	F	39.9	M	40	56.4
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:16:11	73.585	1804	55.2	1.418	77.2	40.1	0.19	25.2	Left	87.1	99.4	43.76506478	-89.98390751	883.6962	F	40	M	40	55.3
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:16:16	73.535	1805	55.1	1.072	74.1	40.1	0.19	23.2	Left	87.1	97.7	43.76536707	-89.98482221	882.0442	F	39.9	M	40	55.2
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:16:20	73.485	1806	56.4	1.601	76.6	40.1	0.21	26.1	Left	87.1	98.6	43.76566272	-89.98572924	881.128	F	40.1	M	40	56.5
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:16:25	73.435	1807	57	0.96	77.6	40.2	0.21	25	Left	87.1	99.4	43.7659618	-89.98663706	879.9797	F	40.2	M	40	57.1
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:16:29	73.385	1808	56.5	1.714	74.1	40	0.23	25.8	Left	87.1	98.7	43.76625869	-89.9875399	879.2579	F	39.9	M	40	56.5
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:16:34	73.335	1809	43.2	5.591	78.6	39.9	0.13	25.7	Left	87.1	94.8	43.76655758	-89.98844702	878.564	F	40.9	M	40	43.2
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:16:38	73.285	1810	55.8	1.004	78.9	39.8	0.17	25.8	Left	87.2	98.9	43.76686113	-89.98936404	879.014	F	39.7	M	40	55.7
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:16:43	73.236	1811	53.1	1.032	76.9	40	0.14	25.9	Left	87.2	98.8	43.76716215	-89.99025697	879.5531	F	40.1	M	40	53.1
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:16:47	73.185	1812	57.4	0.889	78.9	40.3	0.18	25.8	Left	87.2	98.3	43.76747863	-89.99116903	879.5203	F	40	M	40	57.6
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:16:52	73.135	1813	56.4	0.721	79.5	40.4	0.19	26.7	Left	87.1	98	43.7677941	-89.99205858	879.3891	F	40.3	M	40	56.6
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:16:56	73.085	1814	54.5	0.719	79.3	40.4	0.18	26	Left	87.2	98.7	43.76812074	-89.99295059	877.2838	F	40.2	M	40	54.7
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:17:01	73.035	1815	52.8	1.062	79.6	40.4	0.19	26.3	Left	87	98.3	43.7684485	-89.99383868	874.2998	F	40.3	M	40	53.0
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:17:05	72.985	1816	56.5	0.845	78.9	40.3	0.17	25.9	Left	87.3	97.9	43.76877995	-89.99472689	870.3182	F	40	M	40	56.7
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:17:10	72.935	1817	57.1	1.4	77.5	40.1	0.21	25.9	Left	87.2	97.9	43.76910983	-89.99561923	866.5254	F	40	M	40	57.2
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:17:14	72.885	1818	57.3	0.967	78.2	40.1	0.23	25.4	Left	87.2	98.4	43.76943819	-89.99650705	863.2466	F	39.8	M	40	57.4
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:17:19	72.835	1819	56.1	2.86	77.7	40	0.17	25.5	Left	87.2	98.3	43.76976519	-89.99739478	860.7049	F	40	M	40	56.1
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:17:23	72.785	1820	48.4	2.331	75.3	40	0.25	26.1	Left	87.1	99.1	43.7700963	-89.99829121	860.1962	F	40	M	40	48.4
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:17:28	72.735	1821	52.4	0.895	71.7	39.9	0.16	26.2	Left	87.1	98.7	43.77042283	-89.9991701	859.3493	F	39.8	M	40	52.4
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:17:32	72.685	1822	52.7	0.984	73.9	40	0.15	25.9	Left	87.3	99.4	43.77075014	-90.00005331	858.9167	F	39.8	M	40	52.7
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:17:37	72.635	1823	52.3	0.813	74.7	39.9	0.17	26.2	Left	87.2	99.3	43.77108089	-90.00094369	859.0443	F	39.9	M	40	52.3
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:17:41	72.585	1824	52.9	1.041	71.6	39.9	0.15	25.8	Left	87.2	99.3	43.77141213	-90.00183699	859.0357	F	39.7	M	40	52.9
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:17:46	72.535	1825	51.3	1.233	73.2	40	0.17	25.7	Left	87.2	99.1	43.77173798	-90.00272169	859.3104	F	39.9	M	40	51.3
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:17:50	72.486	1826	52.8	0.738	70.9	40.1	0.17	25.6	Left	87.2	99	43.77206412	-90.00360289	858.9823	F	40	M	40	52.9
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:17:55	72.435	1827	52.4	1.506	75.3	40.1	0.2	26.4	Left	87.3	99.2	43.77239561	-90.00450754	859.8049	F	40.2	M	40	52.5
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:17:59	72.385	1828	52.1	0.803	72.2	40.1	0.16	26.4	Left	87.2	99	43.77272505	-90.00539	859.6056	F	39.8	M	40	52.2
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:18:04	72.335	1829	51.5	0.616	69.7	40.1	0.16	25.1	Left	87.1	98.9	43.77305354	-90.0062774	859.7953	F	40	M	40	51.6
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH 94	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	12:18:08	72.285	1830	52	0.889	71.4	40.1	0.16	26	Left	87.2	99.8	43.77337681	-90.00716947	860.2222	F	39.9	M	40	52.1
7/9/2024	F57b-16_WB_L2_01_20240709_120901.D01	IH																											

Appendix C
Detailed Friction Results
Test Site 21

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:27:59	10.461	289	63.8	0.853	102.9	36.8	0.34	18.1	Left	74.5	81.9	43.38511293	-89.767814		897.8115	F	36.5	M		40	62.2	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:28:04	10.511	290	60.8	0.964	88.7	38.2	0.08	19.7	Left	74.3	81.2	43.38582462	-89.76770398		908.2151	F	38	M		40	59.9	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:28:08	10.561	291	60.6	1.043	88.2	39.2	0.41	20.8	Left	74.4	81.2	43.38654006	-89.76758773		918.9492	F	38.9	M		40	60.2	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:28:13	10.611	292	61.1	1.516	86.8	39.8	0.05	20.7	Left	74.4	81.2	43.38726162	-89.76748722		929.9829	F	39.6	M		40	61.0	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:28:17	10.661	293	60.8	0.81	94.5	39.4	0.46	20.5	Left	74.4	81.7	43.38798296	-89.76743691		940.576	F	38.9	M		40	60.5	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:28:22	10.711	294	59.1	1.311	91.2	39.5	0.2	21.2	Left	74.3	81.3	43.38870059	-89.76747631		951.427	F	39.3	M		40	58.9	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:28:26	10.761	295	58.4	1.195	81.2	40.1	0.16	21.4	Left	74.5	81.4	43.38940292	-89.76763446		963.253	F	39.6	M		40	58.5	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:28:31	10.812	296	58.8	1.337	86.7	40.3	0.2	20.8	Left	74.3	80.9	43.39008667	-89.76797796		976.5244	F	39.7	M		40	59.0	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:28:35	10.862	297	59.9	1.472	86.4	39.8	0.22	21.3	Left	74.4	80.6	43.39070287	-89.76847318		991.2169	F	39.4	M		40	59.8	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:28:40	10.911	298	60.4	0.879	90.6	39.9	0.15	20.9	Left	74.3	79.4	43.39125476	-89.76909952		1007.8708	F	39.4	M		40	60.4	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:28:44	10.961	299	60	0.977	81.7	40.1	0.16	21.6	Left	74.4	79.8	43.39178808	-89.76974034		1023.7093	F	39.8	M		40	60.1	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:28:49	11.012	300	62.3	0.919	92.7	41.3	0.1	22	Left	74.2	79.1	43.39234215	-89.77039734		1038.7762	F	40.8	M		40	63.0	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:28:53	11.062	301	64.8	0.699	91.3	41.2	0.23	22.4	Left	74.4	78.3	43.39289355	-89.77103247		1054.7055	F	40.9	M		40	65.4	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:28:58	11.112	302	64.7	0.998	90.2	40.1	0.35	21.6	Left	74.5	78.7	43.39351458	-89.77153339		1072.6986	F	39.8	M		40	64.8	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:29:02	11.161	303	60.5	1.681	86.4	39.5	0.15	20.8	Left	74.3	79	43.39417882	-89.77185809		1091.4782	F	39.4	M		40	60.3	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:29:07	11.211	304	60.5	1.026	90.8	40	0.13	20.8	Left	74.1	78.6	43.39488698	-89.77207915		1108.3699	F	39.8	M		40	60.5	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:29:11	11.261	305	57.8	0.942	83.4	40.3	0.23	22	Left	74.3	77.7	43.3955857	-89.77229138		1123.7168	F	39.9	M		40	58.0	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:29:16	11.311	306	59.9	0.76	91.2	40.1	0.13	21.1	Left	74.3	77	43.39628682	-89.7725013		1139.6817	F	39.8	M		40	60.0	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:29:20	11.361	307	60.5	1.281	87.3	40	0.21	20.7	Left	74.3	79	43.39698845	-89.77270488		1153.9698	F	39.7	M		40	60.5	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:29:25	11.411	308	58.6	0.735	81.9	40.3	0.1	21.6	Left	74.2	81.4	43.39770348	-89.77274084		1171.157	F	39.9	M		40	58.8	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:29:29	11.461	309	60.9	1.277	89.1	40.2	0.33	21.7	Left	74.4	78	43.39842721	-89.77266578		1188.2202	F	40	M		40	61.0	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:29:34	11.511	310	58.9	1.23	85.1	39.7	0.14	20.7	Left	74.3	78.8	43.39913572	-89.77259273		1203.2006	F	39.3	M		40	58.8	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)	2	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:29:38	11.561	311	58.2	1.182	85.4	40.2	0.23	21.7	Left	74.3	78.6	43.39985966	-89.77251713		1215.5384	F	39.9	M		40	58.3	
5/1/2024	21_NB_L2_01_20240501_182721.D01	USH 12	North(+)																															

Appendix C Detailed Friction Results Test Site 22																																	
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:02:42	10.056	1273	40	1.351	67.2	34.7	0.07	17.9	Left	55.7	47.6	43.81955007	-91.21885276	670.334	F	34.6	M	40	37.4		
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:02:47	10.107	1274	40.1	1.126	70.2	37.1	0.04	18.8	Left	55.9	47.3	43.82020773	-91.21842555	669.7879	F	37	M	40	38.7		
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:02:52	10.157	1275	44.5	0.922	70.3	38.9	0.09	20.5	Left	55.7	45.6	43.82086845	-91.21799192	668.5886	F	38.8	M	40	44.0		
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:02:56	10.207	1276	44.9	0.627	70.3	39.2	0.17	20.6	Left	56	46.1	43.8215171	-91.21756595	670.9069	F	38.9	M	40	44.5		
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:03:01	10.257	1277	45.1	0.576	71.3	39	0.15	20.7	Left	55.8	45.5	43.8221701	-91.21713939	678.0071	F	38.9	M	40	44.6		
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:03:06	10.307	1278	45.9	0.766	68.4	38.6	0.09	19.2	Left	55.8	45.8	43.82281404	-91.21671522	686.3855	F	38.5	M	40	45.2		
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:03:10	10.357	1279	45.5	1.219	69.4	38.9	0.29	20.8	Left	55.9	46	43.82347263	-91.21628273	690.9572	F	38.7	M	40	45.0		
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:03:15	10.407	1280	46.3	2.317	68.5	39.6	0.08	21.1	Left	55.9	45.4	43.82412188	-91.21586266	692.0037	F	39.6	M	40	46.1		
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:03:20	10.458	1281	45.3	0.794	71.8	40.5	0.15	21.9	Left	55.9	44.9	43.82481983	-91.21556505	689.8321	F	40	M	40	45.6		
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:03:24	10.508	1282	44.9	1.024	67.2	39.9	0.18	21.2	Left	56	45.4	43.8255341	-91.21553331	689.2316	F	39.8	M	40	44.9		
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:03:29	10.557	1283	50.6	1.613	73.7	40.3	0.16	21.6	Left	55.8	46.1	43.82623722	-91.21573419	690.2527	F	40.3	M	40	50.8		
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:03:33	10.608	1284	49.3	1.483	76.2	40	0.16	21.5	Left	55.9	45.4	43.82694658	-91.2159329	691.561	F	39.9	M	40	49.3		
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:03:38	10.658	1285	46.9	0.932	73.6	40.2	0.15	21.6	Left	56	45.5	43.82766942	-91.21602019	692.3484	F	39.9	M	40	47.0		
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:03:42	10.707	1286	51.6	1.183	75.7	40.4	0.16	21.9	Left	55.9	44.9	43.82838256	-91.21599165	692.0351	F	40.3	M	40	51.8		
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:03:46	10.758	1287	47.1	0.957	71.1	40.6	0.16	21.3	Left	55.9	44.7	43.82910353	-91.21584091	690.0012	F	40.3	M	40	47.4		
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:03:51	10.807	1288	48.1	1.411	70.7	40.5	0.17	21.8	Left	55.9	44.9	43.82979452	-91.21558654	688.6664	F	40.3	M	40	48.4		
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:03:55	10.857	1289	49.1	1.622	72.3	40.4	0.21	21.1	Left	56.1	45.9	43.83046602	-91.215219	686.3697	F	40.3	M	40	49.3		
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:04:00	10.907	1290	48.5	1.194	68.3	40.2	0.28	21.2	Left	55.9	45.5	43.83111452	-91.21477359	683.1921	F	40.1	M	40	48.6		
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:04:04	10.958	1291	49.8	1.162	73.9	39.9	0.15	21.1	Left	55.9	44.8	43.83176782	-91.21432423	681.464	F	39.7	M	40	49.8		
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:04:09	11.008	1292	49.9	1.077	73.5	40.1	0.16	21.1	Left	55.9	43.8	43.83243634	-91.2139587	679.8216	F	40	M	40	50.0		
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:04:13	11.058	1293	50.3	1.214	73.3	40	0.2	21.4	Left	55.9	45.4	43.8331372	-91.21372369	68							

Appendix C
Detailed Friction Results
Test Site 22

5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:35:19	12.118	1382	46.5	1.9	66.5	39.2	0.16	20.7	Left	55.6	46.9	43.84835263	-91.21298991	667.5719	F	39.1	M	40	46.1
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:35:23	12.067	1383	49	1.548	73.6	39.5	0.19	21.1	Left	55.6	45.9	43.84763505	-91.21316234	670.0399	F	39.3	M	40	48.8
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:35:28	12.017	1384	53.1	1.518	75.1	39.5	0.2	21.4	Left	55.7	46	43.84692281	-91.21331195	672.5756	F	39.5	M	40	52.9
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:35:32	11.968	1385	48.9	1.043	70	39.5	0.15	21.2	Left	55.5	45.3	43.84621361	-91.21342729	675.2488	F	39.2	M	40	48.7
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:35:37	11.918	1386	50.8	1.118	72.8	39.6	0.19	21.4	Left	55.5	46.4	43.84549811	-91.21356449	677.9177	F	39.3	M	40	50.6
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:35:42	11.867	1387	49.5	0.867	73.2	39.3	0.11	20.9	Left	55.5	46.4	43.84478457	-91.21374349	680.3021	F	39.1	M	40	49.2
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:35:46	11.817	1388	50.3	1.137	73.9	40	0.23	21.4	Left	55.6	46.7	43.84407316	-91.21391821	682.8588	F	40	M	40	50.3
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:35:51	11.767	1389	51.4	1.055	73.2	39.6	0.05	21.4	Left	55.5	46.3	43.8433656	-91.2140909	686.3157	F	39.3	M	40	51.2
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:35:55	11.717	1390	52.5	0.863	72.7	39.4	0.12	21.3	Left	55.6	46.6	43.84264878	-91.21423924	689.4965	F	39.3	M	40	52.2
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:36:00	11.667	1391	52.5	1.735	78	40.5	0.15	21.8	Left	55.5	46.4	43.84192859	-91.21429882	692.086	F	40.5	M	40	52.8
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:36:04	11.617	1392	50.2	0.966	74.8	40.7	0.15	21.9	Left	55.8	46.7	43.84120041	-91.2142609	694.3493	F	40.5	M	40	50.6
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:36:09	11.567	1393	50.6	1.117	69.4	40.6	0.24	21.7	Left	55.6	46.2	43.84049089	-91.21416683	695.6621	F	40.4	M	40	50.9
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:36:13	11.517	1394	50.8	0.982	73	39.4	0.25	21.3	Left	55.5	45.9	43.83977222	-91.21407007	696.4787	F	39.2	M	40	50.5
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:36:18	11.467	1395	51.5	1.393	72.9	39.5	0.23	20.9	Left	55.7	46.5	43.83905346	-91.21397092	696.7776	F	39.3	M	40	51.3
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:36:22	11.417	1396	50.7	1.315	73.1	39.7	0.15	21.3	Left	55.5	45.6	43.83833316	-91.21387896	695.848	F	39.4	M	40	50.6
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:36:27	11.367	1397	50.2	1.409	73.4	39.8	0.2	21.1	Left	55.5	45.3	43.83761604	-91.21380525	693.9007	F	39.6	M	40	50.1
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:36:31	11.317	1398	51	1.884	76.4	39.8	0.17	21.5	Left	55.7	46.8	43.8368901	-91.21375413	691.1937	F	39.6	M	40	50.9
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:36:36	11.267	1399	50.1	1.194	76.6	39.7	0.19	21.4	Left	55.6	47.6	43.83616779	-91.21372887	688.4997	F	39.6	M	40	50.0
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:36:41	11.217	1400	49.8	1.361	77.4	39.6	0.18	21.1	Left	55.5	46.8	43.83544755	-91.21372674	685.7795	F	39.6	M	40	49.6
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:36:45	11.167	1401	52.2	1.219	75.6	39.5	0.23	20.7	Left	55.7	47.5	43.83471985	-91.21374429	682.9636	F	39.4	M	40	52.0
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:36:50	11.118	1402	50.8	1.558	74.8	39.5	0.19	21	Left	55.7	46.8	43.83400644	-91.2137874	680.3984	F	39.5	M	40	50.6
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:36:54	11.067	1403	50	1.52	73.3	39.3	0.16	20.9	Left	55.7	46.3	43.83328181	-91.21387387	678.5689	F	39.3	M	40	49.7
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:36:59	11.018	1404	53.5	1.422	76.3	39.2	0.19	21.3	Left	55.8	46.1	43.83258084	-91.2140833	678.7001	F	39.2	M	40	53.1
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:37:03	10.968	1405	52.5	1.81	74.3	39.2	0.16	21	Left	55.7	46.8	43.8319072	-91.21443249	679.2895	F	39.1	M	40	52.1
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:37:08	10.918	1406	49.7	1.102	72.7	38.7	0.29	20.9	Left	55.7	47.4	43.83126428	-91.21487263	682.8303	F	38.4	M	40	49.1
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:37:13	10.867	1407	50.8	1.447	72.1	39.8	0.05	21	Left	55.7	47.3	43.8306126	-91.21531871	687.0023	F	39.7	M	40	50.7
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:37:17	10.817	1408	49.8	0.81	72.9	39.4	0.31	21.3	Left	55.6	46.9	43.82994689	-91.21570025	689.8197	F	39.3	M	40	49.5
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:37:22	10.768	1409	50.5	0.915	68.9	38.8	0.23	20	Left	55.8	46.1	43.82925508	-91.2159757	691.9622	F	38.8	M	40	49.9
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:37:27	10.717	1410	50.2	0.792	70	39.2	0.11	20.7	Left	55.6	44.9	43.82854183	-91.21614607	693.2626	F	38.9	M	40	49.8
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:37:31	10.667	1411	49.8	1.322	71.7	39.6	0.21	20.9	Left	55.7	45.2	43.82782007	-91.21620225	693.1686	F	39.4	M	40	49.6
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:37:36	10.617	1412	49.2	1.074	66.5	40	0.09	21	Left	55.8	45.6	43.82710094	-91.21614461	692.1748	F	39.9	M	40	49.2
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:37:40	10.567	1413	50.8	1.746	70.1	41	0.09	22.1	Left	55.6	45.6	43.82638336	-91.2159768	690.7291	F	40.7	M	40	51.3
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:37:45	10.517	1414	43.2	1.41	67.5	40.9	0.24	21.7	Left	55.7	45.9	43.82568487	-91.21574683	687.9228	F	41	M	40	43.7
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:37:49	10.468	1415	43	1.082	63.7	39.5	0.33	21.6	Left	55.6	44.9	43.82497433	-91.21571811	686.9334	F	39.6	M	40	42.8
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:37:54	10.417	1416	44.7	1.206	60.6	40.6	0.16	21.4	Left	55.8	45.8	43.82426682	-91.2159716	689.4913	F	40.5	M	40	45.0
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:37:58	10.367	1417	47.2	1.036	76.4	40.2	0.08	22.1	Left	55.7	45.9	43.82361416	-91.21639028	690.8564	F	40.3	M	40	47.3
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:38:03	10.317	1418	47.7	1.033	68	40.5	0.19	21.7	Left	55.7	45.9	43.82296531	-91.21682084	686.2342	F	40.5	M	40	48.0
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:38:07	10.268																		

Appendix C
Detailed Friction Results
Test Site 25

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNSStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN					
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:38:31	12.974	1208	69	3.952	79.9	39.6	0.26	20.9	Left	55.1	45.2	43.76514952	-91.14415526		725.0912	F	39.4	M		40	68.8						
5/2/2024	25_EB_L1_02_20240502_234334.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:43:34	12.991	1212	69.6	2.468	98.3	38.5	0.27	20.8	Left	55.1	43	43.76500027	-91.14388779		725.7827	F	38.3	M		40	68.9						
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:38:34	13.014	1209	55.2	1.267	80.8	39.7	0.09	21.5	Left	55.2	46.9	43.76480958	-91.14350871		726.035	F	39.5	M		40	55.1						
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:38:40	13.074	1210	59.4	0.848	83	40.2	0.19	21.7	Left	55.1	46.2	43.76437451	-91.14246863		728.1622	F	40	M		40	59.5						
EB Lane 1															Avg		69.3	3.2																EB Lane 1		Avg		68.8	No of Tests 2
															St. Dev		0.4																		St. Dev		0.0		
																																			Min		68.8		
																																			Max		68.9		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:48:20	13.038	1214	55.2	2.458	88.7	37.8	0.11	20.4	Left	55.2	44.2	43.76464048	-91.14306402		726.9478	F	37.8	M		40	54.1						
5/2/2024	25_WB_L1_02_20240502_234139.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:42:09	12.993	1211	65.5	3.406	83.6	39.3	0.22	21.1	Left	54.9	40.8	43.76499296	-91.14381038		725.3865	F	39.1	M		40	65.2						
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:48:25	12.98	1215	60.6	4.322	94.4	40.4	0.41	20.6	Left	55	42.4	43.76510378	-91.14401958		725.3101	F	40.3	M		40	60.8						
WB Lane 1															Avg		63.1	3.9																WB Lane 1		Avg		60.8	No of Tests 2
															St. Dev		3.5																		St. Dev		3.1		
																																			Min		60.8		
																																			Max		65.2		

Appendix C																																	
Detailed Friction Results																																	
Test Site 26																																	
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:34:19	10.204	1153	57.6	1.996	100.7	37.4	0.35	19.1	Left	54.8	44.6	43.75635073	-91.19270248		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:34:24	10.253	1154	54.4	1.227	95.6	38.5	0.27	20.4	Left	55	45.4	43.75682294	-91.19197173		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:34:29	10.303	1155	55	0.31	92.6	37.4	0.13	20.4	Left	55	46.1	43.75728931	-91.19121385		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:34:34	10.353	1156	53.2	0.534	81.1	39.1	0.07	20.9	Left	54.9	45.8	43.75774389	-91.19044818		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:34:38	10.403	1157	53.8	0.567	82.1	40.1	0.2	21.3	Left	54.8	45.9	43.7581922	-91.18966331		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:34:43	10.454	1158	54.3	0.458	86.4	39.8	0.13	20.8	Left	54.8	45.8	43.75863197	-91.1888689		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:34:47	10.503	1159	56.1	0.478	79.9	40.1	0.17	21.4	Left	55	46.1	43.75905759	-91.18806724		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:34:52	10.553	1160	55.7	0.394	80.5	40.3	0.18	21.4	Left	55	45.5	43.759471	-91.18724929		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:34:56	10.604	1161	56.7	0.426	86.4	40.3	0.16	20.9	Left	55	46.3	43.75987829	-91.1864254		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:35:01	10.654	1162	60.7	0.713	88.9	39.3	0.39	20.6	Left	55	46.3	43.76028746	-91.18559871		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:35:05	10.703	1163	54.6	0.583	77.6	38.8	0.14	20.7	Left	54.9	45.7	43.76068154	-91.18478247		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:35:10	10.753	1164	54.1	0.526	82.1	39.4	0.08	20.9	Left	55	46.2	43.76108633	-91.18394789		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:35:15	10.804	1165	57	0.704	85.3	40	0.17	21.1	Left	55.1	46.6	43.76149413	-91.18312187		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:35:19	10.854	1166	55.6	0.693	78.8	40.2	0.2	21.6	Left	54.9	46.3	43.7619235	-91.18231273		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:35:24	10.904	1167	56.3	0.401	82.6	40	0.27	21.1	Left	54.9	46.5	43.76238676	-91.18155892		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:35:28	10.954	1168	55.2	2.012	86.5	39.7	0.17	21.1	Left	55	46	43.76289687	-91.18083687		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:35:33	11.004	1169	54	0.385	80.1	40.1	0.17	21.2	Left	55	46.3	43.76341374	-91.1801578		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:35:37	11.053	1170	54.4	0.607	79.2	40.2	0.28	21.5	Left	54.9	46.1	43.76393066	-91.17947231		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:35:42	11.104	1171	54.5	0.585	81.1	40.4	0.17	21.8	Left	54.9	46.3	43.76440599	-91.17871616		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:35:46	11.154	1172	53.5	0.909	77.7	40.3	0.25	21.7	Left	54.9	46	43.76481111	-91.17789727		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:35:51	11.203	1173	56.9	0.904	87.2	39.6	0.15	21.2	Left	55.1	46.4	43.76514456	-91.17701709		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:35:55	11.253	1174	55.9	0.563	83.4	39.8	0.17	21.5	Left	55	46.8	43.76540261	-91.17609027		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:36:00	11.303	1175	56.1	0.538	82.5	40	0.17	21.2	Left	55.1	46.5	43.76583355	-91.17512572		LongDir	Height	HeightU	Speed	SpeedU		
5/2/2024	26-25_EB_L1_01_20240502_233401.D01	USH 14	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:36:04	11.354	1176	58.2	1.074	92.4	40.1	0.16	20.9	Left	55	46.6	43.76572164	-91.17								

Appendix C
Detailed Friction Results
Test Site 27

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNSD	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:48:30	12.931	1216	57.6	0.798	91.9	37.8	0.15	20.1	Left	55.2	44.4	43.76555072	-91.14478258	725.1896	F	37.8	M		40	56.5		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:48:34	12.881	1217	55.2	0.839	88	38.5	0.09	20	Left	55	44.3	43.7660153	-91.14554792	727.0149	F	38.2	M		40	54.5		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:48:39	12.831	1218	54.7	0.655	80.3	39.8	0.11	21.7	Left	55.1	45.4	43.76644214	-91.14634487	729.1121	F	39.6	M		40	54.6		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:48:44	12.781	1219	56.1	0.926	84.2	40.2	0.17	21.4	Left	55.4	45.4	43.76679112	-91.14721749	731.1517	F	39.8	M		40	56.2		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:48:48	12.731	1220	56.1	0.927	83.3	40.2	0.17	21.7	Left	56.5	44	43.76704983	-91.14813996	733.5366	F	40	M		40	56.2		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:48:53	12.681	1221	56	0.653	84.5	40.3	0.15	21.5	Left	55	44.6	43.76721569	-91.14910837	735.5347	F	40.1	M		40	56.2		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:48:57	12.631	1222	54	0.737	85.6	40.5	0.17	21.8	Left	55.1	46	43.76728707	-91.15010171	736.4501	F	40.4	M		40	54.3		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:49:01	12.58	1223	56	0.607	86.9	40.3	0.28	21.7	Left	55.2	46.7	43.76730798	-91.151110354	735.6895	F	40.1	M		40	56.2		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:49:06	12.531	1224	58.6	0.731	83.2	40	0.17	21.5	Left	55	45.7	43.76733403	-91.15208993	733.9167	F	39.8	M		40	58.6		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:49:10	12.481	1225	55.1	0.732	86.4	40.5	0.12	22.2	Left	55.2	46.7	43.76740574	-91.15307894	730.4599	F	40.4	M		40	55.4		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:49:15	12.43	1226	55.1	0.833	84.7	40.3	0.28	21.4	Left	55.1	46.7	43.76754694	-91.15406613	724.6195	F	40.2	M		40	55.3		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:49:19	12.381	1227	54.8	0.44	85.9	40.2	0.13	20.8	Left	55.1	46.2	43.76775406	-91.15501286	717.2532	F	40.1	M		40	54.9		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:49:24	12.331	1228	55.7	0.917	87.4	40.1	0.17	21.5	Left	55.2	46.5	43.76802659	-91.15593317	710.741	F	40	M		40	55.8		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:49:28	12.28	1229	56.4	0.817	85	39.6	0.19	21.4	Left	55.1	47.3	43.76835511	-91.15683233	706.7234	F	39.5	M		40	56.2		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:49:33	12.231	1230	52.3	0.633	76.7	39.7	0.2	21.1	Left	55.1	48.3	43.76869127	-91.15769782	705.3406	F	39.4	M		40	52.2		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:49:38	12.181	1231	52.6	0.406	75.7	39.9	0.11	21.3	Left	55.2	47.6	43.76896089	-91.15862223	705.8143	F	39.7	M		40	52.6		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:49:42	12.131	1232	49.1	0.943	72.8	40.2	0.12	21.3	Left	55	47	43.76910582	-91.15959732	706.0951	F	40	M		40	49.2		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:49:47	12.08	1233	51	0.653	76.5	40.2	0.21	21.4	Left	55.2	46.7	43.76911693	-91.16059461	705.9639	F	40	M		40	51.1		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:49:51	12.031	1234	51.8	0.957	75.3	39.9	0.19	21.3	Left	55.1	47.5	43.76899943	-91.16157161	707.591	F	39.6	M		40	51.8		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:49:56	11.981	1235	54.3	0.33	77.3	39.5	0.25	21.1	Left	55.1	48.7	43.7687546	-91.16250393	712.0954	F	39.2	M		40	54.1		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:50:00	11.931	1236	55.2	0.641	84.8	39.4	0.05	21.5	Left	55	46.4	43.76839974	-91.16336234	718.683	F	39.2	M		40	54.9		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:50:05	11.88	1237	56	0.835	88.2	40.4	0.33	21.5	Left	55.1	47.7	43.76798598	-91.16418521	725.3614	F	40.4	M		40	56.2		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:50:09	11.831	1238	57.2	1.033	84	38.9	0.05	21.1	Left	55.1	47	43.76758289	-91.16500235	731.7185	F	38.6	M		40	56.7		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:50:14	11.78	1239	56.1	0.59	88.7	39.8	0.28	21.5	Left	55	47.4	43.76721206	-91.16586788	737.0152	F	39.4	M		40	56.0		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:50:18	11.731	1240	55.7	0.406	80	39.5	0.26	21.1	Left	55.1	47.7	43.76690772	-91.16676244	740.5638	F	39.3	M		40	55.5		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:50:23	11.681	1241	58.7	0.646	83.6	39.7	0.15	21.3	Left	55.2	47.3	43.76666192	-91.16769404	742.7575	F	39.5	M		40	58.6		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:50:28	11.63	1242	55	0.478	76.3	40.4	0.15	21.6	Left	55.2	46.7	43.76648195	-91.16866753	743.6833	F	40.1	M		40	55.2		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:50:32	11.58	1243	54.4	1.11	80.7	40.6	0.19	21.9	Left	55.1	45.8	43.76634336	-91.16965014	743.4125	F	40.4	M		40	54.7		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:50:36	11.53	1244	55.5	0.934	79.5	40.7	0.2	22	Left	55.2	47.3	43.76621173	-91.17063043	741.6927	F	40.5	M		40	55.9		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:50:41	11.48	1245	54.9	0.741	80.4	40.7	0.2	22.1	Left	55.1	47.9	43.76608195	-91.17160595	738.8925	F	40.5	M		40	55.3		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:50:45	11.43	1246	56.1	0.586	82.1	40.5	0.18	21.9	Left	55.1	47.9	43.76595031	-91.17258436	735.7128	F	40.2	M		40	56.4		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:50:50	11.381	1247	55.7	1.104	79.3	40.4	0.19	20.8	Left	55.2	47	43.76582092	-91.17355715	732.3419	F	40.2	M		40	55.9		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:50:54	11.33	1248	55.5	0.298	78.6	40.2	0.22	21.3	Left	55.1	46.6	43.76568916	-91.17454761	729.2819	F	40	M		40	55.6		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:50:59	11.281	1249	54.9	0.835	79.8	40.3	0.17	21.6	Left	55.1	46.5	43.7655449	-91.17551342	726.4179	F	40	M		40	55.1		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:51:03	11.23	1250	53.3	0.618	76.8	40.3	0.16	21.3	Left	55.2	44.4	43.76533288	-91.17647139	723.5564	F	40	M		40	53.5		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	23:51:08	11.18	1251	53.9	0.761	77.5	40.1	0.2	21.3	Left	55.1	46.5	43.76504415	-91.17737853	721.4426	F	39.9	M		40	54.0		
5/2/2024	25-27_WB_L1_01_20240502_234807.D01	USH 14	West(-)	1	SN 628/S/R	ARA_RIB																												

Appendix C

Detailed Friction Results

Test Site 28

Collected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNSstd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN		
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:03:09	12.425	1085	62.8	0.887	88.2	40.7	0.23	21.8	Left	55.2	43.4	43.95182802	-91.27411123	712.6331	F	40.6	M	40	63.2				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:03:14	12.475	1086	62.5	1.234	87.4	40.6	0.24	21.9	Left	55.5	44.5	43.95227007	-91.27490169	713.3044	F	40.4	M	40	62.8				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:03:18	12.525	1087	63.8	0.841	87.7	40.6	0.25	21.5	Left	55.2	43.2	43.95270868	-91.27569247	714.1747	F	40.4	M	40	64.1				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:03:23	12.575	1088	61.1	1.396	86.9	40.6	0.25	22	Left	55.2	43.5	43.95315158	-91.27648756	715.2487	F	40.5	M	40	61.4				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:03:27	12.625	1089	64.9	1.598	88	40.6	0.24	21.6	Left	55.4	44.4	43.95359113	-91.27728319	716.1157	F	40.5	M	40	65.2				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:03:32	12.675	1090	64	1.088	86.1	40.6	0.2	21	Left	55.3	43.6	43.9540275	-91.27806764	717.086	F	40.4	M	40	64.3				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:03:36	12.725	1091	63.8	1.627	88.9	40.7	0.25	21.7	Left	55.4	44.3	43.95446902	-91.27886001	717.7421	F	40.6	M	40	64.2				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:03:40	12.775	1092	61.5	0.813	85.8	40.7	0.24	22.1	Left	55.2	43.8	43.95491794	-91.2796496	718.1686	F	40.6	M	40	61.9				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:03:45	12.825	1093	62.8	2.287	76.8	40.7	0.24	21.6	Left	55.4	44.3	43.95538543	-91.2803929	720.1319	F	40.6	M	40	63.2				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:03:49	12.875	1094	63.2	1.192	82.8	40.5	0.24	21.4	Left	55.3	44.1	43.95589117	-91.28111452	721.2427	F	40.3	M	40	63.5				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:03:54	12.925	1095	65.2	0.913	87.8	40.6	0.23	21.5	Left	55.3	44.3	43.95642181	-91.28178662	722.3373	F	40.3	M	40	65.5				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:03:58	12.975	1096	62.4	2.241	84.7	40.6	0.22	21.4	Left	55.3	44.5	43.95698736	-91.28242354	723.3528	F	40.5	M	40	62.7				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:04:03	13.025	1097	63.8	1.212	85.8	40.7	0.27	21.5	Left	55.4	43.9	43.95757045	-91.28301189	724.0413	F	40.5	M	40	64.2				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:04:07	13.075	1098	62.6	1.517	85.8	40.8	0.23	21.4	Left	55.3	43.6	43.95817765	-91.2835469	723.8117	F	40.5	M	40	63.0				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:04:12	13.124	1099	63.3	1.954	85.7	40.8	0.23	22	Left	55.2	43	43.95880231	-91.28403293	723.068	F	40.7	M	40	63.7				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:04:16	13.175	1100	62	0.927	84.9	40.7	0.27	22	Left	55.2	44.2	43.95945775	-91.28447843	721.7934	F	40.6	M	40	62.4				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:04:20	13.225	1101	63.2	1.209	89.2	40.6	0.27	21	Left	55.3	45	43.96012537	-91.28486372	720.6949	F	40.4	M	40	63.5				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:04:25	13.275	1102	61.3	1.049	84.4	40.6	0.25	21	Left	55.2	43.9	43.96080084	-91.28519367	719.7395	F	40.4	M	40	61.6				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:04:29	13.325	1103	61.9	1.093	83.5	40.6	0.26	21.4	Left	55.3	44.6	43.96149416	-91.28547161	719.3952	F	40.4	M	40	62.2				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:04:34	13.375	1104	61.6	0.984	84.6	40.4	0.28	21.2	Left	55.5	44.4	43.96220634	-91.2856936	719.8995	F	40.3	M	40	61.8				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:04:38	13.425	1105	62.7	0.854	87.1	40.4	0.25	21.9	Left	55.3	44.9	43.96292174	-91.28586166	721.1431	F	40.3	M	40	62.9				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:04:43	13.475	1106	61.8	0.894	87.9	40.4	0.24	21.5	Left	55.3	44.4	43.96363172	-91.2859699	723.0844	F	40.1	M	40	62.0				
5/2/2024	28_NB_L1_01_20240502_220231.D01	USH 53	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:04:47	13.526	1107	64.5	1.039	91.1	40.4	0.23	21.4	Left	55.2	45.8	43.96436126	-91.28601468	725.9234	F	40	M						
														NB Lane 1	Avg	62.8	1.3															NB Lane 1	Avg	63.1	No of Tests
															St. Dev	1.1																St. Dev	1.2	21	
															Min																Min	61.4			
															Max																Max	65.5			
5/2/2024	28_NB_L2_01_20240502_220944.D01	USH 53	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:10:15	12.347	1129	54.7	2.47	89.5	39.8	0.26	21	Left	55.3	45.9	43.95117125	-91.27284712	710.1634	F	39.7	M	40	54.6				
5/2/2024	28_NB_L2_01_20240502_220944.D01	USH 53	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:10:19	12.397	1130	58.1	0.76	89.4	40.3	0.2	21.1	Left	55.3	45.5	43.95160895	-91.27364112	711.4429	F	40.1	M	40	58.3				
5/2/2024	28_NB_L2_01_20240502_220944.D01	USH 53	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:10:24	12.447	1131	53.3	1.402	75.6	40.5	0.19	21.6	Left	55.6	46.3	43.95204849	-91.27442551	712.4252	F	40.3	M	40	53.6				
5/2/2024	28_NB_L2_01_20240502_220944.D01	USH 53	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:10:28	12.497	1132	53.1	1.019	75.3	40.7	0.24	21.8	Left	55.5	46.5	43.9524851	-91.27521447	713.3376	F	40.6	M	40	53.5				
5/2/2024	28_NB_L2_01_20240502_220944.D01	USH 53	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:10:33	12.547	1133	53.2	1.722	78.8	40.6	0.24	21.9	Left	55.5	46	43.95292435	-91.27600424	714.2316	F	40.5	M	40	53.5				
5/2/2024	28_NB_L2_01_20240502_220944.D01	USH 53	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:10:37	12.597	1134	51.9	0.771	75.9	40.6	0.2	21.4	Left	55.4	46.2	43.95336782	-91.27680131	714.9862	F	40.4	M	40	52.2				
5/2/2024	28_NB_L2_01_20240502_220944.D01	USH 53	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:10:42	12.647	1135	55.9	3.252	77.6	40.5	0.25	21.4	Left	55.4	47.7	43.95380787	-91.27759058	715.7796	F	40.4	M	40	56.2				
5/2/2024	28_NB_L2_01_20240502_220944.D01	USH 53	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:10:46	12.697	1136	57.7	0.893	85.3	40.5	0.28	21	Left	55.3	45.6	43.95424503	-91.27838551	716.6266	F	40.4	M	40	58.0				
5/2/2024	28_NB_L2_01_20240502_220944.D01	USH 53	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:10:51	12.747	1137	57.5	0.538	77.4	40.7	0.24	22.2	Left	55.2	45.7	43.95468926	-91.27918188	716.8563	F	40.5	M	40	57.9				
5/2/2024	28_NB_L2_01_20240502_220944.D01	USH 53	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:10:55	12.797	1138	56.7	1.02	85	40.6	0.24	21.7	Left	55.2	45.6	43.9551405	-91.2799524	717.3812	F	40.5	M	40	57.0				
5/2/2024	28_NB_L2_01_20240502_220944.D01	USH 53	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:10:59	12.847	1139	57.5	1.024	76.6	40.4	0.24	20.8	Left	55.3	46.4	43.95562062	-91.2806872	721.9552	F	40.5	M	40	57.7				
5/2/2024	28_NB_L2_01_20240502_220944.D01	USH 53	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:11:04	12.897	1140	57.8	1.03	77.7	40.5	0.24	21.5	Left	55.3	46.6	43.95614295	-91.28138936	722.2697	F	40.5	M	40	58.1				
5/2/2024	28_NB_L2_01_20240502_220944.D01	USH 53	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:11:08	12.947	1141	57.2	0.898	84.4	40.6	0.25	21.6	Left	55.5	46.9	43.95669364	-91.28205083	722.7931	F	40.5	M	40	57.5				
5/2/2024	28_NB_L2_01_20240502_220944.D01	USH 53	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:11:13	12.997	1142	60.																				

Appendix C																															
Detailed Friction Results																															
Test Site 28																															
5/2/2024	28_SB_L1_01_20240502_215844.D01	USH 53	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:59:51	12.761	1070	62.6	1.139	87.1	40.6	0.27	21.7	Left	55.2	39.5	43.95466781	-91.27959512	720.4644	F	40.3	M	40	62.9
5/2/2024	28_SB_L1_01_20240502_215844.D01	USH 53	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:59:56	12.71	1071	60.1	2.148	86	40.6	0.2	21.4	Left	55.3	39.6	43.95422329	-91.27879753	719.1919	F	40.5	M	40	60.4
5/2/2024	28_SB_L1_01_20240502_215844.D01	USH 53	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:00:00	12.66	1072	62.8	0.918	84.5	40.6	0.22	21.7	Left	55.3	39.7	43.95378057	-91.27799667	717.6437	F	40.5	M	40	63.1
5/2/2024	28_SB_L1_01_20240502_215844.D01	USH 53	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:00:05	12.61	1073	61.3	1.223	86.1	40.6	0.27	21.7	Left	55.3	40.1	43.95334702	-91.2772106	716.5345	F	40.5	M	40	61.6
5/2/2024	28_SB_L1_01_20240502_215844.D01	USH 53	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:00:09	12.56	1074	61.9	0.891	86	40.6	0.22	21.5	Left	55.2	40.6	43.95290563	-91.27641603	715.3343	F	40.4	M	40	62.2
5/2/2024	28_SB_L1_01_20240502_215844.D01	USH 53	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:00:14	12.51	1075	62.7	1.008	91.3	40.6	0.25	21.7	Left	55.2	41	43.95246331	-91.27562267	714.4285	F	40.4	M	40	63.0
5/2/2024	28_SB_L1_01_20240502_215844.D01	USH 53	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:00:18	12.46	1076	64.7	1.113	90.4	40.6	0.29	21.7	Left	55.1	41.8	43.95202233	-91.27483256	713.526	F	40.4	M	40	65.0
SB Lane 1														Avg	60.9	1.3	SB Lane 1										Avg	61.1	No of Tests		
														St. Dev	1.6												St. Dev	1.6	20		
														Min													Min	57.3			
														Max													Max	63.5			
5/2/2024	28_SB_L2_01_20240502_220659.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:06:59	13.429	1108	51.3	0.723	87.8	39.8	0.25	20.7	Left	55.3	45.9	43.96295916	-91.28614422	720.9672	F	39.6	M	40	51.2
5/2/2024	28_SB_L2_01_20240502_220659.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:07:04	13.38	1109	47.9	0.978	73.9	40.2	0.21	21.4	Left	55.5	46.3	43.96225064	-91.28598328	719.6778	F	40	M	40	48.0
5/2/2024	28_SB_L2_01_20240502_220659.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:07:08	13.33	1110	46.7	1.109	78.1	40.4	0.22	21.5	Left	55.3	45	43.96154815	-91.2857696	719.1529	F	40.2	M	40	46.9
5/2/2024	28_SB_L2_01_20240502_220659.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:07:12	13.28	1111	50.8	1.066	73.1	40.3	0.23	20.9	Left	55.3	44.4	43.96085035	-91.2854981	719.4553	F	40.3	M	40	51.0
5/2/2024	28_SB_L2_01_20240502_220659.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:07:17	13.23	1112	52.4	1.439	73.4	40.4	0.2	21.8	Left	55.3	44.9	43.96016557	-91.28517354	720.2356	F	40.3	M	40	52.6
5/2/2024	28_SB_L2_01_20240502_220659.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:07:21	13.18	1113	48.8	1.307	70.2	40.6	0.15	21.7	Left	55.4	45.5	43.95949838	-91.28479989	721.2396	F	40.5	M	40	49.1
5/2/2024	28_SB_L2_01_20240502_220659.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:07:26	13.13	1114	50.5	0.958	75.1	40.5	0.2	21.3	Left	55.5	44.9	43.9588466	-91.28436686	722.1713	F	40.4	M	40	50.8
5/2/2024	28_SB_L2_01_20240502_220659.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:07:30	13.079	1115	50.5	0.898	68.5	40.7	0.21	22.1	Left	55.3	44	43.95820983	-91.28389155	722.8602	F	40.5	M	40	50.9
5/2/2024	28_SB_L2_01_20240502_220659.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:07:35	13.03	1116	55.7	1.112	77.5	40.6	0.21	21.4	Left	55.5	44.6	43.95759702	-91.28336817	722.9915	F	40.5	M	40	56.0
5/2/2024	28_SB_L2_01_20240502_220659.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:07:39	12.979	1117	47.4	1.301	73.7	40.7	0.19	22	Left	55.2	44.3	43.95700432	-91.2827869	722.3412	F	40.6	M	13	47.8
5/2/2024	28_SB_L2_01_20240502_220659.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:07:44	12.929	1118	48.6	1.368	72.5	40.7	0.19	22	Left	55.2	44.2	43.95644041	-91.2821688	721.5159	F	40.4	M	40	49.0
5/2/2024	28_SB_L2_01_20240502_220659.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:07:48	12.88	1119	48.7	0.77	71.6	40.6	0.21	21.7	Left	55.3	44	43.95590383	-91.28151077	720.4652	F	40.5	M	40	49.0
5/2/2024	28_SB_L2_01_20240502_220659.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:07:53	12.83	1120	54.1	1.168	74.3	40.6	0.21	21.4	Left	55.2	43.1	43.95539098	-91.28080247	719.4047	F	40.3	M	40	54.4
5/2/2024	28_SB_L2_01_20240502_220659.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:07:57	12.779	1121	51.7	1.097	70.2	40.5	0.23	22	Left	55.4	43.4	43.95490545	-91.28005977	719.577	F	40.3	M	40	52.0
5/2/2024	28_SB_L2_01_20240502_220659.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:08:01	12.729	1122	52.4	1.355	74	40.6	0.21	21.6	Left	55.2	43.9	43.95445402	-91.27928015	717.8734	F	40.4	M	40	52.7
5/2/2024	28_SB_L2_01_20240502_220659.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:08:06	12.68	1123	49.5	1.051	71.8	40.6	0.2	21.7	Left	55.2	42.6	43.95401769	-91.27849557	716.8563	F	40.5	M	40	49.8
5/2/2024	28_SB_L2_01_20240502_220659.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:08:10	12.63	1124	51.1	0.539	70	40.6	0.2	21.6	Left	55.2	42.5	43.95357509	-91.27769661	715.9744	F	40.4	M	40	51.4
5/2/2024	28_SB_L2_01_20240502_220659.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:08:15	12.579	1125	50	1.151	71	40.5	0.21	21.8	Left	55.3	43.7	43.9531333	-91.27690235	715.0846	F	40.5	M	40	50.3
5/2/2024	28_SB_L2_01_20240502_220659.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:08:19	12.53	1126	48.5	1.233	69.9	40.6	0.21	21	Left	55.3	43.9	43.95269461	-91.27611438	714.0676	F	40.3	M	40	48.8
5/2/2024	28_SB_L2_01_20240502_220659.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:08:24	12.48	1127	53.2	1.056	74.4	40.5	0.2	21.6	Left	55.4	44.4	43.95225431	-91.27531708	713.1697	F	40.5	M	40	53.5
5/2/2024	28_SB_L2_01_20240502_220659.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:08:28	12.43	1128	49.7	0.962	66.2	40.6	0.19	21.6	Left	55.3	43.8	43.95181291	-91.27452585	712.1359	F	40.4	M	40	50.0
SB Lane 2														Avg	50.5	1.1	SB Lane 2										Avg	50.7	No of Tests		
														St. Dev	2.3												St. Dev	2.3	20		
														Min													Min	46.9			
														Max													Max	56.0			

Appendix C
Detailed Friction Results
Test Site 29

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
5/3/2024	29_SB_L1_02_20240503_002427.D01	USH 53	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:24:49	6.745	1345	62.6	1.398	97.7	39.2	0.24	20.6	Left	55.6	45	43.88538743	-91.21205795	742.2315	F	39.1	M		40	62.2		
5/3/2024	29_SB_L1_01_20240503_002200.D01	USH 53	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:22:25	6.721	1342	62.8	1.395	101.4	39.2	0.27	20.5	Left	55.6	43.9	43.88504676	-91.21189947	744.2357	F	39.1	M		40	62.4		
5/3/2024	29_SB_L1_02_20240503_002427.D01	USH 53	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:24:53	6.7	1346	61.2	1.432	95.7	39.4	0.19	21.1	Left	55.5	44.8	43.8847662	-91.21177766	743.0013	F	39.4	M		40	60.9		
5/3/2024	29_SB_L1_01_20240503_002200.D01	USH 53	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:22:30	6.664	1343	51.3	2.398	75.3	39.7	0.19	21.4	Left	55.6	43.5	43.88424972	-91.2115598	743.7495	F	39.7	M		40	51.2		
5/3/2024	29_SB_L1_02_20240503_002427.D01	USH 53	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:24:58	6.649	1347	51.8	3.205	90.8	39.9	0.15	21.2	Left	55.6	43.5	43.88406605	-91.21148813	742.3752	F	39.6	M		40	51.8		
5/3/2024	29_SB_L1_01_20240503_002200.D01	USH 53	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:22:35	6.611	1344	60.3	2.082	95.8	39.8	0.21	21	Left	55.7	44.9	43.88352313	-91.21127825	741.3909	F	39.7	M		40	60.2		
5/3/2024	29_SB_L1_02_20240503_002427.D01	USH 53	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:25:03	6.595	1348	61.8	2.02	94.9	40	0.28	21.1	Left	55.6	45	43.88331558	-91.2111987	739.7716	F	39.9	M		40	61.8		
SB Lane 1															Avg	51.6	2.8											SB Lane 1	Avg	51.5	No of Tests			
															St. Dev	0.4													St. Dev	0.4	2			
																													Min	51.2				
																													Max	51.8				
5/3/2024	29_SB_L2_01_20240503_001451.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:15:06	6.823	1335	50.5	1.461	99.8	39	0.19	20.1	Left	55.6	45.5	43.88643795	-91.21261842	737.9738	F	38.7	M		40	50.0		
5/3/2024	29_SB_L2_01_20240503_001451.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:15:10	6.778	1336	51.7	1.389	86.8	39.4	0.12	21.4	Left	55.7	45.3	43.88582259	-91.2123108	740.8835	F	39.2	M		40	51.4		
5/3/2024	29_SB_L2_02_20240503_001920.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:19:45	6.72	1340	56.6	1.581	88.7	39.3	0.28	21.1	Left	55.7	45.4	43.88503341	-91.21194586	744.1857	F	38.8	M		40	56.3		
5/3/2024	29_SB_L2_01_20240503_001451.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:15:18	6.694	1337	50.9	1.934	83.1	39.8	0.26	21.1	Left	55.6	45	43.88466557	-91.21178245	743.1686	F	39.6	M		40	50.8		
5/3/2024	29_SB_L2_01_20240503_001451.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:15:21	6.664	1338	49.1	5.243	64.1	39.4	0.11	20.9	Left	55.7	44.4	43.88425465	-91.21161375	743.103	F	39	M		40	48.8		
5/3/2024	29_SB_L2_02_20240503_001920.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:19:51	6.652	1341	47.2	3.693	76.7	39.8	0.21	21.4	Left	55.6	44.3	43.88409184	-91.21154696	744.0893	F	39.7	M		40	47.1		
5/3/2024	29_SB_L2_01_20240503_001451.D01	USH 53	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:15:24	6.622	1339	50.8	7.536	89.2	39.8	0.17	21	Left	55.8	45.7	43.88366662	-91.21138021	741.6727	F	39.7	M		40	50.7		
SB Lane 2															Avg	48.2	4.5											SB Lane 2	Avg	48.0	No of Tests			
															St. Dev	1.3													St. Dev	1.2	2			
																													Min	47.1				
																													Max	48.8				

Appendix C
Detailed Friction Results
Test Site 30

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:53:21	8.422	1023	47.6	1.437	84.3	39.8	0.16	21.3	Left	55.2	41.9	43.9995907	-91.32056025	670.0776	F	39.6	M		40	47.5		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:53:26	8.473	1024	55.5	1.22	83.2	40.2	0.2	21.6	Left	55.2	42.8	43.99954525	-91.31955519	669.8861	F	40	M		40	55.6		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:53:30	8.523	1025	47.7	1.212	79.3	40.4	0.15	21.3	Left	55.3	43.2	43.99950604	-91.31856041	669.9299	F	40.2	M		40	47.9		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:53:34	8.572	1026	57.3	0.885	84.3	40.4	0.27	21.8	Left	55.1	43.3	43.99946361	-91.31756826	670.7834	F	40.2	M		40	57.5		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:53:39	8.622	1027	56.5	1.12	84.3	40.5	0.19	21.7	Left	55.1	42.9	43.99942162	-91.31657433	672.2093	F	40.3	M		40	56.8		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:53:43	8.672	1028	57.8	1.167	83.3	40.5	0.24	21.4	Left	55.1	43.3	43.99937558	-91.3155731	673.6117	F	40.3	M		40	58.1		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:53:48	8.722	1029	55.9	1.418	85.6	40.4	0.24	21.3	Left	55.2	43.4	43.99933245	-91.314571	675.6938	F	40.1	M		40	56.1		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:53:52	8.772	1030	58.8	1.064	84.9	40.2	0.22	21.8	Left	55.2	43.2	43.99929087	-91.31358218	679.1787	F	40.1	M		40	58.9		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:53:57	8.822	1031	60.8	1.401	92.1	40.1	0.24	20.9	Left	55.2	43.2	43.9992511	-91.31257895	684.1232	F	39.9	M		40	60.9		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:54:01	8.872	1032	57.7	1.464	85.8	40.3	0.21	21.6	Left	55.4	43.7	43.9992077	-91.31158013	689.7823	F	40.1	M		40	57.9		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:54:06	8.922	1033	58.8	0.801	83.1	40.5	0.2	21.6	Left	55.2	43.6	43.999165	-91.31058301	695.9109	F	40.3	M		40	59.1		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:54:10	8.973	1034	59.4	0.51	86.8	40.8	0.19	21.5	Left	55.2	43.5	43.99912026	-91.30958315	701.011	F	40.5	M		40	59.8		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:54:15	9.022	1035	55.9	0.927	82.4	40.8	0.23	22	Left	55.3	44.1	43.99907919	-91.30859164	705.407	F	40.6	M		40	56.3		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:54:19	9.072	1036	54.9	0.756	83.5	41	0.19	21.8	Left	55.1	44.1	43.99903926	-91.30760271	708.1771	F	40.7	M		40	55.4		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:54:24	9.122	1037	56.4	0.647	86.8	40.8	0.2	21.7	Left	55.1	43.8	43.9990014	-91.3065974	709.931	F	40.8	M		40	56.8		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:54:28	9.172	1038	51.7	1.464	74.3	40.9	0.25	21.7	Left	55.2	43.4	43.99897438	-91.30560039	710.393	F	40.8	M		40	52.2		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:54:32	9.222	1039	53.3	0.639	81.1	40.7	0.18	21.7	Left	55.3	44	43.99895137	-91.30459649	710.9694	F	40.5	M		40	53.7		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:54:37	9.272	1040	53.5	0.534	80	40.6	0.2	21.8	Left	55.3	44.3	43.99893655	-91.30359939	711.5085	F	40.5	M		40	53.8		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:54:41	9.322	1041	56.4	0.853	82.1	40.6	0.21	21.8	Left	55.3	44.1	43.99891673	-91.30259561	711.8366	F	40.5	M		40	56.7		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:54:46	9.372	1042	57.8	1.308	87.4	40.6	0.25	22	Left	55.2	43.7	43.99890997	-91.30159385	712.2287	F	40.4	M		40	58.1		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:54:50	9.422	1043	52.3	1.444	82.7	40.6	0.2	21.3	Left	55.2	43.9	43.99891137	-91.30060019	712.5983	F	40.4	M		40	52.6		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:54:55	9.472	1044	52.1	0.584	77.4	40.6	0.24	21.5	Left	55.1	43.9	43.9989121	-91.29960094	713.7944	F	40.4	M		40	52.4		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:54:59	9.522	1045	51.8	0.696	81.4	40.5	0.2	21.5	Left	55.4	43.6	43.99892201	-91.2985967	714.4415	F	40.2	M		40	52.1		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:55:03	9.572	1046	53.9	1.142	79.5	40.7	0.2	21.4	Left	55.1	43.3	43.99891548	-91.29760531	715.2815	F	40.4	M		40	54.3		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:55:08	9.622	1047	59.5	0.834	86.5	40.4	0.21	21.6	Left	55.3	43.8	43.99890449	-91.29659465	716.0361	F	40.2	M		40	59.7		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:55:12	9.672	1048	53.5	3.677	88.8	40.6	0.21	21.4	Left	55.1	43.3	43.99890157	-91.29559236	715.4127	F	40.4	M		40	53.8		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:55:17	9.722	1049	48.2	0.967	77.2	40.6	0.23	21.7	Left	55.2	43.8	43.99887945	-91.29459647	715.8865	F	40.4	M		40	48.5		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:55:21	9.772	1050	48.4	1.035	73.5	40.5	0.16	21.2	Left	55.2	44.3	43.99880785	-91.29361116	717.0053	F	40.4	M		40	48.7		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:55:26	9.822	1051	48.8	0.915	76.2	40.5	0.16	22.1	Left	55.1	43.6	43.99866224	-91.29262029	718.1248	F	40.4	M		40	49.1		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:55:30	9.872	1052	50.7	0.869	75.5	40.6	0.19	22.1	Left	55.3	43.8	43.99844003	-91.29167208	719.1201	F	40.5	M		40	51.0		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:55:35	9.922	1053	53.4	0.875	72.7	40.7	0.19	21.3	Left	55.1	43.6	43.99815981	-91.29075816	720.0715	F	40.5	M		40	53.8		
5/2/2024	30_EB_L1_01_20240502_215321.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:55:39	9.972	1054	46.7	1.428	77.2	40.8	0.15	21.3	Left	55.3	44	43.99781653	-91.28988178	720.3012	F	40.6	M		40	47.1		

EB Lane 1

Avg
St. Dev

54.6

3.8

1.1

EB Lane 1

Avg
St. Dev

54.8

3.7

Min
Max

47.1
60.9

No of Tests

29

5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:48:22	9.992	990	55.3	0.885	102.4	38.5	0.19	20.6	Left	55.1	40	43.99767041	-91.28944017	722.2539	F	38.3	M	40	54.6
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:48:27	9.942	991	53.4	1.139	86.4	40.8	0.19	21.2	Left	55.1	40	43.99802305	-91.29031146	722.1507	F	40.6	M	40	53.8
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:48:31	9.892	992	53.4	1.186	67.3	40.9	0.2	22.2	Left	55.1	39.5	43.99833518	-91.29120741	721.5284	F	40.8	M	40	53.9
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:48:35	9.842	993	58	0.781	86.4	40.8	0.26	22	Left	55	39.8	43.99858614	-91.29215474	720.0715	F	40.6	M	40	58.4
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:48:40	9.792	994	55.2	1.362	89.4	40.6	0.21	21.2	Left	55.1	40.8	43.99877404	-91.29311462	718.8762	F	40.5	M	40	55.5
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:48:44	9.742	995	58.2	1.267	86.8	40.5	0.25	21.7	Left	55.1	40.7	43.9988986	-91.29410282	717.7093	F	40.2	M	40	58.5
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:48:49	9.692	996	62.2	1.094	91.2	40.5	0.23	21.4	Left	55	41.5	43.99896848	-91.29508923	716.7483	F	40.3	M	40	62.5
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:48:53	9.642	997	51.1	1.012	87.1	40.6	0.23	21.3	Left	55.1	42.1	43.99897089	-91.2961033	715.6287	F	40.3	M	40	51.4
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:48:58	9.592	998	49.9	0.867	77.1	40.6	0.18	21.5	Left	55	41.5	43.99896747	-91.29708947	714.9534	F	40.5	M	40	50.2
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:49:02	9.542	999	55.2	1.359	81.9	40.5	0.21	21	Left	55.1	41.2	43.99897234	-91.29809622	714.8206	F	40.3	M	40	55.5
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:49:07	9.492	1000	53	1.55	79.7	40.6	0.17	21.7	Left	55.3	42.1	43.99897594	-91.29909489	714.8222	F	40.4	M	40	53.3
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:49:11	9.442	1001	55.5	1.463	86.5	40.5	0.2	22.1	Left	55.1	42.1	43.99897985	-91.30009318	714.6909	F	40.3	M	40	55.8
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:49:15	9.392	1002	54.4	1.107	82.9	40.5	0.16	21.1	Left	55	42	43.99897631	-91.3010911	714.2972	F	40.4	M	40	54.7
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:49:20	9.342	1003	56.9	0.902	82.8	40.6	0.22	21.3	Left	55	42.5	43.99897208	-91.30209298	713.9364	F	40.4	M	40	57.2
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:49:24	9.292	1004	54.8	1.335	85.7	40.6	0.2	21.5	Left	55.2	43.2	43.99896625	-91.30310612	713.5363	F	40.3	M	40	55.1
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:49:29	9.242	1005	55.4	1.094	77.6	40.6	0.2	21.6	Left	55.1	42.7	43.99896859	-91.30409092	713.149	F	40.4	M	40	55.7
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:49:33	9.192	1006	53	1.049	81.7	40.6	0.22	21.7	Left	55	42.2	43.99898559	-91.30509489	712.5584	F	40.4	M	40	53.3
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:49:38	9.142	1007	53.5	0.46	76.1	40.6	0.21	21.8	Left	55.1	42.6	43.99901425	-91.30610241	711.9022	F	40.5	M	40	53.8
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:49:42	9.092	1008	53.6	1.091	75.5	40.7	0.2	21.8	Left	55	43.9	43.99904435	-91.30709237	710.8678	F	40.5	M	40	54.0
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:49:47	9.042	1009	55.5	0.78	82.2	40.8	0.25	21.9	Left	55	43.2	43.99908324	-91.30809567	708.6214	F	40.5	M	40	55.9
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:49:51	8.992	1010	53.2	1.157	86.1	40.9	0.23	21.2	Left	55.1	43.7	43.9991255	-91.30909212	705.0375	F	40.7	M	40	53.7
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:49:55	8.942	1011	54.6	1.074	79.1	40.9	0.17	22.3	Left	55.1	43.2	43.99916851	-91.31009538	700.5169	F	40.7	M	40	55.1
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:50:00	8.892	1012	55	1.2	81.4	40.9	0.19	21.8	Left	55.1	43	43.99920966	-91.31109074	694.6267	F	40.8	M	40	55.5
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:50:04	8.842	1013	56.6	0.618	90.7	40.8	0.2	21.8	Left	55.3	42.8	43.99925215	-91.31209445	688.0302	F	40.6	M	40	57.0
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:50:09	8.792	1014	55.1	0.592	83	40.6	0.24	21.9	Left	55	44.4	43.99929517	-91.31308901	682.0043	F	40.4	M	40	55.4
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:50:13	8.742	1015	54.6	1.27	87	40.3	0.22	21.8	Left	55.1	44.5	43.99933732	-91.31409349	677.6815	F	40.2	M	40	54.8
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:50:18	8.692	1016	56.2	0.668	82.6	40.2	0.23	21.3	Left	55.1	43	43.99937744	-91.31508988	674.7179	F	39.9	M	40	56.3
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:50:22	8.642	1017	57.5	0.557	84.6	40.2	0.2	21.4	Left	55.2	42.6	43.99942099	-91.3160878	673.7229	F	39.9	M	40	57.6
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:50:27	8.592	1018	55.7	1.528	80	40.4	0.22	21.4	Left	55.1	42.5	43.99946552	-91.3170879	672.6634	F	40.4	M	40	55.9
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:50:31	8.542	1019	55.6	0.83	85.6	40.4	0.21	22.1	Left	55.1	42.6	43.9995101	-91.31808142	672.1056	F	40.2	M	40	55.8
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:50:36	8.493	1020	51.2	1.276	72.1	40.5	0.17	22	Left	55.1	43.6	43.99955047	-91.31907053	671.6367	F	40.2	M	40	51.5
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:50:40	8.442	1021	49.6	2.214	67.6	40.6	0.19	21.4	Left	55.3	42.5	43.99959608	-91.32007703	671.0831	F	40.6	M	40	49.9
5/2/2024	30_WB_L1_01_20240502_214822.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	21:50:44	8.392	1022	48.7	2.032	74.2	40.6	0.2	21	Left	55.1	44.2	43.99963907	-91.32108122	670.498	F	40.5	M	40	49.0

Appendix C
Detailed Friction Results
Test Site 32

StateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:26:54	10.849	603	47.5	1.802	83.6	39.9	0.23	21	Left	62.8	63.9	43.660394	-91.21894012		660.4801	F	39.6	M		40	47.5	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:26:59	10.899	604	49.6	0.812	76.1	40	0.19	21.1	Left	62.6	64	43.66111938	-91.21895394		660.3274	F	39.9	M		40	49.6	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:27:03	10.948	605	49.6	0.692	78.5	40.2	0.23	21.2	Left	62.6	63.6	43.66183403	-91.21896495		659.7906	F	40.1	M		40	49.7	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:27:08	10.998	606	46.7	0.69	76.1	40.3	0.21	21.8	Left	62.6	64	43.66255728	-91.21897834		659.1219	F	40.3	M		40	46.9	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:27:12	11.049	607	48.3	0.526	75.4	40.3	0.19	21.3	Left	62.7	63.8	43.66328428	-91.21898973		658.1201	F	40.2	M		40	48.5	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:27:17	11.099	608	43.2	1.215	73.5	40.4	0.2	21.2	Left	62.6	63.7	43.66400336	-91.21900263		657.0201	F	40.2	M		40	43.4	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:27:21	11.149	609	44.2	0.467	77.3	40.1	0.22	21	Left	62.8	63.2	43.6647328	-91.21901764		656.6857	F	40	M		40	44.3	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:27:26	11.199	610	46.5	0.989	74.2	40.3	0.17	21.2	Left	62.7	62.8	43.66545417	-91.21903015		656.7841	F	40	M		40	46.7	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:27:30	11.249	611	45.8	0.743	74.6	40.3	0.17	21.2	Left	62.6	62.4	43.66617628	-91.21904336		655.9639	F	40.1	M		40	46.0	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:27:35	11.299	612	46	0.756	78.6	40	0.21	20.9	Left	62.7	63.5	43.66689971	-91.21905654		656.5417	F	40	M		40	46.0	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:27:39	11.349	613	46.6	0.998	77.1	40.2	0.18	21.1	Left	62.7	63	43.66761635	-91.21911799		657.1122	F	40	M		40	46.7	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:27:44	11.399	614	43.1	0.632	71.1	40.2	0.15	20.4	Left	62.8	62.7	43.66832713	-91.21926966		658.1301	F	40.1	M		40	43.2	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:27:48	11.448	615	42.6	0.797	72.5	40.4	0.23	21.8	Left	62.7	63.6	43.66903059	-91.21949693		657.8996	F	40.1	M		40	42.8	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:27:53	11.499	616	44.5	0.853	73.7	40.2	0.15	21.4	Left	62.7	64.2	43.66973466	-91.21974948		659.2744	F	40.2	M		40	44.6	
NB Lane 1														Avg	46.1	0.9	NB Lane 1														Avg	46.2	No of Tests	
														St. Dev	2.3																St. Dev	2.3	13	
																														Min	42.8			
																														Max	49.7			
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:33:57	11.53	619	55.2	1.69	95	38.9	0.18	18.9	Left	62.7	61.5	43.67022936	-91.21994319		659.7024	F	38.8	M		40	54.7	
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:34:02	11.481	620	51	0.949	81.2	39.8	0.2	20.7	Left	62.8	62	43.66953683	-91.21972361		659.3068	F	39.5	M		40	50.9	
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:34:06	11.43	621	47.3	0.699	74.4	40.2	0.21	21.3	Left	62.7	60.5	43.66883157	-91.21946628		657.4883	F	40.2	M		40	47.4	
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:34:11	11.381	622	50.6	0.676	79.3	40.2	0.15	21.2	Left	62.6	61	43.66812544	-91.21925934		657.1312	F	39.9	M		40	50.7	
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:34:15	11.331	623	51.1	1.627	85.9	40.2	0.19	21.6	Left	62.8	62.5	43.6674077	-91.21913952		656.18	F	40.2	M		40	51.2	
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:34:20	11.281	624	51.8	0.503	77.5	40.3	0.2	21.5	Left	62.8	62.3	43.66668945	-91.21909927		655.4342	F	40	M		40	52.0	
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:34:24	11.23	625	51.8	1.362	83.2	40.2	0.21	21.3	Left	62.8	62.3	43.66596318	-91.21908599		655.2473	F	39.8	M		40	51.9	
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:34:29	11.181	626	48.6	1.104	82.8	40.3	0.2	21.2	Left	62.6	62.7	43.66524608	-91.21907003		655.7014	F	40.2	M		40	48.8	
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:34:33	11.131	627	49.2	0.648	77	40.4	0.19	20.9	Left	62.6	62.4	43.66452067	-91.21906008		655.4822	F	40.1	M		40	49.4	
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:34:38	11.081	628	46.2	3.495	79.7	40.2	0.21	21.3	Left	62.8	63.4	43.66380082	-91.21904771		655.7671	F	40	M		40	46.3	
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:34:42	11.031	629	47.1	1.129	77.2	40.2	0.18	21.3	Left	62.7	62.6	43.66307892	-91.21903012		656.7185	F	40.1	M		40	47.2	
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:34:46	10.98	630	48.4	0.733	78.1	40.3	0.17	21.7	Left	62.6	61.9	43.66235049	-91.21901309		657.5387	F	40.1	M		40	48.6	
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:34:51	10.931	631	45.1	1.386	73.7	40.3	0.15	21.7	Left	62.7	62.8	43.66163373	-91.21900339		658.1925	F	40.1	M		40	45.3	
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:34:55	10.881	632	45.5	0.794	75.2	40.3	0.21	21.3	Left	62.6	62.3	43.66091245	-91.21899192		658.6419	F	40.3	M		40	45.7	
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:35:00	10.831	633	48.3	1.246	76.8	40.3	0.23	20.9	Left	62.7	63.4	43.66018865	-91.21897563		659.0807	F	40.1	M		40	48.5	
SB Lane 1														Avg	48.6	1.2	SB Lane 1														Avg	48.7	No of Tests	
														St. Dev	2.4																St. Dev	2.4	12	
																														Min	45.3			
																														Max	52.0			

Appendix C
Detailed Friction Results
Test Site 33

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:25:38	10.008	588	55	5.331	96.3	39.6	0.33	20.9	Left	62.7	60.1	43.6482608	-91.21910706		647.4463	F	39.6	M		40	54.8	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:25:43	10.058	589	54.4	0.78	86.8	40.4	0.19	21.6	Left	62.7	61.6	43.64897393	-91.21906886		646.0744	F	40.3	M		40	54.6	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:25:47	10.108	590	54.4	0.825	82	40.4	0.29	21.4	Left	62.8	61.8	43.64969933	-91.21902438		644.6377	F	40.3	M		40	54.6	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:25:52	10.157	591	55.5	0.725	84	39.3	0.23	20.6	Left	62.6	60.8	43.65041276	-91.21898099		644.481	F	39.1	M		40	55.2	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:25:56	10.208	592	54.9	0.593	81.5	39.4	0.21	20.9	Left	62.6	61	43.65113527	-91.2189387		644.4498	F	39.3	M		40	54.6	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:26:01	10.258	593	55.1	0.867	81.3	39.4	0.23	20.4	Left	62.7	61.7	43.65186357	-91.21889956		644.5555	F	39.3	M		40	54.8	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:26:05	10.308	594	55	0.611	82.2	39.4	0.24	20.6	Left	62.6	61.7	43.65258348	-91.21886362		644.6122	F	39.3	M		40	54.7	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:26:10	10.358	595	54.4	0.57	85.1	39.5	0.16	20.8	Left	62.9	62.6	43.65330557	-91.21884824		644.5794	F	39.2	M		40	54.2	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:26:14	10.408	596	55.2	1.164	78.7	39.4	0.24	20.9	Left	62.6	62.7	43.65402525	-91.21883739		644.4154	F	39.3	M		40	54.9	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:26:19	10.457	597	54.5	0.659	74.8	39.3	0.23	20.6	Left	62.6	62.7	43.65474421	-91.21884276		645.0367	F	39	M		40	54.2	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:26:24	10.508	598	54.2	0.723	82	39.8	0.15	20.5	Left	62.7	62.7	43.6554703	-91.21885373		647.2037	F	39.7	M		40	54.1	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:26:28	10.557	599	52.3	0.598	80.8	39.4	0.3	20.8	Left	62.6	62.7	43.65618653	-91.2188659		650.9557	F	39.2	M		40	52.0	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:26:33	10.607	600	53.4	0.909	78	39.4	0.11	21.3	Left	62.6	61.2	43.65690658	-91.21887991		655.5591	F	39.1	M		40	53.1	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:26:37	10.657	601	51.4	0.929	78.6	40	0.31	21.5	Left	62.8	63.3	43.65763128	-91.21889134		659.0017	F	40	M		40	51.4	
5/1/2024	33-32_NB_L1_01_20240501_222538.D01	STH 35	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:26:42	10.707	602	53.6	0.585	77.1	39.9	0.15	20.6	Left	62.7	63.7	43.65834569	-91.21890508		661.2901	F	39.8	M		40	53.6	

NB Lane 1

Avg

54.2

1.1

NB Lane 1

Avg

54.0

No of Tests

St. Dev

1.1

St. Dev

1.1

15

Min

51.4

Max

55.2

5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:35:10	10.722	634	47.6	0.856	81.7	40.1	0.21	21.1	Left	62.7	63.3	43.65862516	-91.21895023		659.9989	F	39.6	M		40	47.7
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:35:14	10.673	635	49.3	0.491	77.5	40.3	0.21	21.1	Left	62.7	63.5	43.65790553	-91.2189342		659.2215	F	40.2	M		40	49.5
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:35:18	10.623	636	47.6	0.884	75.9	40.6	0.19	21.9	Left	62.6	62.5	43.65718719	-91.21892106		656.3493	F	40.3	M		40	47.9
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:35:23	10.573	637	50.1	1.026	78.8	40.6	0.21	21.1	Left	62.7	63.6	43.6564638	-91.21890596		651.9173	F	40.5	M		40	50.4
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:35:27	10.523	638	51.8	0.95	81.6	40.4	0.23	21.2	Left	62.7	63.7	43.65574014	-91.21889193		647.813	F	40.3	M		40	52.0
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:35:32	10.473	639	51.1	0.946	77.7	40.1	0.24	21.7	Left	62.7	63.6	43.65501517	-91.21888352		645.2169	F	39.9	M		40	51.2
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:35:36	10.423	640	52.8	0.88	85.1	39.9	0.19	21.1	Left	62.7	64.2	43.65429539	-91.21887661		644.1201	F	39.7	M		40	52.8
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:35:41	10.373	641	54.6	0.643	86.5	40	0.23	20.3	Left	62.7	63.8	43.65357102	-91.21887773		644.0729	F	39.8	M		40	54.6
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:35:45	10.323	642	54.7	0.986	83	40.2	0.21	20.8	Left	62.7	63.5	43.65284585	-91.21889472		644.1857	F	40	M		40	54.8
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:35:50	10.273	643	55	0.833	82.2	40.2	0.19	21.6	Left	62.7	63.1	43.65213109	-91.2189203		644.0217	F	40.2	M		40	55.1
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:35:54	10.223	644	54.1	1.279	86.5	40.3	0.19	21.2	Left	62.7	63.8	43.65140414	-91.21896354		643.8576	F	40.1	M		40	54.3
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:35:59	10.173	645	56.6	0.942	82.8	40.2	0.23	21	Left	62.7	62.7	43.65068031	-91.21900028		643.8576	F	40	M		40	56.7
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:36:03	10.122	646	55	0.98	81.4	40.4	0.27	21.8	Left	62.8	62.5	43.64995703	-91.21904334		643.7264	F	40	M		40	55.2
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:36:08	10.073	647	54.2	0.786	85.6	40.1	0.19	21	Left	62.7	63.5	43.64923795	-91.21908744		644.775	F	39.9	M		40	54.3
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:36:12	10.023	648	55.7	1.335	83.6	40.2	0.2	21.1	Left	62.6	63.4	43.64851674	-91.21912809		646.3819	F	39.9	M		40	55.8
5/1/2024	32-33_SB_L1_01_20240501_223357.D01	STH 35	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	22:36:17	9.972	649	57.3	1.424	90.5	40.3	0.24	21.7	Left	62.6	61.2	43.64778881	-91.21917267		647.7418	F	40.4	M		40	57.5

SB Lane 1

Avg

53.0

0.9

SB Lane 1

Avg

53.2

No of Tests

St. Dev

2.7

St. Dev

2.6

14

Min

47.9

Max

56.7

Appendix C																																		
Detailed Friction Results																																		
Test Site F01																																		
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNSTD	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
5/2/2024	F01_SB_L1_02_20240502_175118.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:51:21	9.965	901	65.2	2.16	91.1	37.2	0.36	18.8	Left	53.4	41.1	44.76530593	-91.42049422		923.1818	F	36.9	M		40	63.8	
5/2/2024	F01_SB_L1_01_20240502_174844.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:48:47	9.956	890	63.9	1.827	90.7	37.6	0.35	19.7	Left	53.2	41.1	44.76518925	-91.42037676		923.7294	F	37.2	M		40	62.7	
5/2/2024	F01_SB_L1_02_20240502_175118.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:51:23	9.937	902	58.4	6.648	86.3	35.1	0.3	17.2	Left	53.3	41.5	44.76498275	-91.42015569		922.0178	F	34.8	M		40	56.0	
5/2/2024	F01_SB_L1_01_20240502_174844.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:48:51	9.919	891	58.4	3.017	85.8	35.9	0.37	18	Left	53.2	41.2	44.76477853	-91.41991026		921.7201	F	35.4	M		40	56.4	
5/2/2024	F01_SB_L1_02_20240502_175118.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:51:27	9.904	903	61.7	2.705	83.8	33.9	0.33	17.2	Left	53.4	41.7	44.76462306	-91.41970974		920.4567	F	33.8	M		40	58.7	
5/2/2024	F01_SB_L1_01_20240502_174844.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:48:55	9.884	892	61.3	4.194	86.7	33.3	0.56	16.1	Left	53.3	42.2	44.76441679	-91.41941277		919.865	F	33.2	M		40	58.0	
5/2/2024	F01_SB_L1_02_20240502_175118.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:51:31	9.87	904	59.8	1.986	74.2	29.7	1.46	13.3	Left	53.2	42.6	44.76428265	-91.41920325		918.7258	F	28.9	M		40	54.7	
5/2/2024	F01_SB_L1_01_20240502_174844.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:48:58	9.855	893	58	3.737	72.3	24.2	0.92	9.8	Left	53.2	41.8	44.76410578	-91.41902067		918.2937	F	23.9	M		40	50.1	
5/2/2024	F01_SB_L1_02_20240502_175118.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:51:34	9.845	905	62.4	5.662	75.9	22.6	0.51	8.6	Left	53.2	42.6	44.7639622	-91.41898881		918.1314	F	22.3	M		40	53.7	
5/2/2024	F01_SB_L1_01_20240502_174844.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:49:03	9.83	894	64.3	1.936	79.9	18.5	0.18	6.2	Left	53.2	41.4	44.76375109	-91.4189598		917.7075	F	17.9	M		40	53.6	
5/2/2024	F01_SB_L1_02_20240502_175118.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:51:39	9.82	906	61.4	1.993	68.5	18.8	0.12	6.4	Left	53.3	42.2	44.76365498	-91.41883682		917.086	F	18.5	M		40	50.8	
5/2/2024	F01_SB_L1_01_20240502_174844.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:49:07	9.81	895	54	3.08	71.5	18.1	0.19	6	Left	53.2	41.9	44.76366212	-91.41861293		917.0948	F	17.5	M		40	43.1	
5/2/2024	F01_SB_L1_02_20240502_175118.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:51:42	9.801	907	56.7	1.564	72.9	18.1	0.28	6.1	Left	53.4	42	44.76371897	-91.41850497		916.7251	F	17.2	M		40	45.8	
5/2/2024	F01_SB_L1_01_20240502_174844.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:49:11	9.788	896	55.1	2.298	71.2	18.5	0.22	6.3	Left	53.3	42.1	44.76392192	-91.41848462		917.6145	F	17.7	M		40	44.4	
5/2/2024	F01_SB_L1_02_20240502_175118.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:51:46	9.782	908	53.6	3.156	63.9	17.9	0.43	5.9	Left	53.3	42.6	44.76396862	-91.41853243		917.5472	F	16.9	M		40	42.6	
5/2/2024	F01_SB_L1_01_20240502_174844.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:49:14	9.771	897	70.3	1.717	83.4	17.3	0.44	5.5	Left	53.2	42.5	44.76402746	-91.41877728		918.6355	F	16.3	M		40	59.0	
5/2/2024	F01_SB_L1_02_20240502_175118.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:51:50	9.765	909	70	1.812	78.7	17.6	0.36	5.9	Left	53.2	42.1	44.76400465	-91.41885501		918.113	F	17	M		40	58.8	
5/2/2024	F01_SB_L1_02_20240502_175118.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:51:54	9.746	910	64.4	3.162	87.6	18.1	0.27	6	Left	53.4	42.5	44.76377779	-91.41897798		917.6109	F	17.6	M		40	53.5	
5/2/2024	F01_SB_L1_01_20240502_174844.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:49:20	9.743	898	61.4	5.027	74.1	18.4	0.36	6.1	Left	53.3	42.7	44.76371278	-91.41893252		917.7031	F	17.8	M		40	50.6	
5/2/2024	F01_SB_L1_02_20240502_175118.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:51:58	9.725	911	55.8	1.841	72.9	17.8	0.38	5.9	Left	53.3	42.7	44.76365322	-91.41863997		916.7251	F	17.1	M		40	44.7	
5/2/2024	F01_SB_L1_01_20240502_174844.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:49:25	9.716	899	52.1	2.174	71.7	19.5	0.29	7.2	Left	53.3	42.6	44.76374602	-91.41848095		916.6443	F	18.6	M		40	41.9	
5/2/2024	F01_SB_L1_02_20240502_175118.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:52:02	9.703	912	54.7	1.793	69.5	20.6	0.2	7.8	Left	53.3	42.6	44.7639086	-91.41847448		917.2561	F	20.2	M		40	45.0	
5/2/2024	F01_SB_L1_02_20240502_175118.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:52:06	9.679	913	65.6	2.603	93.4	27.4	1.09	13.6	Left	53.2	42.5	44.76412034	-91.41882805		917.7208	F	27.8	M		40	59.3	
5/2/2024	F01_SB_L1_01_20240502_174844.D01	USH 53	RAB(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:49:33	9.671	900	57.5	1.391	78.7	30.2	0.49	15.3	Left	53.1	42.2	44.76420761	-91.4189739		918.2903	F	30.3	M		40	52.6	
RAB Lane 1														Avg	59.9	2.9	RAB Lane 1												Avg	51.5	No of Tests			
														St. Dev	5.0														St. Dev	6.0	22			
																												Min	41.9					
																												Max	59.3					
5/2/2024	F01_SB_L2_02_20240502_174523.D01	USH 53	RAB(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:45:25	9.974	882	53.7	2.778	88.7	38.4	0.47	19.6	Left	53.2	40.5	44.76538476	-91.42062871		924.759	F	38.1	M		40	52.9	
5/2/2024	F01_SB_L2_01_20240502_174152.D01	USH 53	RAB(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:41:55	9.959	875	54.3	2.458	94.9	39.2	0.31	20.1	Left	53.1	42.5	44.76520273	-91.42045038		923.7095	F	39.1	M		40	53.9	
5/2/2024	F01_SB_L2_02_20240502_174523.D01	USH 53	RAB(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:45:28	9.938	883	53.6	2.436	85.6	36.6	0.35	18.8	Left	53.3	41	44.76496214	-91.42019117		923.3946	F	36.4	M		40	51.9	
5/2/2024	F01_SB_L2_01_20240502_174152.D01	USH 53	RAB(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:41:58	9.921	876	52.5	12.36	76.8	37.5	0.34	19.7	Left	53.1												

Appendix C																																					
Detailed Friction Results																																					
Test Site F08																																					
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN			
5/3/2024	F08_NB_L1_01_20240503_003023.D01	STH 16	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:30:23	12.914	1354	55.9	2.699	95.8	36.5	0.11	18.2	Left	55.7	45.8	43.85848894		-91.2064603		702.4809	F	36.4	M		40	54.2			
5/3/2024	F08_NB_L1_01_20240503_003023.D01	STH 16	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:30:28	12.964	1355	48.5	3.11	83	40.5	0.2	21.3	Left	55.6	44.9	43.8590858		-91.20588743		696.9792	F	40.5	M		40	48.8			
5/3/2024	F08_NB_L1_01_20240503_003023.D01	STH 16	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:30:32	13.015	1356	49.2	2.323	76.2	40.8	0.21	22.3	Left	55.6	44	43.85972731		-91.20541416		690.1467	F	40.9	M		40	49.6			
5/3/2024	F08_NB_L1_01_20240503_003023.D01	STH 16	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:30:37	13.065	1357	50.9	0.96	75.4	40	0.2	21.5	Left	55.5	42.1	43.86039831		-91.20504817		683.0132	F	39.9	M		40	50.9			
5/3/2024	F08_NB_L1_01_20240503_003023.D01	STH 16	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:30:41	13.114	1358	41.7	2.56	70.9	39.6	0.15	20.5	Left	55.5	42.5	43.86109009		-91.2047898		676.2206	F	39.5	M		40	41.5			
NB Lane 1															Avg	49.5	2.1											NB Lane 1					Avg	49.8	No of Tests		
															St. Dev	1.2																	St. Dev	1.1	3		
																																			Min	48.8	
																																			Max	50.9	
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:08:30	12.885	1327	50.3	4.1	105	37.9	0.16	19.9	Left	55.8	47.5	43.85815704		-91.20678963		704.5297	F	38.1	M		40	49.3			
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:08:35	12.935	1328	50.2	1.746	83.5	39.8	0.2	22	Left	55.8	45.1	43.85872662		-91.20616041		700.6785	F	39.7	M		40	50.1			
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:08:40	12.986	1329	51	1.189	79.4	39.1	0.12	20.9	Left	55.8	42.4	43.85934088		-91.20562886		694.5835	F	39	M		40	50.6			
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:08:44	13.035	1330	52.2	1.722	72.9	39.4	0.15	21.2	Left	55.7	41.4	43.85998641		-91.20520845		687.5171	F	39.1	M		40	51.9			
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:08:49	13.085	1331	52	1.228	78.5	39.5	0.16	21.7	Left	55.8	41.4	43.86067068		-91.20488854		680.5609	F	39.4	M		40	51.8			
5/3/2024	22-F08_NB_L2_01_20240503_000237.D01	STH 16	North(+)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:08:53	13.135	1332	43.2	1.694	61	39.5	0.2	20.9	Left	55.7	42.6	43.86136683		-91.20465343		674.2513	F	39.3	M		40	43.0			
NB Lane 2															Avg	51.4	1.5											NB Lane 2					Avg	51.1	No of Tests		
															St. Dev	0.9																	St. Dev	0.9	4		
																																			Min	50.1	
																																			Max	51.9	

Appendix C																																			
Detailed Friction Results																																			
Test Site F09																																			
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN	
5/3/2024	F09_SB_L1_01_20240503_002803.D01	STH 16	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:28:38	13.112	1349	37.7	1.713	85.3	38.1	0.22	19.8	Left	55.5	44.7	43.86109072	-91.20494531	677.1051	F	37.8	M		40	36.8			
5/3/2024	F09_SB_L1_01_20240503_002803.D01	STH 16	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:28:42	13.061	1350	53.7	1.225	81.9	38.3	0.15	20.3	Left	55.7	44.6	43.86039144	-91.20521656	684.1514	F	38.2	M		40	52.9			
5/3/2024	F09_SB_L1_01_20240503_002803.D01	STH 16	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:28:47	13.011	1351	52.2	2.101	75	38.8	0.13	20.7	Left	55.7	45	43.8597221	-91.20558541	691.3226	F	38.5	M		40	51.6			
5/3/2024	F09_SB_L1_01_20240503_002803.D01	STH 16	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:28:52	12.961	1352	50.8	1.832	74.3	39.4	0.11	20.8	Left	55.5	43.9	43.85908871	-91.2060655	698.3702	F	39.2	M		40	50.5			
5/3/2024	F09_SB_L1_01_20240503_002803.D01	STH 16	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:28:56	12.911	1353	45.4	1.616	74.6	39.9	0.25	21.3	Left	55.7	45.7	43.85850349	-91.20664369	703.3089	F	39.8	M		40	45.4			
SB Lane 1															Avg	52.2	1.7	SB Lane 1															Avg	51.7	No of Tests
															St. Dev	1.5																	St. Dev	1.2	3
																														Min	50.5				
																														Max	52.9				
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:33:20	13.141	1362	46.9	2.094	89.2	38.6	0.27	20.2	Left	55.4	42.9	43.86152108	-91.20485305	674.406	F	38.3	M		40	46.2			
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:33:24	13.092	1363	46.9	3.168	75.7	38.2	0.15	20.5	Left	55.4	43.5	43.86083199	-91.20508152	678.9256	F	37.9	M		40	46.0			
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:33:29	13.042	1364	49.2	2.599	72.2	38.3	0.25	21	Left	55.7	45.9	43.86014381	-91.20538421	685.9247	F	38	M		40	48.4			
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:33:34	12.992	1365	47.5	1.4	72.4	37.9	0.15	20.4	Left	55.5	44.9	43.85949118	-91.20579909	693.2296	F	37.7	M		40	46.5			
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:33:38	12.941	1366	45.8	1.461	68.4	37.6	0.16	20.1	Left	55.4	44.3	43.85887186	-91.20632234	699.8119	F	37.4	M		40	44.6			
5/3/2024	F09-22_SB_L2_01_20240503_003249.D01	STH 16	South(-)	2	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	0:33:42	12.901	1367	46	2.045	63.2	36.5	0.96	17.9	Left	55.5	45.4	43.858413	-91.20681283	703.4132	F	36.6	M		40	44.3			
SB Lane 2															Avg	47.4	2.2	SB Lane 2															Avg	46.4	No of Tests
															St. Dev	1.4																	St. Dev	1.5	4
																														Min	44.6				
																														Max	48.4				

Appendix C																																			
Detailed Friction Results																																			
Test Site F10																																			
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN		
7/10/2024	F10_WB_L1_01_20240710_163940.D01	STH 16	West(-)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	16:41:09	188.99	2692	41.5	2.829	98.3	39.9	0.15	22.8	Left	87.5	98.2	43.06886644	-88.25126707	873.2819	F	39.7	M			40	41.5		
7/10/2024	F10_WB_L1_01_20240710_163940.D01	STH 16	West(-)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	16:41:13	188.94	2693	37.7	4.348	66.6	40.7	0.06	26.1	Left	87.6	98.6	43.06958095	-88.25127915	871.4198	F	40.5	M			40	38.1		
7/10/2024	F10_WB_L1_01_20240710_163940.D01	STH 16	West(-)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	16:41:18	188.89	2694	38.7	3.953	73.1	40.7	0.13	25.2	Left	87.6	99	43.07030314	-88.25129282	868.6125	F	40.6	M			40	39.1		
7/10/2024	F10_WB_L1_01_20240710_163940.D01	STH 16	West(-)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	16:41:22	188.84	2695	40.2	5.175	75.4	40.6	0.12	26.3	Left	87.8	98.7	43.07102412	-88.25130533	865.708	F	40.5	M			40	40.5		
7/10/2024	F10_WB_L1_01_20240710_163940.D01	STH 16	West(-)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	16:41:27	188.79	2696	40.5	4.572	53.3	40.6	0.12	24.8	Left	87.5	97.6	43.07174856	-88.25131986	863.5508	F	40.9	M			40	40.8		
7/10/2024	F10_WB_L1_01_20240710_163940.D01	STH 16	West(-)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	16:41:31	188.74	2697	46.4	4.51	62.4	40.3	0.19	26	Left	87.9	98.9	43.07246707	-88.25133163	862.5548	F	40.1	M			40	46.6		
7/10/2024	F10_WB_L1_01_20240710_163940.D01	STH 16	West(-)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	16:41:35	188.69	2698	36.8	4.69	67.8	40.5	0.17	25.8	Left	87.7	98.6	43.07319203	-88.25134301	862.2247	F	40.3	M			40	37.1		
7/10/2024	F10_WB_L1_01_20240710_163940.D01	STH 16	West(-)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	16:41:40	188.64	2699	24.9	2.622	66.4	40.6	0.1	26.3	Left	87.6	98.2	43.07391269	-88.25134953	862.1129	F	40.4	M			40	25.2		
7/10/2024	F10_WB_L1_01_20240710_163940.D01	STH 16	West(-)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	16:41:44	188.59	2700	28.2	2.523	59.9	40.5	0.12	25.7	Left	87.5	98.2	43.07463232	-88.25134827	862.5584	F	40.4	M			40	28.5		
7/10/2024	F10_WB_L1_01_20240710_163940.D01	STH 16	West(-)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	16:41:49	188.54	2701	39.1	4.884	60.9	40.4	0.16	25.8	Left	87.7	98.8	43.07535901	-88.25133899	863.7195	F	40.4	M			40	39.3		
WB Lane 1															Avg	37.2	3.9	WB Lane 1															Avg	37.5	No of Tests
															St. Dev	6.7																	St. Dev	6.6	9
																																	Min	25.2	
																																	Max	46.6	
7/10/2024	F10_WB_L2_01_20240710_173744.D01	STH 16	West(-)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:37:44	189.02	2744	38	2.085	88.6	39.8	0.18	25.2	Left	86.6	93.7	43.06848307	-88.2512096	870.1817	F	39.7	M			40	37.9		
7/10/2024	F10_WB_L2_01_20240710_173744.D01	STH 16	West(-)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:37:49	188.97	2745	35.6	3.662	69.1	40.5	0.05	25.2	Left	86.6	93.2	43.06919808	-88.25122137	869.779	F	40.3	M			40	35.9		
7/10/2024	F10_WB_L2_01_20240710_173744.D01	STH 16	West(-)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:37:53	188.92	2746	37.4	3.283	71.9	40.8	0.12	26.4	Left	86.6	93.6	43.06992656	-88.25123522	867.4109	F	40.8	M			40	37.8		
7/10/2024	F10_WB_L2_01_20240710_173744.D01	STH 16	West(-)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:37:57	188.87	2747	29	3.018	62.4	40.8	0.13	26.7	Left	86.7	93.9	43.07064575	-88.2512484	864.7032	F	40.8	M			40	29.4		
7/10/2024	F10_WB_L2_01_20240710_173744.D01	STH 16	West(-)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:38:02	188.82	2748	29.2	5.656	48.1	40.6	0.13	26.4	Left	86.8	88.6	43.07137086	-88.25126264	862.0991	F	40.8	M			40	29.5		
7/10/2024	F10_WB_L2_01_20240710_173744.D01	STH 16	West(-)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:38:06	188.77	2749	40.7	2.708	49.2	40.3	0.17	26.6	Left	86.6	94.4	43.07208571	-88.25127662	854.9869	F	39.8	M			40	40.9		
7/10/2024	F10_WB_L2_01_20240710_173744.D01	STH 16	West(-)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:38:11	188.72	2750	34.6	4.211	54.3	40.3	0.1	26	Left	86.6	93.8	43.07281244	-88.25128566	859.4476	F	40.4	M			40	34.8		
7/10/2024	F10_WB_L2_01_20240710_173744.D01	STH 16	West(-)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:38:15	188.67	2751	33	3.651	65.1	40.5	0.1	25.7	Left	86.6	93.8	43.07354213	-88.25129677	859.4416	F	40.3	M			40	33.3		
7/10/2024	F10_WB_L2_01_20240710_173744.D01	STH 16	West(-)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:38:20	188.62	2752	39.7	4.352	59	40.4	0.16	25.4	Left	86.6	94	43.07426705	-88.25130016	859.6056	F	40	M			40	39.9		
7/10/2024	F10_WB_L2_01_20240710_173744.D01	STH 16	West(-)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:38:24	188.57	2753	36.1	3.063	62.6	40.5	0.13	26.8	Left	86.6	94.4	43.07498568	-88.25129711	860.5571	F	40.4	M			40	36.4		
7/10/2024	F10_WB_L2_01_20240710_173744.D01	STH 16	West(-)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:38:29	188.52	2754	32.6	1.702	66.8	40.6	0.14	26	Left	86.6	94.9	43.07570801	-88.25128502	861.5745	F	40.2	M			40	32.9		
WB Lane 2															Avg	35.0	3.7	WB Lane 2															Avg	35.3	No of Tests
															St. Dev	4.1																	St. Dev	4.1	9
																																	Min	29.4	
																																	Max	40.9	

Appendix C

Detailed Friction Results

DateCollected	FileName	Route	Direction	HdriLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/10/2024	F11_EB_L1_01_20240710_172536.D01	STH 16	East(+)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:25:36	188.49	2730	46.8	1.895	89.7	39.9	0.2	25.1	Left	87	95	43.0762086	-88.25154237	862.3095	F	39.8	M	40	46.8		
7/10/2024	F11_EB_L1_01_20240710_172536.D01	STH 16	East(+)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:25:41	188.54	2731	39.9	4.111	70.1	40.2	0.09	25.9	Left	87.1	95.3	43.0754913	-88.25155437	861.9809	F	40	M	40	46.0		
7/10/2024	F11_EB_L1_01_20240710_172536.D01	STH 16	East(+)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:25:45	188.59	2732	43.1	2.758	66.8	40.4	0.16	25.2	Left	87.1	95.1	43.07476561	-88.25156462	861.1084	F	40.3	M	40	43.3		
7/10/2024	F11_EB_L1_01_20240710_172536.D01	STH 16	East(+)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:25:49	188.64	2733	37.4	4.85	64.2	40.5	0.08	26.5	Left	87.1	94.8	43.07405111	-88.25156563	861.0729	F	40.4	M	40	37.7		
7/10/2024	F11_EB_L1_01_20240710_172536.D01	STH 16	East(+)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:25:54	188.69	2734	46.8	2.728	58.1	40.5	0.13	26.6	Left	87	95.1	43.07332721	-88.25156276	860.5571	F	40.4	M	40	47.1		
7/10/2024	F11_EB_L1_01_20240710_172536.D01	STH 16	East(+)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:25:58	188.74	2735	38.3	1.926	61.5	40.6	0.17	26.5	Left	87.1	95.4	43.07260418	-88.25155042	860.3602	F	40.5	M	40	38.6		
7/10/2024	F11_EB_L1_01_20240710_172536.D01	STH 16	East(+)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:26:03	188.79	2736	40.2	2.239	60	40.5	0.15	25.9	Left	87	95.2	43.07187954	-88.2515375	860.3994	F	40.3	M	40	40.5		
7/10/2024	F11_EB_L1_01_20240710_172536.D01	STH 16	East(+)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:26:07	188.84	2737	41.4	3.957	62	40.2	0.15	25.9	Left	87	95	43.07114548	-88.25152162	861.1618	F	39.6	M	40	41.5		
7/10/2024	F11_EB_L1_01_20240710_172536.D01	STH 16	East(+)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:26:12	188.88	2738	47	2.696	51.1	40.4	0.17	26.1	Left	87	95.7	43.07044242	-88.25150707	865.9317	F	40.3	M	40	47.2		
7/10/2024	F11_EB_L1_01_20240710_172536.D01	STH 16	East(+)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:26:16	188.94	2739	40	2.136	64.9	40.5	0.08	26.2	Left	87	95.1	43.06971425	-88.25149573	868.0485	F	40.3	M	40	40.3		
7/10/2024	F11_EB_L1_01_20240710_172536.D01	STH 16	East(+)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:26:21	188.99	2740	26.7	2.64	63.8	40.8	0.04	26.6	Left	87	95.1	43.06899575	-88.25148302	870.0522	F	40.5	M	40	27.1		
7/10/2024	F11_EB_L1_01_20240710_172536.D01	STH 16	East(+)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:26:25	189.04	2741	44.5	1.748	60.5	41.1	0.17	26	Left	87	95.1	43.06827411	-88.25146871	870.0059	F	40.9	M	40	45.1		
7/10/2024	F11_EB_L1_01_20240710_172536.D01	STH 16	East(+)	1	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:26:30	189.09	2742	43.1	3.673	50.9	40.8	0.17	26.3	Left	87	95.5	43.06754664	-88.25145547	869.3142	F	40.7	M	40	43.5		
EB Lane 1														Avg	40.1	2.9	EB Lane 1														Avg	40.3	No of Tests
														St. Dev	6.1																St. Dev	6.0	9
																															Min	27.1	
																															Max	47.2	
7/10/2024	F11_EB_L2_01_20240710_175704.D01	STH 16	East(+)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:57:40	188.42	2775	36.2	3.707	79.6	39.9	0.17	25.4	Left	86.1	91.7	43.07661031	-88.25158235	863.7443	F	39.5	M	40	36.2		
7/10/2024	F11_EB_L2_01_20240710_175704.D01	STH 16	East(+)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:57:45	188.47	2776	38.1	1.518	66.2	40.2	0.14	25.4	Left	86.1	93	43.0758949	-88.25159491	862.5584	F	40.1	M	40	38.2		
7/10/2024	F11_EB_L2_01_20240710_175704.D01	STH 16	East(+)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:57:49	188.52	2777	23.7	1.969	63	40.6	0.06	26.4	Left	86.2	95.4	43.07517639	-88.25160754	861.4429	F	40.4	M	40	24.0		
7/10/2024	F11_EB_L2_01_20240710_175704.D01	STH 16	East(+)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:57:54	188.56	2778	41.3	2.944	66.5	40.5	0.16	26.2	Left	86.3	95.6	43.07445364	-88.25161807	860.5899	F	40.3	M	40	41.6		
7/10/2024	F11_EB_L2_01_20240710_175704.D01	STH 16	East(+)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:57:58	188.61	2779	41.3	2.716	63.6	40.4	0.15	25.4	Left	86.2	95	43.07373104	-88.25161464	859.9009	F	40.3	M	40	41.5		
7/10/2024	F11_EB_L2_01_20240710_175704.D01	STH 16	East(+)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:58:02	188.66	2780	39.4	1.384	65.8	40.5	0.11	26.4	Left	86.1	94.6	43.07300976	-88.25160606	859.7697	F	40.4	M	40	39.7		
7/10/2024	F11_EB_L2_01_20240710_175704.D01	STH 16	East(+)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:58:07	188.72	2781	36.5	2.074	62.9	40.6	0.12	26.3	Left	86.1	94.8	43.07228218	-88.25159431	859.7369	F	40.5	M	40	36.8		
7/10/2024	F11_EB_L2_01_20240710_175704.D01	STH 16	East(+)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:58:11	188.77	2782	27.7	1.846	61.6	40.4	0.14	25.4	Left	86.2	87.7	43.07155636	-88.25158028	860.5219	F	41.7	M	40	27.9		
7/10/2024	F11_EB_L2_01_20240710_175704.D01	STH 16	East(+)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:58:16	188.82	2783	36.4	2.643	66.5	40.2	0.13	26.1	Left	86	94.7	43.07082744	-88.25157615	857.3517	F	39.4	M	40	36.5		
7/10/2024	F11_EB_L2_01_20240710_175704.D01	STH 16	East(+)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:58:20	188.86	2784	40	2.514	64.6	40.4	0.17	26.2	Left	86.1	94.2	43.07011798	-88.25155319	865.9109	F	40.1	M	40	40.2		
7/10/2024	F11_EB_L2_01_20240710_175704.D01	STH 16	East(+)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:58:25	188.91	2785	39.9	2.192	54.2	40.5	0.16	26	Left	86.1	93.8	43.06939925	-88.25154046	868.1906	F	40.4	M	40	40.2		
7/10/2024	F11_EB_L2_01_20240710_175704.D01	STH 16	East(+)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:58:29	188.97	2786	37.3	3.37	66	40.8	0.11	26.5	Left	86.1	94.3	43.06866568	-88.25152923	869.3497	F	40.7	M	40	37.7		
7/10/2024	F11_EB_L2_01_20240710_175704.D01	STH 16	East(+)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:58:34	189.01	2787	36.3	3.465	62.5	41.1	0.13	27	Left	86.2	94.6	43.06795292	-88.25151665	868.2671	F	41	M	40	36.9		
7/10/2024	F11_EB_L2_01_20240710_175704.D01	STH 16	East(+)	2	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	17:58:38	189.07	2788	43.9	1.339	83.3	40.5	0.2	26.4	Left	86	95	43.06722685	-88.251501	868.7821	F	40.3	M	40	44.2		
EB Lane 2														Avg	37.8	2.3	EB Lane 2														Avg	38.0	No of Tests
														St. Dev	4.5																St. Dev	4.5	8
																															Min	27.9	
																															Max	41.6	

Appendix C
Detailed Friction Results
Test Site F13

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNSStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN		
7/11/2024	F13-F15_NB_L1_01_20240711_112009.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:21:13	59.796	2896	35.5	2.324	81.1	40.2	0.2	25.2	Left	81	86.7	42.95752558	-88.05756408		816.0457	F	40.2	M	40	35.6			
7/11/2024	F13-F15_NB_L1_01_20240711_112009.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:21:18	59.846	2897	37.8	0.93	65.9	40.4	0.07	26	Left	81	87.1	42.95752409	-88.05658785		811.1306	F	40.3	M	40	38.0			
7/11/2024	F13-F15_NB_L1_01_20240711_112009.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:21:22	59.895	2898	74.1	22.068	65.2	40.6	0.2	26.4	Left	80.9	87	42.95751873	-88.0556035		805.7014	F	40.6	M	40	74.4			
7/11/2024	F13-F15_NB_L1_01_20240711_112009.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:21:27	59.947	2899	81	1.986	107.5	40.3	0.29	25.8	Left	81.1	88.3	42.95744755	-88.05460388		800.3969	F	40.1	M	40	81.2			
7/11/2024	F13-F15_NB_L1_01_20240711_112009.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:21:31	59.997	2900	77.8	1.71	111.9	40.5	0.27	25.6	Left	81.1	88	42.9572629	-88.0536506		795.5079	F	40.4	M	40	78.1			
7/11/2024	F13-F15_NB_L1_01_20240711_112009.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:21:36	60.046	2901	77.9	3.656	109.6	40.9	0.22	26.1	Left	81	87.7	42.95697512	-88.05275196		790.0507	F	40.7	M	40	78.4			
7/11/2024	F13-F15_NB_L1_01_20240711_112009.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:21:40	60.096	2902	79.3	2.364	110.3	41	0.25	26.9	Left	80.9	87.3	42.95665636	-88.05186979		782.8672	F	40.9	M	40	79.8			
NB Lane 1															Avg	77.7	7.4	NB Lane 1															Avg	78.0	No of Tests
															St. Dev	2.8																	St. Dev	2.8	4
																																	Min	74.4	
																																	Max	81.2	
7/11/2024	F13-F15_NB_L2_01_20240711_105548.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:57:00	59.873	2865	31.6	0.927	55.7	40.8	0.09	26.2	Left	81.5	88.5	42.95748953	-88.0560753		809.3333	F	40.6	M	40	32.0			
7/11/2024	F13-F15_NB_L2_01_20240711_105548.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:57:04	59.924	2866	78.2	2.364	112	40.3	0.25	25.8	Left	81.5	88.9	42.9574634	-88.05507725		804.3275	F	40	M	40	78.4			
7/11/2024	F13-F15_NB_L2_01_20240711_105548.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:57:09	59.974	2867	76.3	3.316	101.9	40.3	0.21	26	Left	81.5	88.8	42.95733306	-88.0541056		799.4879	F	40.2	M	40	76.5			
7/11/2024	F13-F15_NB_L2_01_20240711_105548.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:57:13	60.024	2868	78.4	3.222	104.2	40.7	0.26	26.8	Left	81.3	88.1	42.95708632	-88.05317456		794.3383	F	40.5	M	40	78.8			
7/11/2024	F13-F15_NB_L2_01_20240711_105548.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:57:18	60.074	2869	80.9	2.332	106.6	40.9	0.23	26.9	Left	81.5	88.4	42.9567744	-88.05229613		788.5838	F	40.8	M	40	81.4			
7/11/2024	F13-F15_NB_L2_01_20240711_105548.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:57:22	60.124	2870	82.4	2.561	111.8	40.9	0.25	25.1	Left	81.5	88.4	42.95645487	-88.05141264		781.3869	F	40.8	M	40	82.9			
NB Lane 2															Avg	78.5	2.8	NB Lane 2															Avg	78.7	No of Tests
															St. Dev	1.9																	St. Dev	2.0	4
																																	Min	76.5	
																																	Max	81.4	

Appendix C																																				
Detailed Friction Results																																				
Test Site F14																																				
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNSStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN		
7/11/2024	F14_SB_L1_01_20240711_111121.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:13:12	58.958	2889	41.6	4.015	96	39.2	0.12	24.7	Left	80.9	88.8	42.95856336	-88.07379776			860.2241	F	38.9	M		40	41.2		
7/11/2024	F14_SB_L1_01_20240711_111121.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:13:16	58.909	2890	31.9	1.106	64.1	40.1	0.05	26.4	Left	80.8	88.2	42.95875427	-88.07471755			867.3509	F	39.8	M		40	32.0		
7/11/2024	F14_SB_L1_01_20240711_111121.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:13:21	58.859	2891	33.2	0.909	60.8	40.6	0.12	26.5	Left	80.9	88	42.95885554	-88.07568925			874.2576	F	40.5	M		40	33.5		
7/11/2024	F14_SB_L1_01_20240711_111121.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:13:25	58.808	2892	35.7	1.324	63.2	40.7	0.15	26.6	Left	80.8	87.6	42.9588693	-88.07667764			881.0007	F	40.6	M		40	36.1		
7/11/2024	F14_SB_L1_01_20240711_111121.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:13:29	58.759	2893	35.1	0.624	64.9	40.8	0.13	26.4	Left	80.9	86.7	42.95886305	-88.07765348			887.1959	F	40.7	M		40	35.5		
7/11/2024	F14_SB_L1_01_20240711_111121.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:13:34	58.708	2894	31.6	2.074	50.4	41.2	0.09	27.4	Left	80.8	85.5	42.95885589	-88.07864633			890.5768	F	41	M		40	32.2		
7/11/2024	F14_SB_L1_01_20240711_111121.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:13:38	58.659	2895	35.6	0.572	55.6	41.4	0.11	26.7	Left	80.9	86	42.95884693	-88.07961526			891.4626	F	41.3	M		40	36.3		
				49.191											SB Lane 1			Avg	35.6	1.8											SB Lane 1			Avg	35.7	No of Tests
																		St. Dev	4.3															St. Dev	4.1	4
																																		Min	32.0	
																																		Max	41.2	
7/11/2024	F14_SB_L2_01_20240711_104746.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:48:48	59.293	2849	34.5	1.059	84.9	40.2	0.12	25.1	Left	81.3	88.4	42.95767127	-88.06738985			845.8577	F	40.1	M		40	34.6		
7/11/2024	F14_SB_L2_01_20240711_104746.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:48:53	59.244	2850	33.2	0.967	64.4	40.5	0.11	25.6	Left	81.5	88.6	42.95766957	-88.06836049			846.9744	F	40.3	M		40	33.5		
7/11/2024	F14_SB_L2_01_20240711_104746.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:48:57	59.194	2851	33.8	0.625	59.6	40.7	0.12	26.2	Left	81.2	86.6	42.95767363	-88.06934721			848.671	F	41.5	M		40	34.2		
7/11/2024	F14_SB_L2_01_20240711_104746.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:49:01	59.144	2852	31.8	0.883	60.4	40.7	0.08	26.2	Left	81.4	88.7	42.95773806	-88.07031867			850.0208	F	40.6	M		40	32.2		
7/11/2024	F14_SB_L2_01_20240711_104746.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:49:06	59.095	2853	29.9	0.584	52.4	40.7	0.09	26.4	Left	81.3	88.5	42.9578996	-88.07127038			850.7806	F	40.7	M		40	30.3		
7/11/2024	F14_SB_L2_01_20240711_104746.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:49:10	59.044	2854	33.3	0.894	51.2	40.3	0.14	25.1	Left	81.3	88.5	42.95814711	-88.07219854			852.9911	F	40.2	M		40	33.5		
7/11/2024	F14_SB_L2_01_20240711_104746.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:49:15	58.994	2855	33.7	0.61	59.1	40.1	0.13	26.9	Left	81.4	89.7	42.95840705	-88.07311957			857.8628	F	39.9	M		40	33.8		
7/11/2024	F14_SB_L2_01_20240711_104746.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:49:19	58.944	2856	30.6	1.219	55.9	40	0.08	26.5	Left	81.5	89.6	42.95865734	-88.07403991			864.9642	F	39.8	M		40	30.6		
7/11/2024	F14_SB_L2_01_20240711_104746.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:49:24	58.895	2857	31	0.742	46.9	40.5	0.06	25	Left	81.5	89	42.95882419	-88.0749775			871.3854	F	40.2	M		40	31.3		
7/11/2024	F14_SB_L2_01_20240711_104746.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:49:28	58.844	2858	28	0.793	55.4	40.8	0.08	26.5	Left	81.4	88.1	42.95890083	-88.07595975			877.742	F	40.5	M		40	28.4		
7/11/2024	F14_SB_L2_01_20240711_104746.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:49:33	58.794	2859	34.3	0.719	52	40.6	0.12	25.8	Left	81.4	88.4	42.95890151	-88.07694989			884.2198	F	40.4	M		40	34.6		
7/11/2024	F14_SB_L2_01_20240711_104746.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:49:37	58.744	2860	33.3	0.864	57.8	40.8	0.07	26.9	Left	81.5	88	42.95889406	-88.07792338			889.5771	F	40.6	M		40	33.7		
7/11/2024	F14_SB_L2_01_20240711_104746.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:49:41	58.694	2861	29.9	3.104	58.7	41.3	0.05	27.3	Left	81.4	87.9	42.95888601	-88.0789071			892.0531	F	41.1	M		40	30.6		
7/11/2024	F14_SB_L2_01_20240711_104746.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:49:46	58.644	2862	32	0.614	54.9	41.4	0.09	26.8	Left	81.4	87.4	42.95887892	-88.07990854			892.1188	F	41.3	M		40	32.7		
				49.154											SB Lane 2			Avg	31.8	0.8											SB Lane 2			Avg	32.1	No of Tests
																		St. Dev	2.1															St. Dev	2.1	9
																																		Min	28.4	
																																		Max	34.6	

Appendix C
Detailed Friction Results
Test Site F15

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/11/2024	F13-F15_NB_L1_01_20240711_112009.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:21:44	60.147	2903	81.8	2.317	111.7	40.9	0.26	26.7	Left	80.8	86.9	42.95633209	-88.05098019	775.4193	F	40.7	M	40	82.3		
7/11/2024	F13-F15_NB_L1_01_20240711_112009.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:21:49	60.196	2904	76	3.128	101.3	40.6	0.29	26.6	Left	81	87.6	42.95601655	-88.05010916	768.7136	F	40.3	M	40	76.3		
7/11/2024	F13-F15_NB_L1_01_20240711_112009.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:21:53	60.247	2905	76.1	2.037	103.6	40.4	0.23	26.4	Left	81	87.9	42.95575093	-88.04919627	764.3605	F	40.4	M	40	76.3		
7/11/2024	F13-F15_NB_L1_01_20240711_112009.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:21:58	60.296	2906	78.5	3.432	107	40.5	0.28	25.9	Left	80.8	81.3	42.95564005	-88.04823069	760.2458	F	39.9	M	40	78.8		
7/11/2024	F13-F15_NB_L1_01_20240711_112009.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:22:02	60.346	2907	79.7	2.217	109.1	40.6	0.24	26.9	Left	80.9	88	42.95569436	-88.04725919	755.9362	F	40.1	M	40	80.0		
7/11/2024	F13-F15_NB_L1_01_20240711_112009.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:22:07	60.396	2908	74.7	4.07	104	40.7	0.2	26.9	Left	81.1	88.1	42.95591153	-88.04632699	753.1969	F	40.4	M	40	75.1		
7/11/2024	F13-F15_NB_L1_01_20240711_112009.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:22:11	60.446	2909	79.5	2.521	107.4	40.4	0.3	26.2	Left	80.9	87.6	42.95627532	-88.04547658	750.977	F	40.1	M	40	79.7		
7/11/2024	F13-F15_NB_L1_01_20240711_112009.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:22:16	60.495	2910	37	1.455	58.8	41	0.11	26.9	Left	81	86.9	42.95675096	-88.04476054	748.7422	F	40.9	M	40	37.5		
NB Lane 1															Avg	77.4	2.9	NB Lane 1										Avg	77.7	No of Tests			
															St. Dev	2.1												St. Dev	2.1	6			
																												Min	75.1				
																												Max	80.0				
7/11/2024	F13-F15_NB_L2_01_20240711_105548.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:57:27	60.174	2871	79	2.866	103.4	40.9	0.25	25.9	Left	81.5	88.4	42.95613304	-88.05053429	774.1682	F	40.7	M	40	79.5		
7/11/2024	F13-F15_NB_L2_01_20240711_105548.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:57:31	60.224	2872	71.2	3.226	104	40.3	0.17	26.6	Left	81.3	86.2	42.95582449	-88.04964386	770.478	F	39.5	M	40	71.4		
7/11/2024	F13-F15_NB_L2_01_20240711_105548.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:57:36	60.274	2873	80	2.767	107.7	40.6	0.22	26.5	Left	81.4	88	42.95563931	-88.04870843	766.9657	F	40.4	M	40	80.3		
7/11/2024	F13-F15_NB_L2_01_20240711_105548.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:57:40	60.324	2874	75.1	1.928	104.1	40.6	0.27	27.1	Left	81.3	87.8	42.95559843	-88.04772493	764.2862	F	40.5	M	40	75.4		
7/11/2024	F13-F15_NB_L2_01_20240711_105548.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:57:44	60.374	2875	71.1	3.74	107.7	40.6	0.21	26.6	Left	81.4	87.7	42.9557424	-88.04675907	762.1975	F	40.4	M	40	71.4		
7/11/2024	F13-F15_NB_L2_01_20240711_105548.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:57:49	60.423	2876	75.9	4.236	102.1	40.6	0.26	26.6	Left	81.3	88	42.9560329	-88.0458735	757.7416	F	40.5	M	40	76.2		
7/11/2024	F13-F15_NB_L2_01_20240711_105548.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:57:53	60.474	2877	75.9	6.75	109.3	40.6	0.23	26.9	Left	81.4	88.1	42.95646564	-88.04508559	754.6239	F	40.5	M	40	76.2		
7/11/2024	F13-F15_NB_L2_01_20240711_105548.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:57:58	60.523	2878	29.6	1.029	62.1	41.1	0.08	26.8	Left	81.5	88	42.95696371	-88.04438619	750.779	F	41	M	40	30.2		
NB Lane 2															Avg	74.9	3.8	NB Lane 2										Avg	75.1	No of Tests			
															St. Dev	3.4												St. Dev	3.4	6			
																												Min	71.4				
																												Max	80.3				

Appendix C																																			
Detailed Friction Results																																			
Test Site F16																																			
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN		
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:01:29	318.17	2596	34	1.544	86.9	39.7	0.12	25.9	Left	85.7	93.9	42.96658925	-87.92069701	688.0201	F	39.4	M	40	33.9				
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:01:33	318.21	2597	43.1	4.324	62.6	40.4	0.09	26.5	Left	85.8	99.1	42.96668321	-87.91974151	691.4098	F	40.1	M	40	43.3				
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:01:37	318.26	2598	45.4	2.267	69	40.9	0.13	26.4	Left	85.8	99.4	42.96688424	-87.91879114	693.4619	F	40.7	M	40	45.9				
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:01:42	318.31	2599	47.9	1.851	71.4	41.1	0.18	26.8	Left	85.8	98.6	42.96720422	-87.91790986	694.156	F	40.8	M	40	48.5				
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:01:46	318.36	2600	44	1.74	67.3	41.2	0.12	27.2	Left	85.9	97.8	42.96763739	-87.91713411	693.3199	F	41	M	40	44.6				
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:01:51	318.41	2601	44.2	1.382	73.7	41.1	0.15	26.8	Left	85.8	98.4	42.9681764	-87.91646867	691.5313	F	40.9	M	40	44.8				
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:01:55	318.46	2602	44.1	0.813	71.5	40.9	0.12	26.3	Left	85.7	98.7	42.96878429	-87.91595938	689.5779	F	40.7	M	40	44.6				
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:01:59	318.51	2603	44.8	1.32	67.3	40.7	0.16	26.6	Left	85.8	98.2	42.96945899	-87.91560912	687.5351	F	40.5	M	40	45.2				
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:02:04	318.56	2604	46.4	2.665	64	40.7	0.15	26.5	Left	85.7	98.6	42.97016758	-87.91543363	685.5899	F	40.6	M	40	46.8				
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:02:08	318.61	2605	37.4	1.032	60.4	41	0.08	26.9	Left	85.8	94.7	42.9708837	-87.91542363	683.1746	F	41	M	40	37.9				
NB Lane 1															Avg	45.0	2.0	NB Lane 1															Avg	45.4	No of Tests
															St. Dev	1.5																	St. Dev	1.6	8
																																	Min	43.3	
																																	Max	48.5	
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:26:53	318.18	2652	29	0.654	80.4	40.3	0.06	23.5	Left	84.6	91	42.96658165	-87.92040895	691.5492	F	40.1	M	40	29.2				
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:26:58	318.23	2653	42.7	1.42	57.7	39.9	0.19	25.5	Left	84.6	91	42.96669599	-87.91946185	694.8374	F	39.6	M	40	42.7				
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:27:02	318.28	2654	41.8	1.202	63.5	40.4	0.11	26.7	Left	84.6	91.4	42.96692744	-87.91852739	696.6092	F	40.2	M	40	42.0				
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:27:07	318.33	2655	43	1.399	65.2	40.9	0.11	26.3	Left	84.6	92.1	42.96727965	-87.91767496	696.8432	F	40.6	M	40	43.5				
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:27:11	318.38	2656	40.4	1.131	60.3	40.9	0.17	26.4	Left	84.6	92.1	42.96774718	-87.91691583	695.7425	F	40.9	M	40	40.9				
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:27:16	318.43	2657	43.2	1.282	64.5	40.8	0.16	26.7	Left	84.6	92.1	42.96830734	-87.91628961	693.7967	F	40.8	M	40	43.6				
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:27:20	318.48	2658	41.5	1.459	63.4	39.9	0.13	25.6	Left	84.4	91.9	42.96893859	-87.91581356	691.6947	F	39.7	M	40	41.5				
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:27:24	318.53	2659	43	2.027	62.2	40.6	0.05	26.2	Left	84.5	91.6	42.96961401	-87.91550745	689.5542	F	40.5	M	40	43.3				
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:27:29	318.58	2660	43.9	1.8	64	41	0.24	25.6	Left	84.6	91.9	42.9703283	-87.91537388	687.4928	F	41.1	M	40	44.4				
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:27:33	318.63	2661	30.3	0.732	53.7	40.1	0.14	26	Left	84.6	89.6	42.97104701	-87.91538632	684.8191	F	40.1	M	40	30.4				
NB Lane 2															Avg	42.4	1.5	NB Lane 2															Avg	42.7	No of Tests
															St. Dev	1.1																	St. Dev	1.2	8
																																	Min	40.9	
																																	Max	44.4	

Appendix C
Detailed Friction Results
Test Site F17

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:12:12	314.67	2607	31.3	0.774	82.8	40.4	0.12	25.6	Left	85.6	93.5	42.97129465	-87.91558995	685.8512	F	40.2	M	40	31.5		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:12:16	314.62	2608	43.8	5.455	56.1	40.3	0.12	26.5	Left	85.6	95	42.97058123	-87.91555995	688.1964	F	40.3	M	40	44.0		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:12:21	314.57	2609	40.8	2.043	67.2	40.5	0.11	26.4	Left	85.6	94.4	42.96985807	-87.91563589	690.8037	F	40.4	M	40	41.1		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:12:25	314.52	2610	42	2.717	67.1	40.7	0.12	26.7	Left	85.6	94.9	42.96916399	-87.91589741	693.3671	F	40.7	M	40	42.4		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:12:29	314.47	2611	42	1.33	65.9	40.7	0.13	26.5	Left	85.5	94.3	42.96851484	-87.9163318	695.8083	F	40.6	M	40	42.4		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:12:34	314.42	2612	41.8	1.58	63.3	40.8	0.11	26.3	Left	85.6	93.8	42.9679384	-87.91692866	698.182	F	40.7	M	40	42.2		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:12:38	314.37	2613	42.1	1.803	64.3	41	0.12	25.6	Left	85.6	93.7	42.96745704	-87.91765978	699.5991	F	40.9	M	40	42.6		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:12:43	314.32	2614	42.5	1.563	65.9	41.1	0.11	26.5	Left	85.6	95	42.96708688	-87.91849891	699.4678	F	41	M	40	43.1		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:12:47	314.27	2615	43.7	2.119	70	41.1	0.15	26.2	Left	85.6	94.4	42.96684021	-87.91941937	697.9946	F	41.1	M	40	44.3		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:12:52	314.22	2616	31.7	0.816	52.5	41.3	0.12	27.3	Left	85.8	94.9	42.96672093	-87.92038635	694.77	F	41.2	M	40	32.4		
SB Lane 1															Avg	42.3	2.3											SB Lane 1		Avg	42.7	No of Tests	
															St. Dev	1.0														St. Dev	1.0	8	
																														Min	41.1		
																														Max	44.3		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:36:10	314.65	2663	28.2	0.669	72.9	40.7	0.15	25.7	Left	83.6	88.1	42.97098065	-87.91562022	684.108	F	40.3	M	40	28.6		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:36:15	314.6	2664	40.5	4.197	79.9	40.7	0.16	26.4	Left	83.6	89.6	42.97026599	-87.91561656	686.2607	F	40.5	M	40	40.9		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:36:19	314.55	2665	40.1	1.717	60.3	40.8	0.13	25.8	Left	83.6	89.7	42.96955442	-87.91577008	689.4629	F	40.5	M	40	40.5		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:36:24	314.5	2666	41.8	1.254	63.7	41	0.12	26.5	Left	83.6	89.9	42.96888062	-87.9161077	692.2156	F	40.9	M	40	42.3		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:36:28	314.45	2667	40.8	2.643	71.5	41.1	0.15	26.2	Left	83.5	89.1	42.96826287	-87.91661309	695.1309	F	40.9	M	40	41.4		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:36:32	314.4	2668	42.4	2.19	65	41.3	0.12	27.3	Left	83.6	88.7	42.9677255	-87.91728168	697.4087	F	41.2	M	40	43.1		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:36:37	314.35	2669	40.9	2.779	63.4	41.5	0.15	27.4	Left	83.8	88.8	42.96729832	-87.91806259	698.2373	F	41.3	M	40	41.7		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:36:41	314.3	2670	42.1	2.663	66.7	41.5	0.16	26.8	Left	83.5	88.9	42.96697821	-87.91896504	697.6306	F	41.3	M	40	42.9		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:36:46	314.25	2671	43.4	3.104	69.9	41.6	0.15	27.7	Left	83.5	88.6	42.96680058	-87.91989613	695.6816	F	41.7	M	40	44.2		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:36:50	314.2	2672	29	0.648	54.7	41.5	0.06	27	Left	83.5	88.1	42.96671138	-87.92087198	692.8155	F	41.5	M	40	29.8		
SB Lane 2															Avg	41.5	2.6											SB Lane 2		Avg	42.1	No of Tests	
															St. Dev	1.1														St. Dev	1.2	8	
																														Min	40.5		
																														Max	44.2		

Appendix C
Detailed Friction Results
Test Site F18

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:59:54	317.1	2580	39.8	3.149	106.2	39.5	0.22	25.8	Left	85.8	96.5	42.95899868	-87.93423612		690.2971	F	39.2	M		40	39.6	
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:59:59	317.15	2581	77.7	2.117	106.6	39.6	0.24	25.7	Left	85.7	98.2	42.95970949	-87.93416831		696.6589	F	38.4	M		40	77.5	
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:00:03	317.2	2582	72.8	2.32	107.6	39.9	0.08	25	Left	85.8	98.9	42.96042637	-87.9341553		702.9366	F	39.7	M		40	72.8	
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:00:08	317.25	2583	74.8	3.406	98.4	41.1	0.19	26.4	Left	85.8	97.9	42.96115712	-87.93422503		705.537	F	40.9	M		40	75.4	
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:00:12	317.3	2584	75.9	4.017	104.9	41.5	0.23	26.4	Left	85.7	97	42.9618768	-87.93430535		705.4862	F	41.1	M		40	76.7	
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:00:17	317.35	2585	69.5	3.485	100.2	41.4	0.23	25.9	Left	85.7	97.3	42.96260265	-87.93429159		702.7591	F	41.2	M		40	70.2	
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:00:21	317.4	2586	71	1.951	101.2	41.5	0.17	26.6	Left	85.7	97.2	42.96331169	-87.93408566		697.6286	F	41.4	M		40	71.8	
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:00:25	317.45	2587	69.9	1.497	97.5	41.5	0.23	27.3	Left	85.8	97.1	42.96397053	-87.93369105		689.5949	F	41.4	M		40	70.7	
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:00:30	317.5	2588	74.1	2.054	100.6	41.2	0.24	27.1	Left	85.7	97.5	42.96456537	-87.93312806		680.7905	F	41.1	M		40	74.7	
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:00:34	317.55	2589	74.5	1.765	96.5	40.7	0.31	26.2	Left	85.7	98.3	42.96505945	-87.93241569		673.3977	F	40.6	M		40	74.9	
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:00:39	317.6	2590	67.4	2.92	98.7	39.8	0.28	25.6	Left	85.7	98.3	42.96543889	-87.93159927		670.4652	F	39.4	M		40	67.3	
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:00:43	317.65	2591	70.9	1.717	98.4	39.8	0.25	25.2	Left	85.7	98.6	42.96569949	-87.930667		672.712	F	39.6	M		40	70.8	
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:00:48	317.7	2592	73.6	10.17	108	39.2	0.26	24.5	Left	85.7	98.4	42.96582354	-87.92970109		680.7132	F	38.9	M		40	73.2	
7/10/2024	F18-F16_NB_L1_01_20240710_145946.D01	IH 43	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:00:52	317.75	2593	54.9	1.623	80.3	40.2	0.09	25.9	Left	85.8	98.4	42.96590348	-87.92874801		688.4338	F	40.1	M		40	55.0	
NB Lane 1															Avg	72.7	3.1	NB Lane 1										Avg	73.0	No of Tests				
															St. Dev	3.0											St. Dev	3.0	12					
																									Min	67.3								
																									Max	77.5								
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:25:19	317.12	2635	28.4	1.31	96.8	39.3	0.21	25.3	Left	84.9	83.3	42.95917004	-87.9341634		693.4428	F	38.8	M		40	28.1	
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:25:23	317.17	2636	73.8	1.67	115.8	39.5	0.22	25.5	Left	84.8	90.7	42.95990514	-87.93410231		699.0198	F	39	M		40	73.6	
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:25:28	317.22	2637	73.7	2.915	108.6	40.2	0.13	25.2	Left	84.7	91.3	42.96061796	-87.93412424		702.0045	F	39.9	M		40	73.8	
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:25:32	317.27	2638	74.4	2.161	103.8	41.3	0.18	26.4	Left	84.8	91.9	42.96134005	-87.93419738		704.3825	F	41.2	M		40	75.1	
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:25:37	317.32	2639	73.3	2.863	97.4	41.6	0.26	27	Left	84.8	91.2	42.96205751	-87.93427029		703.5361	F	41.5	M		40	74.1	
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:25:41	317.37	2640	71.1	1.718	103.9	41.4	0.2	26.2	Left	84.9	91.1	42.96278418	-87.93420976		701.0465	F	41.2	M		40	71.8	
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:25:45	317.42	2641	72.1	1.818	101.8	41.4	0.25	27.8	Left	84.8	92.5	42.96347796	-87.93395143		695.4871	F	41.5	M		40	72.8	
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:25:50	317.47	2642	70.4	2.488	103.1	40.5	0.26	26.9	Left	84.7	91.3	42.96411981	-87.93351372		687.3612	F	40.2	M		40	70.7	
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:25:54	317.52	2643	58.6	3.016	77.8	40.6	0.18	26.1	Left	84.7	90.9	42.96468272	-87.9329166		678.6432	F	40.6	M		40	58.9	
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:25:59	317.57	2644	66.1	2.179	96.2	39.8	0.25	26.5	Left	84.7	90.7	42.96515538	-87.93216127		671.9728	F	39.6	M		40	66.0	
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:26:03	317.62	2645	66.9	2.304	100.8	39.1	0.27	25.1	Left	84.6	91.8	42.965501	-87.9313095		670.592	F	38.9	M		40	66.5	
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:26:08	317.67	2646	71.4	1.181	102	40.3	0.21	26.7	Left	84.8	92.7	42.96571549	-87.93035819		674.5419	F	40.2	M		40	71.6	
7/10/2024	F18-F16_NB_L2_01_20240710_152509.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:26:12	317.72	2647	41.4	8.091	59.4	40.3	0.07	26.5	Left	84.7	90.3	42.96581379	-87.92941481		683.9159	F	40.3	M		40	41.6	
NB Lane 2															Avg	70.2	2.2	NB Lane 2										Avg	70.4	No of Tests				
															St. Dev	4.7											St. Dev	4.8	11					
																									Min	58.9								
																									Max	75.1								

Appendix C
Detailed Friction Results
Test Site F22

Collected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN											
7/11/2024	F22_EB_L1_01_20240711_140839.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:08:54	306.77	3031	38.2	2.811	93.7	39.8	0.19	24.9	Left	87.3	98.6	43.02918525	-88.00288078		712.782	F	39.6	M	40	38.1												
7/11/2024	F22_EB_L1_01_20240711_140839.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:08:58	306.82	3032	34.5	1.28	68.6	40.4	0.09	25.1	Left	87.4	98.9	43.02942393	-88.00197108		717.0871	F	40.2	M	40	34.7												
7/11/2024	F22_EB_L1_01_20240711_140839.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:09:01	306.86	3033	48	3.573	91.2	40.4	0.11	25.2	Left	87.4	100.3	43.02961826	-88.00128033		720.2103	F	40.2	M	40	48.2												
7/11/2024	F22_EB_L1_01_20240711_140839.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:09:04	306.89	3034	45.6	3.718	77.2	40.3	0.13	26.9	Left	87.3	100.8	43.02979736	-88.00065177		723.5476	F	40.1	M	40	45.8												
7/11/2024	F22_EB_L1_01_20240711_140839.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:09:07	306.92	3035	39.3	8.692	82	40.2	0.07	26	Left	87.3	100	43.02993613	-88.00012813		726.9297	F	40.4	M	40	39.4												
7/11/2024	F22_EB_L1_01_20240711_140839.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:09:11	306.97	3036	44	3.188	67	41.4	0.1	27.3	Left	87.4	100.5	43.03008808	-87.99922111		729.0938	F	41.3	M	40	44.7												
7/11/2024	F22_EB_L1_01_20240711_140839.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:09:15	307.01	3037	53.8	2.418	77.5	41.3	0.21	26.6	Left	87.3	101	43.03014136	-87.99846519		728.2408	F	41.3	M	40	54.5												
7/11/2024	F22_EB_L1_01_20240711_140839.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:09:20	307.07	3038	35.2	1.979	60.1	41.7	0.12	26.7	Left	87.3	96.8	43.03019024	-87.99719974		725.6644	F	41.5	M	40	36.1												
7/11/2024	F22_EB_L1_01_20240711_140839.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:09:24	307.12	3039	22.8	4.815	56.2	41.8	0.1	26.6	Left	87.3	96.9	43.03023052	-87.99622794		717.6967	F	41.8	M	40	23.7												
EB Lane 1															Avg	46.1	4.3											EB Lane 1		Avg	46.5	No of Tests												
															St. Dev	5.3														St. Dev	5.5	5												
																														Min	39.4													
																														Max	54.5													
7/11/2024	F22_EB_L2_01_20240711_142423.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:24:41	306.81	3040	38.7	2.91	88.8	39.9	0.2	24.7	Left	88.4	101.4	43.02934893	-88.00211665		719.0889	F	39.6	M	40	38.7												
7/11/2024	F22_EB_L2_01_20240711_142423.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:24:46	306.86	3041	55.3	1.889	85	40.4	0.19	26.1	Left	88.4	102.8	43.02959734	-88.00122836		723.152	F	40.2	M	40	55.5												
7/11/2024	F22_EB_L2_01_20240711_142423.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:24:49	306.9	3042	48.6	1.888	77	40.3	0.15	26.3	Left	88.4	102.4	43.02980069	-88.00051842		726.2551	F	40.1	M	40	48.8												
7/11/2024	F22_EB_L2_01_20240711_142423.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:24:53	306.94	3043	39.8	2.726	73.3	40.7	0.09	26.4	Left	88.4	100.8	43.02997231	-87.9997957		729.6172	F	40.6	M	40	40.2												
7/11/2024	F22_EB_L2_01_20240711_142423.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:24:56	306.98	3044	47.6	2.938	71.5	41.3	0.05	26.2	Left	88.5	103.1	43.03007072	-87.99906741		730.217	F	41.2	M	40	48.3												
7/11/2024	F22_EB_L2_01_20240711_142423.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:24:59	307.01	3045	45.2	3.412	73.5	41.3	0.17	26.3	Left	88.5	101.9	43.03011153	-87.99836493		729.3899	F	41	M	40	45.9												
7/11/2024	F22_EB_L2_01_20240711_142423.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:25:04	307.06	3046	32.1	1.198	51.8	41.6	0.08	26.7	Left	88.5	99	43.03014978	-87.99737127		727.8718	F	41.6	M	40	32.9												
7/11/2024	F22_EB_L2_01_20240711_142423.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:25:08	307.11	3047	29.6	2.084	48.4	42	0.09	27.4	Left	88.5	99.1	43.03018866	-87.99637916		720.136	F	42	M	40	30.6												
EB Lane 2															Avg	47.3	2.6											EB Lane 2		Avg	47.7	No of Tests												
															St. Dev	5.6														St. Dev	5.5	5												
																														Min	40.2													
																														Max	55.5													
7/11/2024	F22_EB_L3_01_20240711_135729.D01	IH 94	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:57:50	306.86	3025	50.3	4.688	87.3	48.9	0.38	29.4	Left	87.1	96.5	43.02952504	-88.00132431		720.3528	F	48.7	M	40	54.8												
7/11/2024	F22_EB_L3_01_20240711_135729.D01	IH 94	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:57:53	306.91	3026	31.5	6.554	78.4	45.2	0.41	30.4	Left	87	97.3	43.02978366	-88.00043929		723.8152	F	45	M	40	34.1												
7/11/2024	F22_EB_L3_01_20240711_135729.D01	IH 94	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:57:57	306.96	3027	40.1	2.769	76.3	42.4	0.27	27.8	Left	87	96.5	43.02998657	-87.9995032		727.3378	F	42.1	M	40	41.3												
7/11/2024	F22_EB_L3_01_20240711_135729.D01	IH 94	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:58:02	307.01	3028	44.3	3.053	79.1	41.8	0.22	26.9	Left	86.9	97.4	43.0300716	-87.99852319		727.1581	F	41.6	M	40	45.2												
7/11/2024	F22_EB_L3_01_20240711_135729.D01	IH 94	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:58:06	307.06	3029	35.2	1.437	56	41.4	0.12	26.5	Left	87	95.5	43.03010632	-87.99755417		726.7702	F	41.1	M	40	35.9												
7/11/2024	F22_EB_L3_01_20240711_135729.D01	IH 94	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:58:10	307.11	3030	30.6	1.261	55.1	42	0.08	27.1	Left	87	95.4	43.03014339	-87.99656889		720.16	F	42.1	M	40	31.6												
EB Lane 3															Avg	41.6	4.3											EB Lane 3		Avg	43.8	No of Tests												
															St. Dev	7.9														St. Dev	8.6	4												
																														Min	34.1													
																														Max	54.8													

Appendix C																																																	
Detailed Friction Results																																																	
Test Site F24																																																	
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN																
7/8/2024	F24_L1_01_20240708_152029.D01	STH 38	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:20:40	10.097	1484	41.4	3.168	103.7	21.2	0.79	9	Left	91.3	108.4	42.75937727	-87.86356547	682.7417	F	20.2	M	40	32.0																		
7/8/2024	F24_L1_01_20240708_152029.D01	STH 38	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:20:46	10.131	1485	50.8	12.286	83.8	17.4	0.32	6.5	Left	91.4	107.3	42.75970107	-87.86403811	682.0041	F	16.6	M	40	39.5																		
7/8/2024	F24_L1_01_20240708_152029.D01	STH 38	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:20:51	10.153	1486	70.2	4.241	86.2	15.5	0.14	5.5	Left	91.5	106.5	42.75964073	-87.864367	681.237	F	14.8	M	40	58.0																		
7/8/2024	F24_L1_01_20240708_152029.D01	STH 38	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:20:56	10.173	1487	70.5	6.013	89.9	15.9	0.24	5.4	Left	91.4	108.6	42.75944743	-87.86416336	680.7014	F	15.3	M	40	58.5																		
7/8/2024	F24_L1_01_20240708_152029.D01	STH 38	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:20:59	10.19	1488	65.1	7.786	83.7	15.7	0.2	5.3	Left	91.3	102.1	42.75960709	-87.86395824	681.4622	F	15.1	M	40	53.0																		
7/8/2024	F24_L1_01_20240708_152029.D01	STH 38	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:21:04	10.21	1489	56.2	10.623	74.7	16.2	0.19	5.6	Left	91.3	103.1	42.75973697	-87.8642437	680.9082	F	15.6	M	40	44.3																		
7/8/2024	F24_L1_01_20240708_152029.D01	STH 38	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:21:10	10.236	1490	60.5	12.191	85.3	15.6	0.19	5.4	Left	91.4	103.6	42.75945197	-87.86423943	680.6358	F	14.7	M	40	48.3																		
7/8/2024	F24_L1_01_20240708_152029.D01	STH 38	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:21:18	10.274	1491	57.6	12.463	78.4	15.9	0.35	5.2	Left	91.4	102.6	42.75974275	-87.86418266	681.3125	F	15.1	M	40	45.6																		
7/8/2024	F24_L1_01_20240708_152029.D01	STH 38	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:21:23	10.296	1492	54.7	12.131	97.5	16.1	0.26	5.6	Left	91.4	102.1	42.7595207	-87.86435027	680.8685	F	15.2	M	40	42.8																		
7/8/2024	F24_L1_01_20240708_152029.D01	STH 38	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:21:28	10.319	1493	57.6	10.831	87.3	17	0.28	6.4	Left	91.3	103.9	42.75953247	-87.86398024	681.4174	F	16.2	M	40	46.1																		
7/8/2024	F24_L1_01_20240708_152029.D01	STH 38	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:21:35	10.357	1494	63.7	3.669	103.7	25.4	0.27	13.6	Left	91.3	107.5	42.75993017	-87.86439066	680.8191	F	25.3	M	40	56.4																		
7/8/2024	F24_L1_01_20240708_152029.D01	STH 38	RAB(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:21:39	10.387	1495	42.8	2.238	63.9	30.4	0.25	18.3	Left	91.3	104.6	42.76025858	-87.86477579	680.7993	F	30.5	M	40	38.0																		
												RAB				Avg	9.2														RAB			Avg	49.2	No of Tests 10													
																St. Dev	6.6																	St. Dev	6.8														
																																Min	39.5																
																																Max	58.5																

Appendix C
Detailed Friction Results
Test Site F25

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:29:44	10.967	96	57.3	2.471	113.5	38.2	0.45	19.4	Left	79.7	92.8	43.29492352	-89.3246707		988.5427	F	38.2	M	40	56.4	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:29:49	11.016	97	62.1	2.535	87.3	38.3	0.08	19.9	Left	79.5	89.9	43.2956344	-89.32467253		989.9833	F	38	M	40	61.3	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:29:54	11.066	98	64.6	2.039	101.8	39.5	0.37	20.7	Left	79.3	87.5	43.2963631	-89.32469569		992.6629	F	39.4	M	40	64.4	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:29:58	11.116	99	70.7	1.663	100.4	39.3	0.12	20.2	Left	79.5	89.7	43.29708282	-89.32472917		995.5891	F	39.2	M	40	70.4	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:30:03	11.166	100	68.2	1.499	94.4	40.1	0.18	21.5	Left	79.4	85.7	43.29780421	-89.32475852		998.5277	F	39.9	M	40	68.3	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:30:07	11.216	101	70.2	2.03	94.6	39.8	0.3	20.9	Left	79.5	91.3	43.29852928	-89.32479267		1003.3408	F	39.6	M	40	70.1	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:30:12	11.266	102	70.1	1.9	94.7	39	0.24	20.8	Left	79.4	89.5	43.2992443	-89.32482514		1011.1534	F	38.8	M	40	69.6	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:30:17	11.316	103	70.2	1.573	94	39.4	0.29	21.6	Left	79.3	91.9	43.29996216	-89.32485351		1022.0638	F	39.1	M	40	69.9	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:30:21	11.367	104	68.4	1.598	93.9	40	0.14	20.6	Left	79.2	95.1	43.30069329	-89.32488911		1030.4365	F	39.8	M	40	68.4	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:30:26	11.416	105	68.2	1.687	93.2	39.3	0.36	20.8	Left	79.3	90.8	43.30141091	-89.32492249		1034.6105	F	39.2	M	40	67.9	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:30:30	11.466	106	68.1	1.252	96.1	39.7	0.16	20.7	Left	79.3	88	43.30213556	-89.32495493		1034.6056	F	39.6	M	40	68.0	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:30:35	11.516	107	68.7	1.078	93.4	39.9	0.23	20.8	Left	79.2	89.2	43.30286018	-89.32498884		1034.1619	F	39.8	M	40	68.7	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:30:39	11.566	108	67	1.689	104	39.3	0.27	20.7	Left	79.4	87.9	43.30357515	-89.32502049		1037.0306	F	39.1	M	40	66.7	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:30:44	11.617	109	70.4	1.709	98.8	39.9	0.12	21	Left	79.3	86.6	43.30431168	-89.32505312		1040.4196	F	39.9	M	40	70.4	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:30:48	11.666	110	71	2.851	101.9	40.4	0.24	21.6	Left	79.2	88	43.30502626	-89.32508573		1041.5282	F	40.3	M	40	71.2	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:30:52	11.705	111	61.2	1.308	81.1	40.3	0.19	20.8	Left	79.3	87.3	43.30558853	-89.32510958		1042.0828	F	40.3	M	40	61.4	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:30:57	11.766	112	68.6	2.598	103.7	40.3	0.27	21.4	Left	79	86.2	43.3064694	-89.32515103		1043.0046	F	40.1	M	40	68.8	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:31:02	11.817	113	68	1.152	93.1	39.7	0.27	20.9	Left	79.2	88.4	43.30719264	-89.32518221		1044.5146	F	39.7	M	40	67.9	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:31:06	11.867	114	67	1.735	98.6	39.4	0.19	20.7	Left	79.2	90.3	43.30791452	-89.32521256		1050.203	F	39.2	M	40	66.7	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:31:11	11.916	115	65.3	1.416	85.1	39.1	0.26	20.5	Left	79.1	89.5	43.30863068	-89.32524476		1056.8996	F	39.1	M	40	64.9	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:31:16	11.966	116	66.4	0.863	91.3	38.9	0.19	20.9	Left	79.1	81.8	43.30934668	-89.32528069		1059.8025	F	39	M	40	65.9	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:31:20	12.016	117	64.8	3.138	91.6	40	0.2	21.5	Left	78.9	87	43.31007654	-89.32529918		1057.6772	F	40	M	40	64.8	
5/1/2024	F25_NB_L1_01_20240501_152840.D01	USH 51	North(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:31:25	12.067	118	68.2	1.854	99.9	40.2	0.27	20.5	Left	79	87.6	43.31080693	-89.32531537		1054.6611	F	40	M	40	68.3	
NB Lane 1															Avg	67.6	1.8	NB Lane 1										Avg	67.4	No of Tests			
															St. Dev	2.7												St. Dev	2.8	21			
																														Min	61.3		
																														Max	71.2		

Appendix C
Detailed Friction Results
Test Site F26

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:34:22	12.035	119	58.4	2.451	97.7	39.2	0.16	20.4	Left	78.3	92	43.31040154	-89.3253412		1055.2811	F	38.7	M		40	58.0	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:34:27	11.985	120	60.5	4.794	95.7	40.9	0.13	21.5	Left	78.3	91.5	43.30967581	-89.32533128		1059.5467	F	40.9	M		40	61.0	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:34:31	11.935	121	61.5	2.853	89.8	41.6	0.32	22.2	Left	78.3	85.1	43.30895376	-89.32530147		1058.7959	F	41.6	M		40	62.3	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:34:35	11.886	122	60.4	1.992	92.9	41.2	0.24	21.9	Left	78.2	94.4	43.30823795	-89.32526823		1053.9989	F	41.3	M		40	61.0	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:34:40	11.835	123	56.3	2.505	96	40.5	0.26	21.5	Left	78.3	90.4	43.30750359	-89.32523427		1047.0536	F	40.4	M		40	56.6	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:34:44	11.786	124	55.4	3.629	91	40.3	0.38	21.5	Left	78.3	86.1	43.30679264	-89.3252014		1042.7749	F	40.1	M		40	55.6	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:34:49	11.735	125	59.3	2.582	90.9	41	0.27	21.7	Left	78.2	87.4	43.30606328	-89.32516764		1041.9875	F	40.8	M		40	59.8	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:34:53	11.685	126	47.2	4.872	82.3	40.9	0.35	22	Left	78.1	89.2	43.30534143	-89.32513727		1041.0986	F	40.8	M		40	47.7	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:34:58	11.635	127	60	4.85	95.9	41.2	0.19	22.1	Left	78.2	92.3	43.30461782	-89.32510716		1040.0791	F	41	M		40	60.6	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:35:02	11.585	128	62.7	2.456	90.1	40.9	0.29	21.8	Left	78.2	92.5	43.30389547	-89.32507301		1037.747	F	40.8	M		40	63.2	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:35:06	11.535	129	59.4	2.012	91.2	39.7	0.33	20.6	Left	78.1	91.7	43.30317462	-89.3250387		1033.1241	F	39.6	M		40	59.3	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:35:11	11.486	130	62.1	2.005	89.8	38.7	0.2	20.8	Left	78	93	43.30245594	-89.32500633		1032.0524	F	38.7	M		40	61.5	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:35:16	11.436	131	58.7	2.457	94.4	40.1	0.19	21	Left	78.2	96.3	43.30173185	-89.32497239		1031.9461	F	40.1	M		40	58.8	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:35:20	11.385	132	57.7	3.716	95.4	40.1	0.21	21.3	Left	78	97.1	43.30100478	-89.32493923		1030.6188	F	40.3	M		40	57.8	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:35:25	11.336	133	56.1	1.85	89.5	40.3	0.18	21.3	Left	78	96.5	43.30028541	-89.32490642		1025.3625	F	40.3	M		40	56.3	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:35:29	11.286	134	55	3.561	81	40.4	0.16	21.1	Left	78.1	91.4	43.29956577	-89.32487554		1015.4335	F	40.3	M		40	55.2	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:35:34	11.236	135	56.1	4.646	89.3	39.8	0.23	21.7	Left	78.1	88.1	43.29883865	-89.32483856		1005.7158	F	39.6	M		40	56.0	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:35:38	11.186	136	53	4.043	84	40.1	0.32	21.1	Left	78.1	90.5	43.29811832	-89.32481065		999.6147	F	40	M		40	53.1	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:35:43	11.136	137	53.1	3.357	87.5	39.1	0.17	20.7	Left	78	87.9	43.29740084	-89.32478208		996.1247	F	39.1	M		40	52.7	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:35:47	11.086	138	58.4	3.007	88.6	39.6	0.18	20.9	Left	78	89.7	43.29667125	-89.32475018		993.1225	F	39.4	M		40	58.2	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:35:52	11.036	139	50.9	5.192	83.9	40.1	0.19	21.9	Left	78	91.2	43.29594941	-89.32471913		990.5383	F	40.1	M		40	51.0	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:35:56	10.986	140	46.7	2.681	78.5	40.1	0.23	21.8	Left	77.9	89	43.29522819	-89.32470732		988.0177	F	40	M		40	46.8	
5/1/2024	F26_SB_L1_01_20240501_153413.D01	USH 51	South(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	15:36:01	10.936	141	49.8	2.448	78.3	39.7	0.25	20.9	Left	77.9	91.1	43.29450806	-89.32471437		987.6568	F	39.5	M		40	49.7	
SB Lane 1															Avg	57.2	3.3	SB Lane 1										Avg	57.4	No of Tests				
															St. Dev	4.0												St. Dev	4.0	20				
																														Min	47.7			
																														Max	63.2			

Appendix C
Detailed Friction Results
Test Site F27

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNSStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN											
7/8/2024	F27_WB_L1_01_20240708_180147.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:01:47	10.008	1568	42.2	0.89	99.7	41.4	0.39	26.5	Left	90.2	98.3	43.32396543	-88.24987362	1095.4039	F	41.2	M	40	42.9													
7/8/2024	F27_WB_L1_01_20240708_180147.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:01:52	10.066	1569	37.6	0.839	69.1	39.1	0.09	23.2	Left	89.9	96.9	43.32456619	-88.25064021	1096.8506	F	38.2	M	40	37.2													
7/8/2024	F27_WB_L1_01_20240708_180147.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:01:57	10.114	1570	40.5	1.868	67.5	39.8	0.13	24.5	Left	90	98.2	43.32512176	-88.25121661	1097.7885	F	39.8	M	40	40.4													
7/8/2024	F27_WB_L1_01_20240708_180147.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:02:00	10.156	1571	34.8	1.514	51.3	40.2	0.1	26.3	Left	90.1	98.3	43.32571111	-88.25133876	1100.071	F	40.3	M	40	34.9													
7/8/2024	F27_WB_L1_01_20240708_180147.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:02:04	10.198	1572	36.1	2.307	55	40.6	0.12	25.9	Left	90.2	99	43.32617287	-88.25081102	1099.96	F	40.5	M	40	36.4													
7/8/2024	F27_WB_L1_01_20240708_180147.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:02:08	10.246	1573	36.1	3.2	63.2	41	0.17	26.2	Left	90	97.9	43.32619794	-88.24988902	1099.5741	F	40.9	M	40	36.6													
7/8/2024	F27_WB_L1_01_20240708_180147.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:02:13	10.295	1574	30.7	0.816	47.9	40.1	0.23	25.9	Left	90	96.8	43.32572559	-88.24920842	1102.0901	F	40.1	M	40	30.8													
7/8/2024	F27_WB_L1_01_20240708_180147.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:02:17	10.345	1575	46.7	5.933	53	37.9	0.09	23.8	Left	89.8	99.3	43.32502265	-88.24922715	1115.3906	F	37.6	M	40	45.7													
7/8/2024	F27_WB_L1_01_20240708_180147.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:02:20	10.376	1576	48.6	3.89	66.2	39.3	0.31	25.7	Left	89.9	101.7	43.32467843	-88.24962103	1121.8464	F	39.1	M	40	48.3													
7/8/2024	F27_WB_L1_01_20240708_180147.D01	USH 41	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:02:24	10.417	1577	52.4	11.006	66.6	42	0.06	27.3	Left	89.9	101.6	43.32451322	-88.25037529	1124.057	F	42	M	40	53.4													
NB Lane 1															Avg	38.9	2.5											NB Lane 1		Avg	38.8	No of Tests												
															St. Dev	6.1														St. Dev	5.8	8												
																														Min	30.8													
																														Max	48.3													

Appendix C
Detailed Friction Results
Test Site F28

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
5/1/2024	F28_NB_L1_01_20240501_135009.D01	STH 59	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	13:50:44	10.008	2	54.3	1.857	107.8	40.1	0.21	21.2	Left	79.4	91.8	42.80555255	-88.77193498		877.1739	F	40.1	M		40	54.4	
5/1/2024	F28_NB_L1_01_20240501_135009.D01	STH 59	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	13:50:54	10.121	3	63.3	2.694	90.2	40.2	0.28	21.2	Left	79.4	96.3	42.80557582	-88.76971022		875.2204	F	40	M		40	63.4	
5/1/2024	F28_NB_L1_01_20240501_135009.D01	STH 59	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	13:50:58	10.161	4	57.5	4.83	87.3	40	0.1	21.8	Left	79.3	93.4	42.80559017	-88.76892236		875.7986	F	39.8	M		40	57.5	
5/1/2024	F28_NB_L1_01_20240501_135009.D01	STH 59	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	13:51:02	10.211	5	62.9	3.245	87.2	40.9	0.23	21.4	Left	79.4	101.8	42.8057108	-88.76795664		874.5335	F	40.7	M		40	63.4	
5/1/2024	F28_NB_L1_01_20240501_135009.D01	STH 59	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	13:51:07	10.261	6	59.4	3.153	78.8	41.3	0.15	21.7	Left	79.3	103.3	42.80600341	-88.76706637		871.7213	F	41.2	M		40	60.1	
5/1/2024	F28_NB_L1_01_20240501_135009.D01	STH 59	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	13:51:11	10.311	7	60.9	3.059	82.7	40.9	0.25	22.1	Left	79.4	100.8	42.80644195	-88.76629522		868.352	F	40.7	M		40	61.4	
5/1/2024	F28_NB_L1_01_20240501_135009.D01	STH 59	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	13:51:15	10.361	8	58.6	3.092	79.1	40.3	0.15	20.9	Left	79.3	95.4	42.80691709	-88.76555979		868.8794	F	40	M		40	58.8	
5/1/2024	F28_NB_L1_01_20240501_135009.D01	STH 59	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	13:51:20	10.41	9	52.5	2.308	76.5	40.6	0.21	21.6	Left	79.4	90.8	42.80742529	-88.76486896		870.6376	F	40.4	M		40	52.8	
5/1/2024	F28_NB_L1_01_20240501_135009.D01	STH 59	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	13:51:24	10.461	10	53.8	2.349	79.8	40.9	0.15	20.9	Left	79.3	91.4	42.80795259	-88.76418424		870.9909	F	40.7	M		40	54.3	
EB Lane 1															Avg	60.4	3.3	EB Lane 1										Avg	60.7	No of Tests				
															St. Dev	2.3												St. Dev	2.4	6				
																									Min	57.5								
																									Max	63.4								

Appendix C
Detailed Friction Results
Test Site F29

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNSTd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN										
5/1/2024	F29_SB_L1_01_20240501_135732.D01	STH 59	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	13:57:32	10.789	11	47.1	2.478	95.8	40.4	0.14	21.4	Left	79.2	92	42.80730922		-88.76507498		871.6135	F	40.2	M		40	47.3										
5/1/2024	F29_SB_L1_01_20240501_135732.D01	STH 59	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	13:57:36	10.739	12	60.8	3.409	86.5	40.4	0.19	21.2	Left	79.2	96.9	42.80681207		-88.76577334		870.9325	F	40.2	M		40	61.0										
5/1/2024	F29_SB_L1_01_20240501_135732.D01	STH 59	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	13:57:41	10.689	13	59.6	2.827	86.3	40.4	0.19	21.6	Left	79.1	102.8	42.80633804		-88.76651826		870.6166	F	40.2	M		40	59.8										
5/1/2024	F29_SB_L1_01_20240501_135732.D01	STH 59	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	13:57:45	10.639	14	53.2	2.629	75.1	40.1	0.19	21.3	Left	79.2	103.8	42.80592999		-88.76731795		874.2914	F	39.9	M		40	53.3										
5/1/2024	F29_SB_L1_01_20240501_135732.D01	STH 59	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	13:57:50	10.589	15	57.4	3.891	79.8	41	0.2	21.9	Left	79	96.7	42.80568478		-88.7682428		875.6818	F	40.7	M		40	57.9										
5/1/2024	F29_SB_L1_01_20240501_135732.D01	STH 59	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	13:57:54	10.539	16	58.3	2.902	82.7	41	0.14	21.8	Left	79.1	95.7	42.8056096		-88.76922083		876.5063	F	40.8	M		40	58.8										
5/1/2024	F29_SB_L1_01_20240501_135732.D01	STH 59	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	13:57:59	10.489	17	44.6	1.127	65.1	41.1	0.16	22	Left	79.2	91.6	42.80559904		-88.7701998		876.1411	F	41	M		40	45.2										
5/1/2024	F29_SB_L1_01_20240501_135732.D01	STH 59	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	13:58:03	10.439	18	48.3	1.656	75.2	40.8	0.16	21.4	Left	79.3	92.1	42.80558831		-88.77117889		876.666	F	40.7	M		40	48.7										
WB Lane 1															Avg	57.9	3.1											WB Lane 1					Avg	58.2	No of Tests									
															St. Dev	2.9																	St. Dev	3.0	5									
																																Min	53.3											
																																Max	61.0											

Appendix C																																			
Detailed Friction Results																																			
Test Site F30																																			
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN	
5/1/2024	F30a_EB_L1_01_20240501_185404.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:54:04	9.348	342	62.7	4.571	97.1	39.9	0.29	20.9	Left	73.8	79.2	43.1819542	-89.74148445		822.1713	F	39.6	M		40	62.7		
5/1/2024	F30a_EB_L1_01_20240501_185404.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:54:08	9.39	343	59.9	2.324	83.5	39.7	0.2	20.6	Left	74	80.4	43.18194136	-89.74065743		822.8991	F	39.6	M		40	59.8		
5/1/2024	F30a_EB_L1_01_20240501_185404.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:54:11	9.43	344	63.2	2.212	101.3	39.8	0.16	20.6	Left	73.8	80.1	43.1819529	-89.73987931		824.8786	F	39.6	M		40	63.1		
5/1/2024	F30a_EB_L1_01_20240501_185404.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:54:14	9.463	345	64.6	2.029	92.1	39.7	0.12	21.1	Left	73.8	81.4	43.18206959	-89.73924503		827.3782	F	39.3	M		40	64.5		
5/1/2024	F30a_EB_L1_01_20240501_185404.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:54:18	9.504	346	61.6	1.615	88.8	39.5	0.27	20.9	Left	73.8	80.4	43.18237082	-89.73855247		833.6068	F	39.2	M		40	61.4		
5/1/2024	F30a_EB_L1_01_20240501_185404.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:54:22	9.549	347	60.4	3.106	89.7	38.5	0.33	20.4	Left	73.9	80.7	43.18273485	-89.73783752		848.9645	F	38.2	M		40	59.7		
EB Lane 1															Avg	62.3	2.0	EB Lane 1															Avg	62.2	No of Tests
															St. Dev	2.0																	St. Dev	2.0	4
																														Min	59.8				
																														Max	64.5				
5/1/2024	F30b_WB_L1_01_20240501_185653.D01	STH 19	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:57:38	9.558	348	61.8	2.729	107.5	37	0.26	18.3	Left	73.8	76.6	43.18287633	-89.73764371		852.8726	F	36.9	M		40	60.3		
5/1/2024	F30b_WB_L1_01_20240501_185653.D01	STH 19	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:57:41	9.526	349	53.2	3.535	86.9	38	0.05	20	Left	73.7	78.1	43.18260751	-89.73814558		842.2883	F	37.9	M		40	52.2		
5/1/2024	F30b_WB_L1_01_20240501_185653.D01	STH 19	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:57:43	9.501	350	60.2	2.216	89.3	38.4	0.12	19.9	Left	73.7	77.9	43.18240004	-89.73855797		834.3667	F	38.3	M		40	59.4		
5/1/2024	F30b_WB_L1_01_20240501_185653.D01	STH 19	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:57:48	9.454	351	58.5	1.313	88.4	37.9	0.25	19	Left	73.5	78.1	43.18207081	-89.73936077		827.379	F	37.9	M		40	57.5		
5/1/2024	F30b_WB_L1_01_20240501_185653.D01	STH 19	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:57:51	9.422	352	62.3	0.887	88.8	37.5	0.29	18.5	Left	73.6	78.7	43.1819747	-89.73998017		825.4338	F	37.6	M		40	61.1		
5/1/2024	F30b_WB_L1_01_20240501_185653.D01	STH 19	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:57:54	9.386	353	66.4	5.074	101.2	38.6	0.24	20.9	Left	73.5	78.5	43.18197476	-89.74069402		823.9429	F	39	M		40	65.7		
5/1/2024	F30b_WB_L1_01_20240501_185653.D01	STH 19	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	18:57:59	9.338	354	66.9	5.546	101	38.7	0.38	20.1	Left	73.7	78.1	43.18199	-89.74164853		823.3524	F	38.5	M		40	66.3		
WB Lane 1															Avg	60.1	2.6	WB Lane 1															Avg	59.2	No of Tests
															St. Dev	4.9																	St. Dev	4.9	5
																														Min	52.2				
																														Max	65.7				

Appendix C
Detailed Friction Results
Test Site F31

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
5/1/2024	F31a_EB_L1_01_20240501_174147.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:41:47	9.405	214	48.9	3.251	82.9	36.4	0.07	16.9	Left	75.6	80.4	43.19396515	-89.63100931		964.5748	F	36.2	M	40	47.1	
5/1/2024	F31a_EB_L1_01_20240501_174147.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:41:51	9.442	215	54	3.358	77.4	38.1	0.17	20.4	Left	75.5	82.2	43.19441615	-89.63061919		954.8522	F	37.8	M	40	53.1	
5/1/2024	F31a_EB_L1_01_20240501_174147.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:41:54	9.479	216	55	3.13	76.3	34.4	0.57	17.5	Left	75.3	81.1	43.19483701	-89.63018473		950.3021	F	34.2	M	40	52.2	
5/1/2024	F31a_EB_L1_01_20240501_174147.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:41:58	9.516	217	45.5	3.639	60.6	34.8	0.18	17.4	Left	75.5	83.4	43.19502439	-89.62950693		942.1996	F	35	M	40	42.9	
5/1/2024	F31a_EB_L1_01_20240501_174147.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:42:02	9.557	218	55.5	4.568	77.8	35.9	0.18	18.3	Left	75.4	82.9	43.19500532	-89.62870766		937.0787	F	35.7	M	40	53.5	
5/1/2024	F31a_EB_L1_01_20240501_174147.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:42:06	9.593	219	53.2	3.124	73.8	36.7	0.19	19.4	Left	75.5	82.7	43.19498117	-89.62798402		933.9416	F	36.6	M	40	51.6	
EB Lane 1														Avg	52.5	3.7	EB Lane 1														Avg	50.4	No of Tests 4
														St. Dev	4.7																St. Dev	5.0	
																															Min	42.9	
																															Max	53.5	
5/1/2024	F31b_WB_L1_01_20240501_173755.D01	STH 19	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:38:46	9.584	206	51.2	5.756	79.4	37.6	0.32	18.3	Left	75.3	79	43.19501243	-89.62821745		936.0948	F	37.4	M	40	50.0	
5/1/2024	F31b_WB_L1_01_20240501_173755.D01	STH 19	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:38:50	9.546	207	60	7.064	76	37.1	0.19	19.3	Left	75.3	82.5	43.19503992	-89.6289626		940.1017	F	36.7	M	40	58.6	
5/1/2024	F31b_WB_L1_01_20240501_173755.D01	STH 19	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:38:54	9.507	208	37.8	5.262	52.8	34.3	0.37	17.3	Left	75.2	79.5	43.19502972	-89.62974336		944.15	F	33.8	M	40	35.0	
5/1/2024	F31b_WB_L1_01_20240501_173755.D01	STH 19	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:38:58	9.472	209	58.4	3.803	61.1	36.1	0.06	18.5	Left	75.4	79	43.19478294	-89.63032123		948.2003	F	35.9	M	40	56.5	
5/1/2024	F31b_WB_L1_01_20240501_173755.D01	STH 19	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:39:02	9.43	210	47.7	3.294	71.3	39.4	0.09	20.7	Left	75.2	77.1	43.19428852	-89.63077638		952.2043	F	39.1	M	40	47.4	
5/1/2024	F31b_WB_L1_01_20240501_173755.D01	STH 19	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:39:05	9.392	211	41.9	5.809	77.1	38.3	0.42	20.1	Left	75.4	81.3	43.19382137	-89.6311832		963.5495	F	38.2	M	40	41.1	
WB Lane 1														Avg	52.1	5.4	WB Lane 1														Avg	50.0	No of Tests 3
														St. Dev	12.4																St. Dev	13.1	
																															Min	35.0	
																															Max	58.6	

Appendix C																																			
Detailed Friction Results																																			
Test Site F32																																			
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN	
5/1/2024	F32a_EB_L1_01_20240501_173124.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:31:44	10.159	195	57.4	5.276	103.2	40.1	0.29	21.1	Left	75.6	81.1	43.19630062	-89.61707058	931.3616	F	39.8	M		40	57.5			
5/1/2024	F32a_EB_L1_01_20240501_173124.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:31:48	10.208	196	63.1	3.074	89.9	39.6	0.25	20.8	Left	75.6	80.8	43.19645415	-89.61613085	939.5014	F	39.3	M		40	62.9			
5/1/2024	F32a_EB_L1_01_20240501_173124.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:31:53	10.258	197	53.2	5.374	78.7	39.9	0.17	21	Left	75.5	80.8	43.19655595	-89.61517566	959.0609	F	40.1	M		40	53.2			
5/1/2024	F32a_EB_L1_01_20240501_173124.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:31:57	10.308	198	50	6.075	82.5	39.3	0.3	21.5	Left	75.5	79.3	43.19641215	-89.61420138	954.1959	F	39.1	M		40	49.7			
5/1/2024	F32a_EB_L1_01_20240501_173124.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:32:02	10.359	199	56.4	1.676	77.3	41.9	1.25	21.2	Left	75.5	86.4	43.19614819	-89.61325881	938.985	F	41.9	M		40	57.4			
5/1/2024	F32a_EB_L1_01_20240501_173124.D01	STH 19	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:32:06	10.407	200	62.5	4.319	83.5	35.5	0.33	18.2	Left	75.4	78.7	43.19586059	-89.61239126	940.7176	F	35.5	M		40	60.3			
EB Lane 1															Avg	57.0	4.1											EB Lane 1					Avg	56.7	No of Tests
															St. Dev	5.7																	St. Dev	5.3	5
																																Min	49.7		
																																Max	62.9		
5/1/2024	F32b_WB_L1_01_20240501_173539.D01	STH 19	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:35:39	10.334	201	71.5	2.134	95.9	27.1	0.92	12.2	Left	75.2	83	43.19630923	-89.61369376	944.4866	F	27.2	M		40	65.1			
5/1/2024	F32b_WB_L1_01_20240501_173539.D01	STH 19	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:35:59	10.242	202	66.2	1.503	86.2	31.5	0.41	14.9	Left	75.4	85.3	43.19657148	-89.61544932	955.3697	F	31.6	M		40	62.0			
5/1/2024	F32b_WB_L1_01_20240501_173539.D01	STH 19	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:36:03	10.209	203	59.6	1.521	77.6	38.6	0.15	20.6	Left	75.3	85.6	43.19648625	-89.61608364	940.6071	F	38.4	M		40	58.9			
5/1/2024	F32b_WB_L1_01_20240501_173539.D01	STH 19	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:36:06	10.177	204	61.3	3.234	88.6	38.9	0.24	20	Left	75.4	85.3	43.19638537	-89.61670736	933.6837	F	38.7	M		40	60.8			
5/1/2024	F32b_WB_L1_01_20240501_173539.D01	STH 19	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:36:09	10.141	205	63.3	3.322	89.9	38.2	0.25	20.1	Left	75.2	85.8	43.1962714	-89.61739494	931.0842	F	38	M		40	62.4			
WB Lane 1															Avg	65.8	1.7											WB Lane 1					Avg	62.0	No of Tests
															St. Dev	6.0																	St. Dev	3.1	3
																																Min	58.9		
																																Max	65.1		

Appendix C																																	
Detailed Friction Results																																	
Test Site F33																																	
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:13:32	313.764	2621	52.6	7.018	87.1	41.6	0.15	26.8	Left	85.7	94	42.96596255	-87.92926669	685.4465	F	41.5	M	40	53.4		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:13:36	313.713	2622	75.9	3.557	104.9	41.4	0.29	27.4	Left	85.7	93.6	42.96586871	-87.93026224	677.016	F	41.2	M	40	76.6		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:13:40	313.663	2623	75.5	2.684	110.9	40.2	0.33	26	Left	85.6	94	42.96567593	-87.93121102	672.2041	F	39.9	M	40	75.6		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:13:45	313.614	2624	75.2	2.644	104.4	39.9	0.24	25.6	Left	85.6	93.9	42.96536325	-87.93207693	672.3543	F	39.5	M	40	75.2		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:13:49	313.564	2625	75.3	2.241	106.5	39.9	0.24	26	Left	85.7	93.6	42.9649241	-87.93285566	677.3934	F	39.6	M	40	75.3		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:13:54	313.514	2626	78.9	1.638	107.5	39.7	0.21	26	Left	85.6	93.9	42.96439	-87.9335001	685.603	F	39.2	M	40	78.8		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:13:59	313.464	2627	80	2.256	102.2	39.3	0.19	25	Left	85.6	93.2	42.96377354	-87.93399196	694.0442	F	39.1	M	40	79.7		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:14:03	313.414	2628	72.6	2.077	106.7	39.8	0.12	25.7	Left	85.6	93.8	42.96309055	-87.9343187	700.8142	F	39.6	M	40	72.5		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:14:08	313.364	2629	74.5	1.967	108	41.1	0.12	26.9	Left	85.6	93.4	42.96237959	-87.93446089	704.889	F	40.8	M	40	75.1		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:14:12	313.313	2630	73.8	2.252	108	41.7	0.23	27.6	Left	85.5	93.3	42.96165135	-87.93442387	706.1936	F	41.3	M	40	74.7		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:14:16	313.263	2631	78.6	1.616	107	41.5	0.27	27.2	Left	85.6	93.4	42.960925	-87.93433859	704.5589	F	41.3	M	40	79.4		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:14:21	313.213	2632	76.4	2.25	100.5	41.5	0.2	26.9	Left	85.6	92.6	42.96020519	-87.93429199	700.2394	F	41.3	M	40	77.2		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:14:25	313.163	2633	65.4	4.785	101.5	41.4	0.24	27.2	Left	85.9	84.6	42.95948138	-87.93432156	694.0529	F	41.3	M	40	66.1		
7/10/2024	F17-F33b_SB_L1_01_20240710_151143.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:14:29	313.115	2634	32.3	0.937	53.5	40.6	0.14	26.6	Left	85.6	92.8	42.95877909	-87.93439649	693.7502	F	41.2	M	40	32.6		
SB Lane 1														Avg	75.2	2.5	SB Lane 1										Avg	75.5	No of Tests				
														St. Dev	3.8												St. Dev	3.6	12				
																											Min	66.1					
																											Max	79.7					
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:37:29	313.749	2677	54.3	19.353	60.3	42	0.11	28.4	Left	83.5	87	42.96596539	-87.9296056	680.9937	F	42.1	M	40	55.3		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:37:33	313.699	2678	70.5	2.273	100.8	41.1	0.32	26.8	Left	83.4	87.8	42.96585242	-87.93059035	673.3969	F	40.8	M	40	71.1		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:37:38	313.648	2679	69.7	2.098	105.9	40.4	0.23	25.9	Left	83.3	88.5	42.96561477	-87.93152215	670.2356	F	40	M	40	69.9		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:37:42	313.599	2680	71.3	2.131	102.2	40.3	0.26	27.2	Left	83.4	89.3	42.96525677	-87.93236935	671.9574	F	40	M	40	71.5		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:37:47	313.549	2681	74.7	2.679	101.1	40.1	0.2	26.5	Left	83.3	88.7	42.96478555	-87.93310601	678.2944	F	39.9	M	40	74.8		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:37:51	313.499	2682	73.8	2.688	104.2	40	0.21	26	Left	83.5	89	42.96422591	-87.93370768	686.8398	F	39.7	M	40	73.8		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:37:56	313.449	2683	72.1	2.268	104.6	40.2	0.14	26.4	Left	83.4	88.5	42.96357784	-87.93415577	695.2095	F	39.8	M	40	72.2		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:38:00	313.399	2684	71.7	3.189	105.7	41	0.11	26.1	Left	83.3	88.7	42.96288956	-87.93442765	701.3411	F	40.7	M	40	72.2		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:38:05	313.348	2685	72.4	1.697	99.2	41.9	0.19	27.5	Left	83.4	88.6	42.962167	-87.93451575	704.8816	F	41.7	M	40	73.4		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:38:09	313.298	2686	72.3	2.251	105.8	41.9	0.25	27.9	Left	83.5	89	42.96143927	-87.93444981	704.6371	F	41.7	M	40	73.3		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:38:13	313.248	2687	71.7	2.157	108.6	41.8	0.21	27.4	Left	83.4	88.6	42.96072212	-87.93437071	701.6255	F	41.6	M	40	72.6		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:38:18	313.198	2688	73	2.086	95.8	41.7	0.19	27	Left	83.3	88.2	42.960001	-87.93434193	696.7004	F	41.6	M	40	73.9		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:38:22	313.149	2689	45.1	19.322	96.6	41.4	0.22	26.9	Left	83.4	84	42.95928038	-87.93438735	690.0403	F	43.7	M	40	45.8		
7/10/2024	F17-F33a_SB_L2_01_20240710_153540.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:38:26	313.1	2690	33.7	0.628	51.5	40.7	0.18	26.5	Left	83.3	88.2	42.95857816	-87.93447333	694.3849	F	40.7	M	40	34.1		
SB Lane 2														Avg	72.1	2.3	SB Lane 2										Avg	72.6	No of Tests				
														St. Dev	1.4												St. Dev	1.4	11				
																											Min	69.9					
																											Max	74.8					

Appendix C
Detailed Friction Results
Test Site F34

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN											
7/10/2024	F34_WB_L1_01_20240710_165428.D01	STH 16	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:55:49	178.082	2710	56.9	3.288	101.7	40.1	0.2	24.9	Left	88.2	97.2	43.10768128	-88.43163796	910.6007	F	39.8	M	40	57.0													
7/10/2024	F34_WB_L1_01_20240710_165428.D01	STH 16	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:55:53	178.041	2711	55.8	4.538	90.4	40.1	0.12	25.8	Left	88.3	98.8	43.10786471	-88.43239037	911.0272	F	40	M	40	55.9													
7/10/2024	F34_WB_L1_01_20240710_165428.D01	STH 16	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:55:56	177.999	2712	59.9	2.182	91.5	40.6	0.12	25.9	Left	88.2	98.5	43.10801966	-88.4332078	910.7547	F	40.4	M	40	60.2													
7/10/2024	F34_WB_L1_01_20240710_165428.D01	STH 16	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:56:00	177.956	2713	59.2	2.677	81.9	40.8	0.18	26.6	Left	88.2	99	43.1081347	-88.43403885	909.6353	F	40.6	M	40	59.6													
7/10/2024	F34_WB_L1_01_20240710_165428.D01	STH 16	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:56:07	177.882	2714	53.9	2.543	77	40.9	0.27	26.4	Left	88.3	95.5	43.10826392	-88.43548253	906.4667	F	40.6	M	40	54.4													
7/10/2024	F34_WB_L1_01_20240710_165428.D01	STH 16	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:56:11	177.833	2715	53.9	1.834	85.7	40.3	0.19	26.5	Left	88.2	93.5	43.10834331	-88.43644385	905.4062	F	40.2	M	40	54.1													
WB Lane 1															Avg	58.3	3.1											WB Lane 1		Avg	58.6	No of Tests												
															St. Dev	2.2														St. Dev	2.4	3												
																														Min	55.9													
																														Max	60.2													
7/10/2024	F34_WB_L2_01_20240710_170509.D01	STH 16	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:06:33	178.052	2716	56.1	4.018	89.9	40.2	0.25	24.7	Left	87.8	95.6	43.10785739	-88.43218779	910.7175	F	40.1	M	40	56.2													
7/10/2024	F34_WB_L2_01_20240710_170509.D01	STH 16	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:06:37	178.002	2717	57.2	1.812	91.8	40.4	0.16	25.8	Left	87.9	95.4	43.10804521	-88.4331403	910.4259	F	40.1	M	40	57.4													
7/10/2024	F34_WB_L2_01_20240710_170509.D01	STH 16	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:06:40	177.965	2718	56.9	1.68	90.9	40.4	0.11	26.2	Left	88.1	95.7	43.10814669	-88.43385007	909.6537	F	40.3	M	40	57.1													
7/10/2024	F34_WB_L2_01_20240710_170509.D01	STH 16	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:06:43	177.932	2719	54.1	4.615	88.1	40.6	0.09	26.6	Left	88	96.1	43.10821422	-88.43448691	908.1423	F	40.4	M	40	54.4													
7/10/2024	F34_WB_L2_01_20240710_170509.D01	STH 16	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:06:46	177.902	2720	41.6	1.386	70.8	40.8	0.11	26	Left	88	96	43.10826701	-88.43507526	906.1447	F	40.6	M	40	42.0													
7/10/2024	F34_WB_L2_01_20240710_170509.D01	STH 16	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:06:50	177.852	2721	48	1.932	70.9	40.7	0.15	26.2	Left	87.9	93	43.10834705	-88.43605097	904.914	F	40.7	M	40	48.4													
WB Lane 2															Avg	56.1	3.0											WB Lane 2		Avg	56.3	No of Tests												
															St. Dev	1.4														St. Dev	1.4	4												
																														Min	54.4													
																														Max	57.4													

Appendix C																																			
Detailed Friction Results																																			
Test Site F35																																			
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN	
5/2/2024	F35_RAB_L1_01_20240502_170406.D01	STH 178	RAB(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:04:51	10.561	853	52.3	1.258	68.3	19.3	0.7	6.1	Left	52.8	39.6	44.9661174	-91.36317837	930.6686	F	18.3	M		40	42.0			
5/2/2024	F35_RAB_L1_01_20240502_170406.D01	STH 178	RAB(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:04:55	10.577	854	59.2	2.72	67	16.5	0.14	5.1	Left	52.9	39.6	44.96632255	-91.36321265	931.292	F	15.8	M		40	47.5			
5/2/2024	F35_RAB_L1_01_20240502_170406.D01	STH 178	RAB(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:04:58	10.592	855	56.5	1.138	64.4	16.9	0.24	5.2	Left	53	39.6	44.96631944	-91.3634969	931.5217	F	16.3	M		40	45.0			
5/2/2024	F35_RAB_L1_01_20240502_170406.D01	STH 178	RAB(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:05:01	10.608	856	60.3	2.662	62	16.3	0.15	5.1	Left	52.9	39.1	44.96611872	-91.36354281	930.7014	F	15.7	M		40	48.5			
5/2/2024	F35_RAB_L1_01_20240502_170406.D01	STH 178	RAB(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:05:05	10.624	857	57.9	1.95	66.6	16.9	0.36	5.5	Left	52.8	39	44.96605894	-91.36327187	930.3734	F	16.1	M		40	46.4			
5/2/2024	F35_RAB_L1_01_20240502_170406.D01	STH 178	RAB(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:05:08	10.639	858	55.8	1.204	61.3	16	0.36	4.8	Left	52.9	39.2	44.96623422	-91.36314226	931.0703	F	15.1	M		40	43.8			
5/2/2024	F35_RAB_L1_01_20240502_170406.D01	STH 178	RAB(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:05:11	10.655	859	54.1	1.184	63.4	17.6	0.3	5.6	Left	52.9	39.3	44.96635197	-91.36338252	931.6201	F	16.9	M		40	42.9			
5/2/2024	F35_RAB_L1_01_20240502_170406.D01	STH 178	RAB(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:05:15	10.672	860	55.1	1.371	66.7	17.3	0.36	5.7	Left	52.7	39.2	44.96617545	-91.36357249	930.7999	F	16.4	M		40	43.8			
RAB Lane 1															Avg	56.4	1.7														RAB Lane 1	Avg	45.0	No of Tests	
															St. Dev	2.7																	St. Dev	2.3	8
																																Min	42.0		
																																Max	48.5		

Appendix C																																			
Detailed Friction Results																																			
Test Site F36																																			
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN	
5/2/2024	F36_RAB_L1_01_20240502_170708.D01	STH 124	RAB(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:07:08	10.004	864	57.3	7.337	89.3	20.9	0.43	7.2	Left	52.8	40.5	44.96741461	-91.38828264		930.4062	F	20.3	M		40	47.8		
5/2/2024	F36_RAB_L1_01_20240502_170708.D01	STH 124	RAB(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:07:13	10.032	865	59.3	3.587	77.4	17	0.44	5.3	Left	52.9	40.7	44.96739974	-91.3887292		930.262	F	15.9	M		40	47.8		
5/2/2024	F36_RAB_L1_01_20240502_170708.D01	STH 124	RAB(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:07:19	10.061	866	55.6	2.469	68.2	17.6	0.16	5.7	Left	52.7	40.2	44.9671553	-91.38842599		930.9849	F	17.2	M		40	44.4		
5/2/2024	F36_RAB_L1_01_20240502_170708.D01	STH 124	RAB(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:07:25	10.088	867	61.8	2.41	72.8	18.4	0.38	6.2	Left	52.9	39.8	44.96746779	-91.38833755		929.8493	F	17.4	M		40	51.0		
5/2/2024	F36_RAB_L1_01_20240502_170708.D01	STH 124	RAB(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:07:30	10.115	868	58.5	5.559	74.6	16.5	0.34	5.3	Left	52.8	39.3	44.96735275	-91.38874561		930.4261	F	15.6	M		40	46.8		
5/2/2024	F36_RAB_L1_01_20240502_170708.D01	STH 124	RAB(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:07:40	10.158	869	54.4	2.092	71.4	17.8	0.07	5.8	Left	52.8	40.3	44.96735105	-91.38825102		929.9459	F	17.4	M		40	43.3		
5/2/2024	F36_RAB_L1_01_20240502_170708.D01	STH 124	RAB(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:07:42	10.169	870	61.2	3.312	85.2	17	0.27	5.9	Left	52.8	39.7	44.96747641	-91.38837066		929.6844	F	16.4	M		40	49.7		
5/2/2024	F36_RAB_L1_01_20240502_170708.D01	STH 124	RAB(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	17:07:47	10.191	871	56.4	4.367	84	16.8	0.4	5.3	Left	52.8	39.5	44.96737099	-91.38873898		930.2093	F	16.1	M		40	44.8		
RAB Lane 1															Avg	58.1	3.9											RAB Lane 1					Avg	46.9	No of Tests
															St. Dev	2.6																	St. Dev	2.7	8
																																Min	43.3		
																																Max	51.0		

Appendix C
Detailed Friction Results
Test Site F37

Collected	File	Name	Route	Direction	Hdr	Lane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:45:13	7.999	397	53.1	3.787	94.1	38.8	0.21	20.2	Left	70.9	73	43.18351662	-90.38946251		700.124	F	38.6	M		40	52.5	
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:45:18	8.048	398	55.7	0.484	93.7	39.3	0.2	20.9	Left	70.9	73.2	43.18350526	-90.38847982		699.7808	F	39.2	M		40	55.4	
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:45:22	8.098	399	58.9	0.909	90.6	39.3	0.21	21.3	Left	70.9	73	43.18349544	-90.38749511		699.9272	F	39.3	M		40	58.6	
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:45:27	8.149	400	59.1	0.722	93.5	39.4	0.24	21.2	Left	70.9	73.6	43.18348528	-90.38649956		700.5321	F	39.2	M		40	58.8	
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:45:31	8.199	401	57.9	0.825	91.7	39.6	0.21	20.8	Left	70.8	72.9	43.1834722	-90.38551339		701.0098	F	39.5	M		40	57.7	
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:45:36	8.249	402	59	0.728	92.4	39.6	0.18	20.7	Left	70.8	72.9	43.18346176	-90.38452152		701.5348	F	39.5	M		40	58.8	
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:45:40	8.299	403	57.1	0.705	90.5	39.6	0.19	21.3	Left	70.8	73.1	43.18345091	-90.38353814		701.9941	F	39.5	M		40	56.9	
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:45:45	8.349	404	62.8	0.617	91.8	39.5	0.22	20.5	Left	70.9	73.4	43.18344305	-90.3825501		702.4891	F	39.3	M		40	62.6	
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:45:50	8.399	405	58.1	1.177	88.7	39.7	0.2	21.2	Left	70.8	73.4	43.18343202	-90.38156257		702.724	F	39.6	M		40	58.0	
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:45:54	8.449	406	59.3	0.797	94.7	39.6	0.21	20.7	Left	70.8	72.7	43.18342208	-90.38057541		702.3489	F	39.5	M		40	59.1	
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:45:59	8.499	407	62.2	1.104	83.7	39.6	0.25	20.3	Left	70.8	72.2	43.18341322	-90.3795928		701.8629	F	39.4	M		40	62.0	
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:46:03	8.549	408	59.5	1.803	96.6	39.5	0.24	21.5	Left	70.7	71.8	43.18340259	-90.37859259		701.4035	F	39.3	M		40	59.3	
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:46:08	8.599	409	59.1	0.523	86	39.3	0.25	20.6	Left	70.7	72.1	43.18339225	-90.37761456		702.1602	F	39.2	M		40	58.8	
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:46:12	8.649	410	61.4	1.508	94.4	39.3	0.21	21.2	Left	70.6	72.3	43.18338209	-90.37663325		704.581	F	39.1	M		40	61.1	
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:46:17	8.699	411	56.7	1.465	84.5	39.7	0.16	20.7	Left	70.8	73.1	43.18337117	-90.37564086		705.8327	F	39.6	M		40	56.6	
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:46:22	8.749	412	55.8	1.091	85.8	39.8	0.19	21.7	Left	70.7	73.9	43.18335953	-90.37465452		705.5374	F	39.7	M		40	55.7	
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:46:26	8.798	413	57.5	0.708	90.9	39.7	0.19	21	Left	70.7	74.3	43.1833496	-90.37367435		704.8484	F	39.6	M		40	57.4	
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:46:31	8.849	414	61.4	1.027	90.2	39.5	0.23	21	Left	70.6	73.6	43.18334141	-90.37268114		704.2907	F	39.4	M		40	61.2	
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:46:35	8.899	415	57	0.666	91	39.6	0.16	20.9	Left	70.7	72.9	43.18332661	-90.37169234		703.7329	F	39.4	M		40	56.8	
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:46:40	8.949	416	57.1	0.751	91.4	39.5	0.2	21	Left	70.7	74.4	43.18331601	-90.3706979		703.2736	F	39.5	M		40	56.9	
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:46:44	8.999	417	56.3	1.322	86.3	39.6	0.21	20.9	Left	70.6	74	43.1833047	-90.36971682		702.8848	F	39.4	M		40	56.1	
5/1/2024	F37_EB_L1_01_20240501_194513.D01		STH 133	East(+)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:46:49	9.049	418	53.9	0.944	84.8	39.5	0.17	20.9	Left	70.7	73.3	43.18329275	-90.36872801		702.8471	F	39.3	M		40	53.7	
EB Lane 1															Avg	58.6	0.9	EB Lane 1										Avg	58.4	No of Tests						
															St. Dev	2.1												St. Dev	2.1	20						
																												Min	55.4							
																												Max	62.6							
5/1/2024	F37_WB_L1_01_20240501_194038.D01		STH 133	West(-)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:41:48	9.03	375	55.8	2.098	98.2	39.8	0.27	20.5	Left	71.2	72.9	43.18332068	-90.36906968		702.355	F	39.6	M		40	55.7	
5/1/2024	F37_WB_L1_01_20240501_194038.D01		STH 133	West(-)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:41:52	8.98	376	57.6	0.833	87.6	40.2	0.2	21.4	Left	70.9	72.1	43.18333406	-90.37005602		702.6503	F	40	M		40	57.7	
5/1/2024	F37_WB_L1_01_20240501_194038.D01		STH 133	West(-)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:41:57	8.931	377	55.9	1.236	86.9	40.4	0.2	21.6	Left	71.2	73	43.18334359	-90.37102725		703.044	F	40.2	M		40	56.1	
5/1/2024	F37_WB_L1_01_20240501_194038.D01		STH 133	West(-)	1		SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:42:01	8.88	378	56.3	1.53	84.1	40.5	0.16	21.5	Left													

Appendix C																																		
Detailed Friction Results																																		
Test Site F38																																		
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
5/1/2024	F38_EB_L1_01_20240501_195113.D01	STH 133	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:51:13	9.102	419	58.8	1.949	95.8	38.9	0.31	20.3	Left	70.5	69.5	43.18237152	-90.29169808	701.1365	F	38.7	M		40	58.3		
5/1/2024	F38_EB_L1_01_20240501_195113.D01	STH 133	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:51:18	9.151	420	56.9	1.347	91.2	38.9	0.17	20.5	Left	70.4	66.4	43.18236405	-90.29072193	705.5519	F	38.8	M		40	56.4		
5/1/2024	F38_EB_L1_01_20240501_195113.D01	STH 133	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:51:22	9.201	421	54.9	1.405	84	39.6	0.14	21.3	Left	70.4	67.5	43.18235361	-90.2897363	709.845	F	39.4	M		40	54.7		
5/1/2024	F38_EB_L1_01_20240501_195113.D01	STH 133	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:51:27	9.252	422	60.9	1.651	88.3	40.2	0.21	20.7	Left	70.4	67.5	43.18234208	-90.28873976	710.5899	F	40.1	M		40	61.0		
5/1/2024	F38_EB_L1_01_20240501_195113.D01	STH 133	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:51:31	9.301	423	56.4	1.586	86.5	40.4	0.23	21.6	Left	70.3	69.2	43.18233211	-90.28775358	707.5363	F	40.3	M		40	56.6		
5/1/2024	F38_EB_L1_01_20240501_195113.D01	STH 133	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:51:36	9.351	424	55.9	1.539	87.4	40.2	0.29	21.4	Left	70.4	69.9	43.18231871	-90.2867752	701.4343	F	40.2	M		40	56.0		
5/1/2024	F38_EB_L1_01_20240501_195113.D01	STH 133	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:51:40	9.401	425	60.2	1.103	93.5	39.1	0.19	20.9	Left	70.3	71.3	43.18230566	-90.28578585	699.602	F	39.1	M		40	59.8		
5/1/2024	F38_EB_L1_01_20240501_195113.D01	STH 133	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:51:45	9.451	426	62.4	0.782	90.2	39.2	0.2	21.1	Left	70.3	71.1	43.18229398	-90.28480073	698.8773	F	39.2	M		40	62.0		
5/1/2024	F38_EB_L1_01_20240501_195113.D01	STH 133	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:51:50	9.501	427	59.9	1.369	91.5	39.5	0.21	21	Left	70.4	69.8	43.18228021	-90.28381362	698.3196	F	39.3	M		40	59.7		
5/1/2024	F38_EB_L1_01_20240501_195113.D01	STH 133	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:51:54	9.551	428	62	0.902	89.3	39.6	0.27	20.7	Left	70.3	69.4	43.18226598	-90.28281912	697.0728	F	39.5	M		40	61.8		
5/1/2024	F38_EB_L1_01_20240501_195113.D01	STH 133	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:51:59	9.601	429	61.4	1.117	90.6	39.4	0.23	21.2	Left	70.3	71.4	43.18225404	-90.28183236	696.9244	F	39.2	M		40	61.1		
5/1/2024	F38_EB_L1_01_20240501_195113.D01	STH 133	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:52:03	9.651	430	63.2	1.068	91.1	39.4	0.19	20.5	Left	70.3	72	43.18224288	-90.28084937	697.535	F	39.3	M		40	62.9		
5/1/2024	F38_EB_L1_01_20240501_195113.D01	STH 133	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:52:08	9.701	431	63.5	1.309	93	39.6	0.22	20.8	Left	70.3	72.1	43.18222794	-90.27986614	697.9696	F	39.5	M		40	63.3		
5/1/2024	F38_EB_L1_01_20240501_195113.D01	STH 133	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:52:12	9.751	432	61.3	1.891	91.5	39.7	0.21	21	Left	70.2	71	43.18221408	-90.27887557	697.5978	F	39.6	M		40	61.2		
5/1/2024	F38_EB_L1_01_20240501_195113.D01	STH 133	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:52:17	9.801	433	61.9	0.834	93.2	39.3	0.23	20.5	Left	70.3	69.3	43.18220145	-90.27788734	698.4565	F	39.2	M		40	61.6		
5/1/2024	F38_EB_L1_01_20240501_195113.D01	STH 133	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:52:22	9.851	434	63.6	0.974	89.3	39.2	0.23	20.9	Left	70.2	69.3	43.18219243	-90.27690295	701.3437	F	39.1	M		40	63.2		
5/1/2024	F38_EB_L1_01_20240501_195113.D01	STH 133	East(+)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:52:26	9.901	435	62.9	0.772	92.3	40.2	0.23	21.6	Left	70.1	69.1	43.1821822	-90.27591176	701.4744	F	40	M		40	63.0		
EB Lane 1														Avg	60.1	1.3	EB Lane 1														Avg	59.8	No of Tests	
														St. Dev	2.9																St. Dev	2.8	14	
																															Min	54.7		
																															Max	63.3		
5/1/2024	F38_WB_L1_01_20240501_193555.D01	STH 133	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:36:05	9.877	358	57.9	1.392	89.1	40.2	0.11	21.4	Left	71.9	72.3	43.18221325	-90.27631118	700.8994	F	40.2	M		40	58.0		
5/1/2024	F38_WB_L1_01_20240501_193555.D01	STH 133	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:36:10	9.827	359	59.7	1.27	88.7	41.2	0.21	21.8	Left	72	73.3	43.1822223	-90.27729325	698.8402	F	41.1	M		40	60.3		
5/1/2024	F38_WB_L1_01_20240501_193555.D01	STH 133	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:36:14	9.777	360	58.8	0.717	87.7	40.8	0.24	21.8	Left	71.9	74	43.1822299	-90.27828672	696.2602	F	40.7	M		40	59.2		
5/1/2024	F38_WB_L1_01_20240501_193555.D01	STH 133	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:36:19	9.728	361	61.8	1.124	89.2	40.2	0.19	21.2	Left	71.9	73.9	43.1822427	-90.2792651	696.187	F	40	M		40	61.9		
5/1/2024	F38_WB_L1_01_20240501_193555.D01	STH 133	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:36:23	9.677	362	62.7	1.45	95.3	40.4	0.19	20.9	Left	71.9	74	43.18225665	-90.28025493	696.4495	F	40.4	M		40	62.9		
5/1/2024	F38_WB_L1_01_20240501_193555.D01	STH 133	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:36:27	9.627	363	59.9	0.957	87.3	40.7	0.19	21.7	Left	71.9	74	43.18227025	-90.28124512	695.7277	F	40.5	M		40	60.3		
5/1/2024	F38_WB_L1_01_20240501_193555.D01	STH 133	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:36:32	9.577	364	60.9	0.567	88.2	40.6	0.21	22.2	Left	71.8	73.5	43.18228193	-90.28223265	695.334	F	40.2	M		40	61.2		
5/1/2024	F38_WB_L1_01_20240501_193555.D01	STH 133	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:36:36	9.528	365	63.1	0.758	88.8	40	0.36	20.3	Left	72	73.3	43.18229589	-90.28320963	696.0643	F	39.8	M		40	63.1		
5/1/2024	F38_WB_L1_01_20240501_193555.D01	STH 133	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:36:41	9.477	366	59.3	0.754	90	40.1	0.12	21.6	Left	71.8	73.4	43.18230659	-90.28420304	696.876	F	39.9	M		40	59.4		
5/1/2024	F38_WB_L1_01_20240501_193555.D01	STH 133	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:36:45	9.427	367	60.2	0.701	89.5	40.5	0.19	21.2	Left	71.9	74	43.18232178	-90.28519416	697.3353	F	40.3	M		40	60.5		
5/1/2024	F38_WB_L1_01_20240501_193555.D01	STH 133	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:36:50	9.378	368	58.9	1.356	89.5	40.1	0.32	21.6	Left	71.8	73.7	43.18233297	-90.28617101	698.2851	F	40	M		40	59.0		
5/1/2024	F38_WB_L1_01_20240501_193555.D01	STH 133	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:36:54	9.328	369	58.7	1.224	86.4	39.4	0.25	21.3	Left	71.8	74.7	43.18234524	-90.28715355	701.876	F	39.2	M		40	58.4		
5/1/2024	F38_WB_L1_01_20240501_193555.D01	STH 133	West(-)	1	SN 628/S/R	ARA_RIB_116	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:36:59	9.278	370	57.6	2.172	88.7	40.1	0.08	21.7	Left	71.9	75.3	43.18236058	-90.28814471	707.5499	F	39.9	M		40	57.7		
5/1/2024	F38_WB_L1_01_20240501_1935																																	

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Detailed Friction Results																																	
Test Site F39																																	
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/8/2024	F39_EB_L1_01_20240708_140841.D01	STH 20	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:08:41	9.877	1458	44.4	0.749	78.7	40.2	0.2	25.4	Left	89	110	42.74340512	-88.20071204	783.9755	F	39.9	M	40	44.5		
7/8/2024	F39_EB_L1_01_20240708_140841.D01	STH 20	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:08:44	9.914	1459	84.7	3.408	122.4	39.7	0.19	25.7	Left	89.1	109.6	42.742958	-88.20033639	786.8443	F	39.4	M	40	84.6		
7/8/2024	F39_EB_L1_01_20240708_140841.D01	STH 20	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:08:50	9.978	1460	85.5	2.476	111.4	40.8	0.25	26.3	Left	89.1	109	42.74240122	-88.19935561	790.7962	F	40.5	M	40	85.9		
7/8/2024	F39_EB_L1_01_20240708_140841.D01	STH 20	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:08:54	10.027	1461	83.1	3.496	111.9	41	0.28	26.5	Left	89	109.5	42.7422455	-88.19840982	792.3441	F	40.8	M	40	83.6		
7/8/2024	F39_EB_L1_01_20240708_140841.D01	STH 20	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:08:59	10.077	1462	81.3	1.937	103.8	41.2	0.2	27	Left	89	108.7	42.74236333	-88.19745506	792.3285	F	41	M	40	81.9		
7/8/2024	F39_EB_L1_01_20240708_140841.D01	STH 20	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:09:03	10.126	1463	42.8	0.417	67.4	41.6	0.14	26.8	Left	88.9	107.8	42.74261059	-88.19654722	790.3249	F	41.5	M	40	43.6		
7/8/2024	F39_EB_L1_01_20240708_140841.D01	STH 20	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:09:08	10.177	1464	43.7	0.411	67.1	41	0.27	27	Left	89.1	107.8	42.74286529	-88.19562578	789.2582	F	40.8	M	40	44.2		
EB Lane 1															Avg	83.7	2.8											EB Lane 1		Avg	84.0	No of Tests	
															St. Dev	1.9														St. Dev	1.7	4	
																													Min	81.9			
																													Max	85.9			

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Detailed Friction Results																																	
Test Site F40																																	
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/8/2024	F40_WB_L1_01_20240708_141146.D01	STH 20	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:11:51	10.024	1466	47.6	0.847	72.5	40	0.09	25.9	Left	89.3	111.1	42.74258859	-88.19682445	789.3052	F	39.9	M	40	47.6		
7/8/2024	F40_WB_L1_01_20240708_141146.D01	STH 20	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:11:55	9.972	1467	82.1	2.612	112.8	40.3	0.27	23.8	Left	89.2	112.2	42.74235366	-88.19779282	789.9862	F	40	M	40	82.3		
7/8/2024	F40_WB_L1_01_20240708_141146.D01	STH 20	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:11:59	9.922	1468	84.9	2.547	119	40.7	0.29	25.7	Left	89.2	111.4	42.74233263	-88.19876374	789.3957	F	40.6	M	40	85.3		
7/8/2024	F40_WB_L1_01_20240708_141146.D01	STH 20	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:12:04	9.872	1469	80.7	2.707	117.2	41	0.24	26.8	Left	89.3	112.1	42.74257675	-88.19968551	787.8693	F	40.7	M	40	81.2		
7/8/2024	F40_WB_L1_01_20240708_141146.D01	STH 20	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:12:08	9.822	1470	84.8	2.019	108	41.1	0.31	26.7	Left	89.3	112.9	42.7430723	-88.2003943	784.9175	F	40.9	M	40	85.4		
7/8/2024	F40_WB_L1_01_20240708_141146.D01	STH 20	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:12:13	9.774	1471	45.6	1.627	71.7	41.6	0.12	26.2	Left	89.3	110.4	42.7436763	-88.2008667	781.7966	F	41.5	M	40	46.4		
WB Lane 1															Avg	83.1	2.5											WB Lane 1	Avg	83.5	No of Tests		
															St. Dev	2.1													St. Dev	2.1	4		
</																																	

Appendix C
Detailed Friction Results
Test Site F41

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN	
7/8/2024	F41_NB_L2_01_20240708_145903.D01	STH 32	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:59:03	9.695	1478	38.8	2.596	85	38.5	0.31	24.1	Left	90.7	106.7	42.6976034	-87.79572165		605.603	F	38.4	M	40	38.1		
7/8/2024	F41_NB_L2_01_20240708_145903.D01	STH 32	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:59:08	9.746	1479	37.5	0.44	71.2	37.2	0.15	23.3	Left	90.7	105.7	42.69817347	-87.79507972		615.0924	F	37	M	40	36.1		
7/8/2024	F41_NB_L2_01_20240708_145903.D01	STH 32	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:59:12	9.788	1480	80.5	3.12	85.3	39.6	0.05	24.9	Left	90.8	106.8	42.69851793	-87.79440193		619.6134	F	39.7	M	40	80.3		
7/8/2024	F41_NB_L2_01_20240708_145903.D01	STH 32	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:59:15	9.828	1481	81.7	5.593	117.8	40.8	0.21	26.2	Left	90.9	107.9	42.69888541	-87.79381044		619.602	F	40.6	M	40	82.1		
7/8/2024	F41_NB_L2_01_20240708_145903.D01	STH 32	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:59:19	9.867	1482	77.6	3.92	109.7	40.7	0.17	26.4	Left	90.7	105.6	42.69940787	-87.79356025		620.1371	F	40.4	M	40	78.0		
7/8/2024	F41_NB_L2_01_20240708_145903.D01	STH 32	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:59:23	9.911	1483	38.7	3.539	66.5	41.4	0.11	26.6	Left	90.7	105	42.70003804	-87.79356385		619.1521	F	41.2	M	40	39.4		
															NB Lane 2		Avg	81.1	4.4											NB Lane 2		Avg	81.2	No of Tests
																	St. Dev	0.8														St. Dev	1.3	2
																																Min	80.3	
																																Max	82.1	

Appendix C																																		
Detailed Friction Results																																		
Test Site F42																																		
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN	
7/8/2024	F42_SB_L2_01_20240708_145643.D01	STH 32	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:56:43	9.993	1473	47.9	3.101	92.2	38.1	0.31	23.3	Left	90.6	104	42.69994421	-87.79367883	618.9548	F	37.8	M	40	47.0			
7/8/2024	F42_SB_L2_01_20240708_145643.D01	STH 32	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:56:47	9.954	1474	68.9	4.554	84.3	39.2	0.27	25.2	Left	90.6	106.8	42.69938078	-87.79368262	618.7997	F	39	M	40	68.5			
7/8/2024	F42_SB_L2_01_20240708_145643.D01	STH 32	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:56:52	9.892	1475	75.2	1.885	98.1	39.5	0.18	25.9	Left	90.5	109	42.69865451	-87.79432274	619.3497	F	39.3	M	40	75.0			
7/8/2024	F42_SB_L2_01_20240708_145643.D01	STH 32	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:56:57	9.843	1476	40.1	1.402	64.1	41.5	0.05	26.1	Left	90.6	108.7	42.6982856	-87.79513616	617.3754	F	41.3	M	40	40.9			
7/8/2024	F42_SB_L2_01_20240708_145643.D01	STH 32	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:57:01	9.792	1477	36.8	3.431	60	42.6	0.15	27.1	Left	90.6	108.3	42.69777263	-87.79583436	607.9093	F	42.4	M	40	38.1			
SB Lane 2															Avg	58.4	3.8											SB Lane 2	Avg	57.7	No of Tests			
															St. Dev	14.8													St. Dev	15.2	2			
																													Min	47.0				
																													Max	68.5				

Appendix C
Detailed Friction Results
Test Site F43

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/8/2024	F43_NB_L1_01_20240708_140407.D01	Milwaukee Ave	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:04:07	10.009	1450	43.1	2.439	88.2	39.9	0.17	24.9	Left	88.5	103.7	42.71528559	-88.22839135		792.188	F	39.7	M	40	43.1	
7/8/2024	F43_NB_L1_01_20240708_140407.D01	Milwaukee Ave	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:04:11	10.058	1451	43.8	3.119	69.9	40.6	0.1	26.9	Left	88.4	103.5	42.71570728	-88.22763482		796.8278	F	40.3	M	40	44.1	
7/8/2024	F43_NB_L1_01_20240708_140407.D01	Milwaukee Ave	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:04:16	10.108	1452	43.8	1.998	73.4	41.3	0.16	26.9	Left	88.5	104	42.71614512	-88.22684795		799.1444	F	41.2	M	40	44.5	
7/8/2024	F43_NB_L1_01_20240708_140407.D01	Milwaukee Ave	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:04:20	10.158	1453	48.1	1.233	74.1	41.7	0.12	27.7	Left	88.2	102.8	42.71658617	-88.22607727		797.5669	F	41.5	M	40	49.0	
7/8/2024	F43_NB_L1_01_20240708_140407.D01	Milwaukee Ave	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:04:25	10.208	1454	47.2	1.233	72.8	41.7	0.13	27.1	Left	88.5	101.7	42.71712273	-88.22542527		792.8089	F	41.6	M	40	48.1	
7/8/2024	F43_NB_L1_01_20240708_140407.D01	Milwaukee Ave	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:04:29	10.258	1455	47	1.923	70.4	41.7	0.12	26.6	Left	88.4	103.4	42.71776403	-88.22496267		784.9303	F	41.6	M	40	47.9	
7/8/2024	F43_NB_L1_01_20240708_140407.D01	Milwaukee Ave	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:04:33	10.308	1456	42.7	1.792	64	41.7	0.18	27.2	Left	88.5	105.3	42.7184603	-88.22472956		775.6084	F	41.5	M	40	43.6	
7/8/2024	F43_NB_L1_01_20240708_140407.D01	Milwaukee Ave	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:04:38	10.358	1457	46.6	2.08	71	40.3	0.17	25.9	Left	88.5	104.9	42.71917923	-88.22462374		771.7934	F	40.2	M	40	46.8	
NB Lane 1															Avg	46.3	1.5											NB Lane 1		Avg	47.1	No of Tests	
															St. Dev	2.4														St. Dev	2.4	4	
																													Min	43.6			
																													Max	49.0			

Appendix C
Detailed Friction Results
Test Site F44

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
5/2/2024	F44_NB_L1_01_20240502_205212.D01	STH 93	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	20:52:12	9.632	958	49.9	1.214	89.4	40.2	0.25	20.7	Left	55	39.8	44.2692172	-91.47730014		744.5794	F	40	M		40	50.0	
5/2/2024	F44_NB_L1_01_20240502_205212.D01	STH 93	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	20:52:17	9.682	959	79.1	1.839	106.6	39.6	0.34	20.7	Left	55	39.1	44.26981085	-91.47788441		743.8264	F	39.5	M		40	78.9	
5/2/2024	F44_NB_L1_01_20240502_205212.D01	STH 93	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	20:52:21	9.732	960	73.3	3.687	105.7	40.2	0.27	21.8	Left	55	39.9	44.27043253	-91.47839654		746.4827	F	40	M		40	73.4	
5/2/2024	F44_NB_L1_01_20240502_205212.D01	STH 93	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	20:52:26	9.782	961	75.5	2.247	104.2	40.6	0.27	21.6	Left	55.2	40	44.27111604	-91.47870297		747.7677	F	40.4	M		40	75.8	
5/2/2024	F44_NB_L1_01_20240502_205212.D01	STH 93	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	20:52:30	9.832	962	77.5	1.915	105.9	40.8	0.34	22.3	Left	55.1	40.5	44.27183561	-91.47878236		748.0641	F	40.5	M		40	77.9	
5/2/2024	F44_NB_L1_01_20240502_205212.D01	STH 93	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	20:52:34	9.883	963	75.8	2.934	108	40.5	0.23	21.7	Left	55.1	40.7	44.27255444	-91.47862986		749.9272	F	40.5	M		40	76.1	
5/2/2024	F44_NB_L1_01_20240502_205212.D01	STH 93	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	20:52:39	9.932	964	76.8	2.057	103	40.7	0.24	21.4	Left	55	41	44.27322135	-91.47825897		750.4025	F	40.5	M		40	77.2	
5/2/2024	F44_NB_L1_01_20240502_205212.D01	STH 93	North(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	20:52:43	9.982	965	53.5	12.88	104.4	40.8	0.18	21.1	Left	55.1	41.6	44.27380595	-91.4776843		750.1896	F	40.6	M		40	53.9	
NB Lane 1															Avg	76.3	2.4	NB Lane 1										Avg	76.5	No of Tests				
															St. Dev	2.0												St. Dev	1.9	6				
																														Min	73.4			
																														Max	78.9			

Appendix C
Detailed Friction Results
Test Site F45

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
5/2/2024	F45_SB_L1_01_20240502_204910.D01	STH 93	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	20:49:10	10.029	949	60	1.218	100.8	39.7	0.28	21.1	Left	55	40.7	44.27435426	-91.47708782		748.418	F	39.4	M		40	59.9	
5/2/2024	F45_SB_L1_01_20240502_204910.D01	STH 93	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	20:49:15	9.979	950	80.6	2.94	114.3	39.9	0.27	21.1	Left	55	41.8	44.27379918	-91.47774084		750.0758	F	39.7	M		40	80.6	
5/2/2024	F45_SB_L1_01_20240502_204910.D01	STH 93	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	20:49:19	9.929	951	78.2	2.229	107	40.5	0.23	21.7	Left	55.1	42.9	44.27321226	-91.47830906		750.447	F	40.3	M		40	78.5	
5/2/2024	F45_SB_L1_01_20240502_204910.D01	STH 93	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	20:49:23	9.879	952	78.3	2.031	106.7	40.8	0.31	21.3	Left	55	44	44.27253933	-91.47867412		749.9706	F	40.5	M		40	78.7	
5/2/2024	F45_SB_L1_01_20240502_204910.D01	STH 93	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	20:49:28	9.829	953	77	1.291	106.6	40.8	0.31	21.8	Left	55	43.2	44.27182484	-91.47881862		748.1887	F	40.6	M		40	77.4	
5/2/2024	F45_SB_L1_01_20240502_204910.D01	STH 93	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	20:49:32	9.78	954	77.9	3.232	108.9	40.6	0.25	22	Left	54.8	41.7	44.27111892	-91.47874562		747.9436	F	40.5	M		40	78.2	
5/2/2024	F45_SB_L1_01_20240502_204910.D01	STH 93	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	20:49:37	9.729	955	70.9	5.192	106.6	40.8	0.2	21.9	Left	54.9	40.6	44.27042707	-91.4784347		746.7354	F	40.5	M		40	71.3	
5/2/2024	F45_SB_L1_01_20240502_204910.D01	STH 93	South(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	20:49:41	9.679	956	53.3	1.056	107.8	41	0.22	22.5	Left	55.1	40.6	44.26981117	-91.47792673		744.2774	F	40.8	M		40	53.8	
SB Lane 1															Avg	77.2	2.8											SB Lane 1		Avg	77.4	No of Tests		
															St. Dev	3.3														St. Dev	3.2	6		
																													Min	71.3				
																													Max	80.6				

Appendix C																																	
Detailed Friction Results																																	
Test Site F46																																	
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/10/2024	F46_WB_L1_01_20240710_164850.D01	STH 16	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:48:50	183.319	2702	51.4	2.716	89.9	40.3	0.19	25.5	Left	88	98.2	43.10969555	-88.33048905	946.6947	F	40.2	M	40	51.6		
7/10/2024	F46_WB_L1_01_20240710_164850.D01	STH 16	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:48:54	183.269	2703	49.5	2.184	80.1	40.4	0.13	26.3	Left	88.1	98	43.10970463	-88.33147691	942.4477	F	40.4	M	40	49.7		
7/10/2024	F46_WB_L1_01_20240710_164850.D01	STH 16	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:48:59	183.22	2704	50.4	1.954	77.6	40.9	0.15	26.2	Left	88.1	97.9	43.10971617	-88.33245483	936.9069	F	40.7	M	40	50.9		
7/10/2024	F46_WB_L1_01_20240710_164850.D01	STH 16	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:49:03	183.17	2705	46.5	3.022	64.3	40.5	0.18	26.3	Left	88.1	97.4	43.10972529	-88.33343847	932.9672	F	40	M	40	46.8		
7/10/2024	F46_WB_L1_01_20240710_164850.D01	STH 16	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:49:08	183.119	2706	53.5	1.792	83.6	40	0.2	25.4	Left	88.1	98.5	43.10973308	-88.33443654	932.6606	F	39.8	M	40	53.5		
7/10/2024	F46_WB_L1_01_20240710_164850.D01	STH 16	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:49:12	183.069	2707	51.7	1.647	77.6	40.3	0.19	26.6	Left	88.1	98	43.10974538	-88.33541615	930.2101	F	40.2	M	40	51.9		
7/10/2024	F46_WB_L1_01_20240710_164850.D01	STH 16	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:49:17	183.019	2708	48.5	1.304	77.7	40.5	0.2	26	Left	88	97.5	43.10975877	-88.33640803	928.0795	F	40.3	M	40	48.8		
7/10/2024	F46_WB_L1_01_20240710_164850.D01	STH 16	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:49:21	182.97	2709	55.7	1.549	79.2	40.5	0.21	26	Left	87.9	97.6	43.10976826	-88.33738276	926.2771	F	40.4	M	40	56.0		
WB Lane 1															Avg	50.0	2.0											WB Lane 1			Avg	50.2	No of Tests
															St. Dev	2.5															St. Dev	2.4	6
																														Min	46.8		
																														Max	53.5		
7/10/2024	F46_WB_L2_01_20240710_174414.D01	STH 16	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:45:18	183.275	2756	50.1	2.405	80.3	40.4	0.15	25.7	Left	86.5	94.6	43.10973093	-88.33081436	943.5687	F	40.2	M	40	50.3		
7/10/2024	F46_WB_L2_01_20240710_174414.D01	STH 16	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:45:22	183.225	2757	44.3	0.871	74.6	40.8	0.15	26.5	Left	86.5	94.2	43.10974322	-88.3317924	938.9648	F	40.6	M	40	44.7		
7/10/2024	F46_WB_L2_01_20240710_174414.D01	STH 16	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:45:26	183.175	2758	52.8	1.559	85.3	40.8	0.2	25.9	Left	86.4	93.3	43.10975064	-88.33279111	933.4206	F	40.7	M	40	53.2		
7/10/2024	F46_WB_L2_01_20240710_174414.D01	STH 16	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:45:31	183.125	2759	48.7	2.642	79.5	40.2	0.17	25.9	Left	86.5	93.5	43.10975652	-88.33377339	927.6247	F	39.3	M	40	48.8		
7/10/2024	F46_WB_L2_01_20240710_174414.D01	STH 16	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:45:35	183.075	2760	49.2	1.149	78.7	40.2	0.12	26.1	Left	86.5	93.6	43.1097675	-88.33475844	926.4472	F	40	M	40	49.3		
7/10/2024	F46_WB_L2_01_20240710_174414.D01	STH 16	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:45:40	183.025	2761	45.6	1.422	72.5	40.4	0.12	26.1	Left	86.4	94	43.10978161	-88.33574325	923.5927	F	40.3	M	40	45.8		
7/10/2024	F46_WB_L2_01_20240710_174414.D01	STH 16	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:45:44	182.975	2762	49.3	1.261	73.4	40.5	0.17	25.9	Left	86.5	94.2	43.10979393	-88.33673271	922.3353	F	40.4	M	40	49.6		
7/10/2024	F46_WB_L2_01_20240710_174414.D01	STH 16	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:45:49	182.925	2763	45.2	1.705	77	40.6	0.16	27	Left	86.6	94	43.10980513	-88.33771835	921.2641	F	40.5	M	40	45.5		
WB Lane 2															Avg	48.3	1.5											WB Lane 2			Avg	48.6	No of Tests
															St. Dev	3.0															St. Dev	3.0	6
																														Min	44.7		
																														Max	53.2		

Appendix C
Detailed Friction Results
Test Site F47

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/10/2024	F47_EB_L1_01_20240710_171646.D01	STH 16	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:18:13	182.975	2722	51.2	2.652	90.1	39.8	0.18	24.5	Left	87.6	97.7	43.10956777	-88.33732566	925.365	F	39.8	M	40	51.1		
7/10/2024	F47_EB_L1_01_20240710_171646.D01	STH 16	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:18:18	183.025	2723	47.2	2.193	85.9	40.1	0.12	26.1	Left	87.6	96.9	43.10955975	-88.33634777	927.0653	F	40.1	M	40	47.3		
7/10/2024	F47_EB_L1_01_20240710_171646.D01	STH 16	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:18:22	183.075	2724	50.3	1.051	76.5	40.5	0.16	25.9	Left	87.6	97.5	43.10954854	-88.3353622	928.9278	F	40.3	M	40	50.6		
7/10/2024	F47_EB_L1_01_20240710_171646.D01	STH 16	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:18:27	183.125	2725	49.4	1.949	74.8	40.6	0.16	26.2	Left	87.5	97.3	43.10953673	-88.33438297	930.4196	F	40.4	M	40	49.7		
7/10/2024	F47_EB_L1_01_20240710_171646.D01	STH 16	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:18:31	183.175	2726	44.6	3.404	78.7	40.4	0.21	25.2	Left	87.5	89.6	43.10952832	-88.33339447	932.9612	F	39.3	M	40	44.8		
7/10/2024	F47_EB_L1_01_20240710_171646.D01	STH 16	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:18:36	183.225	2727	48.6	3.101	74.7	40.1	0.17	26	Left	87.4	98	43.10950889	-88.33241211	938.6059	F	39.9	M	40	48.7		
7/10/2024	F47_EB_L1_01_20240710_171646.D01	STH 16	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:18:40	183.275	2728	49.3	1.763	73.2	40.4	0.12	25.4	Left	87.6	98	43.10950151	-88.3314264	943.8652	F	40.2	M	40	49.5		
7/10/2024	F47_EB_L1_01_20240710_171646.D01	STH 16	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:18:45	183.325	2729	50.7	1.479	80	40.7	0.15	26.6	Left	87.5	97	43.10949189	-88.33043544	947.4934	F	40.6	M	40	51.1		
EB Lane 1															Avg	48.2	2.2	EB Lane 1										Avg	48.4	No of Tests			
															St. Dev	2.1												St. Dev	2.1	6			
																												Min	44.8				
																												Max	50.6				
7/10/2024	F47_EB_L2_01_20240710_174911.D01	STH 16	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:50:40	183.003	2766	43.4	0.733	73	40.3	0.13	26	Left	86.3	95.2	43.1095298	-88.33712232	923.9297	F	40.1	M	40	43.6		
7/10/2024	F47_EB_L2_01_20240710_174911.D01	STH 16	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:50:44	183.053	2767	43.8	0.697	71	40.4	0.13	26.7	Left	86.3	94.5	43.10951819	-88.33612158	925.5169	F	40.3	M	40	44.0		
7/10/2024	F47_EB_L2_01_20240710_174911.D01	STH 16	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:50:48	183.103	2768	39.9	1.74	68.3	40.6	0.12	26.2	Left	86.4	94.8	43.10950783	-88.33514361	927.002	F	40.4	M	40	40.2		
7/10/2024	F47_EB_L2_01_20240710_174911.D01	STH 16	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:50:53	183.153	2769	36.1	1.239	70.2	40.7	0.07	26.1	Left	86.5	95.4	43.10949715	-88.33416692	928.2502	F	40.6	M	40	36.5		
7/10/2024	F47_EB_L2_01_20240710_174911.D01	STH 16	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:50:57	183.203	2770	41.2	1.948	63.3	40.3	0.15	26.3	Left	86.5	90.4	43.1094868	-88.33316428	929.702	F	40.5	M	40	41.4		
7/10/2024	F47_EB_L2_01_20240710_174911.D01	STH 16	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:51:02	183.253	2771	44.8	1.859	63.7	40.1	0.17	25.7	Left	86.4	95.7	43.10947517	-88.33218636	935.7311	F	40	M	40	44.9		
7/10/2024	F47_EB_L2_01_20240710_174911.D01	STH 16	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:51:06	183.303	2772	44.3	0.516	66	40.5	0.16	26.1	Left	86.4	94.9	43.10946539	-88.33120405	940.5202	F	40.7	M	40	44.6		
7/10/2024	F47_EB_L2_01_20240710_174911.D01	STH 16	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:51:11	183.353	2773	47.9	1.373	70.2	40.7	0.17	27	Left	86.3	94.8	43.1094532	-88.33021223	944.1576	F	40.8	M	40	48.3		
EB Lane 2															Avg	41.7	1.3	EB Lane 2										Avg	41.9	No of Tests			
															St. Dev	3.3												St. Dev	3.3	6			
																												Min	36.5				
																												Max	44.9				

Appendix C
Detailed Friction Results
Test Site F48

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
7/10/2024	F48_NB_L2_01_20240710_111553.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:16:27	93.187	2370	40.8	1.027	79.4	40.1	0.19	23.7	Left	78.9	85.5	43.33332095		-87.92303069		714.6773	F	39.9	M	40	40.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
7/10/2024	F48_NB_L2_01_20240710_111553.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:16:31	93.237	2371	74.8	2.929	111.5	40.1	0.27	25.8	Left	79.1	85.6	43.33401025		-87.92336733		717.8288	F	40	M	40	74.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
7/10/2024	F48_NB_L2_01_20240710_111553.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:16:36	93.287	2372	78.1	3.207	104.3	40.5	0.21	26.8	Left	79.1	86.8	43.33469243		-87.92369538		720.5789	F	40.3	M	40	78.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
7/10/2024	F48_NB_L2_01_20240710_111553.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:16:40	93.338	2373	79.7	2.755	103.8	40.8	0.27	26.7	Left	78.9	86.4	43.335389		-87.92397835		723.5137	F	40.5	M	40	80.1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
7/10/2024	F48_NB_L2_01_20240710_111553.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:16:44	93.387	2374	74.8	3.752	102.9	40.8	0.2	26.6	Left	79	86.2	43.33608892		-87.92418785		725.8047	F	40.6	M	40	75.2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
7/10/2024	F48_NB_L2_01_20240710_111553.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:16:49	93.437	2375	76.1	2.238	104	40.9	0.28	26.8	Left	79	85.8	43.33679495		-87.92433403		728.5244	F	40.8	M	40	76.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
7/10/2024	F48_NB_L2_01_20240710_111553.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:16:53	93.487	2376	76.4	2.357	104.3	40.9	0.29	26.6	Left	79.2	86.6	43.33751662		-87.92441535		730.4718	F	40.6	M	40	76.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
7/10/2024	F48_NB_L2_01_20240710_111553.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:16:58	93.537	2377	77.4	2.994	100.6	40.8	0.24	26.1	Left	78.9	87.3	43.3382388		-87.92444158		732.6794	F	40.6	M	40	77.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
7/10/2024	F48_NB_L2_01_20240710_111553.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:17:02	93.587	2378	75.6	2.097	103.1	41	0.25	26.5	Left	79.2	87.3	43.33895848		-87.9244573		733.7198	F	40.9	M	40	76.1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
7/10/2024	F48_NB_L2_01_20240710_111553.D01	IH 43	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:17:07	93.637	2379	33	1.864	51.2	41.4	0.09	26.6	Left	79.2	85.3	43.33967463		-87.92447113		734.4088	F	41.3	M	40	33.7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
NB Lane 2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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Appendix C																																										
Detailed Friction Results																																										
Test Site F49																																										
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN									
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:17	97.921	2358	62.8	1.855	87	41.6	0.21	26.9	Left	77.7	85.6	43.40150914	-87.92807819	811.231	F	41.4	M	40	63.6											
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:21	97.871	2359	79.9	2.278	94.6	41.5	0.28	26.8	Left	77.9	85.6	43.40089198	-87.92858539	806.7307	F	41.5	M	40	80.7											
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:26	97.82	2360	77.1	2.386	108.2	41.4	0.29	26.5	Left	78	86.7	43.40023422	-87.9290377	799.0259	F	41.3	M	40	77.8											
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:30	97.77	2361	80.7	2.319	107.3	41.3	0.28	27.5	Left	77.9	86.4	43.39956106	-87.92940677	789.762	F	41.2	M	40	81.4											
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:34	97.721	2362	79.5	2.05	107.2	41.2	0.27	26	Left	77.9	86.5	43.39887781	-87.9296915	780.0322	F	41	M	40	80.1											
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:39	97.671	2363	80.7	2.598	102.2	40.8	0.34	25.9	Left	77.9	87	43.39817035	-87.92990885	772.0547	F	40.7	M	40	81.1											
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:43	97.62	2364	79.9	2.837	102	40.4	0.31	26.6	Left	78	87.1	43.39744901	-87.93004749	765.5586	F	40.2	M	40	80.1											
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:48	97.57	2365	83.2	1.398	109.2	40.3	0.32	26.8	Left	77.9	86.4	43.39672901	-87.93010352	761.3309	F	40.1	M	40	83.4											
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:52	97.521	2366	82.3	2.62	101	40.3	0.32	26.3	Left	77.9	86.9	43.39601294	-87.93008293	759.0902	F	40	M	40	82.5											
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:57	97.47	2367	44.3	1.929	107.1	40.7	0.17	26.3	Left	77.9	84.4	43.39528539	-87.9299805	757.8668	F	40.4	M	40	44.7											
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:07:01	97.421	2368	57	1.093	76.8	40.9	0.23	25.9	Left	78	83.8	43.3945897	-87.92984967	757.5715	F	40.8	M	40	57.5											
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:07:05	97.371	2369	54.7	1.588	83.6	40.8	0.23	26.5	Left	78	83.2	43.3938716	-87.92971564	756.4794	F	40.7	M	40	55.1											
SB Lane 1															Avg	80.4	2.3											SB Lane 1			Avg	80.9	No of Tests									
															St. Dev	1.8															St. Dev	1.7	8									
																														Min	77.8											
																														Max	83.4											
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:31:36	97.909	2394	55.2	2.175	77.5	41.6	0.14	27.4	Left	80.4	87	43.40151848	-87.92811855	811.7436	F	41.3	M	40	56.0											
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:31:40	97.858	2395	74.9	1.938	97.5	41.5	0.23	26.9	Left	80.6	88.3	43.40089382	-87.92863147	807.0813	F	41.3	M	40	75.7											
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:31:44	97.808	2396	76.6	2.082	98.8	41.3	0.29	26.4	Left	80.5	88.3	43.40024335	-87.92907667	799.5698	F	41.2	M	40	77.3											
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:31:49	97.758	2397	76.4	1.759	101	41.3	0.24	27	Left	80.5	88.3	43.39957278	-87.92944297	790.2131	F	41.4	M	40	77.1											
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:31:53	97.708	2398	75.1	2.087	105.3	41.3	0.3	24.6	Left	80.5	88	43.39888207	-87.92973291	780.5254	F	41	M	40	75.8											
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:31:58	97.659	2399	76	2.183	96.9	40.8	0.28	26.9	Left	80.5	88.9	43.39818179	-87.92994767	772.2681	F	40.5	M	40	76.4											
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:32:02	97.608	2400	76.6	2.165	101.5	40.3	0.32	26	Left	80.4	88.1	43.39745783	-87.93008919	765.6628	F	40.3	M	40	76.8											
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:32:06	97.558	2401	73.8	2.042	99.5	40.4	0.28	22.7	Left	80.4	88	43.39673887	-87.930146	761.15	F	40.1	M	40	74.0											
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:32:11	97.508	2402	74.7	2.594	100	40.3	0.29	25.9	Left	80.4	87.2	43.39601663	-87.93012525	759.7977	F	40.1	M	40	74.9											
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:32:15	97.458	2403	33.1	12.83	103.5	40.6	0.14	26.9	Left	80.3	85.9	43.39530288	-87.93002478	758.2399	F	40.6	M	40	33.4											
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:32:20	97.409	2404	33.4	1.692	48.3	41	0.13	25.8	Left	80.3	85	43.39460357	-87.92989663	757.0138	F	40.7	M	40	33.9											
SB Lane 2															Avg	75.5	2.1											SB Lane 2			Avg	76.0	No of Tests									
															St. Dev	1.0															St. Dev	1.1	8									
																														Min	74.0											
																														Max	77.3											

Appendix C																																										
Detailed Friction Results																																										
Test Site F50																																										
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN									
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:05:37	98.371	2349	40.3	2.238	104.3	40.2	0.19	24.9	Left	78	82.3	43.40533467	-87.92106705	791.529	F	40.1	M	40	40.4											
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:05:41	98.322	2350	79.1	13.564	72.4	40	0.26	25.3	Left	77.8	84.9	43.40504828	-87.92196134	791.397	F	39.9	M	40	79.1											
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:05:46	98.27	2351	78.3	3.212	113.1	40.1	0.23	26.3	Left	77.8	85.7	43.40474677	-87.92289943	792.883	F	39.8	M	40	78.4											
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:05:50	98.22	2352	79.8	3.375	106.7	40.3	0.25	25.9	Left	77.8	85.5	43.4044226	-87.92377844	796.5439	F	40	M	40	80.0											
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:05:55	98.171	2353	81	2.724	104.2	40.6	0.25	26.6	Left	77.8	85.6	43.40405247	-87.9246117	800.8086	F	40.3	M	40	81.3											
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:05:59	98.12	2354	81.6	3.376	109.9	40.7	0.29	26	Left	78	86.5	43.40362042	-87.92542341	805.3113	F	40.4	M	40	82.0											
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:04	98.071	2355	80.6	1.044	107.1	40.8	0.23	26.5	Left	77.8	85.2	43.40315832	-87.9261657	809.6543	F	40.6	M	40	81.0											
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:08	98.02	2356	80.7	2.337	109.2	41.1	0.27	25.9	Left	77.7	85.2	43.40264192	-87.92686827	812.4465	F	40.9	M	40	81.3											
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:13	97.97	2357	81.9	2.457	108.2	41.3	0.31	26	Left	77.8	86	43.40208375	-87.92751551	812.9193	F	41.1	M	40	82.6											
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:17	97.921	2358	62.8	1.855	87	41.6	0.21	26.9	Left	77.7	85.6	43.40150914	-87.92807819	811.231	F	41.4	M	40	63.6											
SB Lane 1															Avg	80.6	2.6											SB Lane 1			Avg	80.9	No of Tests									
															St. Dev	1.2															St. Dev	1.4	7									
																														Min	78.4											
																														Max	82.6											
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:31:00	98.309	2386	78.3	2.892	102.5	39.8	0.38	25.2	Left	80.4	88.6	43.40506596	-87.92202396	790.3471	F	39.6	M	40	78.2											
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:31:05	98.258	2387	74.8	2.63	109.5	40.2	0.22	26	Left	80.4	89.3	43.40476689	-87.9229405	792.5389	F	40	M	40	74.9											
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:31:09	98.208	2388	76.4	1.967	107.9	40.6	0.3	25.6	Left	80.5	89.5	43.40444104	-87.92381866	796.378	F	40.3	M	40	76.7											
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:31:14	98.158	2389	75.9	2.422	106.4	40.7	0.29	25.8	Left	80.6	89.2	43.40405983	-87.92467009	800.7934	F	40.5	M	40	76.3											
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:31:18	98.108	2390	78	2.307	109.5	40.6	0.28	26.7	Left	80.4	87.9	43.40363588	-87.92546501	805.2789	F	40.4	M	40	78.3											
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:31:23	98.058	2391	73.1	2.992	104.5	40.8	0.26	25.6	Left	80.6	88.2	43.40316537	-87.92620944	809.6614	F	40.6	M	40	73.5											
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:31:27	98.008	2392	76.1	3.099	101.5	41.2	0.29	26.6	Left	80.5	87.5	43.40264901	-87.92691286	812.5237	F	40.9	M	40	76.7											
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:31:31	97.958	2393	77.9	2.685	102.8	41.2	0.3	26.5	Left	80.5	87.6	43.40210044	-87.92754667	813.1327	F	41.1	M	40	78.5											
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:31:36	97.909	2394	55.2	2.175	77.5	41.6	0.14	27.4	Left	80.4	87	43.40151848	-87.92811855	811.7436	F	41.3	M	40	56.0											
SB Lane 2															Avg	76.3	2.6											SB Lane 2			Avg	76.6	No of Tests									
															St. Dev	1.8															St. Dev	1.8	8									
																														Min	73.5											
																														Max	78.5											

Appendix C																																	
Detailed Friction Results																																	
Test Site F51																																	
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNSStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:02:28	100.5	2342	69.7	3.241	115	39.9	0.31	25.3	Left	77.6	80.5	43.4117787	-87.88021609	725.2569	F	39.6	M	40	69.7		
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:02:32	100.462	2343	80.2	3.748	112.3	40	0.13	24.4	Left	77.7	82	43.41178627	-87.88097509	727.2634	F	39.8	M	40	80.2		
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:02:35	100.426	2344	80.5	2.979	107.9	40.4	0.17	26.4	Left	77.7	83	43.4117942	-87.88169421	728.8171	F	40.2	M	40	80.7		
7/10/2024	F51-F50-F49_SB_L1_01_20240710_110145.D01	IH 43	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:02:42	100.352	2345	32.2	3.261	72.1	41.3	0.17	25.9	Left	77.8	81.1	43.4117984	-87.88315785	734.3818	F	41.1	M	40	32.9		
SB Lane 1															Avg	76.8	3.3											SB Lane 1		Avg	76.9	No of Tests	
															St. Dev	6.2														St. Dev	6.2	3	
																														Min	69.7		
																														Max	80.7		
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:27:50	100.463	2381	56.6	17.598	96.6	40.1	0.24	24.5	Left	80.2	88.5	43.41182004	-87.88075248	726.718	F	39.7	M	40	56.7		
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:27:52	100.431	2382	71.7	1.677	108	39.7	0.13	25.4	Left	80.3	88.6	43.41182506	-87.88139061	727.839	F	39.6	M	40	71.6		
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:27:55	100.403	2383	73.9	1.57	111.4	39.7	0.13	25.3	Left	80.1	87.8	43.41182982	-87.88194252	729.4612	F	39.6	M	40	73.8		
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:27:58	100.367	2384	33.2	0.903	53.3	40.7	0.05	27.3	Left	80.3	86.6	43.41183348	-87.882655	731.9837	F	40.5	M	40	33.6		
7/10/2024	F51-F50-F49_SB_L2_01_20240710_112705.D01	IH 43	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:28:03	100.314	2385	33.6	0.916	59.1	41.3	0.17	26.5	Left	80.4	86.3	43.41183115	-87.88371344	736.2437	F	41.2	M	40	34.3		
SB Lane 2															Avg	67.4	6.9											SB Lane 2		Avg	67.3	No of Tests	
															St. Dev	9.4														St. Dev	9.3	3	
																														Min	56.7		
																														Max	73.8		

Appendix C																																	
Detailed Friction Results																																	
Test Site F52																																	
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/8/2024	F52-F53-F54_NB_L1_01_20240708_172225.D01	SH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:22:25	10.004	1550	50	12.078	88.9	19.6	0.15	8.1	Left	91.1	91.8	43.10654777	-87.88726692	662.0478	F	19.7	M	40	39.8		
7/8/2024	F52-F53-F54_NB_L1_01_20240708_172225.D01	SH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:22:31	10.044	1551	71.5	12.824	88.3	35.2	0.44	21.9	Left	91.1	103.1	43.10703125	-87.8876783	657.7926	F	35.7	M	40	69.1		
7/8/2024	F52-F53-F54_NB_L1_01_20240708_172225.D01	SH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:22:34	10.076	1552	73.2	3.072	101.1	31.9	0.55	18.8	Left	91.1	101.4	43.1074257	-87.88802591	655.0907	F	31.7	M	40	69.2		
7/8/2024	F52-F53-F54_NB_L1_01_20240708_172225.D01	SH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:22:39	10.113	1553	76.9	2.048	112.3	28.7	0.1	16.3	Left	91.1	99.6	43.10756784	-87.88870109	654.3263	F	28.6	M	40	71.3		
7/8/2024	F52-F53-F54_NB_L1_01_20240708_172225.D01	SH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:22:43	10.147	1554	70.8	1.706	110.3	29.3	0.07	16.8	Left	91.1	104	43.10760255	-87.88936388	654.3443	F	29.3	M	40	65.5		
7/8/2024	F52-F53-F54_NB_L1_01_20240708_172225.D01	SH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:22:47	10.18	1555	75.8	2.086	103.6	33.3	0.07	19.9	Left	91.1	98.2	43.10787177	-87.88989052	654.1266	F	33.7	M	40	72.5		
7/8/2024	F52-F53-F54_NB_L1_01_20240708_172225.D01	SH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:22:51	10.223	1556	37.6	0.51	64.2	34.5	0.17	20.9	Left	91.1	92.9	43.10839802	-87.89035024	653.4585	F	34.8	M	40	34.9		
NB Lane 1														Avg	73.6	4.3	NB Lane 1														Avg	69.5	No of Tests
														St. Dev	2.7																St. Dev	2.7	5
																												Min	65.5				
																												Max	72.5				

Appendix C																																	
Detailed Friction Results																																	
Test Site F53																																	
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/8/2024	F52-F53-F54_NB_L1_01_20240708_172225.D01	SH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:23:09	10.39	1557	76.9	2.81	115	35.8	0.42	22	Left	91	99.8	43.11044631	-87.89205989	665.4182	F	36.6	M	40	74.8		
7/8/2024	F52-F53-F54_NB_L1_01_20240708_172225.D01	SH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:23:12	10.423	1558	73.7	3.499	106.5	32.7	0.37	18.1	Left	91.1	104.7	43.11091283	-87.89218471	665.7575	F	32	M	40	70.1		
7/8/2024	F52-F53-F54_NB_L1_01_20240708_172225.D01	SH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:23:16	10.451	1559	74.9	3.639	103.2	28.7	0.39	16.1	Left	91.1	103.4	43.1111167	-87.892597	666.3998	F	28.2	M	40	69.3		
7/8/2024	F52-F53-F54_NB_L1_01_20240708_172225.D01	SH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:23:20	10.489	1560	75.9	4.798	108.3	32.3	0.59	19.6	Left	91	103.7	43.11117066	-87.89333392	669.7106	F	32.6	M	40	72.1		
7/8/2024	F52-F53-F54_NB_L1_01_20240708_172225.D01	SH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:23:24	10.519	1561	71.5	2.765	105.7	31.1	0.51	16.3	Left	91	105	43.11118444	-87.89393549	668.3983	F	31.1	M	40	67.1		
7/8/2024	F52-F53-F54_NB_L1_01_20240708_172225.D01	SH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:23:28	10.553	1562	73.7	1.686	93.3	32.3	0.4	19.4	Left	91	100.7	43.11149912	-87.89441621	663.9296	F	32.2	M	40	69.9		
7/8/2024	F52-F53-F54_NB_L1_01_20240708_172225.D01	SH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:23:33	10.598	1563	38.5	1.275	62.4	31	0.15	17.8	Left	91.1	99.7	43.11210856	-87.89469597	659.6754	F	31.1	M	40	34.0		
NB Lane 1															Avg	74.4	3.2											NB Lane 1		Avg	70.5	No of Tests	
															St. Dev	1.9														St. Dev	2.6	6	
																													Min	67.1			
																													Max	74.8			

Appendix C																																	
Detailed Friction Results																																	
Test Site F54																																	
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/8/2024	F52-F53-F54_NB_L1_01_20240708_172225.D01	SH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:24:33	11.027	1564	40.2	1.147	100.2	35	0.38	21.4	Left	91	102.2	43.11782649	-87.89788967	666.6365	F	34.8	M	40	37.7		
7/8/2024	F52-F53-F54_NB_L1_01_20240708_172225.D01	SH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:24:36	11.055	1565	72.6	3.975	115.6	27.9	1.24	14.9	Left	90.9	96.5	43.11820603	-87.89811329	666.781	F	27	M	40	66.6		
7/8/2024	F52-F53-F54_NB_L1_01_20240708_172225.D01	SH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:24:40	11.083	1566	80.1	1.324	91.7	26.4	0.16	13.7	Left	91	96.5	43.11843304	-87.89852425	662.4247	F	26.4	M	40	73.3		
7/8/2024	F52-F53-F54_NB_L1_01_20240708_172225.D01	SH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:24:44	11.115	1567	35.4	2.558	73.1	28.9	0.12	16.3	Left	91	98.4	43.1184373	-87.89914407	660.1109	F	29.5	M	40	29.9		
NB Lane 1															Avg	76.4	2.6											NB Lane 1	Avg	69.9	No of Tests		
															St. Dev	5.3													St. Dev	4.8	2		

Appendix C
Detailed Friction Results
Test Site F55

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/8/2024	F55a_EB_L1_01_20240708_183816.D01	CTH H	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:38:16	9.921	1616	41.7	5.188	96.8	43.2	0.12	27.9	Left	87.6	98.7	43.49776843	-88.19571164	934.0239	F	43.1	M	40	43.3		
7/8/2024	F55a_EB_L1_01_20240708_183816.D01	CTH H	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:38:20	9.97	1617	40	3.408	71.1	41.8	0.35	26.7	Left	87.5	96.1	43.49782264	-88.19473813	927.1909	F	41.6	M	40	40.9		
7/8/2024	F55a_EB_L1_01_20240708_183816.D01	CTH H	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:38:25	10.021	1618	76.9	4.859	107.4	39.7	0.2	26	Left	87.6	98.5	43.49787783	-88.19374324	926.6459	F	39.5	M	40	76.8		
7/8/2024	F55a_EB_L1_01_20240708_183816.D01	CTH H	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:38:29	10.07	1619	70.9	12.33	108.9	40.6	0.12	26.1	Left	87.5	95.3	43.4979351	-88.19276096	927.206	F	40.3	M	40	71.2		
7/8/2024	F55a_EB_L1_01_20240708_183816.D01	CTH H	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:38:34	10.121	1620	74	4.985	105.6	41.1	0.28	26.3	Left	87.5	99.1	43.49796523	-88.19175885	927.0565	F	40.8	M	40	74.6		
7/8/2024	F55a_EB_L1_01_20240708_183816.D01	CTH H	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:38:38	10.171	1621	76.6	2.361	108.5	40.8	0.31	26	Left	87.5	98.4	43.49785682	-88.19077059	926.0098	F	40.7	M	40	77.0		
7/8/2024	F55a_EB_L1_01_20240708_183816.D01	CTH H	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:38:42	10.221	1622	75.6	8.269	102.4	40.2	0.29	26	Left	87.5	98.8	43.4976069	-88.18984607	927.7539	F	39.9	M	40	75.7		
7/8/2024	F55a_EB_L1_01_20240708_183816.D01	CTH H	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:38:47	10.27	1623	80.2	3.348	103.7	39.4	0.32	25.6	Left	87.4	99.7	43.49735766	-88.18893437	935.4783	F	39.1	M	40	79.9		
7/8/2024	F55a_EB_L1_01_20240708_183816.D01	CTH H	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:38:52	10.32	1624	83.1	3.078	105.8	41.3	0.46	27.6	Left	87.4	98.9	43.49726512	-88.18795999	950.6016	F	40.9	M	40	83.8		
7/8/2024	F55a_EB_L1_01_20240708_183816.D01	CTH H	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:38:56	10.37	1625	76.2	4.641	102.2	38.6	0.36	24.4	Left	87.4	98.6	43.49724617	-88.18697301	966.1547	F	38.4	M	40	75.5		
7/8/2024	F55a_EB_L1_01_20240708_183816.D01	CTH H	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:39:01	10.42	1626	43.3	2.647	70.6	42	0.07	27.8	Left	87.4	99.7	43.49722627	-88.18599467	974.746	F	42.1	M	40	44.3		
EB Lane 1															Avg	76.7	5.5											EB Lane 1		Avg	76.8	No of Tests	
															St. Dev	3.7														St. Dev	3.7	8	
																														Min	71.2		
																														Max	83.8		
7/8/2024	F55b_WB_L1_01_20240708_184033.D01	CTH H	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:40:33	10.402	1628	43.3	6.122	90.4	41.8	0.1	27.5	Left	87.5	99.6	43.49725779	-88.18626128	973.5278	F	41.7	M	40	44.2		
7/8/2024	F55b_WB_L1_01_20240708_184033.D01	CTH H	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:40:37	10.352	1629	77.3	2.986	106.1	42.2	0.17	26.9	Left	87.5	100.3	43.49727847	-88.18725532	962.2852	F	42.2	M	40	78.4		
7/8/2024	F55b_WB_L1_01_20240708_184033.D01	CTH H	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:40:42	10.301	1630	77.6	5.101	108.8	43.4	0.2	28.6	Left	87.5	100.1	43.49730299	-88.18826087	945.416	F	43.4	M	40	79.3		
7/8/2024	F55b_WB_L1_01_20240708_184033.D01	CTH H	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:40:46	10.252	1631	77	3.136	105.7	43	0.46	27.4	Left	87.5	99.9	43.49745413	-88.18922724	931.9034	F	42.9	M	40	78.5		
7/8/2024	F55b_WB_L1_01_20240708_184033.D01	CTH H	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:40:50	10.202	1632	76.7	4.064	106.3	40.5	0.38	25.7	Left	87.4	100	43.49772695	-88.19014196	926.8569	F	40.2	M	40	77.0		
7/8/2024	F55b_WB_L1_01_20240708_184033.D01	CTH H	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:40:54	10.151	1633	74.7	2.853	109.2	41	0.51	26.4	Left	87.5	99.9	43.49793909	-88.19109481	927.0189	F	40.7	M	40	75.2		
7/8/2024	F55b_WB_L1_01_20240708_184033.D01	CTH H	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:40:59	10.102	1634	79.3	4.98	106	40.6	0.06	25.9	Left	87.4	99.4	43.49799362	-88.1920595	927.491	F	40.6	M	40	79.6		
7/8/2024	F55b_WB_L1_01_20240708_184033.D01	CTH H	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:41:03	10.052	1635	75.9	3.737	106.9	40	0.24	25.9	Left	87.3	95.8	43.49794652	-88.19305171	926.9285	F	39.7	M	40	75.9		
7/8/2024	F55b_WB_L1_01_20240708_184033.D01	CTH H	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:41:08	10.003	1636	41.5	11.7	105.8	40.5	0.23	26.3	Left	87.4	98.5	43.49788799	-88.19403132	927.1617	F	40.3	M	40	41.8		
7/8/2024	F55b_WB_L1_01_20240708_184033.D01	CTH H	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:41:12	9.953	1637	38.6	4.091	68	40.8	0.23	26.4	Left	87.4	97.5	43.49783755	-88.19501443	927.9127	F	40.8	M	40	39.0		
7/8/2024	F55b_WB_L1_01_20240708_184033.D01	CTH H	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	18:41:17	9.903	1638	46.2	2.855	68.1	39.1	0.25	25.3	Left	87.5	99	43.49778198	-88.19599767	937.866	F	38.9	M	40	45.8		
WB Lane 1															Avg	76.9	3.8											WB Lane 1		Avg	77.7	No of Tests	
															St. Dev	1.4														St. Dev	1.7	7	
																														Min	75.2		
																														Max	79.6		

Appendix C																																	
Detailed Friction Results																																	
Test Site F56																																	
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
5/2/2024	F56a_EB_L1_01_20240502_162221.D01	STH 29	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:22:21	82.616	713	65	0.904	90.1	40.1	0.27	21.1	Left	54.5	41.2	44.91160445	-91.30943999	920.3012	F	39.8	M			40	65.1
5/2/2024	F56a_EB_L1_01_20240502_162221.D01	STH 29	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:22:26	82.666	714	59	3.806	85.7	40.5	0.18	22	Left	54.6	43	44.91161503	-91.30843697	921.134	F	40.3	M			40	59.3
5/2/2024	F56a_EB_L1_01_20240502_162221.D01	STH 29	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:22:30	82.716	715	59.4	5.375	87.8	40.7	0.21	21.6	Left	54.6	41.8	44.91162473	-91.30741667	922.7962	F	40.3	M			40	59.8
5/2/2024	F56a_EB_L1_01_20240502_162221.D01	STH 29	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:22:34	82.767	716	55	0.981	80.8	40.9	0.19	21.6	Left	54.7	41.8	44.91163425	-91.306385	923.7754	F	40.7	M			40	55.5
5/2/2024	F56a_EB_L1_01_20240502_162221.D01	STH 29	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:22:39	82.816	717	56.4	0.577	82	40.9	0.15	21.7	Left	54.5	40.5	44.91164463	-91.30537925	925.441	F	40.7	M			40	56.9
5/2/2024	F56a_EB_L1_01_20240502_162221.D01	STH 29	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:22:43	82.866	718	57.7	0.411	84.7	40.9	0.19	21.8	Left	54.5	40.1	44.91165292	-91.30436599	926.9941	F	40.7	M			40	58.2
5/2/2024	F56a_EB_L1_01_20240502_162221.D01	STH 29	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:22:48	82.916	719	56	0.451	78.9	40.9	0.15	21.8	Left	54.5	40.4	44.91166376	-91.30334841	928.2424	F	40.6	M			40	56.5
5/2/2024	F56a_EB_L1_01_20240502_162221.D01	STH 29	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:22:52	82.966	720	58.4	0.954	80.9	40.2	0.31	21.3	Left	54.4	40.7	44.91167351	-91.30233354	929.1715	F	39.9	M			40	58.5
5/2/2024	F56a_EB_L1_01_20240502_162221.D01	STH 29	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:22:57	83.016	721	58.3	0.777	85.2	40.5	0.11	21.1	Left	54.4	41.2	44.91168258	-91.30132597	930.5698	F	40.2	M			40	58.6
5/2/2024	F56a_EB_L1_01_20240502_162221.D01	STH 29	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:23:01	83.066	722	56.7	0.613	81.9	40	0.32	21.5	Left	54.4	40.7	44.91169391	-91.30030348	932.2306	F	39.9	M			40	56.7
5/2/2024	F56a_EB_L1_01_20240502_162221.D01	STH 29	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:23:06	83.116	723	57.2	0.668	84.2	39.6	0.36	21	Left	54.4	40.6	44.9117034	-91.29928808	933.6927	F	39.4	M			40	57.0
5/2/2024	F56a_EB_L1_01_20240502_162221.D01	STH 29	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:23:10	83.166	724	58.6	0.496	85.9	39.5	0.19	20.9	Left	54.4	40.2	44.91171288	-91.29827559	935.4271	F	39.4	M			40	58.4
5/2/2024	F56a_EB_L1_01_20240502_162221.D01	STH 29	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:23:15	83.216	725	57.6	0.34	84	40	0.19	21.3	Left	54.3	40.7	44.91172323	-91.29725283	937.1563	F	39.9	M			40	57.6
5/2/2024	F56a_EB_L1_01_20240502_162221.D01	STH 29	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:23:19	83.266	726	58.8	0.764	81.9	40.2	0.24	22.1	Left	54.5	40.6	44.91173123	-91.29624357	938.8875	F	39.9	M			40	58.9
5/2/2024	F56a_EB_L1_01_20240502_162221.D01	STH 29	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:23:24	83.316	727	57.5	0.757	83.3	40.2	0.21	21.6	Left	54.4	40	44.91174185	-91.29522904	941.0843	F	40	M			40	57.6
5/2/2024	F56a_EB_L1_01_20240502_162221.D01	STH 29	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:23:28	83.366	728	58.8	0.825	83.4	40.1	0.19	21.7	Left	54.3	39.6	44.91175021	-91.29420857	943.2503	F	39.8	M			40	58.9
5/2/2024	F56a_EB_L1_01_20240502_162221.D01	STH 29	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:23:33	83.417	729	58.3	0.792	85.2	40.2	0.17	21.9	Left	54.4	40.7	44.91175951	-91.29318827	945.8893	F	39.9	M			40	58.4
5/2/2024	F56a_EB_L1_01_20240502_162221.D01	STH 29	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:23:37	83.466	730	58	0.67	83.6	40.1	0.19	21.3	Left	54.4	40.2	44.91176882	-91.29218512	949.5007	F	39.9	M			40	58.1
5/2/2024	F56a_EB_L1_01_20240502_162221.D01	STH 29	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:23:42	83.516	731	57.7	0.587	82.9	39.9	0.21	21.1	Left	54.5	40.6	44.91177697	-91.29116922	954.7569	F	39.6	M			40	57.7
5/2/2024	F56a_EB_L1_01_20240502_162221.D01	STH 29	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:23:46	83.566	732	57.5	0.951	83.1	39.9	0.17	21.3	Left	54.4	40.3	44.91178607	-91.29015658	961.1508	F	39.7	M			40	57.5
5/2/2024	F56a_EB_L1_01_20240502_162221.D01	STH 29	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:23:51	83.616	733	58	0.718	85.2	39.9	0.17	21.6	Left	54.2	39.5	44.91179514	-91.28914396	968.3479	F	39.8	M				

Appendix C
Detailed Friction Results
Test Site F56

5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:36:05	84.222	749	61	1.975	84.7	40	0.11	22	Left	53.2	41.3	44.91200292	-91.27680481	983.727	F	39.8	M	40	61.0	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:36:09	84.172	750	61.4	2.844	81.4	40.5	0.2	21.7	Left	53.2	41.1	44.91202705	-91.27782667	985.7307	F	40.3	M	40	61.7	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:36:14	84.122	751	58.5	0.878	81.5	40.2	0.23	21.6	Left	53.3	40.9	44.91204521	-91.27883293	988.0305	F	39.9	M	40	58.6	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:36:18	84.072	752	56.9	1.712	81.1	40.3	0.19	21.9	Left	53.2	40.4	44.91205418	-91.27984822	989.8086	F	40.1	M	40	57.1	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:36:23	84.022	753	57.7	0.732	85.8	40.4	0.2	21.3	Left	53.2	40.2	44.91205927	-91.28086131	990.4044	F	40.2	M	40	57.9	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:36:27	83.972	754	57.6	0.742	80.8	40.5	0.22	21.9	Left	53.2	40.1	44.91205481	-91.28188307	989.8506	F	40.4	M	Auto Off	40	57.9
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:36:31	83.922	755	57.2	0.548	85.1	40.5	0.23	21.7	Left	53.2	39.9	44.91204411	-91.2829069	988.1802	F	40.4	M	40	57.5	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:36:36	83.872	756	57.2	0.846	84.3	40.4	0.21	21.9	Left	53.2	39.3	44.9120362	-91.28390823	985.8164	F	40.3	M	40	57.4	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:36:40	83.822	757	58.2	0.693	79.9	40.2	0.28	21.7	Left	53.1	39.4	44.91202673	-91.2849275	982.5827	F	40.1	M	40	58.3	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:36:45	83.772	758	59.9	1.096	84.9	39.8	0.19	20.7	Left	53.2	40.2	44.91201883	-91.28594077	978.5337	F	39.8	M	40	59.8	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:36:49	83.722	759	61.2	5.289	87.1	40.3	0.17	21.9	Left	53.2	41.1	44.91200949	-91.28696224	973.7745	F	40.2	M	40	61.4	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:36:54	83.672	760	56.9	0.698	83.6	40.3	0.2	21	Left	53.1	40.6	44.91199968	-91.28798042	968.5023	F	40.1	M	40	57.1	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:36:58	83.622	761	57	0.813	81.8	40.4	0.19	21.7	Left	53.2	40.6	44.91199044	-91.28899758	962.2631	F	40.3	M	40	57.2	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:37:03	83.571	762	57.2	0.678	85.8	40.3	0.18	21.6	Left	53.1	41.1	44.91197954	-91.29002439	955.8418	F	40.1	M	40	57.4	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:37:07	83.522	763	57.2	0.69	83.2	40.1	0.15	21.2	Left	53.2	41.6	44.91196958	-91.29102808	950.4521	F	40	M	40	57.3	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:37:12	83.472	764	56.8	0.753	81.8	40	0.2	21	Left	53.1	41.1	44.91195968	-91.2920398	946.0626	F	39.8	M	40	56.8	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:37:16	83.422	765	57.1	1.117	82.1	40	0.17	21.7	Left	53.1	40.6	44.91195107	-91.29305766	942.7517	F	39.8	M	40	57.1	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:37:21	83.372	766	57.3	0.787	77.2	39.9	0.19	21.7	Left	53.2	41.4	44.91194094	-91.29408087	940.4651	F	39.7	M	40	57.3	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:37:25	83.322	767	57.6	0.776	80.7	40	0.19	21.2	Left	53.1	41.1	44.91193154	-91.29508645	938.7023	F	39.8	M	40	57.6	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:37:30	83.272	768	55.9	0.744	80.8	40.2	0.21	21.5	Left	53.1	40.6	44.91192242	-91.29610598	937.2074	F	40	M	40	56.0	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:37:34	83.222	769	57.2	0.465	81	40.2	0.22	21.5	Left	53.2	40.4	44.91191212	-91.29712304	935.5467	F	40.1	M	40	57.3	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:37:39	83.172	770	57.2	0.606	80	40.2	0.21	21.6	Left	53.1	40.6	44.91190377	-91.29813258	933.9179	F	40	M	40	57.3	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:37:43	83.122	771	57.6	0.677	84.3	40.2	0.22	21.7	Left	53.2	41.1	44.91189371	-91.29915828	932.0242	F	40	M	40	57.7	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:37:48	83.072	772	56.9	0.615	83.7	40.2	0.19	21.3	Left	53.1	40.2	44.91188436	-91.3001648	930.1541	F	40	M	40	57.0	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:37:52	83.022	773	57.3	0.561	82.3	40.2	0.22	22.2	Left	53.1	40.6	44.91187351	-91.30119029	928.5585	F	40	M	40	57.4	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:37:57	82.972	774	56.9	0.697	79.9	40.2	0.16	21.3	Left	53.2	41.2	44.91186571	-91.30220669	926.53	F	40.1	M	40	57.0	
5/2/2024	F56a_WB_L1_01_20240502_163600.D01	STH 29	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	16:38:01	82																			

Appendix C																																		
Detailed Friction Results																																		
Test Site F57																																		
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
7/9/2024	F57a_EB_L1_01_20240709_124251.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:43:40	77.354	1998	53	1.057	73.9	41.2	0.23	26.2	Left	88	94.5	43.73424137	-89.92241436		884.1135	F	41.1	M		40	53.6	
7/9/2024	F57a_EB_L1_01_20240709_124251.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:43:45	77.404	1999	54.2	1.143	77.6	39.9	0.27	25	Left	87.9	95	43.73379388	-89.92164231		883.8182	F	39.9	M		40	54.2	
7/9/2024	F57a_EB_L1_01_20240709_124251.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:43:49	77.454	2000	54.6	1.602	75.9	39.9	0.21	25.6	Left	87.8	96.2	43.73334182	-89.92085856		883.8839	F	39.8	M		40	54.6	
7/9/2024	F57a_EB_L1_01_20240709_124251.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:43:54	77.504	2001	52.8	1.521	75.2	40	0.26	25.7	Left	87.9	95.2	43.73288597	-89.92007195		883.9167	F	39.9	M		40	52.8	
7/9/2024	F57a_EB_L1_01_20240709_124251.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:43:58	77.554	2002	52.6	0.692	72.7	39.8	0.16	25.8	Left	87.9	95.7	43.73243895	-89.91929994		883.9167	F	39.7	M		40	52.5	
7/9/2024	F57a_EB_L1_01_20240709_124251.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:44:03	77.604	2003	52	1.068	74.3	40.3	0.08	25.4	Left	87.9	95.8	43.73198624	-89.91851947		883.9495	F	40.2	M		40	52.2	
7/9/2024	F57a_EB_L1_01_20240709_124251.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:44:07	77.655	2004	52.4	0.699	71.9	41.4	0.2	26.6	Left	87.8	96.8	43.73153101	-89.91773384		883.7198	F	41.3	M		40	53.1	
7/9/2024	F57a_EB_L1_01_20240709_124251.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:44:12	77.704	2005	51	1.107	73.6	41.1	0.29	26.1	Left	87.9	96.8	43.73108204	-89.91695776		882.8684	F	41	M		40	51.6	
7/9/2024	F57a_EB_L1_01_20240709_124251.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:44:16	77.754	2006	53.7	1.708	71.3	40.3	0.23	25.8	Left	87.7	96	43.73063341	-89.91618367		881.4172	F	40.2	M		40	53.9	
7/9/2024	F57a_EB_L1_01_20240709_124251.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:44:21	77.804	2007	51.2	0.867	73.8	40.2	0.19	24.9	Left	87.8	94.8	43.73018139	-89.9154047		879.8776	F	40	M		40	51.3	
7/9/2024	F57a_EB_L1_01_20240709_124251.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:44:25	77.854	2008	49.4	0.704	72.4	40.1	0.2	23	Left	87.8	95.3	43.72972553	-89.91461864		878.7001	F	39.9	M		40	49.5	
7/9/2024	F57a_EB_L1_01_20240709_124251.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:44:30	77.905	2009	52.2	1.45	76.5	40	0.23	25.5	Left	87.9	96.2	43.72927374	-89.91383666		878.1672	F	40	M		40	52.2	
7/9/2024	F57a_EB_L1_01_20240709_124251.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:44:34	77.954	2010	53.5	1.062	72.3	40	0.19	25.6	Left	87.7	95.7	43.72882977	-89.91307041		877.8143	F	39.8	M		40	53.5	
7/9/2024	F57a_EB_L1_01_20240709_124251.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:44:39	78.004	2011	52.2	1.257	72.3	40.1	0.16	25.3	Left	87.8	95.3	43.7283769	-89.91229118		877.565	F	39.9	M		40	52.3	
7/9/2024	F57a_EB_L1_01_20240709_124251.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:44:43	78.055	2012	51.1	1.589	72.8	40.1	0.19	25.4	Left	87.8	95.8	43.72792077	-89.91150179		877.4862	F	40	M		40	51.2	
7/9/2024	F57a_EB_L1_01_20240709_124251.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:44:48	78.104	2013	53.2	0.822	73.6	40.1	0.23	25.4	Left	87.6	95.3	43.7274748	-89.91073027		877.3878	F	40	M		40	53.3	
7/9/2024	F57a_EB_L1_01_20240709_124251.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:44:52	78.155	2014	50.9	1.657	72.6	40.1	0.22	25.5	Left	87.8	95	43.72701751	-89.90994415		877.4534	F	40	M		40	51.0	
7/9/2024	F57a_EB_L1_01_20240709_124251.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:44:57	78.204	2015	50.9	1.174	71.5	40.1	0.21	25.9	Left	87.8	94.4	43.72656893	-89.90916901		877.489	F	39.9	M		40	51.0	
7/9/2024	F57a_EB_L1_01_20240709_124251.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:45:01	78.254	2016	53.9	0.874	73.6	40.1	0.2	25.6	Left	87.8	96.8	43.72612376	-89.90839946		877.4534	F	40	M		40	54.0	
7/9/2024	F57a_EB_L1_01_20240709_124251.D01	IH 94	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:45:06	78.304	2017	53.9	1.789	76.6	40.2	0.23	26.1	Left	87.7	96.3	43.72567144	-89.90761707		877.3362	F	40	M		40	54.0	
EB Lane 1															Avg	52.4	1.2	EB Lane 1													Avg	52.6	No of Tests	
															St. Dev	1.4															St. Dev	1.4	20	
																															Min	49.5		
																															Max	54.6		
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:34:53	77.312	1942	53.9	1.057	78.2	39.6	0.17	25.8	Left	88.6	96.7	43.7346078	-89.92312754		886.1331	F	39.5	M		40	53.7	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:34:57	77.362	1943	54.5	1.198	78.3	39.9	0.19	25.6	Left	88.5	96	43.7341532	-89.92234453		885.229	F	39.8	M		40	54.5	
7/9/2024	F57a-16_EB_L2_01_20240709_122538.D01	IH 94	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	12:35:02	77.412	1944	53.5	1.131	76.2	40	0.0															

3.3

45.5

Appendix C																																		
Detailed Friction Results																																		
Test Site F58																																		
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:25:21	36.562	2201	57.5	1.49	92.4	40.8	0.16	26.3	Left	88.8	100.1	43.93908298	-90.60124263	1186.409	F	40.7	M		40	57.9		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:25:25	36.612	2202	61.7	1.289	88.5	41.1	0.16	27.4	Left	88.7	100.3	43.93907415	-90.6002387	1181.24	F	41	M		40	62.3		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:25:30	36.662	2203	56.8	1.81	85.4	41.2	0.18	27	Left	88.6	100.4	43.93906553	-90.59924057	1174.48	F	41.1	M		40	57.4		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:25:34	36.713	2204	57.1	0.939	87.5	40.8	0.18	26.4	Left	88.6	100.9	43.9390596	-90.59822704	1167.585	F	40.8	M		40	57.5		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:25:39	36.762	2205	60.2	1.279	86.3	40.7	0.16	26.8	Left	88.6	100.4	43.93905687	-90.59723905	1160.765	F	40.6	M		40	60.6		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:25:43	36.813	2206	59.2	1.059	87.6	40.7	0.19	27.5	Left	88.6	101.3	43.93907242	-90.59622826	1153.714	F	40.6	M		40	59.6		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:25:48	36.862	2207	60	1.581	90.9	40.6	0.19	26.2	Left	88.6	101.1	43.93911325	-90.59524372	1146.978	F	40.5	M		40	60.3		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:25:52	36.912	2208	59.2	1.406	87.6	40.6	0.13	26.5	Left	88.6	100.5	43.93918041	-90.5942421	1140.191	F	40.5	M		40	59.5		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:25:56	36.962	2209	58.4	0.983	89.7	40.8	0.15	26.5	Left	88.6	100	43.9392715	-90.5932571	1133.438	F	40.6	M		40	58.8		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:26:01	37.012	2210	60.4	1.305	89.4	40.7	0.23	26.8	Left	88.7	99.6	43.93938751	-90.59226256	1126.444	F	40.6	M		40	60.8		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:26:05	37.062	2211	59.2	1.499	83.7	40.6	0.17	26.9	Left	88.5	100.6	43.93952815	-90.59128494	1119.617	F	40.5	M		40	59.5		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:26:10	37.112	2212	61.7	1.586	90.7	40.6	0.16	26.5	Left	88.6	100.5	43.93969288	-90.59030984	1112.891	F	40.5	M		40	62.0		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:26:14	37.162	2213	57.3	1.381	82.4	40.7	0.16	27.2	Left	88.5	99.8	43.93988055	-90.58934873	1105.896	F	40.6	M		40	57.7		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:26:19	37.212	2214	59.1	1.383	88	40.7	0.19	26.4	Left	88.6	100.7	43.94009433	-90.58839311	1098.815	F	40.6	M		40	59.5		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:26:23	37.262	2215	58.8	1.134	86.2	40.6	0.17	26.7	Left	88.5	100	43.94033229	-90.58744401	1091.987	F	40.7	M		40	59.1		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:26:28	37.312	2216	60.2	1.101	88.9	40.6	0.18	26.7	Left	88.5	101	43.94059204	-90.58650314	1085.334	F	40.6	M		40	60.5		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:26:32	37.362	2217	57.9	1.411	87.4	40.5	0.2	27.3	Left	88.5	102.2	43.94087449	-90.58559057	1079.048	F	40.3	M		40	58.2		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:26:36	37.412	2218	57.9	1.121	89.5	40.4	0.2	26.5	Left	88.6	99.8	43.94118035	-90.58468393	1074.383	F	40.2	M		40	58.1		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:26:41	37.462	2219	61.2	0.882	82.3	40.2	0.23	26.2	Left	88.5	99	43.94150772	-90.58379402	1071.119	F	40.2	M		40	61.3		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:26:45	37.512	2220	62.3	1.384	85.5	40.2	0.23	26.1	Left	88.6	98.2	43.94184794	-90.58291592	1069.035	F	40.1	M		40	62.4		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:26:50	37.562	2221	60.2	1.386	81.3	40.4	0.2	27	Left	88.5	99	43.94219278	-90.5820324	1067.48	F	40.3	M		40	60.4		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:26:54	37.612	2222	58.4	1.321	84.3	40.6	0.17	26.9	Left	88.5	98.6	43.94253344	-90.58115762	1066.017	F	40.5	M		40	58.7		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:26:59	37.662	2223	62.3	1.486	86.8	40.6	0.19	26.4	Left	88.4	99.6	43.94287938	-90.58026762	1064.117	F	40.4	M		40	62.6		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:27:03	37.712	2224	61.5	1.402	81.9	40.6	0.21	26.7	Left	88.5	99.1	43.94322096	-90.57938985	1062.657	F	40.4	M		40	61.8		
7/9/2024	F58b_EB_L1_01_20240709_162427.D01	IH 90	East(+)																															

Appendix C
Detailed Friction Results
Test Site F58

7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:29:24	37.974	2235	61.1	0.983	86.9	40.5	0.15	26.4	Left	88.3	100.4	43.94495775	-90.57462971	1043.232	F	40.3	M	40	61.4
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:29:28	37.924	2236	60.4	1.007	85.5	40.6	0.19	26.9	Left	88.3	101.1	43.9448088	-90.57559334	1047.199	F	40.4	M	40	60.7
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:29:33	37.875	2237	57	1.489	81.4	40.7	0.17	27	Left	88.3	98.5	43.9446126	-90.57654931	1050.856	F	40.3	M	40	57.4
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:29:37	37.825	2238	60.1	1.309	88.8	40.8	0.2	26.9	Left	88.3	101.2	43.94436719	-90.5774882	1054.754	F	40.5	M	40	60.5
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:29:42	37.774	2239	59	1.067	89	40.4	0.19	26.6	Left	88.3	101.4	43.94407583	-90.57841185	1059.276	F	40.2	M	40	59.2
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:29:46	37.724	2240	57.8	1.159	85.9	40.7	0.19	25.8	Left	88.5	99.9	43.94377248	-90.5793162	1063.142	F	40.5	M	40	58.2
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:29:51	37.674	2241	61.6	1.329	84.1	40.6	0.24	26.2	Left	88.4	99.7	43.94346714	-90.5802178	1067.416	F	40.4	M	40	61.9
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:29:55	37.624	2242	57.9	1.272	86.8	40.4	0.21	26.4	Left	88.3	100.1	43.94316126	-90.58112109	1072.497	F	40.2	M	40	58.1
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:30:00	37.574	2243	59.8	1.116	80.7	40.6	0.23	26.4	Left	88.3	100	43.94285632	-90.58202418	1077.591	F	40.3	M	40	60.1
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:30:04	37.524	2244	59.2	1.224	84.8	40.7	0.23	26.3	Left	88.3	99.3	43.94254803	-90.58293725	1082.964	F	40.4	M	40	59.6
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:30:09	37.474	2245	60.7	0.996	86.5	40.5	0.16	26.5	Left	88.2	100.1	43.94224121	-90.58384531	1088.211	F	40.4	M	40	61.0
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:30:13	37.424	2246	59.1	0.949	85.7	40.7	0.21	26.2	Left	88.3	99.9	43.9419369	-90.58474493	1093.352	F	40.5	M	40	59.5
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:30:17	37.375	2247	59.7	1.072	80.7	40.7	0.24	24.9	Left	88.2	99.8	43.9416358	-90.5856363	1098.384	F	40.5	M	40	60.1
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:30:22	37.324	2248	60.6	1.054	85.7	40.5	0.19	26.5	Left	88.3	100.9	43.94132785	-90.58654975	1103.977	F	40.2	M	40	60.9
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:30:26	37.274	2249	60.3	1.141	88.7	40.7	0.18	26.2	Left	88.4	101.6	43.94102879	-90.5874571	1109.556	F	40.5	M	40	60.7
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:30:31	37.224	2250	61.9	1.366	85.5	40.8	0.23	26.5	Left	88.3	100.7	43.94074981	-90.58837512	1114.867	F	40.6	M	40	62.3
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:30:35	37.174	2251	61	1.325	87.5	40.6	0.25	26.6	Left	88.2	100.8	43.94049	-90.58931869	1120.094	F	40.4	M	40	61.3
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:30:40	37.124	2252	59.1	1.614	88.2	40.6	0.2	26.1	Left	88.3	100	43.94025947	-90.59025295	1125.612	F	40.3	M	40	59.4
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:30:44	37.074	2253	62.9	1.031	88	40.7	0.19	26.6	Left	88.2	100.3	43.94005015	-90.59121318	1130.9	F	40.5	M	40	63.3
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:30:49	37.024	2254	58.6	1.088	83.5	40.7	0.2	26.5	Left	88.1	101.4	43.93986529	-90.59217369	1135.861	F	40.6	M	40	59.0
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:30:53	36.974	2255	56.8	1.324	87.1	40.7	0.17	27.1	Left	88.4	100.6	43.9397013	-90.59315726	1141.191	F	40.4	M	40	57.2
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:30:57	36.924	2256	59.2	1.05	86.7	40.7	0.23	26.1	Left	88.2	100	43.93956544	-90.59413269	1146.468	F	40.5	M	40	59.6
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:31:02	36.874	2257	57.4	1.246	85.4	40.7	0.2	26.3	Left	88.3	100.4	43.93945216	-90.59512421	1151.57	F	40.4	M	40	57.8
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:31:06	36.824	2258	60.3	0.953	80.2	40.6	0.16	26.1	Left	88.2	100.4	43.93936572	-90.59610563	1157.015	F	40.5	M	40	60.6
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:31:11	36.774	2259	59.3	1.467	87.6	40.6	0.24	26.8	Left	88.2	100.5	43.93930147	-90.59710083	1162.294	F	40.4	M	40	59.6
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:31:15	36.724	2260	59.6	1.04	89.5	40.6	0.21	26.6	Left	88.3	100.3	43.93926313	-90.59810237	1167.827	F	40.4	M	40	59.9
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:31:20	36.675	2261	57.5	1.428	88.5	40.6	0.19	26.9	Left	88.3	100.2	43.93924964	-90.59909411	1173.217	F	40.5	M	40	57.8
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:31:24	36.624	2262	58.7	1.213	85.7	40.7	0.23	27.1	Left	88.3	100.5	43.93925337	-90.60009852	1178.102	F	40.6	M	40	59.1
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:31:28	36.574	2263	59.9	1.048	84.7	40.6	0.25	26.4	Left	88.2	99.9	43.93926301	-90.60110308	1183.223	F	40.5	M	40	60.2
7/9/2024	F58a_WB_L1_01_20240709_162912.D01	IH 90	West(-)	1	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:31:33	36.524	2264	59	1.196	86.7	40.9	0.17	27.4	Left	88.2	99.6	43.93927087	-90.60209698	1187.137	F	40.8	M	40	59.5

WB Lane 1

Avg

59.5

1.2

WB Lane 1

Avg

59.8

No of Tests

St. Dev

1.4

St. Dev

1.4

32

Min

57.2

Max

63.3

7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:18:25	38.09	2168	57.7	1.563	87.5	40.3	0.19	26.3	Left	89	98.7	43.9451903	-90.5729436	1036.002	F	40.2	M	40	57.9
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:18:30	38.04	2169	57.9	1.174	83.5	40.4	0.17	26.6	Left	89	99	43.94507632	-90.57392726	1039.909	F	40.3	M	40	58.1
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:18:34	37.99	2170	54.8	1.855	80.3	40.6	0.18	27.2	Left	89	99.3	43.94495284	-90.57491651	1044.089	F	40.3	M	40	55.1
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:18:39	37.94	2171	53.2	3.875	84.7	40.7	0.16	26.5	Left	89	98.5	43.94478944	-90.57588711	1047.927	F	40.5	M	40	53.6
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:18:43	37.89	2172	51.5	3.631	78.5	40.7	0.19	26.3	Left	88.8	98.7	43.9445781	-90.57684093	1051.787	F	40.4	M	40	51.9
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:18:48	37.84	2173	56.6	0.761	77.6	40.6	0.19	26.7	Left	89	99	43.94431939	-90.57777719	1055.685	F	40.4	M	40	56.9
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:18:52	37.79	2174	56.4	0.886	85	40.7	0.19	26	Left	89	99.1	43.94402296	-90.57868514	1059.873	F	40.5	M	40	56.8
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:18:57	37.74	2175	59.2	1.46	84.4	40.5	0.21	26	Left	88.9	99.6	43.9437199	-90.57958608	1063.817	F	40.3	M	40	59.5
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:19:01	37.69	2176	59	0.943	81.3	40.5	0.19	26.3	Left	89	98.6	43.94341313	-90.58049295	1068.368	F	40.2	M	40	59.3
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:19:05	37.64	2177	56.6	1.101	81.8	40.6	0.21	25.3	Left	89	98.6	43.94310644	-90.58140002	1073.479	F	40.3	M	40	56.9
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:19:10	37.59	2178	57.2	1.057	81.3	40.6	0.2	25.5	Left	89.2	98.2	43.94280155	-90.58230067	1078.639	F	40.3	M	40	57.5
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:19:14	37.54	2179	59	1.174	80.7	40.6	0.16	26.9	Left	88.9	99.1	43.9424966	-90.58320159	1084.229	F	40.3	M	40	59.3
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:19:19	37.49	2180	59	0.643	81.2	40.7	0.17	26.5	Left	88.9	99	43.94218852	-90.58411487	1089.79	F	40.6	M	40	59.4
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:19:23	37.44	2181	56.4	1.402	80.9	40.7	0.23	27.1	Left	89	99.6	43.94188448	-90.5850155	1095.207	F	40.4	M	40	56.8
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:19:28	37.39	2182	56.6	0.99	79.9	40.6	0.2	26.9	Left	89.1	99.8	43.94157906	-90.58592001	1100.663	F	40.5	M	40	56.9
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:19:32	37.34	2183	56.4	0.824	84	40.6	0.14	26.1	Left	89.1	99.7	43.94127251	-90.58682828	1106.232	F	40.4	M	40	56.7
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:19:37	37.29	2184	58.6	1.551	83.9	40.7	0.21	26.6	Left	89	100	43.94097925	-90.58773111	1111.418	F	40.5	M	40	59.0
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:19:41	37.24	2185	58.7	1.074	82.5	40.5	0.19	26.3	Left	89	100.4	43.9407041	-90.58865794	1116.718	F	40.4	M	40	59.0
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:19:45	37.19	2186	57.6	0.586	79.1	40.6	0.2	26.1	Left	88.9	99.1	43.94045615	-90.5895917	1121.885	F	40.4	M	40	57.9
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:19:50	37.14	2187	59.3	1.369	81.4	40.7	0.15	26.2	Left	88.9	99	43.94022658	-90.59054833	1127.47	F	40.4	M	40	59.7
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:19:54	37.09	2188	58.5	0.901	81.5	40.5	0.2	26.9	Left	89	99.8	43.94002432	-90.59150916	1132.697	F	40.3	M	40	58.8
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:19:59	37.039	2189	56.8	1.494	85.8	40.7	0.16	26.6	Left	88.9	99.7	43.93984524	-90.59248266	1137.977	F	40.5	M	40	57.2
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:20:03	36.99	2190	57.8	0.863	81	40.7	0.17	27.1	Left	89.1	99.2	43.93969305	-90.59344964	1143.126	F	40.4	M	40	58.2
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:20:08	36.94	2191	59.4	1.12	82.5	40.6	0.15	26.8	Left	88.9	99.6	43.93956373	-90.59442555	1148.129	F	40.4	M	40	59.7
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:20:12	36.889	2192	59.1	0.912	84.3	40.6	0.19	27.2	Left	89	99.5	43.93945818	-90.59542409	1153.466	F	40.4	M	40	59.4
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:20:17	36.84	2193	58	0.554	81.5	40.6	0.17	26.5	Left	89	99.3	43.93937716	-90.59641	1158.637	F	40.5	M	40	58.3
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:20:21	36.79	2194	60.2	1.272	83.7	40.6	0.21	26.4	Left	89	99.5	43.93932254	-90.59740732	1163.72	F	40.4	M	40	60.5
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:20:25	36.74	2195	56.1	0.84	86	40.5	0.18	26.8	Left	89.1	99.1	43.93929235	-90.59839863	1169.103	F	40.4	M	40	56.4
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:20:30	36.689	2196	58.6	0.717	83.1	40.7	0.2	27	Left	89	99.7	43.93928495	-90.5994086	1174.605	F	40.5	M	40	59.0
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:20:34	36.64	2197	58	1.529	83.9	40.7	0.2	27.1	Left	89	99.3	43.93929231	-90.60040153	1179.776	F	40.5	M	40	58.4
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R	M MORIN	J BENNETT	Ribbed	Ribbed	16:20:39	36.59	2198	59.2	1.657	81.4	40.7	0.19	26.9	Left	88.9	99.5	43.93930043	-90.60139459	1184.646	F	40.6	M	40	59.6

Appendix C
Detailed Friction Results
Test Site F59

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/11/2024	F59_WB_L1_01_20240711_114607.D01	IH 894	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:46:15	4.499	2965	29.6	1.145	56.9	40.6	0.12	26.5	Left	82	91.6	42.96314302	-88.03482417		726.4364	F	40.6	M	40	29.9	
7/11/2024	F59_WB_L1_01_20240711_114607.D01	IH 894	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:46:20	4.447	2966	66.4	2.489	104.7	39.2	0.35	25	Left	82.2	93.2	42.96354352	-88.03566991		729.6123	F	38.9	M	40	66.0	
7/11/2024	F59_WB_L1_01_20240711_114607.D01	IH 894	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:46:24	4.397	2967	74.6	2.32	107.4	39.6	0.12	25.8	Left	82.1	93.4	42.96401526	-88.03641648		737.9513	F	39.4	M	40	74.4	
7/11/2024	F59_WB_L1_01_20240711_114607.D01	IH 894	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:46:29	4.347	2968	65.6	2.626	107.9	40.8	0.2	26.2	Left	82	92.9	42.9645647	-88.03705293		745.3016	F	40.5	M	40	66.0	
7/11/2024	F59_WB_L1_01_20240711_114607.D01	IH 894	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:46:33	4.297	2969	72.7	2.649	112.1	40.8	0.27	26.5	Left	82.3	94.9	42.96517207	-88.03757665		752.7937	F	40.5	M	40	73.1	
7/11/2024	F59_WB_L1_01_20240711_114607.D01	IH 894	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:46:38	4.247	2970	67.1	3.053	99.5	41.2	0.15	26.3	Left	82	93.5	42.96583217	-88.03797225		759.2085	F	40.9	M	40	67.7	
7/11/2024	F59_WB_L1_01_20240711_114607.D01	IH 894	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:46:42	4.197	2971	63.8	5.88	101.9	41.8	0.25	27.8	Left	82.2	93.5	42.96654086	-88.0382188		758.2458	F	41.7	M	40	64.7	
7/11/2024	F59_WB_L1_01_20240711_114607.D01	IH 894	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:46:46	4.147	2972	65.6	3.866	105.6	41	0.23	27.2	Left	82.2	93.9	42.96725364	-88.03831041		755.6655	F	40.8	M	40	66.1	
7/11/2024	F59_WB_L1_01_20240711_114607.D01	IH 894	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:46:51	4.099	2973	32.9	1.253	53.2	41.2	0.09	25.8	Left	82.1	91.5	42.967957	-88.03830907		753.389	F	41.2	M	40	33.5	
WB Lane 1														Avg	68.0	3.3	WB Lane 1														Avg	68.3	No of Tests
														St. Dev	4.0																St. Dev	3.9	7
																															Min	64.7	
																															Max	74.4	
7/11/2024	F60-F61_WB_L2_01_20240711_113712.D01	IH 894	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:37:25	4.485	2938	28.5	6.859	44.7	40.7	0.12	26.5	Left	81.3	88.1	42.96327457	-88.0350402		726.0864	F	40.7	M	40	28.9	
7/11/2024	F60-F61_WB_L2_01_20240711_113712.D01	IH 894	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:37:30	4.435	2939	66.8	4.27	106.7	39	0.2	24.5	Left	81.2	88.2	42.9636924	-88.03585482		731.3248	F	38.5	M	40	66.3	
7/11/2024	F60-F61_WB_L2_01_20240711_113712.D01	IH 894	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:37:34	4.385	2940	69.8	2.506	105.5	40.1	0.16	25.5	Left	81.3	89.8	42.96418373	-88.0365704		739.7662	F	39.9	M	40	69.9	
7/11/2024	F60-F61_WB_L2_01_20240711_113712.D01	IH 894	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:37:39	4.335	2941	68.4	3.05	108.9	40.8	0.27	26.7	Left	81.2	90.8	42.96475423	-88.0371804		747.576	F	40.4	M	40	68.8	
7/11/2024	F60-F61_WB_L2_01_20240711_113712.D01	IH 894	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:37:43	4.285	2942	64.8	2.528	102.2	40.8	0.24	26.8	Left	81.3	90.7	42.96537425	-88.03766177		754.948	F	40.5	M	40	65.2	
7/11/2024	F60-F61_WB_L2_01_20240711_113712.D01	IH 894	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:37:48	4.234	2943	58.2	7.874	102	41.5	0.12	27.4	Left	81.3	90.1	42.96605367	-88.03802616		759.8025	F	41.3	M	40	59.0	
7/11/2024	F60-F61_WB_L2_01_20240711_113712.D01	IH 894	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:37:52	4.185	2944	61.4	4.394	108.4	41.7	0.23	26.7	Left	81.4	90.8	42.96675678	-88.0382186		757.763	F	42.1	M	40	62.3	
7/11/2024	F60-F61_WB_L2_01_20240711_113712.D01	IH 894	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:37:56	4.135	2945	42.5	19.291	100.2	40.9	0.24	27.4	Left	81.2	88.9	42.96747759	-88.03827327		755.6157	F	40.5	M	40	43.0	
7/11/2024	F60-F61_WB_L2_01_20240711_113712.D01	IH 894	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:38:01	4.086	2946	29.2	0.831	57.7	41	0.11	26.5	Left	81.3	88.9	42.96818713	-88.03826222		754.3891	F	40.9	M	40	29.7	
WB Lane 2														Avg	64.9	4.1	WB Lane 2														Avg	65.2	No of Tests
														St. Dev	4.4																St. Dev	4.1	6
																															Min	59.0	
																															Max	69.9	
7/11/2024	F59_WB_L3_01_20240711_115841.D01	IH 894	West(-)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:58:50	4.493	2993	27.9	0.839	60.9	40.8	0.08	26.6	Left	83.3	91.1	42.96325015	-88.03489663		725.4371	F	40.7	M	40	28.3	
7/11/2024	F59_WB_L3_01_20240711_115841.D01	IH 894	West(-)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:58:54	4.442	2994	59.5	4.13	103.2	39.1	0.3	24.9	Left	83.2	91.8	42.96365734	-88.03572449		729.411	F	39	M	40	59.1	
7/11/2024	F59_WB_L3_01_20240711_115841.D01	IH 894	West(-)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:58:59	4.392	2995	70	2.887	108.3	39.9	0.15	26.1	Left	83.2	91.8	42.96414143	-88.03645587		737.7941	F	39.6	M	40	70.0	
7/11/2024	F59_WB_L3_01_20240711_115841.D01	IH 894	West(-)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:59:03	4.342	2996	66.1	3.775	106.7	40.6	0.28	26.5	Left	83.3	92.5	42.96469704	-88.03707504		745.4858	F	40.5	M	40	66.4	
7/11/2024	F59_WB_L3_01_20240711_115841.D01	IH 894	West(-)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:59:08	4.292	2997	67.5	3.127	106	40.8	0.23	26.8	Left	83.3	93.3	42.96531607	-88.0375751		753.1191	F	40.5	M	40	67.9	
7/11/2024	F59_WB_L3_01_20240711_115841.D01	IH 894	West(-)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:59:12	4.242	2998	67.6	2.963	103.3	41.3	0.18	27.2	Left	83.2	92.8	42.96598692	-88.03795305		758.7198	F	41.1	M	40	68.3	
7/11/2024	F59_WB_L3_01_20240711_115841.D01	IH 894	West(-)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:59:17	4.192	2999	69.3	4.581	103	41.7	0.27	27.2	Left	83.1	92.1	42.96668682	-88.03816028		756.9642	F	41.9	M	40	70.2	
7/11/2024	F59_WB_L3_01_20240711_115841.D01	IH 894	West(-)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:59:21	4.142	3000	61.8	20.372	100.6	40.7	0.35	26.3	Left	83.2	91.8	42.96740638	-88.03822534		754.4492	F	40.5	M	40	62.2	
7/11/2024	F59_WB_L3_01_20240711_115841.D01	IH 894	West(-)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:59:25	4.093	3001	29	0.769	53.7	41.1	0.11	26.3	Left	83.3	92.1	42.96811597	-88.03821598		752.7616	F	40.9	M	40	29.6	
WB Lane 3														Avg	66.7	3.6	WB Lane 3														Avg	67.0	No of Tests
														St. Dev	3.8																St. Dev	4.1	6
																															Min	59.1	
																															Max	70.2	

Appendix C																																	
Detailed Friction Results																																	
Test Site F60																																	
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN
7/11/2024	F60-F61_EB_L1_01_20240711_115031.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:50:46	4.186	2975	35.9	1.103	84.3	40.1	0.17	25.5	Left	82.5	91.1	42.96695354	-88.03850399	756.5573	F	39.9	M	40	36.0		
7/11/2024	F60-F61_EB_L1_01_20240711_115031.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:50:51	4.236	2976	51.6	20.331	55.6	40.5	0.07	25.8	Left	82.6	92.9	42.96623396	-88.03854888	758.0256	F	40.5	M	40	51.9		
7/11/2024	F60-F61_EB_L1_01_20240711_115031.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:50:55	4.287	2977	72.5	3.738	106.6	40	0.31	26.2	Left	82.5	92.8	42.96550461	-88.03854603	760.6683	F	39.7	M	40	72.5		
7/11/2024	F60-F61_EB_L1_01_20240711_115031.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:51:00	4.337	2978	72.4	5.602	110.4	40.3	0.2	26.3	Left	82.5	93.1	42.96478232	-88.03840731	765.2051	F	40	M	40	72.6		
7/11/2024	F60-F61_EB_L1_01_20240711_115031.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:51:04	4.387	2979	75	2.564	109.5	40.9	0.19	27.1	Left	82.5	92.2	42.96411081	-88.03810698	768.9748	F	40.8	M	40	75.5		
7/11/2024	F60-F61_EB_L1_01_20240711_115031.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:51:09	4.436	2980	56.7	2.414	82.9	41.9	0.15	26.1	Left	82.5	91.5	42.96348651	-88.03764057	766.9493	F	41.8	M	40	57.7		
EB Lane 1															Avg	73.3	4.0											EB Lane 1	Avg	73.5	No of Tests		
															St. Dev	1.5													St. Dev	1.7	3		
																														Min	72.5		
																														Max	75.5		
7/11/2024	F60-F61_EB_L2_01_20240711_114140.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:41:58	4.212	2948	29.2	2.764	59	40.4	0.11	26	Left	81.6	91.4	42.96659006	-88.03857111	756.7517	F	40.3	M	40	29.4		
7/11/2024	F60-F61_EB_L2_01_20240711_114140.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:42:02	4.263	2949	69.9	2.647	106.1	40.1	0.25	25.7	Left	81.7	92	42.96585556	-88.03860684	759.1923	F	40.1	M	40	70.0		
7/11/2024	F60-F61_EB_L2_01_20240711_114140.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:42:07	4.312	2950	66.3	2.225	104.4	40.1	0.25	25.7	Left	81.6	92.5	42.96514966	-88.03854352	763.4102	F	39.9	M	40	66.4		
7/11/2024	F60-F61_EB_L2_01_20240711_114140.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:42:11	4.363	2951	69.7	2.427	103.4	40.5	0.23	26.6	Left	81.6	91.9	42.96443236	-88.03832252	768.0168	F	40.2	M	40	70.0		
7/11/2024	F60-F61_EB_L2_01_20240711_114140.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:42:16	4.413	2952	66.3	4.079	103.5	41.4	0.12	26.8	Left	81.7	92	42.96376916	-88.03793047	769.7887	F	41.2	M	40	67.0		
EB Lane 2															Avg	68.1	2.8											EB Lane 2	Avg	68.3	No of Tests		
															St. Dev	2.0													St. Dev	1.9	4		
																														Min	66.4		
																														Max	70.0		
7/11/2024	F60-F61_EB_L3_01_20240711_113323.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:33:23	4.204	2918	29.9	0.547	95.4	40.1	0.11	24.3	Left	81.2	87.7	42.96686659	-88.03859755	756.8825	F	40	M	40	30.0		
7/11/2024	F60-F61_EB_L3_01_20240711_113323.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:33:27	4.253	2919	70.5	8.021	68.5	40.1	0.29	25.3	Left	81	89.4	42.96615146	-88.03863914	759.1727	F	39.9	M	40	70.6		
7/11/2024	F60-F61_EB_L3_01_20240711_113323.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:33:32	4.304	2920	72.3	3.742	104.1	40	0.25	26.3	Left	81.1	90.5	42.96541961	-88.03862865	762.9728	F	39.8	M	40	72.3		
7/11/2024	F60-F61_EB_L3_01_20240711_113323.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:33:36	4.353	2921	69.8	1.899	107.8	40.3	0.23	26.7	Left	81	89.8	42.96471584	-88.03847473	767.5777	F	40.4	M	40	70.0		
7/11/2024	F60-F61_EB_L3_01_20240711_113323.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:33:41	4.403	2922	62.6	7.304	99.6	41	0.12	25.8	Left	81.1	89.3	42.96403575	-88.03815991	771.1253	F	40.7	M	40	63.1		
EB Lane 3															Avg	68.8	5.2											EB Lane 3	Avg	69.0	No of Tests		
															St. Dev	4.3													St. Dev	4.0	4		
																														Min	63.1		
																														Max	72.3		

Appendix C

Detailed Friction Results

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Normalized Speed	Adj SN					
7/11/2024	F60-F61_EB_L1_01_20240711_115031.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:51:13	4.486	2981	52.5	2.228	81	41.9	0.14	27	Left	82.6	91.4	42.96292272	-88.03701544	759.0006	F	41.8	M	40	53.5							
7/11/2024	F60-F61_EB_L1_01_20240711_115031.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:51:17	4.536	2982	55	2.352	87.8	41.6	0.21	27.1	Left	82.5	91.4	42.96245156	-88.03626543	749.8169	F	41.3	M	40	55.8							
7/11/2024	F60-F61_EB_L1_01_20240711_115031.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:51:22	4.587	2983	63.6	3.437	100.1	41	0.26	26.5	Left	82.5	92.2	42.96208965	-88.03541017	741.5309	F	40.7	M	40	64.1							
7/11/2024	F60-F61_EB_L1_01_20240711_115031.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:51:26	4.637	2984	76.7	2.944	97.2	40.6	0.3	27	Left	82.6	91.9	42.96184718	-88.03448796	733.7131	F	40.4	M	40	77.0							
7/11/2024	F60-F61_EB_L1_01_20240711_115031.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:51:31	4.686	2985	74.9	2.791	107.1	40.3	0.34	26.1	Left	82.7	92.3	42.96168263	-88.03353754	727.7459	F	40.1	M	40	75.1							
7/11/2024	F60-F61_EB_L1_01_20240711_115031.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:51:35	4.736	2986	75.6	3.057	109.2	39.8	0.28	26	Left	82.6	92.1	42.96158686	-88.03256034	727.9127	F	39.7	M	40	75.5							
7/11/2024	F60-F61_EB_L1_01_20240711_115031.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:51:40	4.786	2987	71.6	3.978	102.2	40.5	0.21	26.5	Left	82.5	92	42.96155518	-88.03157921	729.6172	F	40.4	M	40	71.9							
7/11/2024	F60-F61_EB_L1_01_20240711_115031.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:51:44	4.836	2988	74.1	4.226	102.4	40.9	0.28	26	Left	82.5	92.2	42.96157379	-88.03059777	731.1671	F	40.7	M	40	74.6							
7/11/2024	F60-F61_EB_L1_01_20240711_115031.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:51:48	4.887	2989	66.5	14.67	110.5	40.8	0.28	25.3	Left	82.5	91.6	42.96164514	-88.02960926	732.5692	F	40.6	M	40	66.9							
7/11/2024	F60-F61_EB_L1_01_20240711_115031.D01	IH 894	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:51:53	4.935	2990	35.5	1.945	54.4	41.2	0.15	26.8	Left	82.6	91.6	42.96174748	-88.02866947	733.5425	F	41.1	M	40	36.1							
EB Lane 1															Avg St. Dev		71.9 5.0		5.0													EB Lane 1		Avg St. Dev		72.1 4.9		No of Tests 7
7/11/2024	F60-F61_EB_L2_01_20240711_114140.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:42:20	4.463	2953	49.1	3.126	75.9	42.1	0.15	27.2	Left	81.7	91.5	42.9631795	-88.03738923	764.7932	F	42	M	40	50.2							
7/11/2024	F60-F61_EB_L2_01_20240711_114140.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:42:25	4.513	2954	53.3	1.505	72.7	41.8	0.17	26.5	Left	81.7	91.4	42.96266174	-88.03670547	755.8416	F	41.6	M	40	54.2							
7/11/2024	F60-F61_EB_L2_01_20240711_114140.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:42:29	4.563	2955	65.8	2.309	100.9	41.4	0.24	26.7	Left	81.7	91.7	42.96224021	-88.03590597	747.1423	F	41.2	M	40	66.5							
7/11/2024	F60-F61_EB_L2_01_20240711_114140.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:42:33	4.613	2956	69.2	3.532	98.3	41.2	0.24	26.9	Left	81.6	92.5	42.96193569	-88.0350057	738.5645	F	41.1	M	40	69.8							
7/11/2024	F60-F61_EB_L2_01_20240711_114140.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:42:38	4.663	2957	73.7	2.117	105.3	40.7	0.24	26.3	Left	81.7	92.2	42.96173172	-88.0340673	731.6624	F	40.4	M	40	74.1							
7/11/2024	F60-F61_EB_L2_01_20240711_114140.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:42:42	4.713	2958	71.8	2.262	105.1	39.9	0.28	25.2	Left	81.6	91.1	42.96159987	-88.03309695	728.3064	F	39.8	M	40	71.8							
7/11/2024	F60-F61_EB_L2_01_20240711_114140.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:42:47	4.762	2959	66	2.436	102.9	40.4	0.15	26.6	Left	81.8	92.2	42.96153608	-88.03212854	729.3123	F	40.2	M	40	66.2							
7/11/2024	F60-F61_EB_L2_01_20240711_114140.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:42:51	4.813	2960	70.4	4.735	103.4	40.7	0.27	26	Left	81.8	92.3	42.96152711	-88.03114253	730.6133	F	40.5	M	40	70.8							
7/11/2024	F60-F61_EB_L2_01_20240711_114140.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:42:56	4.863	2961	68.6	3.415	99.3	40.7	0.24	26.3	Left	81.7	91.4	42.96156931	-88.03015743	731.911	F	40.5	M	40	69.0							
7/11/2024	F60-F61_EB_L2_01_20240711_114140.D01	IH 894	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:43:00	4.912	2962	30.5	0.698	48.7	41.3	0.08	26	Left	81.8	90.5	42.96165742	-88.02919293	732.9527	F	41	M	40	31.2							
EB Lane 2															Avg St. Dev		69.4 2.9		3.0													EB Lane 2		Avg St. Dev		69.7 2.8		No of Tests 7
7/11/2024	F60-F61_EB_L3_01_20240711_113323.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:33:45	4.454	2923	52.8	1.53	79.3	41.8	0.14	28	Left	81	88.9	42.96340331	-88.03767152	768.9595	F	42	M	40	53.7							
7/11/2024	F60-F61_EB_L3_01_20240711_113323.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:33:50	4.504	2924	53.7	1.526	89.5	41.9	0.12	27.1	Left	81	88.5	42.9628502	-88.03704544	760.7982	F	41.8	M	40	54.7							
7/11/2024	F60-F61_EB_L3_01_20240711_113323.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:33:54	4.554	2925	58.5	5.567	81.5	41.6	0.24	27.1	Left	81.2	89.5	42.96238492	-88.03628831	751.6479	F	41.5	M	40	59.3							
7/11/2024	F60-F61_EB_L3_01_20240711_113323.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:33:59	4.604	2926	65.4	2.301	107.3	41	0.27	25.4	Left	81.1	90.1	42.96202444	-88.03543784	743.3864	F	40.9	M	40	65.9							
7/11/2024	F60-F61_EB_L3_01_20240711_113323.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:34:03	4.654	2927	73.2	2.402	104.7	40.7	0.28	26.8	Left	81.3	89.7	42.96178159	-88.03449969	735.1721	F	40.3	M	40	73.6							
7/11/2024	F60-F61_EB_L3_01_20240711_113323.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:34:07	4.704	2928	68.3	3.984	104.1	40.3	0.28	26.2	Left	81	88.9	42.96162059	-88.03354613	729.3199	F	40.1	M	42	67.5							
7/11/2024	F60-F61_EB_L3_01_20240711_113323.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:34:12	4.754	2929	68.1	3.962	105.5	39.7	0.24	25.4	Left	81.1	88.8	42.96152658	-88.03257489	729.5203	F	39.6	M	40	68.0							
7/11/2024	F60-F61_EB_L3_01_20240711_113323.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:34:16	4.804	2930	73.7	2.573	110.3	40.3	0.23	26.5	Left	81	89	42.96149218	-88.03158942	730.4718	F	40.2	M	40	73.9							
7/11/2024	F60-F61_EB_L3_01_20240711_113323.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:34:21	4.854	2931	63.4	1.992	100.7	40.6	0.2	25.8	Left	81.2	89	42.96151027	-88.03060887	731.8173	F	40.3	M	40	63.7							
7/11/2024	F60-F61_EB_L3_01_20240711_113323.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:34:25	4.905	2932	70.9	9.249	96	40.5	0.23	26.6	Left	81.2	87.7	42.96158044	-88.02962018	732.998	F	40.3	M	40	71.2							
7/11/2024	F60-F61_EB_L3_01_20240711_113323.D01	IH 894	East(+)	3	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:34:30	4.953	2933	30.5	1.168	47.1	41.1	0.06	26.6	Left	81.2	87.8	42.9616807	-88.02867769	733.8839	F	41	M	40	31.1							
EB Lane 3															Avg St. Dev		69.0 3.9		3.8													EB Lane 3		Avg St. Dev		69.1 3.9		No of Tests 7

Appendix C
Detailed Friction Results
Test Site F80

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
7/9/2024	NEW-SITE-1-F58b_EB_L2_01_20240709_160142.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:06:49	38.464	2142	56.4	0.804	80.5	40.3	0.16	26.3	Left	89.1	102.2	43.94574544	-90.56549622	1010.1551	F	40.2	M		40	56.6		
7/9/2024	NEW-SITE-1-F58b_EB_L2_01_20240709_160142.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:06:53	38.514	2143	55.5	0.935	83.1	40.4	0.16	26	Left	89.2	103.2	43.94585383	-90.56451108	1008.1353	F	40.3	M		40	55.7		
7/9/2024	NEW-SITE-1-F58b_EB_L2_01_20240709_160142.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:06:57	38.564	2144	57.1	0.989	82.8	40.5	0.19	26.9	Left	89.1	103.3	43.94596164	-90.56351376	1006.5293	F	40.3	M		40	57.4		
7/9/2024	NEW-SITE-1-F58b_EB_L2_01_20240709_160142.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:07:02	38.614	2145	56.5	0.9	80.4	40.5	0.16	25.1	Left	89	102.9	43.94606999	-90.56252836	1005.1045	F	40.5	M		40	56.8		
7/9/2024	NEW-SITE-1-F58b_EB_L2_01_20240709_160142.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:07:06	38.664	2146	55.5	0.902	80.4	40.6	0.15	26.5	Left	89	103	43.94617904	-90.56154304	1003.7986	F	40.4	M		40	55.8		
7/9/2024	NEW-SITE-1-F58b_EB_L2_01_20240709_160142.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:07:11	38.714	2147	54.6	1.031	81.1	40.7	0.17	26.3	Left	89.1	102	43.94628845	-90.56055002	1002.3811	F	40.5	M		40	55.0		
7/9/2024	NEW-SITE-1-F58b_EB_L2_01_20240709_160142.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:07:15	38.764	2148	57	1.026	80.1	40.6	0.17	26.3	Left	89.1	102.5	43.94639462	-90.55956752	1001.1411	F	40.5	M		40	57.3		
7/9/2024	NEW-SITE-1-F58b_EB_L2_01_20240709_160142.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:07:20	38.814	2149	59.2	0.761	78.7	40.6	0.19	26.2	Left	89.1	103	43.94650231	-90.55857848	999.8018	F	40.5	M		40	59.5		
7/9/2024	NEW-SITE-1-F58b_EB_L2_01_20240709_160142.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:07:24	38.864	2150	54.3	0.609	80.2	40.6	0.19	26.5	Left	89.1	103	43.94660998	-90.55759118	998.418	F	40.5	M		40	54.6		
7/9/2024	NEW-SITE-1-F58b_EB_L2_01_20240709_160142.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:07:29	38.913	2151	58.7	1.059	80.6	40.6	0.2	25.5	Left	89	102.1	43.94671787	-90.55660516	997.2183	F	40.4	M		40	59.0		

EB Lane 2

Avg
St. Dev

56.5
1.6

0.9

EB Lane 2

Avg
St. Dev

56.8
1.6

No of Tests
10

Min
Max

54.6
59.5

7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:17:10	38.942	2155	58.7	1.197	93.4	40	0.15	26.1	Left	89.1	99.4	43.94713734	-90.55612795	996.187	F	39.8	M		40	58.7
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:17:14	38.892	2156	60.5	0.947	85.9	40.3	0.23	26.1	Left	89	99.1	43.94702308	-90.55711476	997.0653	F	40.1	M		40	60.7
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:17:18	38.842	2157	59.3	0.763	82.4	40.4	0.19	26.4	Left	88.9	99.1	43.94690968	-90.55810023	998.333	F	40.4	M		40	59.5
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:17:23	38.792	2158	58.9	0.941	85.8	40.5	0.17	26.3	Left	89.1	98.3	43.94679372	-90.55909266	999.6509	F	40.4	M		40	59.2
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:17:27	38.742	2159	55.3	1.364	81.3	40.7	0.13	26.4	Left	89.1	99.1	43.94668065	-90.56007413	1001.0098	F	40.6	M		40	55.7
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:17:32	38.692	2160	59.6	1.288	84.3	40.7	0.15	26.3	Left	89.1	99.8	43.94656631	-90.56105919	1002.1825	F	40.5	M		40	60.0
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:17:36	38.643	2161	57.5	0.765	84.4	40.6	0.17	26.5	Left	89.1	98.7	43.94645258	-90.56203506	1003.659	F	40.4	M		40	57.8
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:17:41	38.592	2162	55.6	0.973	83.8	40.6	0.17	26.2	Left	89.1	98.7	43.94633702	-90.56303146	1005.0005	F	40.5	M		40	55.9
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:17:45	38.542	2163	60.2	0.994	82.9	40.7	0.17	26.3	Left	89	98.7	43.94622304	-90.56401706	1006.5224	F	40.5	M		40	60.6
7/9/2024	NEW-SITE-1-F58a_WB_L2_01_20240709_161705.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	16:17:50	38.492	2164	55.6	1.176	83.3	40.6	0.19	26.5	Left	89.1	99.3	43.94610939	-90.56500395	1008.1785	F	40.4	M		40	55.9

WB Lane 2

Avg
St. Dev

58.1
2.0

1.0

WB Lane 2

Avg
St. Dev

58.4
2.0

No of Tests
10

Min
Max

55.7
60.7

Appendix C
Detailed Friction Results
Test Site F81

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
7/8/2024	NEW-SITE-2_NB_L1_01_20240708_132205.D01	US 14	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:22:05	10.009	1426	48.3	0.735	101.3	39.2	0.15	25.1	Left	83.9	95.5	42.63863107	-88.74249985		898.7411	F	38.7	M		40	47.9	
7/8/2024	NEW-SITE-2_NB_L1_01_20240708_132205.D01	US 14	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:22:10	10.058	1427	47.7	0.485	79.8	39	0.11	26.1	Left	83.8	94.7	42.63933666	-88.74251464		905.3303	F	38.9	M		40	47.2	
7/8/2024	NEW-SITE-2_NB_L1_01_20240708_132205.D01	US 14	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:22:14	10.108	1428	44	1.312	72.4	40.5	0.11	26.7	Left	84.1	96.4	42.64006216	-88.74252921		911.2573	F	40.3	M		40	44.3	
7/8/2024	NEW-SITE-2_NB_L1_01_20240708_132205.D01	US 14	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:22:19	10.158	1429	44.9	0.86	71.1	41.1	0.17	26.7	Left	84.1	94.7	42.64077983	-88.742544		916.8814	F	40.9	M		40	45.5	
7/8/2024	NEW-SITE-2_NB_L1_01_20240708_132205.D01	US 14	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:22:23	10.208	1430	44.6	1.206	71.7	41	0.16	25.2	Left	83.9	96.9	42.64150211	-88.74256024		922.3283	F	40.8	M		40	45.1	
7/8/2024	NEW-SITE-2_NB_L1_01_20240708_132205.D01	US 14	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:22:27	10.258	1431	45.7	0.924	68.1	40.9	0.19	26.8	Left	83.9	95.4	42.6422243	-88.74257453		928.3163	F	40.9	M		40	46.2	
7/8/2024	NEW-SITE-2_NB_L1_01_20240708_132205.D01	US 14	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:22:32	10.308	1432	46.3	0.713	68.9	40.8	0.12	26.5	Left	84	96.4	42.64294795	-88.74258755		934.3625	F	40.4	M		40	46.7	
7/8/2024	NEW-SITE-2_NB_L1_01_20240708_132205.D01	US 14	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:22:36	10.358	1433	45.9	1.263	70.5	40.8	0.12	26.3	Left	84.2	96.2	42.64366553	-88.74260254		939.9269	F	40.6	M		40	46.3	
7/8/2024	NEW-SITE-2_NB_L1_01_20240708_132205.D01	US 14	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:22:41	10.408	1434	44.2	2.328	68	41.2	0.11	26.4	Left	84.1	96.6	42.64439052	-88.74261871		943.4198	F	40.9	M		40	44.8	
7/8/2024	NEW-SITE-2_NB_L1_01_20240708_132205.D01	US 14	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:22:45	10.458	1435	43.3	0.469	70.2	41.3	0.19	26.1	Left	84	95.8	42.64510903	-88.74263271		944.6122	F	41.3	M		40	44.0	
7/8/2024	NEW-SITE-2_NB_L1_01_20240708_132205.D01	US 14	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:22:49	10.508	1436	42.2	1.251	64.2	41	0.15	26.8	Left	84	98.3	42.64583376	-88.74264598		945.9285	F	40.8	M		40	42.7	
NB Lane 1															Avg	45.2	1.1	NB Lane 1													Avg	45.5	No of Tests	
															St. Dev	1.4															St. Dev	1.1	9	
																														Min	44.0			
																														Max	47.2			
7/8/2024	NEW-SITE-2_SB_L1_01_20240708_132514.D01	US 14	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:25:14	10.543	1438	41.3	2.884	83.9	40.3	0.2	25.4	Left	84.3	100.1	42.64634221	-88.74269881		946.1151	F	40.2	M		40	41.5	
7/8/2024	NEW-SITE-2_SB_L1_01_20240708_132514.D01	US 14	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:25:18	10.493	1439	43.6	0.84	73.7	40.4	0.12	26.6	Left	84.2	99.5	42.64562658	-88.74268286		944.7274	F	40.3	M		40	43.8	
7/8/2024	NEW-SITE-2_SB_L1_01_20240708_132514.D01	US 14	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:25:23	10.443	1440	40.5	1.848	67	40.6	0.19	26.3	Left	84.2	98.5	42.64490115	-88.74266735		943.7842	F	40.4	M		40	40.8	
7/8/2024	NEW-SITE-2_SB_L1_01_20240708_132514.D01	US 14	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:25:27	10.393	1441	42.5	1.013	67.6	40.8	0.08	26.6	Left	84.1	97.7	42.64418704	-88.74265482		942.2742	F	40.5	M		40	42.9	
7/8/2024	NEW-SITE-2_SB_L1_01_20240708_132514.D01	US 14	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:25:32	10.343	1442	42.1	1.71	71	41.2	0.09	26	Left	84.4	99.4	42.64345641	-88.74263921		938.5942	F	41	M		40	42.7	
7/8/2024	NEW-SITE-2_SB_L1_01_20240708_132514.D01	US 14	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:25:36	10.293	1443	44.6	1.191	68.5	41.2	0.12	26.8	Left	84.1	96.8	42.64273864	-88.74262381		933.1918	F	41.3	M		40	45.2	
7/8/2024	NEW-SITE-2_SB_L1_01_20240708_132514.D01	US 14	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:25:41	10.243	1444	44.4	0.873	66	41	0.13	26.1	Left	84.3	98.8	42.6420113	-88.74260879		928.0815	F	40.6	M		40	44.9	
7/8/2024	NEW-SITE-2_SB_L1_01_20240708_132514.D01	US 14	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:25:45	10.193	1445	44.2	1.151	68.6	40.8	0.1	26.8	Left	84.3	98.8	42.64129323	-88.74259411		922.4527	F	40.7	M		40	44.6	
7/8/2024	NEW-SITE-2_SB_L1_01_20240708_132514.D01	US 14	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:25:49	10.143	1446	45.3	0.881	67.7	40.8	0.16	26.3	Left	84.4	98.2	42.6405706	-88.74257899		917.0504	F	40.8	M		40	45.7	
7/8/2024	NEW-SITE-2_SB_L1_01_20240708_132514.D01	US 14	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:25:54	10.093	1447	44.5	1.434	67.3	41	0.09	26.8	Left	84.3	96.2	42.63984651	-88.74256439		910.6461	F	41	M		40	45.0	
7/8/2024	NEW-SITE-2_SB_L1_01_20240708_132514.D01	US 14	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:25:58	10.043	1448	44.8	1.618	66.7	41	0.15	26.4	Left	84.3	95.8	42.63912705	-88.74254755		903.1795	F	40.9	M		40	45.3	
7/8/2024	NEW-SITE-2_SB_L1_01_20240708_132514.D01	US 14	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:26:03	9.993	1449	45.9	1.335	70.5	40.8	0.12	25.4	Left	84.3	93.1	42.63840365	-88.74253279		896.821	F	40.7	M		40	46.3	
SB Lane 1															Avg	43.7	1.3	SB Lane 1													Avg	44.1	No of Tests	
															St. Dev	1.6															St. Dev	1.6	9	
																														Min	40.8			
																														Max	45.7			

Appendix C
Detailed Friction Results
Test Site F82

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
7/10/2024	NEW-SITE-3_EB_L1_01_20240710_093937.D01	US 151	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:39:37	10.008	2324	46.5	2.283	98	40.1	0.19	25	Left	72.8	76.2	44.07353971	-87.85682342	844.9403	F	39.9	M		40	46.55		
7/10/2024	NEW-SITE-3_EB_L1_01_20240710_093937.D01	US 151	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:39:42	10.058	2325	42.8	0.447	83.5	40.4	0.14	25	Left	72.8	76	44.07376751	-87.85588449	844.1741	F	40.2	M		40	43.0		
7/10/2024	NEW-SITE-3_EB_L1_01_20240710_093937.D01	US 151	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:39:46	10.107	2326	42.1	0.663	68.2	40.5	0.09	26.3	Left	72.8	76.6	44.07399526	-87.8549465	843.5623	F	40.4	M		40	42.4		
7/10/2024	NEW-SITE-3_EB_L1_01_20240710_093937.D01	US 151	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:39:50	10.158	2327	45.2	1.015	74.9	40.5	0.16	26.2	Left	72.9	77.3	44.07423358	-87.85399257	842.8931	F	40.4	M		40	45.5		
7/10/2024	NEW-SITE-3_EB_L1_01_20240710_093937.D01	US 151	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:39:55	10.208	2328	47.6	0.815	69.9	40.5	0.18	26.2	Left	72.7	77.3	44.07447997	-87.85305131	842.318	F	40.3	M		40	47.9		
7/10/2024	NEW-SITE-3_EB_L1_01_20240710_093937.D01	US 151	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:39:59	10.258	2329	45.9	0.654	75.5	40.6	0.19	26.4	Left	72.8	77.4	44.07473312	-87.85210856	841.6699	F	40.4	M		40	46.2		
7/10/2024	NEW-SITE-3_EB_L1_01_20240710_093937.D01	US 151	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:40:04	10.307	2330	46.4	1.002	76	40.5	0.16	26.7	Left	72.8	77.5	44.07499117	-87.85118493	841.0448	F	40.5	M		40	46.7		
7/10/2024	NEW-SITE-3_EB_L1_01_20240710_093937.D01	US 151	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:40:08	10.357	2331	44.9	1.191	69	40.5	0.11	25.6	Left	72.9	78.1	44.07525976	-87.85025307	840.4127	F	40.4	M		40	45.2		
7/10/2024	NEW-SITE-3_EB_L1_01_20240710_093937.D01	US 151	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:40:13	10.407	2332	44.2	0.693	70.2	40.5	0.16	26	Left	72.9	78	44.0755336	-87.84933292	840.3471	F	40.3	M		40	44.5		
EB Lane 1															Avg	45.0	0.8											EB Lane 1			Avg	45.3	No of Tests	
															St. Dev	2.1															St. Dev	2.2	6	
																														Min	42.4			
																														Max	47.9			
7/10/2024	NEW-SITE-3_WB_L1_01_20240710_094149.D01	US 151	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:41:49	10.388	2333	46.6	1.563	85.4	39.7	0.19	24.8	Left	72.9	77.4	44.07547131	-87.84963806	840.4783	F	39.5	M		40	46.5		
7/10/2024	NEW-SITE-3_WB_L1_01_20240710_094149.D01	US 151	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:41:54	10.338	2334	45.9	0.673	80.1	40.1	0.12	25.6	Left	72.9	77.9	44.07519801	-87.85056205	840.6752	F	39.9	M		40	46.0		
7/10/2024	NEW-SITE-3_WB_L1_01_20240710_094149.D01	US 151	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:41:58	10.288	2335	45.4	0.664	77.4	40.4	0.13	25.9	Left	72.9	78.1	44.07492713	-87.85150511	841.2061	F	40.2	M		40	45.6		
7/10/2024	NEW-SITE-3_WB_L1_01_20240710_094149.D01	US 151	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:42:02	10.238	2336	48.8	1.263	79.4	40.4	0.17	26	Left	72.9	78.3	44.07467114	-87.85243405	841.8235	F	40.2	M		40	49.0		
7/10/2024	NEW-SITE-3_WB_L1_01_20240710_094149.D01	US 151	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:42:07	10.188	2337	47.3	0.725	71.5	40.5	0.19	26.2	Left	72.9	78.3	44.07442299	-87.85337358	842.4876	F	40.4	M		40	47.6		
7/10/2024	NEW-SITE-3_WB_L1_01_20240710_094149.D01	US 151	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:42:11	10.138	2338	48	1.109	75.7	40.5	0.17	26	Left	72.9	78.1	44.07418057	-87.85431517	843.2548	F	40.4	M		40	48.3		
7/10/2024	NEW-SITE-3_WB_L1_01_20240710_094149.D01	US 151	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:42:16	10.088	2339	46.3	1.456	68.7	40.5	0.19	26.3	Left	72.9	77.5	44.07394415	-87.85527074	843.8424	F	40.4	M		40	46.6		
7/10/2024	NEW-SITE-3_WB_L1_01_20240710_094149.D01	US 151	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:42:20	10.038	2340	45.7	0.817	70.5	40.6	0.12	26.4	Left	72.9	77.7	44.07371461	-87.85621247	844.5391	F	40.4	M		40	46.0		
7/10/2024	NEW-SITE-3_WB_L1_01_20240710_094149.D01	US 151	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:42:25	9.988	2341	45.3	0.714	74.7	40.5	0.17	25.6	Left	72.9	77.9	44.07348274	-87.85716352	845.1699	F	40.4	M		40	45.6		
WB Lane 1															Avg	46.8	1.0											WB Lane 1			Avg	47.0	No of Tests	
															St. Dev	1.3															St. Dev	1.3	7	
																														Min	45.6			
																														Max	49.0			

Appendix C
Detailed Friction Results
Test Site F83

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN	
7/9/2024	NEW-SITE-4_NB_L2_01_20240709_105658.D01	US 151	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:57:33	105.41	1688	54.3	1.265	87.2	41.2	0.16	26.3	Left	85.8	96.2	43.20466506		-89.1859545		983.8307	F	41.1	M		40	54.9	
7/9/2024	NEW-SITE-4_NB_L2_01_20240709_105658.D01	US 151	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:57:38	105.46	1689	51.7	1.123	84.7	41.2	0.15	26.4	Left	85.8	96.3	43.20499232		-89.18507119		978.6388	F	41	M		40	52.3	
7/9/2024	NEW-SITE-4_NB_L2_01_20240709_105658.D01	US 151	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:57:42	105.51	1690	54.7	1.452	79	41	0.2	26.4	Left	85.7	96.4	43.20531995		-89.18418926		974.1425	F	40.8	M		40	55.2	
7/9/2024	NEW-SITE-4_NB_L2_01_20240709_105658.D01	US 151	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:57:46	105.56	1691	53.6	1.28	76.3	40.9	0.15	26.3	Left	85.7	96.2	43.20564387		-89.18331004		970.653	F	40.7	M		40	54.1	
7/9/2024	NEW-SITE-4_NB_L2_01_20240709_105658.D01	US 151	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:57:51	105.61	1692	53.6	0.758	83.5	40.9	0.15	26.1	Left	85.7	96.4	43.20597668		-89.18240407		967.939	F	40.6	M		40	54.1	
7/9/2024	NEW-SITE-4_NB_L2_01_20240709_105658.D01	US 151	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:57:55	105.66	1693	53.4	1.503	75.8	41	0.15	26.5	Left	85.8	96.3	43.206293		-89.18155068		965.4301	F	41	M		40	53.9	
7/9/2024	NEW-SITE-4_NB_L2_01_20240709_105658.D01	US 151	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:58:00	105.71	1694	51.9	1.241	81.1	41.2	0.13	26.2	Left	85.7	96.3	43.20661864		-89.18066832		962.8081	F	41	M		40	52.5	
7/9/2024	NEW-SITE-4_NB_L2_01_20240709_105658.D01	US 151	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:58:04	105.76	1695	53.4	1.848	75.7	41.1	0.12	27.2	Left	85.6	96.2	43.206942		-89.17978871		960.0689	F	41	M		40	54.0	
7/9/2024	NEW-SITE-4_NB_L2_01_20240709_105658.D01	US 151	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:58:08	105.81	1696	53.7	1.624	79.1	41.2	0.16	27	Left	85.8	96.3	43.20727171		-89.17889613		956.9915	F	41	M		40	54.3	
7/9/2024	NEW-SITE-4_NB_L2_01_20240709_105658.D01	US 151	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:58:13	105.86	1697	55.5	1.986	77.5	41	0.19	26.8	Left	85.6	95.7	43.20759595		-89.17801819		954.3496	F	40.9	M		40	56.0	
7/9/2024	NEW-SITE-4_NB_L2_01_20240709_105658.D01	US 151	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:58:17	105.91	1698	53.6	0.886	81.7	41.1	0.16	26.1	Left	85.7	96	43.20792167		-89.17713507		951.7445	F	41	M		40	54.2	
7/9/2024	NEW-SITE-4_NB_L2_01_20240709_105658.D01	US 151	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:58:22	105.96	1699	54	0.931	77.4	41.1	0.16	26.6	Left	85.7	96.6	43.20825014		-89.17624819		949.3154	F	41	M		40	54.6	
7/9/2024	NEW-SITE-4_NB_L2_01_20240709_105658.D01	US 151	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:58:26	106.01	1700	55.9	2.682	82.2	41	0.24	26.8	Left	85.6	95.4	43.2085744		-89.17537512		947.6503	F	40.8	M		40	56.4	
NB Lane 2															Avg	53.7	1.4	NB Lane 2															Avg	54.3	No of Tests
															St. Dev	0.9																	St. Dev	0.9	10
																																	Min	52.5	
																																	Max	56.0	
7/9/2024	NEW-SITE-4_SB_L2_01_20240709_110615.D01	US 151	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:15	105.99	1701	55	1.599	92.2	40.3	0.24	24.8	Left	85.6	95.5	43.2087121		-89.17576684		951.5435	F	40	M		40	55.2	
7/9/2024	NEW-SITE-4_SB_L2_01_20240709_110615.D01	US 151	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:19	105.94	1702	55.3	1.094	87.9	40.7	0.12	27	Left	85.6	95.2	43.2083905		-89.17663947		954.2512	F	40.6	M		40	55.7	
7/9/2024	NEW-SITE-4_SB_L2_01_20240709_110615.D01	US 151	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:24	105.89	1703	55	1.132	81.9	41.1	0.16	26.7	Left	85.6	94.8	43.20806463		-89.17751866		956.7017	F	40.9	M		40	55.6	
7/9/2024	NEW-SITE-4_SB_L2_01_20240709_110615.D01	US 151	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:28	105.84	1704	54.8	1.049	86	41.1	0.15	26.7	Left	85.5	95.1	43.20774017		-89.17840174		959.2119	F	40.9	M		40	55.4	
7/9/2024	NEW-SITE-4_SB_L2_01_20240709_110615.D01	US 151	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:33	105.79	1705	53.7	1.173	79.4	41.1	0.17	26.7	Left	85.5	95.5	43.20741272		-89.17928761		961.6835	F	41	M		40	54.3	
7/9/2024	NEW-SITE-4_SB_L2_01_20240709_110615.D01	US 151	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:37	105.74	1706	56.6	1.992	84.5	40.8	0.28	25.9	Left	85.5	94.9	43.20708915		-89.18016975		964.2066	F	40.6	M		40	57.0	
7/9/2024	NEW-SITE-4_SB_L2_01_20240709_110615.D01	US 151	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:42	105.69	1707	57.7	1.012	82.7	40.1	0.19	26.4	Left	85.5	95.4	43.20676648		-89.181046		966.6626	F	40	M		40	57.8	
7/9/2024	NEW-SITE-4_SB_L2_01_20240709_110615.D01	US 151	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:46	105.64	1708	56.3	1.576	86.4	40.1	0.16	26	Left	85.5	95.1	43.20644056		-89.18192996		969.2269	F	39.9	M		40	56.4	
7/9/2024	NEW-SITE-4_SB_L2_01_20240709_110615.D01	US 151	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:51	105.59	1709	56.3	1.166	84.3	40.1	0.18	26.2	Left	85.5	93.8	43.20611596		-89.18280603		971.6487	F	39.9	M		40	56.4	
7/9/2024	NEW-SITE-4_SB_L2_01_20240709_110615.D01	US 151	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:06:55	105.54	1710	55	1.595	83.7	40.1	0.18	25.7	Left	85.4	94.9	43.20579204		-89.18368638		974.335	F	39.9	M		40	55.1	
7/9/2024	NEW-SITE-4_SB_L2_01_20240709_110615.D01	US 151	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:07:00	105.49	1711	56	1.807	81.8	39.9	0.23	26.2	Left	85.6	94.8	43.20546823		-89.1845664		978.0148	F	39.7	M		40	56.0	
7/9/2024	NEW-SITE-4_SB_L2_01_20240709_110615.D01	US 151	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:07:04	105.44	1712	55.7	1.23	84.4	39.9	0.17	25.1	Left	85.5	95.2	43.2051368		-89.18546301		982.7173	F	39.7	M		40	55.7	
7/9/2024	NEW-SITE-4_SB_L2_01_20240709_110615.D01	US 151	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	11:07:09	105.39	1713	54.4	1.248	82.8	40	0.17	25.3	Left	85.6	95.6	43.20481495		-89.18633452		987.5076	F	39.7	M		40	54.4	
SB Lane 2															Avg	55.7	1.3	SB Lane 2															Avg	55.9	No of Tests
															St. Dev	1.1																	St. Dev	1.0	11
																																	Min	54.3	
																																	Max	57.8	

Appendix C																																		
Detailed Friction Results																																		
Test Site F84																																		
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
7/8/2024	NEW-SITE-5_NB_L1_01_20240708_153134.D01	STH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:31:34	10.008	1497	38.5	2.995	81.7	40.1	0.19	25.2	Left	90.5	101	42.80557008	-87.82738817	658.4477	F	39.9	M		40	38.55		
7/8/2024	NEW-SITE-5_NB_L1_01_20240708_153134.D01	STH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:31:38	10.057	1498	38.6	0.995	64.7	40.5	0.07	26.7	Left	90.5	101.7	42.80616757	-87.82792619	659.8906	F	40.3	M		40	38.9		
7/8/2024	NEW-SITE-5_NB_L1_01_20240708_153134.D01	STH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:31:43	10.107	1499	38.1	1.151	64.6	40.4	0.12	25	Left	90.5	101	42.80674975	-87.82848817	662.158	F	40.1	M		40	38.3		
7/8/2024	NEW-SITE-5_NB_L1_01_20240708_153134.D01	STH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:31:47	10.157	1500	39.7	1.955	70	40.6	0.11	25.7	Left	90.6	101.9	42.80733707	-87.82906936	665.2333	F	40.4	M		40	40.0		
7/8/2024	NEW-SITE-5_NB_L1_01_20240708_153134.D01	STH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:31:52	10.207	1501	41	0.706	69.9	40.7	0.13	26.2	Left	90.5	100.9	42.80792342	-87.82964416	668.8315	F	40.5	M		40	41.4		
7/8/2024	NEW-SITE-5_NB_L1_01_20240708_153134.D01	STH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:31:56	10.257	1502	40.4	0.896	64.9	41	0.12	25.5	Left	90.5	101.9	42.80850773	-87.83022022	671.608	F	41	M		40	40.9		
7/8/2024	NEW-SITE-5_NB_L1_01_20240708_153134.D01	STH 32	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:32:01	10.308	1503	42.1	0.606	69.9	41	0.1	26.6	Left	90.4	99.8	42.80909469	-87.83080135	672.5724	F	40.9	M		40	42.6		
NB Lane 1															Avg	39.6	1.1											NB Lane 1			Avg	39.9	No of Tests	
															St. Dev	1.2															St. Dev	1.3	5	
																														Min	38.3			
																														Max	41.4			
7/8/2024	NEW-SITE-5_SB_L1_01_20240708_153410.D01	STH 32	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:34:10	10.292	1504	38.8	3.395	82.3	40.2	0.18	25.8	Left	90.4	99.7	42.80892363	-87.83067725	671.6411	F	40	M		40	38.9		
7/8/2024	NEW-SITE-5_SB_L1_01_20240708_153410.D01	STH 32	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:34:14	10.242	1505	40.3	0.586	71.7	40.6	0.12	25.6	Left	90.5	101.2	42.80833878	-87.83009929	669.9794	F	40.5	M		40	40.6		
7/8/2024	NEW-SITE-5_SB_L1_01_20240708_153410.D01	STH 32	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:34:19	10.192	1506	43.1	0.624	71.9	40.9	0.12	26.5	Left	90.3	101.9	42.80774974	-87.82951854	667.5026	F	40.8	M		40	43.6		
7/8/2024	NEW-SITE-5_SB_L1_01_20240708_153410.D01	STH 32	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:34:23	10.142	1507	43.2	1.02	74.9	40.9	0.15	26	Left	90.2	101.2	42.80717143	-87.82894537	665.2352	F	40.9	M		40	43.7		
7/8/2024	NEW-SITE-5_SB_L1_01_20240708_153410.D01	STH 32	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:34:28	10.092	1508	40.6	0.581	69.5	40.9	0.09	26.4	Left	90.5	99.6	42.80658973	-87.82837338	661.6398	F	40.4	M		40	41.1		
7/8/2024	NEW-SITE-5_SB_L1_01_20240708_153410.D01	STH 32	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:34:32	10.042	1509	41.3	0.998	69.7	40.5	0.12	26.3	Left	90.3	100.7	42.80599495	-87.82780615	659.4527	F	40.5	M		40	41.6		
7/8/2024	NEW-SITE-5_SB_L1_01_20240708_153410.D01	STH 32	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	15:34:37	9.992	1510	41.3	1.293	68.9	40.8	0.17	26.3	Left	90.2	101.5	42.80538819	-87.82727296	657.1442	F	40.4	M		40	41.7		
SB Lane 1															Avg	41.8	0.7											SB Lane 1			Avg	42.2	No of Tests	
															St. Dev	1.6															St. Dev	1.6	4	
																														Min	40.6			
																														Max	43.7			

Appendix C
Detailed Friction Results
Test Site F85

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
7/9/2024	NEW-SITE-6_EB_L2_01_20240709_171033.D01	STH 54	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:10:33	10.009	2265	53	1.808	101.7	40.6	0.26	25.3	Left	89.4	107.2	44.3008643	-90.81641151		857.796	F	40.5	M		40	53.3	
7/9/2024	NEW-SITE-6_EB_L2_01_20240709_171033.D01	STH 54	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:10:37	10.058	2266	52.5	1.157	80.1	40.4	0.27	26.2	Left	89.4	106.8	44.30142755	-90.81579822		856.3829	F	40.4	M		40	52.7	
7/9/2024	NEW-SITE-6_EB_L2_01_20240709_171033.D01	STH 54	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:10:42	10.108	2267	53.2	1.123	84.7	40.4	0.05	24.6	Left	89.5	106.6	44.30199494	-90.81517512		855.1212	F	40.3	M		40	53.4	
7/9/2024	NEW-SITE-6_EB_L2_01_20240709_171033.D01	STH 54	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:10:46	10.158	2268	55.5	0.777	82.4	41.2	0.15	25.6	Left	89.4	105.9	44.30255885	-90.81455796		853.8525	F	41.2	M		40	56.1	
7/9/2024	NEW-SITE-6_EB_L2_01_20240709_171033.D01	STH 54	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:10:51	10.208	2269	56.4	1.07	83.2	39.9	0.32	26	Left	89.4	106.2	44.30313125	-90.81392922		852.6466	F	39.8	M		40	56.4	
7/9/2024	NEW-SITE-6_EB_L2_01_20240709_171033.D01	STH 54	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:10:55	10.257	2270	53.4	1.239	82.6	39.4	0.19	26.1	Left	89.4	105.5	44.30368969	-90.81331559		851.3691	F	39.2	M		40	53.1	
7/9/2024	NEW-SITE-6_EB_L2_01_20240709_171033.D01	STH 54	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:11:00	10.307	2271	54	0.922	84.4	39.3	0.21	24.3	Left	89.5	106.5	44.30425868	-90.81268949		850.9442	F	39.1	M		40	53.7	
7/9/2024	NEW-SITE-6_EB_L2_01_20240709_171033.D01	STH 54	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:11:05	10.357	2272	54.1	1.055	85.6	39.2	0.21	24.6	Left	89.5	106.7	44.3048234	-90.81207133		851.8244	F	39.2	M		40	53.7	
EB Lane 2															Avg	54.2	1.0	EB Lane 2										Avg	54.2	No of Tests				
															St. Dev	1.5												St. Dev	1.6	6				
															Min	52.7												Min	52.7					
															Max	56.4												Max	56.4					
7/9/2024	NEW-SITE-6_WB_L2_01_20240709_171220.D01	STH 54	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:12:20	10.343	2273	55.5	3.192	91.3	39.9	0.25	24.9	Left	89.6	107.1	44.30478099	-90.81237759		850.8875	F	39.8	M		40	55.5	
7/9/2024	NEW-SITE-6_WB_L2_01_20240709_171220.D01	STH 54	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:12:25	10.293	2274	53.6	1.277	87.1	39.9	0.19	26.4	Left	89.6	105.6	44.30421232	-90.8130003		850.6542	F	39.8	M		40	53.6	
7/9/2024	NEW-SITE-6_WB_L2_01_20240709_171220.D01	STH 54	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:12:29	10.243	2275	56.4	1.554	88.8	40.1	0.17	26.2	Left	89.6	106.4	44.30364213	-90.81362839		851.2911	F	39.9	M		40	56.5	
7/9/2024	NEW-SITE-6_WB_L2_01_20240709_171220.D01	STH 54	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:12:34	10.193	2276	56.7	0.962	86.9	40.3	0.17	26.1	Left	89.5	105.4	44.30307786	-90.81424725		852.3629	F	40.2	M		40	56.9	
7/9/2024	NEW-SITE-6_WB_L2_01_20240709_171220.D01	STH 54	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:12:38	10.143	2277	59	1.174	82.6	40.4	0.21	25.6	Left	89.5	105.4	44.30250857	-90.81487308		853.5733	F	40.2	M		40	59.2	
7/9/2024	NEW-SITE-6_WB_L2_01_20240709_171220.D01	STH 54	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:12:42	10.093	2278	58.6	1.162	87.6	40.5	0.16	26.5	Left	89.5	105.4	44.301947	-90.81549067		854.6982	F	40.4	M		40	58.9	
7/9/2024	NEW-SITE-6_WB_L2_01_20240709_171220.D01	STH 54	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:12:47	10.043	2279	57.6	1.416	87.3	40.5	0.15	25.8	Left	89.6	105.3	44.30138069	-90.81611125		855.7635	F	40.4	M		40	57.9	
7/9/2024	NEW-SITE-6_WB_L2_01_20240709_171220.D01	STH 54	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	17:12:52	9.993	2280	53.4	3.503	89.9	40.5	0.15	26.6	Left	89.6	106	44.30080875	-90.81673781		857.0391	F	40.3	M		40	53.7	
WB Lane 2															Avg	57.0	1.3	WB Lane 2										Avg	57.1	No of Tests				
															St. Dev	1.9												St. Dev	2.1	6				
															Min	53.6												Min	53.6					
															Max	59.2												Max	59.2					

Appendix C
Detailed Friction Results
Test Site F86

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
7/9/2024	NEW-SITE-7_EB_L2_01_20240709_140329.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:04:38	63.805	2077	54.2	1.526	95.8	40.4	0.27	25.1	Left	87.5	96.2	43.86145689	-90.11612995	894.3027	F	40.3	M		40	54.4		
7/9/2024	NEW-SITE-7_EB_L2_01_20240709_140329.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:04:42	63.855	2078	51.2	1.032	77.1	40.6	0.19	26.1	Left	87.5	96.4	43.86087868	-90.11553069	893.8904	F	40.2	M		40	51.5		
7/9/2024	NEW-SITE-7_EB_L2_01_20240709_140329.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:04:47	63.905	2079	52.5	1.629	79.1	40.7	0.2	26.4	Left	87.6	96.8	43.86029931	-90.11493449	891.1333	F	40.7	M		40	52.9		
7/9/2024	NEW-SITE-7_EB_L2_01_20240709_140329.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:04:51	63.955	2080	51.8	1.045	77.8	40.8	0.2	26.3	Left	87.6	96.1	43.85971767	-90.11433443	888.328	F	40.7	M		40	52.2		
7/9/2024	NEW-SITE-7_EB_L2_01_20240709_140329.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:04:56	64.004	2081	54.8	1.728	73.9	40.6	0.27	25.1	Left	87.5	95.3	43.85914166	-90.1137396	887.0781	F	40.5	M		40	55.1		
7/9/2024	NEW-SITE-7_EB_L2_01_20240709_140329.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:05:00	64.054	2082	52.1	1.237	76.4	40.7	0.21	26.1	Left	87.5	95.6	43.85856106	-90.11313979	885.6766	F	40.7	M		40	52.5		
7/9/2024	NEW-SITE-7_EB_L2_01_20240709_140329.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:05:04	64.104	2083	53.2	1.87	75.8	40.8	0.23	25.9	Left	87.6	95.6	43.85798208	-90.11254445	884.8681	F	40.7	M		40	53.6		
7/9/2024	NEW-SITE-7_EB_L2_01_20240709_140329.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:05:09	64.155	2084	52.3	1.491	75.3	40.8	0.2	26.3	Left	87.5	94.9	43.85740133	-90.11194334	884.1475	F	40.7	M		40	52.7		
7/9/2024	NEW-SITE-7_EB_L2_01_20240709_140329.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:05:13	64.204	2085	51.9	1.813	78.7	40.9	0.19	26.3	Left	87.7	95.9	43.85682706	-90.11135141	883.5558	F	40.8	M		40	52.4		
7/9/2024	NEW-SITE-7_EB_L2_01_20240709_140329.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:05:18	64.255	2086	51.7	1.347	78.4	40.9	0.25	25.7	Left	87.5	96.7	43.85623934	-90.11074263	882.6043	F	40.7	M		40	52.2		
7/9/2024	NEW-SITE-7_EB_L2_01_20240709_140329.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:05:22	64.305	2087	52.3	1.808	74.4	40.8	0.16	26.1	Left	87.7	95.7	43.85566115	-90.11014349	882.1857	F	40.8	M		40	52.7		
7/9/2024	NEW-SITE-7_EB_L2_01_20240709_140329.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:05:26	64.355	2088	50.5	3.032	77.4	40.8	0.23	26.6	Left	87.5	95.6	43.85508503	-90.10954968	882.2019	F	40.5	M		40	50.9		
7/9/2024	NEW-SITE-7_EB_L2_01_20240709_140329.D01	IH 90	East(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:05:31	64.405	2089	53.2	1.153	75.2	40.8	0.2	26.4	Left	87.5	96	43.85450573	-90.10895298	881.7533	F	40.6	M		40	53.6		
EB Lane 2															Avg	52.2	1.6	EB Lane 2										Avg	52.6	No of Tests				
															St. Dev	1.1												St. Dev	1.1	11				
																												Min	50.9					
																												Max	55.1					
7/9/2024	NEW-SITE-7_WB_L2_01_20240709_141714.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:18:07	64.407	2093	45.9	2.865	72.6	40.7	0.16	23.4	Left	87.2	95.1	43.85482693	-90.10818916	880.2599	F	40.5	M		40	46.3		
7/9/2024	NEW-SITE-7_WB_L2_01_20240709_141714.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:18:11	64.356	2094	49.1	5.487	69.7	40.8	0.19	25.9	Left	87.2	94.8	43.85541818	-90.10878585	880.3406	F	40.6	M		40	49.5		
7/9/2024	NEW-SITE-7_WB_L2_01_20240709_141714.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:18:15	64.307	2095	48.8	4.968	70.1	40.8	0.18	26.5	Left	87.2	94.6	43.85600115	-90.1093755	880.8825	F	40.8	M		40	49.2		
7/9/2024	NEW-SITE-7_WB_L2_01_20240709_141714.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:18:20	64.257	2096	44.1	2.317	67.6	40.9	0.19	26	Left	87.3	95.1	43.85658072	-90.10996326	881.5217	F	40.7	M		40	44.6		
7/9/2024	NEW-SITE-7_WB_L2_01_20240709_141714.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:18:24	64.207	2097	43.2	3.379	68.7	40.8	0.17	25.7	Left	87.3	94.8	43.85716481	-90.11055458	882.0794	F	40.3	M		40	43.6		
7/9/2024	NEW-SITE-7_WB_L2_01_20240709_141714.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:18:29	64.157	2098	47.6	1.768	65.3	40.8	0.17	26.3	Left	87.3	94.2	43.85774453	-90.11114111	882.8668	F	40.7	M		40	48.0		
7/9/2024	NEW-SITE-7_WB_L2_01_20240709_141714.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:18:33	64.107	2099	46.3	2.552	69.1	40.8	0.24	26.2	Left	87.2	94.5	43.85833187	-90.111737	883.8182	F	40.6	M		40	46.7		
7/9/2024	NEW-SITE-7_WB_L2_01_20240709_141714.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:18:37	64.057	2100	48.5	4.245	69.1	40.8	0.17	26.2	Left	87.2	93.9	43.85891186	-90.11232366	884.6148	F	40.5	M		40	48.9		
7/9/2024	NEW-SITE-7_WB_L2_01_20240709_141714.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:18:42	64.006	2101	52.6	6.697	81.2	40.7	0.24	26.5	Left	87.2	94.4	43.85950793	-90.11292704	886.0492	F	40.5	M		40	53.0		
7/9/2024	NEW-SITE-7_WB_L2_01_20240709_141714.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:18:46	63.957	2102	46.2	4.994	67.6	40.8	0.17	26.3	Left	87.1	93.7	43.86007852	-90.11350415	887.8213	F	40.6	M		40	46.6		
7/9/2024	NEW-SITE-7_WB_L2_01_20240709_141714.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:18:51	63.907	2103	47.8	0.996	71.5	40.8	0.2	27	Left	87.2	94.3	43.86066426	-90.11410006	889.6091	F	40.8	M		40	48.2		
7/9/2024	NEW-SITE-7_WB_L2_01_20240709_141714.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:18:55	63.857	2104	44.6	6.632	61.1	40.9	0.17	27	Left	87.2	95.2	43.861242	-90.11468349	891.2079	F	40.8	M		40	45.1		
7/9/2024	NEW-SITE-7_WB_L2_01_20240709_141714.D01	IH 90	West(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	14:19:00	63.807	2105	44.5	2.938	63.5	40.9	0.2	25.6	Left	87.2	94	43.86182298	-90.11527398	892.8406	F	40.8	M		40	45.0		
WB Lane 2															Avg	47.2	4.0	WB Lane 2										Avg	47.6	No of Tests				
															St. Dev	2.7												St. Dev	2.7	11				
																												Min	43.6					
																												Max	53.0					

Appendix C
Detailed Friction Results
Test Site F87

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN	
5/2/2024	NEW-SITE-8_EB_L1_01_20240502_145059.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:51:15	10.185	692	57.7	2.098	107.4	39.6	0.27	19.7	Left	50.1	35	44.7287154	-92.71411497	956.9737	F	39.2	M		40	57.5			
5/2/2024	NEW-SITE-8_EB_L1_01_20240502_145059.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:51:20	10.235	693	56.9	0.604	86.8	38.8	0.33	20.5	Left	50	34.9	44.72871882	-92.71311673	963.9809	F	38.5	M		40	56.3			
5/2/2024	NEW-SITE-8_EB_L1_01_20240502_145059.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:51:24	10.285	694	59.1	0.737	91	38.3	0.04	20.7	Left	50	35.3	44.72872073	-92.71211471	975.1404	F	38.2	M		40	58.3			
5/2/2024	NEW-SITE-8_EB_L1_01_20240502_145059.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:51:29	10.335	695	56.2	0.806	81.7	39.3	0.19	21.3	Left	50	35.8	44.72872117	-92.71110531	983.4471	F	39.2	M		40	55.9			
5/2/2024	NEW-SITE-8_EB_L1_01_20240502_145059.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:51:34	10.385	696	54	0.587	83.5	39	0.19	21.2	Left	50	35.2	44.72872326	-92.71008603	988.4841	F	38.9	M		40	53.5			
5/2/2024	NEW-SITE-8_EB_L1_01_20240502_145059.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:51:38	10.435	697	58.1	0.745	85.8	39.2	0.09	21.4	Left	50.1	35.2	44.72872254	-92.70908065	991.2608	F	39	M		40	57.7			
5/2/2024	NEW-SITE-8_EB_L1_01_20240502_145059.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:51:43	10.486	698	56.8	0.585	81.1	40.1	0.36	21.2	Left	50.1	36.3	44.72872476	-92.70805194	996.9372	F	39.9	M		40	56.9			
5/2/2024	NEW-SITE-8_EB_L1_01_20240502_145059.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:51:47	10.535	699	59.1	0.856	82.2	39.3	0	20.9	Left	50.1	36	44.72872598	-92.70705253	1005.4656	F	39.2	M		40	58.8			
5/2/2024	NEW-SITE-8_EB_L1_01_20240502_145059.D01	STH 35	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:51:52	10.586	700	56.6	0.613	86.4	40.5	0.36	21.6	Left	50.1	36.6	44.72872959	-92.7060362	1010.8401	F	40.4	M		40	56.9			
EB Lane 1															Avg	56.9	0.7	EB Lane 1															Avg	56.4	No of Tests
															St. Dev	1.7																	St. Dev	1.7	6
																														Min	53.5				
																														Max	58.3				
5/2/2024	NEW-SITE-8_WB_L1_01_20240502_145449.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:54:54	10.578	703	55.7	0.402	86.5	39.8	0.05	21.3	Left	50.5	39.2	44.72876592	-92.70605166	1013.7995	F	39.7	M						
5/2/2024	NEW-SITE-8_WB_L1_01_20240502_145449.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:54:58	10.527	704	56.2	0.591	85.9	41.3	0.13	22.2	Left	50.5	38.8	44.72876318	-92.70708285	1008.3425	F	41.2	M		40	56.9			
5/2/2024	NEW-SITE-8_WB_L1_01_20240502_145449.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:55:02	10.478	705	55.4	0.497	92.6	41.3	0.18	22.2	Left	50.4	37.4	44.7287607	-92.70808148	998.8539	F	41	M		40	56.1			
5/2/2024	NEW-SITE-8_WB_L1_01_20240502_145449.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:55:07	10.427	706	56.8	0.659	86	41.8	0.26	21.9	Left	50.5	37.8	44.72875778	-92.70910301	993.0608	F	41.6	M		40	57.7			
5/2/2024	NEW-SITE-8_WB_L1_01_20240502_145449.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:55:11	10.378	707	57.4	0.593	85	39.8	0.23	21.5	Left	50.6	39	44.72875603	-92.7101039	989.7458	F	39.7	M		40	57.3			
5/2/2024	NEW-SITE-8_WB_L1_01_20240502_145449.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:55:16	10.328	708	53	0.847	83.1	40.1	0.13	20.9	Left	50.5	37.9	44.72875387	-92.71111332	984.442	F	40	M		40	53.1			
5/2/2024	NEW-SITE-8_WB_L1_01_20240502_145449.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:55:20	10.278	709	54.4	0.641	84.7	39.8	0.11	21.2	Left	50.6	37.2	44.72874901	-92.71213025	974.6562	F	39.8	M		40	54.3			
5/2/2024	NEW-SITE-8_WB_L1_01_20240502_145449.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:55:25	10.228	710	55.3	0.783	88.1	40.5	0.14	21.6	Left	50.5	38.1	44.72874658	-92.71313499	962.2046	F	40.2	M		40	55.6			
5/2/2024	NEW-SITE-8_WB_L1_01_20240502_145449.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:55:29	10.177	711	56.4	0.772	88.9	40.7	0.31	20.6	Left	50.5	38.3	44.72874146	-92.71417009	953.9922	F	40.5	M		40	56.8			
5/2/2024	NEW-SITE-8_WB_L1_01_20240502_145449.D01	STH 35	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	14:55:34	10.128	712	57.4	0.622	85.3	39.3	0.2	21.1	Left	50.6	38.3	44.72873837	-92.71516147	949.7619	F	39.2	M		40	57.1			
WB Lane 1															Avg	55.4	0.7	WB Lane 1															Avg	55.7	No of Tests
															St. Dev	1.6																	St. Dev	1.8	6
																														Min	53.1				
																														Max	57.7				

Appendix C

Detailed Friction Results

Test Site F88

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN										
7/10/2024	NEW-SITE-9_NB_L3_01_20240710_131813.D01	IH 41	North(+)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:18:13	51.671	2563	40.1	2.464	84.2	40	0.23	24.9	Left	85.8	92.5	43.1845686	-88.1058383		818.3407	F	39.7	M		40	40.1											
7/10/2024	NEW-SITE-9_NB_L3_01_20240710_131813.D01	IH 41	North(+)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:18:18	51.721	2564	41.2	0.594	74.3	40.1	0.13	25.4	Left	85.8	92.7	43.18493459	-88.10666854		825.3433	F	39.9	M		40	41.3											
7/10/2024	NEW-SITE-9_NB_L3_01_20240710_131813.D01	IH 41	North(+)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:18:22	51.771	2565	41.1	1.128	71.8	40.5	0.17	26	Left	85.9	93	43.18530523	-88.10751176		833.0783	F	40.3	M		40	41.4											
7/10/2024	NEW-SITE-9_NB_L3_01_20240710_131813.D01	IH 41	North(+)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:18:26	51.821	2566	41	0.994	65.8	40.7	0.19	27.2	Left	85.8	92.2	43.1856785	-88.1083634		840.1404	F	40.6	M		40	41.4											
7/10/2024	NEW-SITE-9_NB_L3_01_20240710_131813.D01	IH 41	North(+)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:18:31	51.871	2567	39.1	1.557	60.5	41	0.16	26.4	Left	85.6	92	43.18605115	-88.10920464		845.8238	F	40.8	M		40	39.6											
7/10/2024	NEW-SITE-9_NB_L3_01_20240710_131813.D01	IH 41	North(+)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:18:35	51.921	2568	39.9	0.638	61.3	41.1	0.19	26.9	Left	85.8	92.8	43.18642397	-88.11005754		850.1465	F	41.1	M		40	40.5											
7/10/2024	NEW-SITE-9_NB_L3_01_20240710_131813.D01	IH 41	North(+)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:18:40	51.971	2569	42.3	0.88	63	41.2	0.17	27.1	Left	85.8	92.7	43.18679518	-88.11089619		853.1014	F	41	M		40	42.9											
7/10/2024	NEW-SITE-9_NB_L3_01_20240710_131813.D01	IH 41	North(+)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:18:44	52.021	2570	40.5	0.959	63.6	41.1	0.19	26.1	Left	85.9	93.3	43.18716839	-88.11174828		855.0406	F	41	M		40	41.1											
7/10/2024	NEW-SITE-9_NB_L3_01_20240710_131813.D01	IH 41	North(+)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:18:48	52.071	2571	40.9	0.49	64.6	41.2	0.17	26.5	Left	85.9	93	43.18754156	-88.11259823		854.8215	F	41	M		40	41.5											
7/10/2024	NEW-SITE-9_NB_L3_01_20240710_131813.D01	IH 41	North(+)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:18:53	52.121	2572	39.1	0.597	61.5	41.1	0.16	26.2	Left	85.8	92.5	43.18791211	-88.11344659		852.6257	F	40.7	M		40	39.7											
7/10/2024	NEW-SITE-9_NB_L3_01_20240710_131813.D01	IH 41	North(+)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:18:57	52.171	2573	40.1	0.936	58.7	41.2	0.15	26.9	Left	85.9	92.7	43.18828515	-88.11428902		850.8528	F	40.9	M		40	40.7											
7/10/2024	NEW-SITE-9_NB_L3_01_20240710_131813.D01	IH 41	North(+)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:19:02	52.221	2574	39.8	1.429	64.4	40.9	0.17	26	Left	85.8	92.6	43.18865555	-88.11513178		847.4931	F	40.9	M		40	40.3											
7/10/2024	NEW-SITE-9_NB_L3_01_20240710_131813.D01	IH 41	North(+)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:19:06	52.271	2575	46.7	1.051	64.6	40.5	0.23	26	Left	85.8	93	43.18903335	-88.11598505		845.4921	F	40.4	M		40	47.0											
7/10/2024	NEW-SITE-9_NB_L3_01_20240710_131813.D01	IH 41	North(+)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:19:10	52.321	2576	44.2	0.736	64.4	40.5	0.19	25.8	Left	85.6	93	43.18941933	-88.11681416		844.8039	F	40.5	M		40	44.5											
7/10/2024	NEW-SITE-9_NB_L3_01_20240710_131813.D01	IH 41	North(+)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:19:15	52.371	2577	45.3	0.877	69.4	40.6	0.21	23.5	Left	85.8	93	43.18982297	-88.1176365		844.3169	F	40.5	M		40	45.6											
7/10/2024	NEW-SITE-9_NB_L3_01_20240710_131813.D01	IH 41	North(+)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:19:19	52.421	2578	42	1.743	67.6	40.7	0.16	25.8	Left	85.7	92.7	43.19023643	-88.11844065		843.6936	F	40.6	M		40	42.4											
7/10/2024	NEW-SITE-9_NB_L3_01_20240710_131813.D01	IH 41	North(+)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:19:24	52.471	2579	46	1.202	67.8	40.7	0.19	27	Left	85.7	92.9	43.19066992	-88.11923958		843.2343	F	40.6	M		40	46.4											
														NB Lane 3			Avg St. Dev		41.5 2.3		0.9																NB Lane 3		Avg St. Dev Min Max		41.9 2.2 39.6 47.0		No of Tests 14	
7/10/2024	NEW-SITE-9_SB_L3_01_20240710_131053.D01	IH 41	South(-)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:13:00	52.476	2546	42	2.611	84	40.3	0.2	23.9	Left	86.4	93.4	43.19057315	-88.11958312		841.9731	F	40	M		40	42.2											
7/10/2024	NEW-SITE-9_SB_L3_01_20240710_131053.D01	IH 41	South(-)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:13:05	52.426	2547	41.6	1.276	73.9	40.5	0.18	25.8	Left	86.3	92.9	43.19014454	-88.11879186		842.1128	F	40.3	M		40	41.9											
7/10/2024	NEW-SITE-9_SB_L3_01_20240710_131053.D01	IH 41	South(-)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:13:09	52.376	2548	42	0.943	64.6	40.7	0.19	25.8	Left	86.4	93	43.18972566	-88.11798784		842.25	F	40.6	M		40	42.4											
7/10/2024	NEW-SITE-9_SB_L3_01_20240710_131053.D01	IH 41	South(-)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:13:13	52.327	2549	41.5	1.508	66.5	40.8	0.2	26.2	Left	86.3	93.4	43.18932625	-88.11718072		842.3812	F	40.5	M		40	41.9											
7/10/2024	NEW-SITE-9_SB_L3_01_20240710_131053.D01	IH 41	South(-)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:13:18	52.277	2550	39.8	0.626	68.3	40.7	0.15	25.4	Left	86.3	93	43.18893429	-88.11635234		842.9259	F	40.6	M		40	40.2											
7/10/2024	NEW-SITE-9_SB_L3_01_20240710_131053.D01	IH 41	South(-)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:13:22	52.226	2551	40.4	1.187	63.5	40.6	0.16	24.6	Left	86.3	92.3	43.18855425	-88.11550139		844.8395	F	40.3	M		40	40.7											
7/10/2024	NEW-SITE-9_SB_L3_01_20240710_131053.D01	IH 41	South(-)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:13:27	52.176	2552	39	0.903	64.8	40.5	0.19	25.8	Left	86.5	92.5	43.18818439	-88.11465179		847.9367	F	40.3	M		40	39.3											
7/10/2024	NEW-SITE-9_SB_L3_01_20240710_131053.D01	IH 41	South(-)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:13:31	52.126	2553	38.9	1.078	65.9	40.7	0.11	25.9	Left	86.4	92.1	43.18781286	-88.11381229		851.3984	F	40.5	M		40	39.3											
7/10/2024	NEW-SITE-9_SB_L3_01_20240710_131053.D01	IH 41	South(-)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:13:36	52.077	2554	40.4	1.085	61.4	41	0.19	25.2	Left	86.3	91.8	43.18744275	-88.11297208		853.372	F	40.8	M		40	40.9											
7/10/2024	NEW-SITE-9_SB_L3_01_20240710_131053.D01	IH 41	South(-)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:13:40	52.026	2555	39.8	0.794	65.1	41	0.15	26.4	Left	86.4	92.5	43.1870646	-88.11211487		854.2251	F	41	M		40	40.3											
7/10/2024	NEW-SITE-9_SB_L3_01_20240710_131053.D01	IH 41	South(-)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:13:44	51.976	2556	41	0.421	66.2	41.1	0.15	26.2	Left	86.4	92.9	43.18669675	-88.11126811		853.612	F	41	M		40	41.6											
7/10/2024	NEW-SITE-9_SB_L3_01_20240710_131053.D01	IH 41	South(-)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:13:49	51.926	2557	40.4	1.918	59	41.2	0.15	25.5	Left	86.5	92.1	43.18632424	-88.11042046		851.1048	F	41.1	M		40	41.0											
7/10/2024	NEW-SITE-9_SB_L3_01_20240710_131053.D01	IH 41	South(-)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:13:53	51.877	2558	39.6	1.36	67.3	41.2	0.19	26.2	Left	86.4	91.9	43.18595557	-88.1095761		847.3787	F	41.1	M		40	40.2											
7/10/2024	NEW-SITE-9_SB_L3_01_20240710_131053.D01	IH 41	South(-)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:13:58	51.826	2559	39.2	0.746	61.3	41.3	0.17	26.3	Left	86.3	92.5	43.18558103	-88.10872687		841.9703	F	41.3	M		40	39.9											
7/10/2024	NEW-SITE-9_SB_L3_01_20240710_131053.D01	IH 41	South(-)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:14:02	51.776	2560	39.6	1.541	64.1	41.1	0.14	26.5	Left	86.2	92.1	43.18520544	-88.10787395		834.9318	F	41	M		40	40.2											
7/10/2024	NEW-SITE-9_SB_L3_01_20240710_131053.D01	IH 41	South(-)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:14:06	51.726	2561	39.6	1.078	65.6	41.1	0.17	27.2	Left	86.3	92	43.18483341	-88.10702333		827.3404	F	40.9	M		40	40.2											
7/10/2024	NEW-SITE-9_SB_L3_01_20240710_131053.D01	IH 41	South(-)	3	SN 628/R/R			M MORII	J BENNETT	Ribbed	Ribbed	13:14:11	51.676	2562	40.2	0.814	63.2	40.9	0.21	25.8	Left	86.4	92.8	43.18446229	-88.10618149		819.6169	F	40.8	M		40	40.7											
														SB Lane 3			Avg St. Dev		40.1 0.9		1.1																SB Lane 3		Avg St. Dev Min Max		40.6 0.9 39.3 42.4		No of Tests 14	

Appendix C
Detailed Friction Results
Test Site F89

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
7/9/2024	NEW-SITE-10_NB_L1_01_20240709_090955.D01	local street	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:09:55	9.534	1649	60.5	6.35	99.9	34.3	0.34	19.8	Left	78.7	90.2	42.920595		-89.38901751		970.0059	F	34.3	M		40	57.65
7/9/2024	NEW-SITE-10_NB_L1_01_20240709_090955.D01	local street	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:10:00	9.584	1650	62.9	1.226	89.7	37.4	0.1	23.4	Left	78.7	87.6	42.92129528		-89.38886874		970.6116	F	37.3	M		40	61.6
7/9/2024	NEW-SITE-10_NB_L1_01_20240709_090955.D01	local street	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:10:05	9.634	1651	61.2	1.249	90.2	39.1	0.15	24.4	Left	78.7	84.8	42.92200905		-89.38873986		969.9169	F	38.8	M		40	60.8
7/9/2024	NEW-SITE-10_NB_L1_01_20240709_090955.D01	local street	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:10:09	9.684	1652	64.8	1.016	92.7	39.7	0.21	25.3	Left	78.6	86.8	42.92272791		-89.38872269		969.6344	F	39.6	M		40	64.7
7/9/2024	NEW-SITE-10_NB_L1_01_20240709_090955.D01	local street	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:10:14	9.734	1653	58.9	3.24	91	39.2	0.24	25.6	Left	78.7	90.9	42.92344822		-89.38870173		971.2765	F	39	M		40	58.5
7/9/2024	NEW-SITE-10_NB_L1_01_20240709_090955.D01	local street	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:10:19	9.784	1654	61.8	3.469	81.8	39.3	0.19	25.2	Left	78.9	91.4	42.92415077		-89.38885687		971.6791	F	39	M		40	61.5
7/9/2024	NEW-SITE-10_NB_L1_01_20240709_090955.D01	local street	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:10:23	9.834	1655	59.8	1.398	89	40.8	0.15	25.6	Left	78.8	85.7	42.92475028		-89.38940891		966.5389	F	40.6	M		40	60.2
7/9/2024	NEW-SITE-10_NB_L1_01_20240709_090955.D01	local street	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:10:28	9.885	1656	59.9	1.877	93.6	40.9	0.28	26.2	Left	78.8	89.5	42.92539076		-89.38989155		955.152	F	40.5	M		40	60.4
7/9/2024	NEW-SITE-10_NB_L1_01_20240709_090955.D01	local street	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:10:32	9.934	1657	59.9	0.727	88.9	40.1	0.28	23.9	Left	78.7	84.6	42.92609389		-89.39006574		946.8463	F	39.7	M		40	60.0
7/9/2024	NEW-SITE-10_NB_L1_01_20240709_090955.D01	local street	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:10:37	9.983	1658	47.4	3.747	63.6	36.6	0.37	22.6	Left	78.7	83.4	42.92679597		-89.39006671		943.5552	F	36.7	M		40	45.7
NB Lane 1														Avg	61.2	1.8	NB Lane 1														Avg	60.9	No of Tests	
														St. Dev	2.0																St. Dev	1.8	8	
																															Min	58.5		
																															Max	64.7		
7/9/2024	NEW-SITE-10_SB_L1_01_20240709_090711.D01	local street	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:07:11	9.992	1639	55.3	5.423	109.7	38.2	0.42	22.9	Left	78.4	85.6	42.92695746		-89.3900168		944.1745	F	38.1	M		40	54.4
7/9/2024	NEW-SITE-10_SB_L1_01_20240709_090711.D01	local street	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:07:16	9.944	1640	66.2	2.14	84.5	33.4	0.3	19.5	Left	78.4	90.7	42.92627778		-89.39014825		945.7677	F	32.8	M		40	62.9
7/9/2024	NEW-SITE-10_SB_L1_01_20240709_090711.D01	local street	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:07:21	9.893	1641	64.7	0.97	89.7	36.1	0.58	21.7	Left	78.5	89.8	42.92556416		-89.38998373		951.9985	F	35.7	M		40	62.8
7/9/2024	NEW-SITE-10_SB_L1_01_20240709_090711.D01	local street	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:07:26	9.843	1642	65.9	1.561	81	35.8	0.23	22	Left	78.4	85.9	42.92490612		-89.38961118		961.3652	F	35.4	M		40	63.8
7/9/2024	NEW-SITE-10_SB_L1_01_20240709_090711.D01	local street	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:07:31	9.793	1643	65.4	0.906	91.7	37.6	0.12	23.3	Left	78.4	90.3	42.92432652		-89.38902971		968.2343	F	37.4	M		40	64.2
7/9/2024	NEW-SITE-10_SB_L1_01_20240709_090711.D01	local street	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:07:36	9.742	1644	61.4	1.039	88.4	39.2	0.31	24.3	Left	78.4	90	42.92362758		-89.38874653		967.1926	F	39.7	M		40	61.0
7/9/2024	NEW-SITE-10_SB_L1_01_20240709_090711.D01	local street	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:07:40	9.692	1645	63.6	1.517	88.2	40.1	0.07	25	Left	78.4	89.5	42.92290505		-89.38875415		967.4797	F	39.9	M		40	63.7
7/9/2024	NEW-SITE-10_SB_L1_01_20240709_090711.D01	local street	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:07:45	9.642	1646	55.8	10.788	85.6	39.9	0.32	23.7	Left	78.6	87.8	42.92217833		-89.38877296		971.2879	F	39.6	M		40	55.8
7/9/2024	NEW-SITE-10_SB_L1_01_20240709_090711.D01	local street	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:07:50	9.592	1647	62.6	1.312	86.8	39	0.25	25.2	Left	78.5	86.8	42.92146321		-89.38884628		972.04	F	39	M		40	62.1
7/9/2024	NEW-SITE-10_SB_L1_01_20240709_090711.D01	local street	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	9:07:54	9.543	1648	56.2	1.681	78.3	39.3	0.11	24.1	Left	78.4	88.4	42.92077458		-89.38909212		973.0899	F	39	M		40	55.9
SB Lane 1														Avg	63.2	2.5	SB Lane 1														Avg	62.0	No of Tests	
														St. Dev	3.4																St. Dev	2.7	8	
																															Min	55.8		
																															Max	64.2		

Appendix C																																		
Detailed Friction Results																																		
Test Site F90																																		
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNSStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
7/9/2024	NEW-SITE-11_NB_L1_01_20240709_212754.D01	local street	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	21:27:54	10.003	2310	76.3	5.569	108.6	20.6	1.58	10.4	Left	78.8	85.1	44.89178504		-87.86708404		580.1765	F	21.4	M		40	66.6
7/9/2024	NEW-SITE-11_NB_L1_01_20240709_212754.D01	local street	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	21:28:00	10.058	2311	60.5	3.283	98.4	38.3	0.42	24.1	Left	78.7	84.9	44.8925709		-87.86710013		580.9556	F	38.2	M		40	59.7
7/9/2024	NEW-SITE-11_NB_L1_01_20240709_212754.D01	local street	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	21:28:05	10.108	2312	66.1	0.833	96.3	37.7	0.12	24.4	Left	78.7	82.5	44.89328912		-87.86712153		581.2963	F	37.8	M		40	65.0
7/9/2024	NEW-SITE-11_NB_L1_01_20240709_212754.D01	local street	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	21:28:10	10.158	2313	62.7	2.318	94.6	39.2	0.14	25.2	Left	78.9	82.8	44.89401865		-87.86714095		581.2637	F	39.3	M		40	62.3
7/9/2024	NEW-SITE-11_NB_L1_01_20240709_212754.D01	local street	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	21:28:14	10.208	2314	67	1.158	94.1	39.6	0.23	24.9	Left	78.8	85.3	44.89473965		-87.86715363		582.4403	F	39.3	M		40	66.8
7/9/2024	NEW-SITE-11_NB_L1_01_20240709_212754.D01	local street	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	21:28:19	10.258	2315	58.9	1.501	88.3	39.8	0.18	24.4	Left	78.6	83.5	44.89545712		-87.86716769		583.9859	F	39.7	M		40	58.8
7/9/2024	NEW-SITE-11_NB_L1_01_20240709_212754.D01	local street	North(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	21:28:23	10.308	2316	64.7	1.65	94.4	40	0.24	25.6	Left	78.7	83.2	44.89618371		-87.86718047		585.1306	F	39.6	M		40	64.7
NB Lane 1														Avg	63.3	1.8	NB Lane 1														Avg	62.9	No of Tests	
														St. Dev	3.2																St. Dev	3.2	6	
																															Min	58.8		
																															Max	66.8		
7/9/2024	NEW-SITE-11_SB_L1_01_20240709_212921.D01	local street	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	21:29:21	10.349	2317	71	0.973	99.9	30.7	0.75	17.9	Left	78.8	86.1	44.89679989		-87.86723372		582.5497	F	30.7	M		40	66.4
7/9/2024	NEW-SITE-11_SB_L1_01_20240709_212921.D01	local street	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	21:29:26	10.297	2318	70.3	0.89	98.5	36.6	0.15	23.3	Left	78.6	83.7	44.89605107		-87.86721825		582.6699	F	36.2	M		40	68.6
7/9/2024	NEW-SITE-11_SB_L1_01_20240709_212921.D01	local street	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	21:29:31	10.247	2319	64.7	0.981	94.1	38.2	0.11	24.3	Left	78.6	81	44.89533164		-87.86720456		584.0593	F	38	M		40	63.8
7/9/2024	NEW-SITE-11_SB_L1_01_20240709_212921.D01	local street	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	21:29:36	10.197	2320	59.6	1.757	94.9	39.6	0.15	25.9	Left	78.7	84.5	44.89460654		-87.86718829		583.2103	F	39.4	M		40	59.4
7/9/2024	NEW-SITE-11_SB_L1_01_20240709_212921.D01	local street	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	21:29:40	10.146	2321	63.5	0.681	94.5	39.5	0.21	25.8	Left	78.8	85	44.89387637		-87.86717073		582.6088	F	39.2	M		40	63.3
7/9/2024	NEW-SITE-11_SB_L1_01_20240709_212921.D01	local street	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	21:29:45	10.096	2322	63	1.338	95.1	39.9	0.23	25.5	Left	78.7	81.6	44.89315644		-87.86714349		581.2446	F	39.6	M		40	63.0
7/9/2024	NEW-SITE-11_SB_L1_01_20240709_212921.D01	local street	South(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	21:29:50	10.046	2323	60.3	1.284	90.2	38.7	0.78	24	Left	78.6	85.1	44.89243011		-87.86712189		580.2421	F	38.6	M		40	59.7
SB Lane 1														Avg	64.6	1.1	SB Lane 1														Avg	63.4	No of Tests	
														St. Dev	4.5																St. Dev	3.3	7	
																															Min	59.4		
																															Max	68.6		

Appendix C
Detailed Friction Results
Test Site F91

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
5/2/2024	NEW-SITE-12_EB_L1_01_20240502_191156.D01	CTH H	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:11:56	10.007	914	48.1	3.262	86.8	39.7	0.17	20.7	Left	53.1	41.2	44.65604321	-90.31637801		1230.57	F	39.4	M		40	47.95	
5/2/2024	NEW-SITE-12_EB_L1_01_20240502_191156.D01	CTH H	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:12:01	10.057	915	48.3	0.737	76.3	40	0.18	21.4	Left	53	39.9	44.65605661	-90.31536544		1232.029	F	39.9	M		40	48.3	
5/2/2024	NEW-SITE-12_EB_L1_01_20240502_191156.D01	CTH H	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:12:05	10.107	916	47.4	1.458	75.9	40.2	0.16	21.1	Left	53	40.2	44.6560656	-90.31435493		1233.669	F	39.9	M		40	47.5	
5/2/2024	NEW-SITE-12_EB_L1_01_20240502_191156.D01	CTH H	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:12:10	10.157	917	49.3	1.079	77.8	40.3	0.17	21.3	Left	53	40.4	44.65607453	-90.31334316		1235.67	F	40.1	M		40	49.5	
5/2/2024	NEW-SITE-12_EB_L1_01_20240502_191156.D01	CTH H	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:12:14	10.208	918	48.8	0.703	79	40.4	0.16	21.4	Left	53	39.7	44.65608564	-90.31232553		1237.247	F	40.2	M		40	49.0	
5/2/2024	NEW-SITE-12_EB_L1_01_20240502_191156.D01	CTH H	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:12:18	10.258	919	48.8	0.694	76.2	40.5	0.15	21.4	Left	53	39.7	44.65609539	-90.31131067		1238.083	F	40.3	M		40	49.1	
5/2/2024	NEW-SITE-12_EB_L1_01_20240502_191156.D01	CTH H	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:12:23	10.308	920	50.3	1.212	81.2	40.4	0.19	21.5	Left	53	39.4	44.65610635	-90.31029243		1238.444	F	40.2	M		40	50.5	
5/2/2024	NEW-SITE-12_EB_L1_01_20240502_191156.D01	CTH H	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:12:27	10.358	921	49.1	0.687	79.9	40.4	0.19	21.8	Left	53	39.6	44.65611371	-90.30928175		1239.397	F	40.1	M		40	49.3	
5/2/2024	NEW-SITE-12_EB_L1_01_20240502_191156.D01	CTH H	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:12:32	10.408	922	50.5	1.185	81.5	40.1	0.21	21.7	Left	53	39.6	44.65611942	-90.30828138		1241.095	F	40	M		40	50.6	
5/2/2024	NEW-SITE-12_EB_L1_01_20240502_191156.D01	CTH H	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:12:36	10.458	923	49.6	0.709	80.8	40.3	0.16	21.7	Left	53	38.8	44.65612558	-90.30727018		1242.895	F	40.1	M		40	49.8	
5/2/2024	NEW-SITE-12_EB_L1_01_20240502_191156.D01	CTH H	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:12:41	10.508	924	50.5	1.299	79	40.2	0.16	21.6	Left	53.1	39.9	44.65613359	-90.3062567		1245.314	F	39.9	M		40	50.6	
5/2/2024	NEW-SITE-12_EB_L1_01_20240502_191156.D01	CTH H	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:12:45	10.558	925	47.4	1.187	77.4	40.3	0.14	21.3	Left	53.1	39.5	44.65613849	-90.30524458		1247.916	F	40.1	M		40	47.6	
5/2/2024	NEW-SITE-12_EB_L1_01_20240502_191156.D01	CTH H	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:12:50	10.608	926	50.8	0.57	78.6	40.2	0.19	21.6	Left	52.9	39.6	44.65614565	-90.30423333		1251.366	F	40	M		40	50.9	
5/2/2024	NEW-SITE-12_EB_L1_01_20240502_191156.D01	CTH H	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:12:54	10.658	927	52.5	0.663	86.5	40.2	0.2	21.6	Left	53	39.9	44.65615265	-90.30323439		1255.505	F	40	M		40	52.6	
5/2/2024	NEW-SITE-12_EB_L1_01_20240502_191156.D01	CTH H	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:12:59	10.708	928	50.3	1.299	81	40.3	0.11	21.4	Left	53	39.7	44.65615747	-90.30221528		1259.866	F	40	M		40	50.5	
5/2/2024	NEW-SITE-12_EB_L1_01_20240502_191156.D01	CTH H	East(+)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:13:03	10.757	929	49.4	1.819	79.2	40.4	0.14	20.2	Left	52.9	39.3	44.65616374	-90.30122187		1263.671	F	40.2	M		40	49.6	
EB Lane 1														Avg	49.6	1.0	EB Lane 1														Avg	49.7	No of Tests	
														St. Dev	1.5																St. Dev	1.4	12	
																														Min	47.5			
																														Max	52.6			
5/2/2024	NEW-SITE-12_WB_L1_01_20240502_191801.D01	CTH H	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:18:05	10.778	932	48.5	1.664	76.6	40.2	0.13	20.8	Left	52.6	37.4	44.65619635	-90.30073994		1266.92	F	40	M		40	48.6	
5/2/2024	NEW-SITE-12_WB_L1_01_20240502_191801.D01	CTH H	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:18:10	10.729	933	48.8	1.422	74.6	40.5	0.15	21.9	Left	52.7	37.3	44.65619006	-90.30173886		1263.39	F	40.4	M		40	49.05	
5/2/2024	NEW-SITE-12_WB_L1_01_20240502_191801.D01	CTH H	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:18:14	10.678	934	52.6	1.207	79.2	40.5	0.19	21.4	Left	52.6	37.5	44.65618363	-90.30275752		1259.17	F	40.3	M		40	52.9	
5/2/2024	NEW-SITE-12_WB_L1_01_20240502_191801.D01	CTH H	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:18:19	10.628	935	52.7	1.424	84.4	40.4	0.15	20.4	Left	52.5	37.8	44.65617658	-90.30377622		1254.945	F	40.3	M		40	52.9	
5/2/2024	NEW-SITE-12_WB_L1_01_20240502_191801.D01	CTH H	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:18:23	10.578	936	53.9	1.463	81.9	40.3	0.17	21.5	Left	52.7	38.5	44.65617092	-90.3047884		1250.377	F	40.1	M		40	54.1	
5/2/2024	NEW-SITE-12_WB_L1_01_20240502_191801.D01	CTH H	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:18:28	10.528	937	55	2.423	83.1	40.2	0.19	21.7	Left	52.6	38.4	44.65616574	-90.30579133		1246.306	F	40.1	M		40	55.1	
5/2/2024	NEW-SITE-12_WB_L1_01_20240502_191801.D01	CTH H	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:18:32	10.478	938	50.7	1.951	78.6	40.2	0.21	22.2	Left	52.5	38.3	44.65616212	-90.30680947		1243.145	F	40	M		40	50.8	
5/2/2024	NEW-SITE-12_WB_L1_01_20240502_191801.D01	CTH H	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:18:37	10.428	939	53.9	2.029	80.4	40.2	0.23	21.4	Left	52.6	39.6	44.65615443	-90.30782289		1240.797	F	39.9	M		40	54.0	
5/2/2024	NEW-SITE-12_WB_L1_01_20240502_191801.D01	CTH H	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:18:41	10.378	940	51.4	1.336	87.3	40.3	0.17	21.8	Left	52.5	38.7	44.65614815	-90.30883359		1238.669	F	40	M		40	51.6	
5/2/2024	NEW-SITE-12_WB_L1_01_20240502_191801.D01	CTH H	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:18:46	10.328	941	51.5	2.237	81.5	40.1	0.17	21.1	Left	52.6	39.3	44.65614097	-90.30985121		1237.481	F	40	M		40	51.6	
5/2/2024	NEW-SITE-12_WB_L1_01_20240502_191801.D01	CTH H	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:18:50	10.278	942	53.1	1.612	86.4	40.2	0.2	21.5	Left	52.7	38.8	44.65613191	-90.31085691		1236.771	F	40	M		40	53.2	
5/2/2024	NEW-SITE-12_WB_L1_01_20240502_191801.D01	CTH H	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:18:55	10.228	943	54.3	1.703	83.9	40.3	0.2	21.6	Left	52.6	39	44.65612148	-90.3118694		1236.312	F	40.1	M		40	54.5	
5/2/2024	NEW-SITE-12_WB_L1_01_20240502_191801.D01	CTH H	West(-)	1	SN 628/S/R	ARA_RIB_086	ARA_RIB_082	J LUO	J BENNETT	Smooth	Ribbed	19:18:59	10.178	944	51.1	1.743	83.6	40.4	0.15															

Appendix C																																		
Detailed Friction Results																																		
Test Site F92																																		
DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:26:18	10.42	2023	56.1	1.49	80.9	40.9	0.21	25.7	Left	87.8	99.4	43.77457213	-89.72915473	1002.3004	F	40.7	M		40	56.6		
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:26:22	10.47	2024	54.9	1.209	82.1	40.4	0.27	25.9	Left	87.9	99.4	43.77455362	-89.72815135	1003.6633	F	40.3	M		40	55.1		
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:26:27	10.52	2025	55.5	1.747	78	39.7	0.24	25.4	Left	87.8	99.1	43.77453776	-89.72715369	1004.72	F	39.4	M		40	55.4		
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:26:31	10.57	2026	58	1.859	77.8	40.1	0.16	26.6	Left	87.9	99.6	43.77452828	-89.72616436	1005.4758	F	40	M		40	58.1		
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:26:36	10.621	2027	57.4	1.757	76	41.1	0.22	25.8	Left	87.8	99.7	43.77452035	-89.72515695	1005.3773	F	41	M		40	58.0		
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:26:40	10.67	2028	55	1.881	79.9	40.9	0.27	25.7	Left	87.8	99	43.7745145	-89.72416384	1004.1266	F	40.9	M		40	55.5		
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:26:44	10.72	2029	54.9	1.945	79.8	40.6	0.24	25.6	Left	87.7	99.8	43.77450643	-89.72316547	1003.8642	F	40.5	M		40	55.2		
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:26:49	10.77	2030	55.3	2.239	78.6	40.4	0.23	26	Left	87.9	99.8	43.77449804	-89.72217591	1005.3777	F	40.4	M		40	55.5		
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:26:53	10.82	2031	57.2	1.285	79.9	40.5	0.2	26	Left	87.9	99.3	43.77449082	-89.72117985	1006.8397	F	40.4	M		40	57.5		
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:26:58	10.871	2032	54.7	1.919	79.3	40.5	0.2	25.3	Left	87.9	99.5	43.77448569	-89.72016906	1008.1265	F	40.3	M		40	55.0		
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:27:02	10.92	2033	54.6	2.133	80.9	40.3	0.21	26.8	Left	87.7	99	43.77447763	-89.71918335	1011.094	F	40	M		40	54.8		
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:27:07	10.97	2034	52.9	1.787	71.4	40.5	0.15	26.1	Left	87.7	99.9	43.77446877	-89.71819743	1015.1139	F	40.3	M		40	53.2		
EB Lane 1														Avg	55.8	1.8	EB Lane 1														Avg	56.0	No of Tests	
														St. Dev	1.3																St. Dev	1.3	10	
																															Min	54.8		
																															Max	58.1		
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:31:22	10.95	2063	54.5	1.09	76.8	41.2	0.22	26.7	Left	87.7	99	43.77449695	-89.71855674	1015.5549	F	41	M		40	55.1		
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:31:26	10.9	2064	54.1	1.75	82.8	41	0.21	26.3	Left	87.6	100.4	43.77450678	-89.71955747	1011.4429	F	40.9	M		40	54.6		
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:31:31	10.85	2065	54.4	2.11	80.2	40.7	0.23	26.4	Left	87.7	99.8	43.77451347	-89.72055566	1009.0285	F	40.5	M		40	54.8		
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:31:35	10.8	2066	52.6	2.459	83.2	40.7	0.19	26	Left	87.7	99.8	43.77452065	-89.72154944	1007.4782	F	40.5	M		40	53.0		
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:31:40	10.75	2067	56.5	1.445	81.7	40.7	0.25	26.2	Left	87.6	100.4	43.77452764	-89.72254675	1006.28	F	40.6	M		40	56.9		
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:31:44	10.7	2068	54.6	1.457	82.9	40.6	0.19	25.5	Left	87.8	99.5	43.77453496	-89.72353919	1006.2734	F	40.5	M		40	54.9		
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:31:49	10.65	2069	58.2	1.142	77.5	40.6	0.22	26.1	Left	87.6	99.8	43.77454289	-89.72453859	1007.1778	F	40.5	M		40	58.5		
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:31:53	10.6	2070	50.2	1.461	80.3	40.8	0.14	26.2	Left	87.7	99.5	43.77454986	-89.72553154	1007.7684	F	40.7	M		40	50.6		
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:31:57	10.55	2071	56.8	2.26	78.9	40.9	0.25	26.9	Left	87.6	98.9	43.77455602	-89.72654057	1007.7055	F	40.8	M		40	57.3		
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:32:02	10.5	2072	55.9	2.201	80.9	41	0.23	25.6	Left	87.6	99.2	43.77456803	-89.72753903	1006.9142	F	40.7	M		40	56.4		
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:32:06	10.45	2073	56.6	1.188	82.5	40.9	0.21	26.2	Left	87.7	99.8	43.7745865	-89.7285264	1005.68	F	40.8	M		40	57.1		
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:32:11	10.4	2074	55.2	1.774	81.4	41	0.21	26.1	Left	87.7	99.9	43.77460506	-89.72952898	1004.3891	F	40.9	M		40	55.7		
WB Lane 1														Avg	55.0	1.7	WB Lane 1														Avg	55.4	No of Tests	
														St. Dev	2.3																St. Dev	2.3	10	
																															Min	50.6		
																															Max	58.5		

Appendix C
Detailed Friction Results
Test Site F93

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:27:16	11.07	2036	44.3	1.701	67.3	41	0.17	26.3	Left	87.7	99.3	43.77445474		-89.716195		1020.609	F	40.9	M		40	44.8
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:27:20	11.12	2037	50.5	1.132	73.2	39.6	0.24	25.3	Left	87.9	95.2	43.77444695		-89.71519763		1022.0458	F	39.3	M		40	50.3
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:27:25	11.17	2038	55.9	0.958	77.6	39.6	0.12	25.2	Left	87.7	97	43.77443931		-89.7141994		1022.5986	F	39.6	M		40	55.7
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:27:29	11.22	2039	53.8	1.223	77.6	40.8	0.19	26	Left	87.8	95.6	43.77443074		-89.71320638		1023.7662	F	40.5	M		40	54.2
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:27:34	11.27	2040	53.9	1.471	83.2	40.9	0.18	26.3	Left	87.8	97.6	43.77442564		-89.71220599		1023.9413	F	40.9	M		40	54.4
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:27:38	11.32	2041	56.2	1.612	80	41.3	0.27	26.1	Left	87.7	97.1	43.77442287		-89.7112054		1019.8106	F	41.2	M		40	56.9
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:27:42	11.37	2042	51.5	1.328	78.2	39.9	0.32	24.9	Left	87.7	97	43.77441887		-89.71021347		1013.861	F	39.8	M		40	51.5
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:27:47	11.42	2043	53.1	1.65	73.9	39.4	0.19	25.6	Left	87.7	97.9	43.77441598		-89.70921168		1010.1662	F	39.3	M		40	52.8
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:27:51	11.47	2044	53.9	0.984	79.6	39.3	0.19	25.1	Left	87.7	96.5	43.77441354		-89.70822101		1009.5544	F	39.1	M		40	53.6
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:27:56	11.52	2045	51.8	1.425	76.9	40.4	0.19	26.1	Left	87.7	97.8	43.77441143		-89.70721741		1011.0812	F	40.3	M		40	52.0
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:28:00	11.57	2046	52.1	1.606	77.8	40.5	0.27	25.5	Left	87.8	97	43.77440673		-89.70621888		1012.2507	F	40.3	M		40	52.4
7/9/2024	CONCRETE_TEST_1-2_EB_L1_01_20240709_132541.D01	STH 82	East(+)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:28:05	11.62	2047	56.3	1.311	80.8	40.1	0.23	25.6	Left	87.6	97.1	43.77440321		-89.70522522		1013.7837	F	40	M		40	56.4
EB Lane 1															Avg	53.3	1.3											EB Lane 1			Avg	53.4	No of Tests	
															St. Dev	1.9															St. Dev	2.0	10	
																														Min	50.3			
																														Max	56.9			
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:30:24	11.599	2050	54.8	2.817	92.3	40.6	0.19	26.3	Left	87.7	99.3	43.77443267		-89.70560537		1013.3786	F	40.3	M		40	55.1
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:30:29	11.55	2051	54.4	3.361	88.4	40.7	0.19	25.8	Left	87.7	99.9	43.77443527		-89.70659342		1012.46	F	40.5	M		40	54.8
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:30:33	11.5	2052	53.7	2.13	78.8	40.8	0.25	26.2	Left	87.8	98.8	43.77443734		-89.7075897		1010.9769	F	40.7	M		40	54.1
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:30:38	11.45	2053	54	1.075	82.2	40.6	0.21	26.1	Left	87.6	98.3	43.77444032		-89.70857817		1010.5243	F	40.4	M		40	54.3
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:30:42	11.4	2054	55.4	2.959	83.5	40.3	0.25	26.4	Left	87.5	99.3	43.77444368		-89.70958034		1013.0829	F	40.2	M		40	55.6
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:30:47	11.35	2055	56.9	1.633	79.3	40.2	0.27	26.2	Left	87.7	99	43.77444587		-89.7105782		1017.6573	F	40	M		40	57.0
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:30:51	11.3	2056	54.6	1.543	84.1	40.6	0.21	26.5	Left	87.6	98.5	43.7744493		-89.71157411		1022.797	F	40.4	M		40	54.9
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:30:56	11.25	2057	54.1	1.531	81.6	41.4	0.17	26.6	Left	87.7	97.7	43.77445201		-89.71256937		1025.1916	F	41.2	M		40	54.8
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:31:00	11.2	2058	55	2.097	79.5	41.4	0.2	26.1	Left	87.7	97.7	43.77445868		-89.71357023		1024.2382	F	41.2	M		40	55.7
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:31:04	11.15	2059	53.7	1.753	81.6	41.1	0.23	26.6	Left	87.7	98.2	43.77446691		-89.71456458		1022.9502	F	40.9	M		40	54.3
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:31:09	11.1	2060	53.1	2.786	78.4	41	0.26	25.8	Left	87.7	99.1	43.77447494		-89.71556019		1022.1767	F	41.1	M		40	53.6
7/9/2024	CONCRETE_TEST_1-2_WB_L1_01_20240709_133020.D01	STH 82	West(-)	1	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	13:31:13	11.049	2061	53.3	1.452	79.8	41	0.23	26.2	Left	87.7	99.8	43.77448335		-89.71657497		1020.9905	F	40.9	M		40	53.8
WB Lane 1															Avg	54.5	2.1											WB Lane 1			Avg	54.9	No of Tests	
															St. Dev	1.1															St. Dev	1.0	10	
																														Min	53.6			
																														Max	57.0			

Appendix C
Detailed Friction Results
Test Site F94

DateCollected	FileName	Route	Direction	HdrLane	Equipment	ARATireSN-L	ARATireSN-R	Driver	Operator	LeftTireType	RightTireType	TestTime	RefPost	CycleNumber	SNAvg	SNSStd	SNPeak	SpeedAvg	SpeedSTD	WaterAvg	Wheel	AirTemp	SurfTemp	Latitude	LatDir	Longitude	LongDir	Height	HeightU	Speed	SpeedU	Message	Normalized Speed	Adj SN	
7/9/2024	CONCRETE_TEST_3_NB_L2_01_20240709_103526.D01	US 51	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:35:26	64.86	1675	51.1	1.493	91.7	40.9	0.23	24.1	Left	83.8	93.6	43.23865432	-89.32251389	1004.8051	F	40.5	M		40	51.6			
7/9/2024	CONCRETE_TEST_3_NB_L2_01_20240709_103526.D01	US 51	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:35:30	64.909	1676	49.5	2.542	84.8	41	0.14	27	Left	83.8	93.6	43.23936158	-89.32252582	1001.3184	F	41.1	M		40	50.0			
7/9/2024	CONCRETE_TEST_3_NB_L2_01_20240709_103526.D01	US 51	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:35:35	64.959	1677	48.1	2.195	78.7	41.3	0.14	27.5	Left	83.7	93.5	43.24008327	-89.32254398	996.576	F	41.3	M		40	48.8			
7/9/2024	CONCRETE_TEST_3_NB_L2_01_20240709_103526.D01	US 51	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:35:39	65.009	1678	51.6	2.113	85.2	41.4	0.15	27.7	Left	83.7	92.7	43.24080996	-89.3225601	990.4976	F	41.2	M		40	52.3			
7/9/2024	CONCRETE_TEST_3_NB_L2_01_20240709_103526.D01	US 51	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:35:44	65.059	1679	49.4	1.823	78	41.5	0.15	26.5	Left	83.9	93.8	43.24153132	-89.32257324	983.3542	F	41.4	M		40	50.2			
7/9/2024	CONCRETE_TEST_3_NB_L2_01_20240709_103526.D01	US 51	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:35:48	65.109	1680	49	2.015	83.2	41.2	0.2	27.3	Left	83.8	93.6	43.24225411	-89.32258664	976.1364	F	41.1	M		40	49.6			
7/9/2024	CONCRETE_TEST_3_NB_L2_01_20240709_103526.D01	US 51	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:35:52	65.159	1681	51	2.644	79.4	40.8	0.19	26.5	Left	83.8	93.3	43.24297639	-89.3226018	970.3261	F	40.7	M		40	51.4			
7/9/2024	CONCRETE_TEST_3_NB_L2_01_20240709_103526.D01	US 51	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:35:57	65.209	1682	50.6	2.345	82	40.7	0.15	26.2	Left	83.8	92.4	43.24369421	-89.32261754	966.0922	F	40.5	M		40	51.0			
7/9/2024	CONCRETE_TEST_3_NB_L2_01_20240709_103526.D01	US 51	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:36:01	65.259	1683	53.4	2.339	79	40.6	0.17	26.5	Left	83.8	92.4	43.24441946	-89.3226327	963.2272	F	40.4	M		40	53.7			
7/9/2024	CONCRETE_TEST_3_NB_L2_01_20240709_103526.D01	US 51	North(+)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:36:06	65.309	1684	48.2	1.884	80.2	40.7	0.19	26.2	Left	83.9	93	43.24514612	-89.32265393	961.9022	F	40.4	M		40	48.6			
NB Lane 2															Avg	50.2	2.1	NB Lane 2															Avg	50.7	No of Tests
															St. Dev	1.7																	St. Dev	1.6	10
																																	Min	48.6	
																																	Max	53.7	
7/9/2024	CONCRETE_TEST_3_SB_L2_01_20240709_102919.D01	US 51	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:29:19	65.382	1663	48.6	2.559	104.6	39.9	0.21	24.2	Left	83.3	92.8	43.2462206	-89.32307916	958.9393	F	39.7	M		40	48.6			
7/9/2024	CONCRETE_TEST_3_SB_L2_01_20240709_102919.D01	US 51	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:29:23	65.332	1664	46.3	1.603	71.1	40.7	0.12	26.5	Left	83.3	92.6	43.24550798	-89.32302229	958.1079	F	40.6	M		40	46.7			
7/9/2024	CONCRETE_TEST_3_SB_L2_01_20240709_102919.D01	US 51	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:29:28	65.282	1665	48.1	1.324	73.4	40.8	0.15	25.8	Left	83.4	92.5	43.24478556	-89.32299074	958.8167	F	40.5	M		40	48.5			
7/9/2024	CONCRETE_TEST_3_SB_L2_01_20240709_102919.D01	US 51	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:29:32	65.233	1666	44.7	1.173	69	40.7	0.15	26	Left	83.4	92.9	43.24407352	-89.32297583	961.4255	F	40.6	M		40	45.1			
7/9/2024	CONCRETE_TEST_3_SB_L2_01_20240709_102919.D01	US 51	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:29:37	65.182	1667	43	1.903	64	40.9	0.15	26.3	Left	83.3	92	43.24334238	-89.32296111	965.0103	F	40.5	M		40	43.5			
7/9/2024	CONCRETE_TEST_3_SB_L2_01_20240709_102919.D01	US 51	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:29:41	65.132	1668	46.4	1.091	69.4	40.7	0.15	26.3	Left	83.6	92.6	43.24262548	-89.3229463	970.027	F	40.4	M		40	46.8			
7/9/2024	CONCRETE_TEST_3_SB_L2_01_20240709_102919.D01	US 51	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:29:46	65.083	1669	48.5	3.171	76	40.7	0.12	26.2	Left	83.5	92.5	43.24191116	-89.32293144	976.4249	F	40.3	M		40	48.9			
7/9/2024	CONCRETE_TEST_3_SB_L2_01_20240709_102919.D01	US 51	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:29:50	65.032	1670	48	1.682	71.4	40.8	0.11	27.1	Left	83.5	93.5	43.24118591	-89.32291709	983.9749	F	40.5	M		40	48.4			
7/9/2024	CONCRETE_TEST_3_SB_L2_01_20240709_102919.D01	US 51	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:29:54	64.982	1671	46	1.516	67.7	41.2	0.13	25.7	Left	83.4	93.3	43.24046209	-89.32290358	990.5428	F	41	M		40	46.6			
7/9/2024	CONCRETE_TEST_3_SB_L2_01_20240709_102919.D01	US 51	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:29:59	64.932	1672	41.5	1.829	65.1	41.4	0.14	26.4	Left	83.4	93	43.23973808	-89.32288927	995.9408	F	41.3	M		40	42.2			
7/9/2024	CONCRETE_TEST_3_SB_L2_01_20240709_102919.D01	US 51	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:30:03	64.882	1673	48.6	2.442	74.2	41.4	0.15	25.9	Left	83.6	93.4	43.23902098	-89.32287539	999.9592	F	41.1	M		40	49.3			
7/9/2024	CONCRETE_TEST_3_SB_L2_01_20240709_102919.D01	US 51	South(-)	2	SN 628/R/R			M MORIN	J BENNETT	Ribbed	Ribbed	10:30:08	64.832	1674	49.5	3.762	74	41.4	0.16	27.2	Left	83.4	92.2	43.2382993	-89.32285947	1003.0205	F	41.2	M		40	50.2			
SB Lane 2															Avg	46.1	1.8	SB Lane 2															Avg	46.6	No of Tests
															St. Dev	2.4																	St. Dev	2.4	10
																																	Min	42.2	
																																	Max	49.3	