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AN INVESTIGATION OF THE DURABILITY OF THE SKID RESISTANCE OF WIRE COMBED PCC PAVEMENT SURFACES
STUDY 74-5

AND

AN INVESTIGATION OF SKID RESISTANT ASPHALTIC MIX DESIGNS
STUDY 74-4

DESCRIPTION OF PROJECTS AND
SUMMARY OF TEST DATA
THROUGH 1974

Materials and Research Division
Missouri State Highway Department

INTRODUCTION

The Materials and Research Division of the Missouri State Highway Department is now conducting two FHWA sponsored research investigations dealing with skid resistance of highway pavements. Both of these investigations were scheduled to run from December 1973 to December 1977. The two investigations are "An Investigation of the Durability of the Skid Resistance of Wire Combed PCC Pavement Surfaces" (Study 74-5) and "An Investigation of Skid Resistant Asphaltic Mix Designs" (Study 74-4).

Portland cement concrete (PCC) pavements have been constructed using a transverse wire combed texture which have been found, in a previous study, to be more effective for improving skid resistance over that of a longitudinal burlap drag. The ability of the surface textured with a wire comb to maintain the improved skid resistance is unknown. Sufficient friction tests need to be made on this type of textured surface to determine a reasonably accurate rate of wear, based on change in surface friction. The objective of "An Investigation of the Durability of the Skid Resistance of Wire Combed PCC Pavement Surfaces" is to determine friction Wear Factors, using the Missouri skid trailer, for a number of Portland cement concrete pavements, constructed to have an improved skid resistance.

Flexible pavement surface mixes are being constructed using materials and mixes which have been found to produce surfaces with improved skid resistance. The ability of these

mixes to maintain the improved skid resistance for a feasible length of time is not known. Sufficient friction tests need to be made on these mixes in order that a reasonably accurate rate of wear can be determined, based on change of surface friction. The objective of "An Investigation of Skid Resistant Asphaltic Mix Designs" is to determine friction Wear Factors for a number of flexible pavement surface mixes, designed to have improved resistance to skidding as determined with the Missouri skid trailer.

This report gives a brief description of each project now under study and a summary of the friction tests to date. Some of the projects have only recently been completed and have only the initial friction test results while some others have been carried over from a previous study and have a considerable amount of friction test data. There is expected to be more projects added to the investigations within this calendar year.

An Investigation of the Durability of the Skid Resistance of Wire Combed PCC Pavement Surfaces

The locations of the projects now under study in this investigation and the types of surface textures within each project are given below.

TABLE 1

County	Route	Surface Texture
Jackson	I-435	Burlap Drag 3" x ¼" Wire Comb
Boone	63	Burlap Drag 3" x ¼" Wire Comb Heavy Nylon Broom Fine Nylon Broom Natural Bristle Broom
Boone	63	3" x ½" Wire Comb
Boone	163	3" x ¼" Wire Comb
Morgan	50	3" x ½" Wire Comb
Barton	71	3" x ¼" Wire Comb 3" x ½" Wire Comb 5" x ¼" Wire Comb 5" x ½" Wire Comb Astrodrag

I-435, Jackson County

The surface textures within this area have been carried over from a previous investigation. The surface textures being tested were constructed with a longitudinal burlap drag and a transverse wire comb. The wire comb had teeth approximately 3 inches long with ¼ inch spacing. The burlap drag texture was applied to the northbound and southbound lanes of project I-435-1(61)16 UA and the wire comb texture was given to the northbound and southbound lanes of project I-IG-435-1(9). Both projects were opened to traffic in late

1971. Five locations per direction were selected for testing over the burlap drag sections while ten locations per direction were selected over the wire comb sections. A summary of the tests made in position 2 at 40 and 50 mph are shown in Table 2.

TABLE 2
I-435, Jackson County

Surface Texture	Dir.	Length (mi.)	1974 ADT	Date Tested	CF_{40}	CF_{50}
Burlap Drag	NB	1.691	22,700	6/72	.399	.312
				11/72	.416	.318
				5/73	.329	.316
				10/74	.337	.256
	SB	1.203	23,500	6/72	.378	.295
				11/72	.349	.258
				5/73	.323	.294
				10/74	.318	.268
Wire Comb	NB	2.848	17,200	6/72	.573	.510
				11/72	.549	.510
				5/73	.377	.382
				10/74	.366	.299
	SB	2.848	17,200	6/72	.538	.475
				11/72	.506	.476
				5/73	.381	.363
				10/74	.363	.309

Route 63, Boone County

This undivided two lane pavement was also carried over from the previous skid resistance investigation. Five different surface textures were constructed under project C010-63(19) and opened to traffic in late 1970.

A longitudinal burlap drag was the Missouri standard for texturing PCC pavement at the time of construction and was used as the standard in this test project.

The transverse wire comb had exposed teeth of 3 inches with ¼ inch centers.

The heavy nylon bristle broom was made of polypropylene plastic with two rows, at approximately one inch centers, of plastic strands consisting of 11 clusters, per foot of broom length in each row. Cluster holes were 3/8 inch diameter. There were approximately 48 oval strands of plastic, exposed to a length of 4¼ inches, in each cluster.

The fine nylon bristle broom was identical to the heavy nylon bristle broom except the oval strands of plastic were thinner.

The natural bristle broom was made of palmyra fiber with three rows of fibers consisting of 11 clusters per foot in each row. Cluster holes were 3/8 inch diameter with the rows spaced at 3/4 inch and the middle row of clusters staggered with respect to the two outside rows. There were approximately 50 strands of fiber exposed to a length of 4 inches in each cluster.

Although the wire comb texture had higher initial CF values and has remained higher, it was thought worthwhile to continue the study to determine when, if at all, the wire comb texture would have the same coefficient of friction as the other surfaces.

The test results at 40 and 50 mph for this project are shown in Table 3; only the spring run results are shown after 1971. There were five locations, per direction, selected from each section for testing, and the average shown is for all locations and positions tested within the section. The 1974 ADT for this project is 5570.

TABLE 3

Rte. 63, Boone County

Surface Texture	Length (mi.)	Date Tested	CF_{40}	CF_{50}
Burlap Drag	.523	8/70	.484	.376
		10/70	.397	.357
		3/71	.432	.365
		8/71	.361	.333
		11/71	.396	.365
		4/72	.393	.341
		5/73	.405	--
		6/74	.385	.345
3" x ¼" Wire Comb	.519	8/70	.678	.597
		10/70	.569	.534
		3/71	.545	.490
		8/71	.469	.452
		11/71	.479	.462
		4/72	.479	.426
		5/73	.426	--
		6/74	.414	.377
Heavy Nylon Broom	.625	8/70	.629	.507
		10/70	.523	.489
		3/71	.481	.432
		8/71	.427	.386
		11/71	.436	.402
		4/72	.432	.376
		5/73	.393	--
		6/74	.384	.341
Fine Nylon Broom	.511	8/70	.618	.484
		10/70	.506	.470
		3/71	.462	.394
		8/71	.375	.346
		11/71	.406	.372
		4/72	.396	.348
		5/73	.382	--
		6/74	.368	.332
Natural Bristle Broom	.498	8/70	.627	.475
		10/70	.490	.451
		3/71	.467	.403
		8/71	.391	.368
		11/71	.412	.387
		4/72	.416	.362
		5/73	.402	--
		6/74	.386	.350

Sand patch texture depth tests were run on this project for the first three years and the results are given in Table 4. The 1970 tests were run before the pavement was open to traffic.

TABLE 4

Sand Patch Test Results
Rte. 63, Boone County

Surface Texture	Year Tested	Texture Depth Max.	Min.	Avg.	Range
Burlap Drag	1970	.026	.015	.020	.011
	1971	.022	.010	.013	.012
	1972	.016	.009	.011	.007
3" x ¼" Wire Comb	1970	.045	.020	.029	.025
	1971	.032	.013	.019	.019
	1972	.028	.014	.016	.014
Heavy Nylon Broom	1970	.045	.023	.030	.022
	1971	.029	.015	.016	.014
	1972	.024	.011	.012	.013
Fine Nylon Broom	1970	.034	.021	.026	.013
	1971	.019	.010	.012	.009
	1972	.019	.010	.011	.009
Natural Bristle Broom	1970	.035	.015	.021	.020
	1971	.016	.010	.011	.006
	1972	.016	.010	.011	.006

Route 63, Boone County

This project (5-P-63-32) was constructed with a 3" x ¼" wire comb texture, and opened to traffic in late 1974. The project is a four lane divided pavement with the northbound pavement having 15 test locations selected over a 3.66 mile length, while the southbound pavement has five test locations over a 0.90 mile length. The northbound lanes had an approximate 1974 ADT of 3300 while the southbound lanes had a 1974 ADT of 3390. Initial tests only have been run for this project and the results of the 40 and 50 mph tests are shown in Table 5. Tests were run in position 2 only.

TABLE 5

Rte. 63, Boone County

3" x ½" Wire Comb

Dir.	Date Tested	CF_{40}	CF_{50}
NB	12/74	.489	.458
SB	12/74	.503	.458

Route 163, Boone County

There are two construction projects being tested, both having a 3" x ¼" wire comb texture. Project S-SU-51(8) is a four lane divided pavement with five test locations over a 0.40 mile length. Project C010-K(4) is a two lane undivided pavement with 15 test locations over a 2.58 mile length. Both of these projects were opened to traffic during the fall of 1972. The divided pavement has a 1974 ADT of 4300 vehicles per day per direction while the undivided pavement ADT increases from 5,050 to 8,650 from South to North.

The test results are shown in Table 6. Because of traffic conditions, 20 and 30 mph tests only are made on the divided pavement, although 40 mph tests were made for the initial tests. The 20 mph tests are not shown. Separate average are given for the northbound and southbound lanes of the divided pavement, but only one average is given for the undivided pavement. The averages given include all positions tested.

TABLE 6

Rte. 163, Boone County

3" x ¼" Wire Comb

Divided or Undivided	Dir.	Date Tested	CF_{30}	CF_{40}	CF_{50}
D	NB	3/73	.574	.490	--

TABLE 6

Divided or Undivided	Dir.	Date Tested	CF_{30}	CF_{40}	CF_{50}
		9/73	.553	--	--
		6/74	.517	--	--
		12/74	.442	--	--
D	SB	3/73	.578	.565	--
		9/73	.569	--	--
		6/74	.542	--	--
		12/74	.491	--	--
U	--	3/73	.633	.586	.500
		9/73	.552	.525	.470
		6/74	.562	.476	.444
		12/74	.516	.480	.452

Route 50, Morgan County

Project DP-F-FG-50-3(18) is a two lane undivided PCC pavement opened to traffic in late 1974. Two areas were selected from this project for study, one area having a 0.78 mile length of 4" x ½" wire comb texturing and the other area having a 1.39 mile length of 4" x ¼" wire comb texturing. The 1974 ADT for these sections is 2250 and only the initial friction tests have been run on these sections. Five locations in each direction were selected from each section and tests were run in position 2. The 40 and 50 mph test results are given in Table 7.

TABLE 7

Rte. 50, Morgan County

Surface Texture	Date Tested	CF_{40}	CF_{50}
4" x ¼" Wire Comb	11/74	.620	.574
4" x ½" Wire Comb	11/74	.545	.504

Sand patch texture depth tests were also run on the two sections before the pavement was open to traffic and the results are given in Table 8.

TABLE 8

Sand Patch Test Results

Rte. 50, Morgan County

Surface Texture	Texture Depth Max.	Min.	Avg.	Range
4" x ¼" Wire Comb	.096	.054	.071	.042
4" x ½" Wire Comb	.091	.044	.064	.047

Route 71, Barton County

Project 71-7-P-71-13 is a four lane divided PCC pavement constructed in 1974, having four different surface textures. The northbound lanes have the following textures; two sections with a 3" x ¼" wire comb, a 3" x ½" wire comb, a 5" x ¼" wire comb and a 5" x ½" wire comb. The southbound lanes have sections textured with a 3" x ¼" wire comb, a 3" x ½" wire comb, and a section textured longitudinally with an Astroturf drag. Both northbound and southbound lanes were opened to traffic in late 1974, but three sections of the northbound lanes had carried two-way traffic for several months before the remainder of the sections were open to traffic. Initial tests were run on the sections carrying two-way traffic with the remainder of the sections being tested shortly after they were opened to traffic. Five test locations were selected from each section with tests being made in position 2. The three sections carrying two-way traffic also had tests made in what is now position 3. The test results are shown in Table 9. The test sections had an approximate 1974 ADT of 2400, both northbound and southbound.

TABLE 9

Rte. 71, Barton County

Surface Texture	Dir.	Length (mi.)	Date Tested	CF_{40}	CF_{50}
3" x ¼" Wire Comb	NB	1.00	7/74	.595	--
3" x ½" Wire Comb	NB	0.97	7/74	.564	--
5" x ½" Wire Comb	NB	--	7/74	.524	--
3" x ¼" Wire Comb	NB	1.00	11/74	.517	.503
	SB	1.24	11/74	.542	.517
3" x ½" Wire Comb	NB	0.97	11/74	.483	.439
	NB	1.76	11/74	.509	.476
	SB	1.76	11/74	.506	.477
5" x ¼" Wire Comb	NB	1.03	11/74	.544	.496
5" x ½" Wire Comb	NB	1.04	11/74	.510	.482
Astrodrag	SB	0.96	11/74	.506	.465

Sand patch texture depth tests were also run on the above sections before any of them had been open to traffic and the results are given in Table 10.

TABLE 10

Rte. 71, Barton County

Sand Patch Test Results

Surface Texture	Texture Depth			
	Max.	Min.	Avg.	Range
3" x ¼" Wire Comb	.077	.036	.052	.041
3" x ½" Wire Comb	.096	.034	.068	.062
5" x ¼" Wire Comb	.066	.030	.046	.036
5" x ½" Wire Comb	.069	.036	.048	.033
Astrodrag	.081	.034	.052	.047

Although the projects are not included in the current investigation, Table 11 shows the test results on two projects having 3" x ¼" wire comb textures that were tested under the previous skid resistance investigation. Project C071-52(5) is an undivided two lane section of Route 52, Morgan County opened to traffic in May, 1972, while Project S-S11-95(7) is an undivided two lane section of Route B, Cooper County opened to traffic in late 1971.

TABLE 11

3" x ¼" Wire Comb Texture

Project	Length (mi.)	Date Tested	CF_{40}	CF_{50}
C071-52(5)	0.42	10/72	.532	.570
		4/73	.622	.592
	0.20	10/72	.536	.518
		4/72	.599	.534
	0.42	10/72	.550	.562
		4/73	.646	.587
S-S11-95(7)	1.80	7/72	.487	.435
		3/73	.503	.461

In comparison of the wire comb textures, based on the small amount of data which we have, it appears that the comb with ¼" spacing gives a slightly higher initial CF than the comb with ½" spacing. It would be expected that the ½" wire comb texture would not decrease in skid resistance as fast as the ¼" texture and possibly level off at a higher CF value. However, there is not enough data collected at this time to verify this statement; in fact, the one area where both 3" x ¼" and 3" x ½" wire comb textures have been tested twice, the percentage decrease for the second test was about the same for both textures.

An Investigation of Skid Resistant Asphaltic Mix Designs

The location of each project or projects, now under study in this investigation and each project's design feature, is given below.

TABLE 12

County	Route	Design Feature
St. Louis	40	Special D Mix D71-338 (Trap Rock)
Clay	I-435	Special D Mix D71-344 (Trap Rock)
St. Louis	140	Special C Mix C69-471 (Trap Rock) Special D Mix D69-624 (Blast Furnace Slag)
St. Louis	140	Special C Mix C69-104 (Trap Rock)
Buchanan	752	Special C Mix C73-329 (Haydite)
St. Louis	115	SS73-2 (Steel Slag)
Pemiscott	I-55	Special C Mix C73-60 & C73-61 32% Ls./43% Gravel
Lafayette	I-70	C71-258 3/4" Max. size 66.2% + #10
Johnson	50	C72-91 3/4" max. size 67.1% + #10
Greene	I-44	C72-156 ½" max. size 64.8% + #10
Newton	I-44	C72-300 Burl. Ls. with 35% chert ½" max. size
St. Louis	141	C73-77 ½" max. size 62.9% + #10

TABLE 12 (Cont.)

County	Route	Design Feature
Jackson	291	C73-73 ½" max. size 62.8% + #10
Saline	41	BP72-124M (Wet Bottom Boiler Slag)
Bates	J	BP74-15 (Wet Bottom Boiler Slag)
Bates	H	BP74-16 (Wet Bottom Boiler Slag)
Green	160	BP70-121M BP70-124M BP70-127M (Joplin Chat/Limestone)

Route 40, St. Louis County

Project C096-40(9)U is a special D Mix (D71-338) using Trap Rock and a blended sand. Paving of the asphaltic concrete was completed on the six lane divided pavement in 1971. The project length is 1.75 miles with 15 locations selected for testing in each direction. Test results for positions 2, 4, and 5 at 40 and 50 mph are shown in Table 13. The 1974 ADT was 37,200 in the Eastbound direction and 36,500 in the Westbound direction.

TABLE 13

Rte. 40, St. Louis County

Surface	Dir.	Test Date	CF_{40}	CF_{50}	Date	40	50
AC - Trap Rock	EB	5/72	.510	.454	8/75	.478	.44
		6/73	.510	.452	4/76	.495	.44
		9/73	.444	.399			
		6/74	.470	.421			
		10/74	.479	.425			
		4/75	.490	.470			
	WB	5/72	.495	.434			
		6/73	.509	.440			

TABLE 13 (Cont.)

Surface	Dir.	Test Date	CF_{40}	CF_{50}	Date	40	50
AC - Trap Rock	WB	9/73	.454	.407	8/75	.470	.43
		6/74	.459	.404	4/76	.490	.44
		10/74	.467	.418			
		4/75	.475	.454			

I-435, Clay County - Missouri River Bridge

Project I-435-1(77)12 is a Special D Mix (D71-344) constructed in 1972 using Trap Rock and Missouri River sand. The asphaltic concrete project has a length of 0.69 miles and a 1974 ADT of 16,700 per direction. Five test locations were selected in each direction and the test results for 40 and 50 mph in position 2 are shown in Table 14.

TABLE 14

I-435, Clay County

Surface	Dir.	Test Date	CF_{40}	CF_{50}
AC - Trap Rock	NB	11/72	.583	.512
		5/73	.525	.524
		10/74	.503	.400
		4/75	.534	.455
	SB	11/72	.558	.453
		5/73	.530	.492
		10/74	.508	.437
		4/75	.553	.494

Route 140, St. Louis County

Project C096-M(3) is an asphaltic concrete resurfacing job with two types of mix designs. Special Mix No. C69-471 has Trap Rock as the coarse aggregate while Special Mix No. D69-624 has Blast Furnace Slag as the coarse aggregate. Both mixes use Missouri River sand for the fine aggregate. The Trap Rock mix has a test length of 1.01 miles with five tests being taken per direction while the Blast Furnace Slag mix

has a length of only 0.15 miles with three tests taken per direction. The four lane undivided pavement was resurfaced in late 1969 and has a 1974 ADT of approximately 7500. The test results for all positions tested at 30 and 40 mph are shown in Table 15.

TABLE 15

Rte. 140, St. Louis County

Test Date	AC - Slag CF_{30}	AC - Slag CF_{40}	AC-Trap Rock CF_{30}	AC-Trap Rock CF_{40}	Date	AC - Slag 30	AC - Slag 40	AC - Trap Rock 30	AC - Trap Rock 40
7/70	.632	.584	.597	.535	8/75	.633	.576	.538	.49.
3/71	.663	.610	.619	.564	4/76	.617	.564	.543	.51.
8/71	.686	.633	.612	.565					
11/71	.616	.556	.560	.509					
5/72	.626	.584	.564	.530					
9/72	.600	.563	.541	.504					
6/73	.632	.556	.543	.498					
9/73	.628	.558	.535	.469					
6/74	.596	.541	.532	.488					
10/74	.616	.557	.526	.486					
8/75	.606	[illegible]	[illegible]	[illegible]					

Route 140, St. Louis County

Project C096-140(2)U is another asphaltic concrete resurfacing job using a special C Mix (C69-104) utilizing Trap Rock as coarse aggregate and a Field Deposit sand as fine aggregate. This section of Route 140 is a four lane divided pavement resurfaced in late 1969 and having a 1974 ADT of 13,200 Southbound and 14,200 Northbound. Five locations were selected in each direction with tests made in positions 2 and 3. Test results for 20 and 30 mph tests

are shown in Table 16. No 40 mph tests were run because of traffic conditions.

TABLE 16

Rte. 140, St. Louis County

Surface	Test Date	NB CF_{20}	NB CF_{30}	SB CF_{20}	SB CF_{30}	Date	NB 20	NB 30	SB 20	SB 30
AC - Trap Rock	7/70	.545	.452	--	--	8/75	.482	.450	.483	.44.
	5/72	.587	.497	.575	.518	4/76	.518	.492	.504	.47
	6/73	.553	.489	.547	.492					
	9/73*	.516	.463	.522	.456					
	6/74	.524	.471	.510	.460					
	10/74	.518	.468	.506	.456					

* Tests were made in position 1 and 3

Route 752, Buchanan County

A special C Mix (C73-329) asphaltic concrete was used in resurfacing a high accident reverse curve area on Route 752 in 1973. The resurfacing was a maintenance project utilizing Haydite aggregate. A section of regular asphaltic concrete pavement (Mix C70-250) lying East of the Haydite section was chosen as a control section. The Haydite section has a length of 0.14 miles while the regular AC pavement has a test length of 0.35 miles. The four lane undivided pavement has a 1973 ADT of 8440 vehicles per day; the 1974 ADT for this section was not available. Five test locations were selected for each section. The test results for 30 mph are shown below, 40 mph tests were not run because of the speed limit.

TABLE 17

Rte. 752, Buchanan County

Surface	Test* Date	CF_{30}		30
AC - Haydite	10/73	.529	9/75	.646
	10/74	.596	3/76	.674
AC - Regular	10/73	.355	9/75	.450
	10/74	.425	3/76	.548

* Positions 1 and 3 tested in 10/73
Positions 2 and 3 tested in 10/74

Route 115, St. Louis County

Project 6-U-115-59 is an asphaltic concrete overlay (Mix No. SS73-2) utilizing Steel Slag as the coarse aggregate and Missouri River sand as the fine aggregate. The two lane undivided pavement was resurfaced in 1973 and has a 1974 ADT of 12,287. Ten locations were selected for testing in each direction over the two mile test length. The results of tests at 30 and 40 mph are shown in Table 18.

TABLE 18

Rte. 115, St. Louis County

Surface	Test Date	CF_{30}	CF_{40}
AC - Steel Slag	11/73	.622	.552
	6/74	.528	.476
	10/74	.560	.496
		.553	.495
	8/75	.565	.498
	4/76	.530	.466

I-55, Pemiscott County

There are three asphaltic concrete mixes under study in this area. Project I-IG-55-1(13)11 has two mixes; a C Mix (C74-241) utilizing Plattin Limestone and a blended sand, and a special C Mix (C73-60) utilizing Ste. Genevieve Limestone and Black River crushed gravel as the coarse

aggregate, and Mississippi River sand as the fine aggregate. The mix contains 32.4% limestone and 43.0% gravel. Project I-55-1(20) also has a special C Mix (C73-61) which is the same as Special Mix No. C73-60. Both of these projects are for the Southbound lanes only and were opened to traffic in late 1974 and the 1974 ADT is not yet available. The 1973 ADT for Project I-IG-55-1(13)11 was 2300 vehicles per day while that for Project I-55-1(20) was approximately 2500 vehicles. The initial test results for position 2 are shown below.

TABLE 19

I-55, Pemiscott County

Surface	Mix No.	Length	No. of Tests	Date Tested	CF40	CF50			
AC - Ls.	C74-241	1.09	5	11/74	.371	.352	11/75	.313	.2
						.339	5/76	.212	.19
AC-Ls. w/Gravel	C73-60	4.15	15	11/74	.477	.435	11/75	.456	.4
							5/76	.364	.34
AC-Ls. w/Gravel	C73-61	6.79	25	11/74	.505	.459	11/75	.454	.46
							5/76	.437	.41

I-70, Lafayette County

Project C054-70(1) is an asphaltic concrete resurfacing job constructed in 1971. The Type C Mix (C71-258) used Bethany Falls Limestone and a blended sand. The coarse aggregate had a 3/4 inch maximum size with 66.2% of the aggregate (based on total mix) retained on the No. 10 sieve. The eastbound lanes had a test length of 10.22 miles while the westbound lanes had a test length of 11.68 miles. Fifteen test locations were selected in each direction. Test results for tests made in position 2 at 40 and 50 mph are shown in Table 17. The 1974 ADT average for the

WB lane - Bath Falls
EB - Winthrop
C71-94

eastbound direction is 5200 vehicles per day and for the westbound direction is 5800. The test results for position 2 at 40 and 50 mph is shown in Table 20.

TABLE 20

I-70, Lafayette County

Surface	Test Date	EB CF40	EB CF50	WB CF40	WB CF50
AC	10/71	.461	.390	.419	.367
3/4" max. size	5/73	.393	.352	.375	.329
66.2% + #10	10/74	.350	.315	.316	.288
	10/75	.362	.331	.324	.297
	4/76	.397	.365	.354	.319

Route 50, Johnson County

Project 4-P-50-19 is an asphaltic concrete resurfacing job constructed in 1972. The Type C Mix (C72-19) used Burlington Limestone and a blended sand. The coarse aggregate had a 3/4 inch maximum size with 67.1% of the aggregate (based on total mix) retained on the No. 10 sieve. The project includes only the eastbound lanes and has a test length of 6.64 miles. This project has been tested only once with tests made in position 2 at 15 different locations. The results of the 40 and 50 mph tests are given below.

TABLE 21

Rte. 50, Johnson County

Surface	Test Date	CF40	CF50
AC	10/74	.389	.342
3/4" max. size			
67.1% + #10			
	9/75	.406	.371
	4/76	.417	.370

I-44, Greene County

Project FI-44-2(67)80 is an asphaltic concrete resurfacing job completed in 1972. The type C mix (C72-156) used

Burlington Limestone and Arkansas River sand. The coarse aggregate had a 1/2 inch maximum size with 64.8% of the aggregate (based on total Mix) retained on the No. 10 sieve. The resurfacing project covers only the westbound lanes and has a test length of 5.19 miles. A total of ten locations were selected for testing and the results of tests taken at 40 and 50 mph in position 2 are given in Table 22. The average 1974 ADT for the project is 6400 vehicles per day.

TABLE 22

I-44, Greene County

Surface	Test Date	CF_{40}	CF_{50}
AC	4/73	.491	.407
1/2" max. size	3/74	.464	--
64.8% + #10	10/74	.320	.275
	1/75	[illegible]	
	10/75	.348	.318
	4/76	.474	.372

I-44, Newton County

Project I-FI-44-1(36)0 is an asphaltic concrete resurfacing job completed in late 1972. The type C mix (C72-300) had Burlington Limestone with 35% chert as coarse aggregate and a blended sand as fine aggregate. The coarse aggregate had a maximum size of ½ inch with 62.0% of the aggregate (based on total mix) retained on the No. 10 sieve. Both the eastbound and westbound lanes have a test length of 7.80 miles, with ten test locations per direction. The test results taken at 40 and 50 mph in position 2 are shown in Table 23. The eastbound lanes had an average 1974 ADT of 5384 while the westbound lanes had an average of 5700.

TABLE 23

I-44, Newton County

Surface	Date Tested	EB CF40	EB CF50	WB CF40	WB CF50
AC	11/72	.590	.531	.616	.534
Burl. Ls. w/35% Chert ½" max. size	4/73	.443	.401	.470	.425
	9/74	.458	.422	.483	.433
	4/75	.513	.415	.505	.426
	10/75 =	.438	.401	.461	.419
	4/76 =	.422	.366	.430	.384

Route 141, St. Louis County

Project 6-U-141-38 is an asphaltic concrete resurfacing job completed in 1973. The type C mix (C73-77) utilizes St. Louis Limestone and Missouri River sand with a ½ inch maximum size aggregate and 62.9% of the aggregate (based on total mix) retained on the No. 10 sieve. The resurfacing project is a four lane undivided pavement divided into two sections because of the large difference in ADT between the two areas. Due to the speed limits, 50 mph tests were not made. Test results at 30 and 40 mph in position 2 are shown in Table 24. Five test locations per direction were selected in each section.

TABLE 24

Rte. 141, St. Louis County

Surface	ADT	Length (mi.)	Date Tested	CF30	CF40
AC	11,432	1.24	10/74	.309	.278
½" max. size 62.9% + #10	18,565	1.21	10/74	.341	.300
			4/75	.368	.325
		1.24	8/75	.374	.310
			4/76	.424	.367
		1.21	8/75	.388	.341
			4/76	.436	.372

Route 291, Jackson County

Project 4-U-291-55 is an asphaltic concrete resurfacing job completed in 1973. The type C mix (C73-73) uses Bethany Falls Limestone and Missouri River sand. The coarse aggregate

has a ½ inch maximum size with 62.8% of the aggregate (based on total mix) retained on the No. 10 sieve. The two lane undivided pavement has an average 1974 ADT of 9650 vehicles per day. The test length is 4.43 miles with ten test locations being selected in each direction. The project has been tested once and the test results at 40 and 50 mph in position 2 are shown below.

TABLE 25

Rte. 291, Jackson County

Surface	Date Tested	CF_{40}	CF_{50}
AC ½" max. size 62.8% + #10	10/74	.370	.314
	9/75	.336	.299
	4/76	.444	.366

Route 41, Saline County

Project C097-41(7)M is a Grade D Plant Mix Bituminous pavement resurfacing completed in 1972. Mix No. BP72-124M utilizes Callaway and Chouteau Limestone as the coarse aggregate and Wet Bottom Boiler Slag from the Thomas Hill Power Plant as the fine aggregate on a 78% limestone to 20% Boiler Slag combination. The project has a 10.00 mile test length and an average 1974 ADT of 775 vehicles per day. Ten test locations per direction were selected with tests made at 30, 40 and 50 mph in position 2. The test results for 40 and 50 mph are shown in Table 26.

TABLE 26

Rte. 41, Saline County

Surface	Date Tested	CF_{40}	CF_{50}
Plant Mix Bit, Pvt. (Wet Bottom Boiler Slag)	10/72	.505	.452
	5/73	.522	.472
	10/74	.448	.422
Sat fine agg.	4/75	[illegible]	.455
	10/75	.396	.364
	4/76	.502	.476

Routes J and H, Bates County

Project 7-S-J-30 for Route J and Project 7-S-H-29 for Route H are both Grade C Plant Mix Bituminous Pavement resurfacing jobs completed in 1974. For both Mix No. BP74-15 (Route J) and BP74-16 (Route H), the aggregate used was a combination of 20% Wet Bottom Boiler Slag from Kansas City Power and Light Company, and 80% Higginsville Limestone. Route J has a length of 9.68 miles and an average 1974 ADT of 520 while Route H has a length of 15.17 miles and an average 1974 ADT of 530. There were 25 test locations selected per direction for Route J and 40 test locations per direction selected for Route H. The initial test results at 40 and 50 mph for position 2 are shown in Table 27.

TABLE 27

Routes J & H, Bates County

Surface	Route	Date Tested	CF40	CF50
Plant Mix Bit. Pavement (Wet Bottom Boiler Slag)	J H	10/74	.439	.403
	H J	10/74	.477	.440
	J	9/75	.421	.404
		4/76	.459	.432
	H	9/75	.424	.408
		4/76	.452	.428

Route 160, Greene County

In an effort to improve the frictional properties of this route, three experimental leveling course mixes were applied in 1970. The Plant Mix Bituminous Pavement was put down under Project C039-160(6)M. Joplin flint chat was used in order to evaluate its performance in asphaltic surfaces designed to provide high coefficients of friction. The combination of aggregates used in each mix follows:

Mix No.	Aggregates
BP70-127M	85% Crushed Limestone 15% Joplin flint sand

Mix No.	Aggregates
BP70-124M	45% Crushed Limestone 40% Joplin flint chat ~~sand~~ 15% Joplin flint chat sand
BP70-121M	72% Joplin flint chat 28% Limestone screenings

A section of Route 160 in Dade County was also resurfaced in 1972 with a Plant Mix Bituminous Pavement under Project C029-39(5)M. This mix (No. BP72-80M) has the same combination of aggregates as Mix BP70-127M; 85% crushed limestone and 15% Joplin flint sand. The test results of the four mixes at 40 and 50 mph for the two lane undivided pavement are shown in Table 28.

TABLE 28

Route 160, Greene & Dade County

Mix No.	1974 ADT	Length (mi.)	Date Tested	CF40	CF50
BP70-121M	10,270	4.06	11/70	.692	.636
			3/71	.661	.622
			7/71	.551	.529
			10/71	.537	.501
			3/72	.569	.516
			6/72	.545	.505
			11/72	.538	.480
			4/73	.550	.515
			2/74	.583	.534
			10/74	.537	.510
			9/75	.555	.512
BP70-124M	7,290	1.83	11/70	.584	.598
			3/71	.623	.606
			7/71	.496	.503
			10/71	.496	.478
			3/72	.526	.467
			6/72	.505	--
			11/72	.468	--
			4/73	.474	--
			2/74	.507	--
			10/74	.473	--
			9/75	.541	
BP70-127M	Range 1250-3920	10.61	11/70	.656	.622
			3/71	.638	.574

TABLE 28 (Cont.)

Mix No.	1974 ADT	Length (mi.)	Date Tested	CF_{40}	CF_{50}
			7/71	.512	.487
			10/71	.489	.452
			3/72	.527	.473
			6/72	.501	.469
			11/72	.480	.412
			4/73	.472	.459
			2/74	.514	.425
			10/74	.458	.414
			5/75	.562	.492
BP72-80M	1,250	4.00	6/72	.588	.555
			11/72	.500	.462
			4/73	.496	.451
			2/74	.548	.452
			10/74	.484	.421
			5/75	.512	.444

TABLE 1

SKID TESTS AND TRAFFIC DATA

ROUTE D
NEW MADRID COUNTY

Date Tested	SN 30	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Wet Bottom Boiler Slag						
9/30/75	46.2	44.1	45.0	346	1	10,000
5/11/76	44.0	42.0	40.3	367	8	86,000
10/20/76	43.2	40.9	38.4	367	14	152,000
3/29/77	46.4	44.2	42.0	367	19	207,000
8/12/77	44.8	40.4	37.8	367	23	251,000
Section 2 - Wet Bottom Boiler Slag						
9/30/75	48.1	45.5	43.6	342	1	10,000
5/11/76	46.0	43.5	41.8	362	8	84,000
10/20/76	44.9	42.3	39.8	362	14	150,000
3/29/77	48.9	47.2	43.0	362	19	204,000
8/12/77	47.2	43.2	39.0	362	23	247,000
Section 3 - Wet Bottom Boiler Slag						
9/30/75	47.0	44.5	42.4	470	1	14,000
5/11/76	46.4	43.4	40.9	497	8	116,000
10/20/76	44.2	41.7	39.0	497	14	206,000
3/29/77	47.1	44.6	41.5	497	19	280,000
8/12/77	45.6	41.6	38.6	497	23	340,000
Section 4 - Wet Bottom Boiler Slag						
9/30/75	38.3	37.6	36.3	893	1	27,000
5/11/76	42.8	39.6	38.2	946	8	221,000
10/20/76	41.0	38.6	35.2	946	14	391,000
3/29/77	44.8	41.2	37.4	946	19	533,000
8/12/77	42.0	37.6	34.7	946	23	646,000

TABLE II

SKID TESTS AND TRAFFIC DATA

ROUTE 41
SALINE COUNTY

Date Tested	SN 30	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Wet Bottom Boiler Slag						
10/30/72	54.6	49.3	44.8	235	3	21,000
5/16/73	56.0	51.5	46.5	264	10	75,000
10/22/74	46.2	44.9	42.2	320	27	226,000
4/16/75	58.9	53.8	48.8	333	33	285,000
10/ 9/75	47.0	39.5	37.2	333	38	335,000
4/12/76	53.0	49.8	46.6	313	44	394,000
10/14/76	48.2	46.5	44.8	313	50	450,000
3/23/77	58.6	53.2	48.1	313	56	506,000
8/ 4/77	54.4	49.4	46.0	313	60	544,000
Section 2 - Wet Bottom Boiler Slag						
10/30/72	52.1	51.6	45.6	235	3	21,000
5/16/73	55.8	53.3	48.0	376	10	92,000
10/22/74	48.2	44.2	42.1	455	27	307,000
4/16/75	58.6	52.2	48.8	472	33	391,000
10/ 9/75	43.9	39.8	35.6	472	38	462,000
4/12/76	55.8	50.5	48.7	445	44	544,000
10/14/76	48.8	46.8	44.3	445	50	624,000
3/23/77	57.2	52.0	46.2	445	56	705,000
8/ 4/77	55.8	50.6	47.0	445	60	758,000

TABLE III

SKID TESTS AND TRAFFIC DATA

ROUTE H
BATES COUNTY

Date Tested	SN 20	SN 30	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Wet Bottom Boiler Slag							
10/10/74	34.4	--	--	--	628	5	94,000
4/ 1/75	39.6	--	--	--	653	11	209,000
9/25/75	27.8	--	--	--	653	17	327,000
4/14/76	28.1	--	--	--	688	23	448,000
8/31/76	29.0	--	--	--	688	28	551,000
4/ 7/77	29.9	--	--	--	688	35	695,000
8/25/77	29.3	--	--	--	688	40	799,000
Section 2 - Wet Bottom Boiler Slag							
10/10/74	--	48.2	40.7	38.3	382	5	57,000
4/ 1/75	--	45.9	42.7	37.9	398	11	128,000
9/25/75	--	42.6	36.6	35.2	398	17	199,000
4/14/76	--	47.1	42.2	39.6	419	23	273,000
8/31/76	--	43.4	38.0	35.1	419	28	336,000
4/ 7/77	--	42.0	40.4	33.2	419	35	424,000
8/25/77	--	43.7	40.0	37.5	419	40	486,000
Section 3 - Wet Bottom Boiler Slag							
10/10/74	--	--	44.1	--	340	5	51,000
4/ 1/75	--	--	47.0	--	324	11	111,000
9/25/75	--	--	41.2	--	324	17	169,000
4/14/76	--	--	47.2	--	296	23	225,000
8/31/76	--	--	43.4	--	296	28	269,000
4/ 7/77	--	--	45.9	--	296	35	331,000
8/25/77	--	--	47.4	--	296	40	376,000
Section 4 - Wet Bottom Boiler Slag							
10/10/74	--	--	42.1	--	246	5	37,000
4/ 1/75	--	--	46.9	--	255	11	82,000
9/25/75	--	--	43.6	--	255	17	128,000
4/14/76	--	--	46.5	--	233	23	172,000
8/31/76	--	--	42.7	--	233	28	207,000
4/ 7/77	--	--	46.2	--	233	35	256,000
8/25/77	--	--	48.1	--	233	40	291,000

TABLE III (Continued)

SKID TESTS AND TRAFFIC DATA

ROUTE H
BATES COUNTY

Date Tested	SN 20	SN 30	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 5 - Wet Bottom Boiler Slag							
10/10/74	--	48.8	44.8	40.4	224	5	34,000
4/ 1/75	--	51.1	46.0	38.0	233	11	75,000
9/25/75	--	51.4	43.0	42.0	233	17	117,000
4/14/76	--	52.2	46.8	42.7	213	23	157,000
8/31/76	--	51.1	43.7	42.3	213	28	189,000
4/ 7/77	--	49.9	46.8	38.6	213	35	233,000
8/25/77	--	51.8	47.7	44.6	213	40	265,000
Section 6 - Wet Bottom Boiler Slag							
10/10/74	--	--	42.4	--	224	5	34,000
4/ 1/75	--	--	39.7	--	233	11	75,000
9/25/75	--	--	42.6	--	233	17	117,000
4/14/76	--	--	39.1	--	213	23	157,000
8/31/76	--	--	37.6	--	213	28	189,000
4/ 7/77	--	--	39.9	--	213	35	233,000
8/25/77	--	--	39.5	--	213	40	265,000
Section 7 - Wet Bottom Boiler Slag							
10/10/74	--	--	44.8	--	206	5	31,000
4/ 1/75	--	--	45.3	--	214	11	69,000
9/25/75	--	--	41.5	--	214	17	107,000
4/14/76	--	--	45.0	--	196	23	144,000
8/31/76	--	--	44.9	--	196	28	174,000
4/ 7/77	--	--	45.3	--	196	35	215,000
8/25/77	--	--	48.3	--	196	40	244,000
Section 8 - Wet Bottom Boiler Slag							
10/10/74	--	50.3	49.6	43.5	210	5	32,000
4/ 1/75	--	53.8	51.0	47.1	163	11	65,000
9/25/75	--	54.2	48.0	45.1	163	17	94,000
4/14/76	--	54.8	49.9	46.0	149	23	122,000
8/31/76	--	53.8	46.3	44.0	149	28	145,000
4/ 7/77	--	51.8	52.0	43.8	149	35	176,000
8/25/77	--	55.3	52.5	46.6	149	40	198,000

TABLE IV

SKID TESTS AND TRAFFIC DATA

ROUTE J
BATES COUNTY

Date Tested	SN 30	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Wet Bottom Boiler Slag						
10/10/74	--	44.8	--	415	4	50,000
4/ 1/75	--	45.6	--	432	10	126,000
9/25/75	--	37.6	--	432	16	204,000
4/14/76	--	42.0	--	505	22	288,000
8/31/76	--	34.5	--	505	27	364,000
4/ 7/77	--	44.6	--	505	34	470,000
8/24/77	--	41.8	--	505	39	546,000
Section 2 - Wet Bottom Boiler Slag						
10/10/74	51.0	45.6	42.4	335	4	40,000
4/ 1/75	54.2	48.4	44.4	312	10	98,000
9/25/75	48.6	42.1	39.8	312	16	155,000
4/14/76	52.0	45.6	41.8	366	22	216,000
8/31/76	46.3	39.5	37.6	366	27	270,000
4/ 7/77	50.6	44.8	39.2	366	34	347,000
8/24/77	49.0	44.4	40.5	366	39	402,000
Section 3 - Wet Bottom Boiler Slag						
10/10/74	--	43.6	--	282	4	34,000
4/ 1/75	--	46.0	--	294	10	86,000
9/25/75	--	40.4	--	294	16	139,000
4/14/76	--	43.0	--	344	22	196,000
8/31/76	--	40.5	--	344	27	248,000
4/ 7/77	--	45.0	--	344	34	320,000
8/24/77	--	46.2	--	344	39	371,000
Section 4 - Wet Bottom Boiler Slag						
10/10/74	54.6	52.8	45.6	156	4	19,000
4/ 1/75	56.9	50.0	44.5	180	10	49,000
9/25/75	51.6	45.6	41.0	180	16	81,000
4/14/76	54.0	50.1	44.6	210	22	116,000
8/31/76	50.6	44.0	40.6	210	27	148,000
4/ 7/77	52.6	48.7	43.6	210	34	192,000
8/24/77	54.6	50.5	46.4	210	39	224,000

TABLE IV (Continued)

SKID TESTS AND TRAFFIC DATA

ROUTE J
BATES COUNTY

Date Tested	SN 30	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 5 - Wet Bottom Boiler Slag						
10/10/74	--	49.3	--	156	4	19,000
4/ 1/75	--	51.2	--	180	10	49,000
9/25/75	--	45.0	--	180	16	81,000
4/14/76	--	48.9	--	210	22	116,000
8/31/76	--	46.1	--	210	27	148,000
4/ 7/77	--	48.6	--	210	34	192,000
8/24/77	--	52.6	--	210	39	224,000

TABLE V

SKID TESTS AND TRAFFIC DATA

ROUTE 752
BUCHANAN COUNTY

Date Tested	SN 20	SN 30	AADT /Lane	Age in Months	Est. Acc. Traffic
Lightweight Aggregate Section (Expanded Shale) - Position 2 - Eastbound					
10/24/74	65.9	60.8	1720	14	732,000
4/10/75	69.9	65.1	3243	19	1,127,000
9/15/75	70.1	61.0	3243	24	1,613,000
3/30/76	72.3	66.1	3587	31	2,325,000
9/15/76	56.1	51.0	3587	36	2,863,000
5/ 4/77	77.8	66.0	3587	44	3,724,000
8/ 3/77	64.8	58.1	3587	47	4,047,000
Lightweight Aggregate Section (Expanded Shale) - Position 3 - Eastbound					
10/ 9/73	67.9	59.1	665	1	20,000
10/24/74	66.2	58.4	637	14	271,000
4/10/75	68.3	65.9	1201	19	417,000
9/15/75	71.2	66.2	1201	24	598,000
3/30/76	73.6	66.3	1329	31	861,000
9/15/76	54.0	56.2	1329	36	1,061,000
5/ 4/77	--	--	1329	44	1,380,000
8/ 3/77	71.7	62.3	1329	47	1,499,000
Lightweight Aggregate Section (Expanded Shale) - Position 2 - Westbound					
10/24/74	65.6	56.5	1455	14	619,000
4/10/75	68.0	60.4	2742	19	953,000
9/15/75	70.7	62.4	2742	24	1,364,000
3/30/76	77.1	67.7	3033	31	1,966,000
9/15/76	65.7	61.5	3033	36	2,421,000
5/ 4/77	72.7	57.7	3033	44	3,149,000
8/ 3/77	66.5	67.4	3033	47	3,422,000

TABLE V (Continued)

SKID TESTS AND TRAFFIC DATA

ROUTE 752
BUCHANAN COUNTY

Date Tested	SN 20	SN 30	AADT /Lane	Age in Months	Est. Acc. Traffic
Lightweight Aggregate Section (Expanded Shale) - Position 3 - Westbound					
10/ 9/73	67.4	58.5	866	1	26,000
10/24/74	70.6	62.5	830	14	353,000
4/10/75	73.2	69.3	1564	19	543,000
9/15/75	76.8	68.9	1564	24	778,000
3/30/76	76.4	69.2	1730	31	1,121,000
9/15/76	64.5	63.2	1730	36	1,381,000
5/ 4/77	--	--	1730	44	1,796,000
8/ 3/77	77.1	65.2	1730	47	1,951,000
Regular AC Section - Position 2 - Eastbound					
10/24/74	49.6	41.1	1720	48	2,563,000
4/10/75	53.6	48.6	3243	53	2,958,000
9/15/75	52.8	47.3	3243	58	3,445,000
3/30/76	58.0	52.5	3587	65	4,157,000
9/15/76	39.8	36.0	3587	70	4,695,000
5/ 4/77	54.4	42.9	3587	78	5,556,000
8/ 3/77	38.9	35.2	3587	81	5,878,000
Regular AC Section - Position 3 - Eastbound					
10/ 9/73	45.7	36.6	665	35	698,000
10/24/74	51.2	43.7	637	48	950,000
4/10/75	51.1	47.0	1201	53	1,096,000
9/15/75	44.3	44.0	1201	58	1,276,000
3/30/76	60.0	55.4	1329	65	1,540,000
9/15/76	39.8	36.7	1329	70	1,739,000
5/ 4/77	--	--	1329	78	2,058,000
8/ 3/77	42.0	32.9	1329	81	2,178,000

TABLE V (Continued)

SKID TESTS AND TRAFFIC DATA

ROUTE 752
BUCHANAN COUNTY

Date Tested	SN 20	SN 30	AADT /Lane	Age in Months	Est. Acc. Traffic
Regular AC Section - Position 2 - Westbound					
10/24/74	50.8	41.5	1455	48	2,167,000
4/10/75	61.0	52.4	2742	53	2,502,000
9/15/75	52.7	47.0	2742	58	2,913,000
3/30/76	65.0	54.3	3033	65	3,515,000
9/15/76	44.7	39.0	3033	70	3,970,000
5/ 4/77	55.4	44.4	3033	78	4,698,000
8/ 3/77	39.3	36.4	3033	81	4,971,000
Regular AC Section - Position 3 - Westbound					
10/ 9/73	47.6	37.8	866	35	909,000
10/24/74	51.1	43.6	830	48	1,236,000
4/10/75	59.3	49.4	1564	53	1,426,000
9/15/75	50.6	41.8	1564	58	1,661,000
3/30/76	64.7	57.2	1730	65	2,004,000
9/15/76	39.9	37.3	1730	70	2,264,000
5/ 4/77	--	--	1730	78	2,679,000
8/ 3/77	43.9	34.7	1730	81	2,835,000

TABLE VI

SKID TESTS AND TRAFFIC DATA

ROUTE I-70
JACKSON COUNTY

Date Tested	SN 40	SN 55	AADT /Lane	Age in Months	Est. Acc. Traffic
Lightweight Aggregate Section (Expanded Shale) - Position 2					
7/ 7/75	40.8	35.9	11420	1	343,000
9/26/75	54.1	36.4	11420	4	1,370,000
4/14/76	52.9	41.5	12032	10	3,481,000
9/17/76	38.9	35.9	12032	16	5,647,000
5/ 6/77	52.1	40.2	12032	23	8,174,000
8/26/77	46.0	33.2	12032	27	9,617,000
Lightweight Aggregate Section (Expanded Shale) - Position 4					
7/ 7/75	42.2	36.0	15944	1	478,000
9/26/75	47.2	41.5	15944	4	1,913,000
4/14/76	52.0	37.3	16797	10	4,860,000
9/17/76	39.0	29.1	16797	16	7,883,000
5/ 6/77	51.1	45.8	16797	23	11,411,000
8/26/77	41.0	36.7	16797	27	13,426,000
Control Section - Position 2 (PCCP)					
7/ 7/75	16.6	15.2	11420	180	56,549,000
9/26/75	21.2	17.7	11420	184	57,919,000
4/14/76	26.9	21.5	12032	190	60,030,000
9/17/76	17.7	17.1	12032	196	62,196,000
5/ 6/77	28.1	23.7	12032	213	68,332,000
8/26/77	23.2	21.4	12032	218	70,137,000
Control Section - Position 4 (PCCP)					
7/ 7/75	17.1	14.4	15944	180	78,945,000
9/26/75	20.0	15.9	15944	184	80,859,000
4/14/76	27.1	21.4	16797	190	83,805,000
9/17/76	16.6	14.1	16797	196	86,829,000
5/ 6/77	27.8	21.4	16797	213	95,395,000
8/26/77	21.8	21.9	16797	218	97,915,000

TABLE VII

SKID TESTS AND TRAFFIC DATA

ROUTE 115
ST. LOUIS COUNTY

Date Tested	SN 20	SN 30	SN 40	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Steel Slag						
6/26/74	--	56.2	47.2	6351	8	1,494,000
10/17/74	62.6	56.4	49.0	6351	12	2,256,000
4/29/75	62.9	55.0	49.0	6326	18	3,396,000
8/26/75	65.6	56.8	50.0	6326	22	4,155,000
4/28/76	57.9	52.3	46.0	6705	30	5,719,000
9/21/76	56.3	52.6	45.4	6705	35	6,725,000
Section 2 - Steel Slag						
6/26/74	--	55.2	48.6	6686	8	1,554,000
10/17/74	64.4	58.4	52.1	6686	12	2,356,000
4/29/75	62.4	55.6	50.0	6522	18	3,540,000
8/26/75	65.1	56.2	49.6	6522	22	4,323,000
4/28/76	59.7	53.7	47.3	6913	30	5,935,000
9/21/76	56.3	52.4	45.6	6913	35	6,972,000
6/ 8/77	58.8	47.0	40.6	6913	44	8,839,000

TABLE VIII

SKID TESTS AND TRAFFIC DATA

ROUTE 141
ST. LOUIS COUNTY

Date Tested	SN 20	SN 30	SN 40	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Steel Slag						
8/26/75	63.0	54.4	48.7	5745	4	689,000
4/29/76	62.7	55.6	46.9	6090	12	2,110,000
9/21/76	60.6	55.6	48.8	6090	17	3,023,000
5/11/77	56.8	48.4	42.5	6090	25	4,485,000
8/ 8/77	63.8	54.3	46.3	6090	40	7,225,000

TABLE IX

SKID TESTS AND TRAFFIC DATA

ROUTE 21
ST. LOUIS COUNTY

Date Tested	SN 30	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Position 2 - 6.0% Asphalt - Blast Furnace Slag						
8/27/75	54.1	48.3	44.9	6224	2	373,000
9/29/75	58.0	54.1	48.0	6224	3	560,000
4/27/76	63.7	54.3	49.1	6597	10	1,912,000
9/21/76	59.9	53.2	50.2	6597	15	2,901,000
5/12/77	56.8	49.0	44.5	6597	22	4,287,000
8/ 9/77	59.0	50.4	49.3	6597	25	4,880,000
Section 1 - Position 4 - 6.0% Asphalt - Blast Furnace Slag						
9/29/75	58.6	54.9	50.2	6002	3	540,000
4/27/76	67.9	58.1	53.4	6363	10	1,844,000
9/21/76	61.6	55.8	52.3	6363	15	2,798,000
5/12/77	61.4	54.8	50.9	6363	22	4,135,000
8/ 9/77	59.6	55.3	51.8	6363	25	4,707,000
Section 1 - Position 2 - 6.2% Asphalt - Blast Furnace Slag						
8/27/75	53.7	49.0	44.1	6224	2	373,000
9/29/75	55.5	53.1	48.0	6224	3	560,000
4/27/76	65.5	56.1	50.0	6597	10	1,912,000
9/21/76	58.1	52.6	48.5	6597	15	2,901,000
5/12/77	56.9	49.4	46.2	6597	22	4,287,000
8/ 9/77	59.4	54.2	49.1	6597	25	4,880,000
Section 1 - Position 4 - 6.2% Asphalt - Blast Furnace Slag						
9/29/75	62.1	56.4	52.2	6002	3	540,000
4/27/76	71.6	57.2	48.8	6363	10	1,844,000
9/21/76	63.9	60.0	53.4	6363	15	2,798,000
5/12/77	59.6	53.2	47.5	6363	22	4,135,000
8/ 9/77	62.4	57.5	51.8	6363	25	4,707,000

TABLE IX (Continued)

SKID TESTS AND TRAFFIC DATA

ROUTE 21
ST. LOUIS COUNTY

Date Tested	SN 30	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 2 - Position 2 - 6.2% Asphalt - Blast Furnace Slag						
8/27/75	54.2	49.2	44.5	5705	2	342,000
9/29/75	56.2	53.7	48.4	5705	3	513,000
4/27/76	66.1	56.7	51.6	6047	10	1,753,000
9/21/76	58.4	54.2	48.6	6047	15	2,660,000
5/12/77	57.6	50.3	45.4	6047	22	3,929,000
8/ 9/77	57.5	53.4	48.6	6047	25	4,474,000
Section 2 - Position 4 - 6.0% Asphalt - Blast Furnace Slag						
9/29/75	59.8	56.4	51.1	5502	3	495,000
4/27/76	68.0	60.5	54.8	5833	10	1,690,000
9/21/76	63.1	57.6	53.7	5833	15	2,565,000
5/12/77	61.6	55.4	51.6	5833	22	3,790,000
8/ 9/77	62.1	58.0	53.6	5833	25	4,315,000

TABLE X

SKID TESTS AND TRAFFIC DATA

ROUTE 140
ST. LOUIS COUNTY

Date Tested	SN 20	SN 30	SN 40	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Position 3 - Blast Furnace Slag						
3/17/71	77.4	68.4	62.0	1386	17	563,000
8/ 3/71	79.0	71.8	65.6	1386	21	730,000
5/17/72	69.4	64.8	59.3	1728	31	1,197,000
9/ 5/72	65.8	59.1	55.6	1728	34	1,352,000
6/ 8/73	70.0	63.0	55.8	2222	43	1,893,000
9/19/73	68.4	62.8	55.8	2222	47	2,159,000
6/27/74	65.8	62.6	58.0	1832	56	2,689,000
10/16/74	66.1	61.4	55.8	1832	60	2,909,000
4/24/75	63.9	60.0	54.8	3254	66	3,409,000
8/26/75	65.2	61.6	57.5	3254	70	3,800,000
4/28/76	62.6	62.6	56.6	3450	78	4,604,000
4/22/76	61.3	57.7	52.2	3450	83	5,122,000
8/ 8/77	63.3	64.5	57.9	3450	94	6,260,000
Section 1 - Position 4 - Blast Furnace Slag						
7/ 8/70	--	63.2	58.4	1044	8	251,000
3/17/71	71.1	64.3	60.0	1386	17	563,000
8/ 3/71	72.7	65.5	61.0	1386	21	730,000
11/12/71	--	61.6	55.4	1386	24	854,000
5/17/72	64.5	60.9	57.5	1728	31	1,197,000
9/ 5/72	67.4	60.8	56.9	1728	34	1,352,000
6/ 8/73	72.4	63.5	55.9	2222	43	1,893,000
6/27/74	60.4	56.5	50.2	1832	56	2,689,000
10/16/74	68.8	61.8	55.6	1832	60	2,909,000
4/24/75	66.8	61.3	54.8	3254	66	3,409,000
8/26/75	70.5	65.0	57.6	3254	70	3,800,000
4/28/76	67.8	60.8	56.2	3450	78	4,604,000
9/22/76	65.1	60.7	53.8	3450	83	5,122,000
8/ 8/77	68.7	62.8	57.6	3450	94	6,260,000

TABLE X (Continued)

SKID TESTS AND TRAFFIC DATA

ROUTE 140
ST. LOUIS COUNTY

Date Tested	SN 20	SN 30	SN 40	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 2 - Position 3 - Porphyry						
3/17/71	72.4	63.5	57.5	1386	17	563,000
8/ 3/71	69.0	63.8	58.1	1386	21	730,000
5/17/72	62.6	56.6	53.6	1728	31	1,197,000
9/ 5/72	57.2	53.3	49.7	1728	34	1,352,000
6/ 8/73	61.4	54.2	50.6	2222	43	1,893,000
9/19/73	57.2	53.6	46.9	2222	47	2,159,000
6/27/74	61.6	56.0	51.6	1899	56	2,701,000
10/16/74	58.1	52.6	49.0	1899	60	2,929,000
4/24/75	58.0	52.9	48.6	3293	66	3,438,000
8/26/75	52.9	51.2	47.4	3293	70	3,833,000
4/28/76	56.0	54.0	51.4	3491	78	4,647,000
9/22/76	51.5	48.8	46.0	3491	83	5,171,000
8/ 8/77	54.7	52.7	49.2	3491	94	6,323,000
Section 2 - Position 4 - Porphyry						
7/ 8/70	--	59.4	53.6	1044	8	251,000
3/17/71	68.4	60.3	55.4	1386	17	563,000
8/ 3/71	66.0	58.4	55.0	1386	21	730,000
11/12/71	--	56.0	50.4	1386	24	854,000
5/17/72	59.1	56.1	52.4	1728	31	1,197,000
9/ 5/72	60.0	55.0	51.2	1728	34	1,352,000
6/ 8/73	63.0	54.4	49.0	2222	43	1,893,000
6/27/74	54.4	50.3	46.0	1899	56	2,701,000
10/16/74	58.5	53.4	48.2	1899	60	2,929,000
4/24/75	59.2	55.5	51.0	3293	66	3,438,000
8/26/75	60.4	56.4	51.2	3293	70	3,833,000
4/28/76	56.4	54.6	51.6	3491	78	4,647,000
9/22/76	54.2	53.2	47.6	3491	83	5,171,000
8/ 8/77	53.0	49.2	46.7	3491	84	6,323,000

TABLE XI

SKID TESTS AND TRAFFIC DATA

ROUTE 40
ST. LOUIS COUNTY

Date Tested	SN 30	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Position 2 - Porphyry						
5/31/72	--	46.9	40.6	9670	8	2,299,000
6/ 6/73	--	50.7	44.1	11792	20	6,099,000
6/27/74	--	45.9	42.1	10866	33	10,531,000
10/17/74	52.8	46.1	42.4	10866	37	11,835,000
4/21/75	54.6	49.6	47.7	11421	43	13,857,000
8/27/75	53.7	47.2	44.8	11421	47	15,228,000
4/28/76	56.1	48.9	42.5	12106	55	18,051,000
9/22/76	53.0	48.3	47.3	12106	60	19,867,000
8/ 8/77	54.8	41.8	46.6	12106	70	23,499,000
Section 1 - Position 4 - Porphyry						
5/31/72	--	47.8	40.8	14026	8	3,334,000
6/ 6/73	--	52.0	46.2	17104	20	8,845,000
6/27/74	--	47.0	41.0	15759	33	15,274,000
10/17/74	--	49.1	41.1	15759	37	17,165,000
4/21/75	--	50.2	49.1	16565	43	20,098,000
8/27/75	--	47.5	42.7	16565	47	22,086,000
4/28/76	--	49.2	43.4	17558	55	26,181,000
9/22/76	--	47.5	44.1	17558	60	28,815,000
8/ 8/77	--	50.9	46.8	17558	70	34,082,000
Section 1 - Position 5 - Porphyry						
5/31/72	--	57.6	53.8	11710	8	2,784,000
6/ 6/73	--	50.2	45.2	14280	20	7,385,000
9/19/73	--	48.1	43.0	14280	24	9,100,000
6/27/74	--	48.2	43.2	13157	33	12,752,000
10/17/74	--	48.6	44.0	13157	37	14,331,000
4/21/75	--	47.2	44.1	13830	43	16,780,000
8/27/75	--	47.8	46.5	13830	47	18,439,000
4/28/76	--	50.4	47.4	14629	55	21,858,000
9/22/76	--	45.6	42.8	14629	60	24,057,000
8/ 8/77	--	49.1	44.1	14629	70	28,455,000

TABLE XI (Continued)

SKID TESTS AND TRAFFIC DATA

ROUTE 40
ST. LOUIS COUNTY

Date Tested	SN 30	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 2 - Position 2 - Porphyry						
5/31/72	--	47.2	39.4	9709	8	2,308,000
6/ 6/73	--	49.6	43.5	11665	20	6,097,000
6/27/74	--	43.8	38.3	10757	33	10,483,000
10/17/74	50.4	46.8	38.7	10757	37	11,774,000
4/21/75	52.8	47.0	44.2	11325	43	13,778,000
8/27/75	53.7	47.4	42.4	11325	47	15,137,000
4/28/76	55.2	48.1	42.3	12004	55	17,937,000
9/22/76	51.8	47.9	41.8	12004	60	19,737,000
8/ 8/77	54.1	48.2	46.6	12004	70	23,339,000
Section 2 - Position 4 - Porphyry						
5/31/72	--	45.9	40.2	13902	8	3,305,000
6/ 6/73	--	52.4	45.3	16702	20	8,730,000
6/27/74	--	44.5	40.3	15402	33	15,010,000
10/17/74	--	47.2	42.6	15402	37	16,858,000
4/21/75	--	48.9	48.5	16215	43	19,728,000
8/27/75	--	45.9	43.9	16215	47	21,674,000
4/28/76	--	48.9	45.0	17188	55	25,682,000
9/22/76	--	47.0	41.5	17188	60	28,260,000
8/ 8/77	--	49.3	44.4	17188	70	33,417,000
Section 2 - Position 5 - Porphyry						
5/31/72	--	55.5	50.7	11799	8	2,805,000
6/ 6/73	--	50.7	43.1	14175	20	7,409,000
9/19/73	--	47.9	43.7	14175	24	9,110,000
6/27/74	--	48.2	42.6	13072	33	12,739,000
10/17/74	--	49.9	44.2	13072	37	14,307,000
4/21/75	--	46.7	43.6	13762	43	16,743,000
8/27/75	--	47.6	45.2	13762	47	18,394,000
4/28/76	--	50.0	46.3	14587	55	21,796,000
9/22/76	--	45.8	40.6	14587	60	23,948,000
8/ 8/77	--	46.9	41.8	14587	71	28,361,000

TABLE XII

SKID TESTS AND TRAFFIC DATA

ROUTE 140
ST. LOUIS COUNTY

Date Tested	SN 20	SN 30	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Position 2 - Porphyry					
7/13/70	50.1	39.4	6488	10	1,946,000
5/31/72	55.8	46.9	6962	33	6,580,000
6/ 6/73	54.2	48.3	7200	45	9,122,000
6/25/74	49.0	44.4	7108	58	11,913,000
10/17/74	48.4	43.2	7108	62	12,766,000
4/24/75	54.2	48.3	8450	68	14,206,000
8/27/75	48.7	43.9	8450	72	15,220,000
4/30/76	49.6	47.6	8957	80	17,309,000
9/21/76	39.7	39.1	8957	85	18,653,000
5/12/77	49.8	44.6	8957	92	20,534,000
8/ 8/77	44.9	42.2	8957	95	21,340,000
Section 1 - Position 3 - Porphyry					
5/31/72	59.7	57.9	6962	33	6,580,000
6/ 6/73	55.2	50.0	7200	45	9,122,000
9/17/73	54.0	47.5	7200	49	9,986,000
6/25/74	53.1	47.5	7108	58	11,913,000
10/17/74	52.9	48.0	7108	62	12,766,000
4/24/75	56.0	50.3	8450	68	14,206,000
8/27/75	47.9	44.4	8450	72	15,220,000
4/30/76	51.1	48.1	8957	80	17,309,000
9/21/76	46.7	43.8	8957	85	18,653,000
8/ 8/77	46.8	45.7	8957	95	21,340,000
Section 2 - Position 2 - Porphyry					
7/13/70	54.5	45.2	6488	10	1,946,000
5/31/72	55.0	45.0	7368	33	6,714,000
6/ 6/73	55.1	48.5	7809	45	9,432,000
6/25/74	51.2	45.9	6659	58	12,271,000
10/17/74	50.0	44.8	6659	62	13,070,000
4/24/75	56.2	48.6	7124	68	14,324,000
8/27/75	48.5	45.4	7124	72,	15,179,000
4/30/76	51.5	49.6	7552	80	16,940,000
9/21/76	45.9	40.4	7552	85	18,073,000
5/12/77	50.0	41.6	7552	92	19,659,000
8/ 8/77	46.7	43.6	7552	95	20,339,000

TABLE XII (Continued)

SKID TESTS AND TRAFFIC DATA

ROUTE 140
ST. LOUIS COUNTY

Date Tested	SN 20	SN 30	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 2 - Position 3 - Porphyry					
5/31/72	62.4	54.3	7368	33	6,714,000
6/ 6/73	55.4	49.3	7809	45	9,432,000
9/17/73	53.1	47.7	7809	49	10,369,000
6/25/74	53.8	48.4	6659	58	12,271,000
10/17/74	53.6	48.8	6659	62	13,070,000
4/24/75	57.1	50.8	7124	68	14,324,000
8/27/75	47.9	44.5	7124	72	15,179,000
4/30/76	52.2	48.8	7552	80	16,940,000
9/21/76	46.5	43.6	7552	85	18,073,000
8/ 8/77	51.1	47.3	7552	95	20,339,000

TABLE XIII

SKID TESTS AND TRAFFIC DATA

ROUTE I-435
CLAY COUNTY

Date Tested	SN 40	SN 50	SN 60	SN 70	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Porphyry							
11/ 2/72	55.8	45.3	44.0	39.8	4658	11	1,537,000
5/ 2/73	53.0	49.2	46.3	43.6	5552	17	2,483,000
10/23/74	50.8	43.7	--	--	5552	35	5,481,000
4/10/75	53.3	49.4	--	--	5774	40	6,334,000
9/24/75	48.2	45.6	--	--	5774	46	7,373,000
Section 2 - Porphyry							
11/ 2/72	58.3	51.2	47.9	45.8	4658	11	1,537,000
5/ 2/73	52.5	52.4	47.3	46.7	5552	17	2,483,000
10/23/74	50.3	43.2	--	--	5552	35	5,481,000
4/10/75	53.4	48.8	--	--	5774	40	6,334,000
9/24/75	49.8	47.3	--	--	5774	46	7,373,000

TABLE XIV

SKID TESTS AND TRAFFIC DATA

ROUTE FF
JASPER COUNTY

Date Tested	SN 30	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Flint Chat						
10/ 7/75	55.0	48.2	42.8	415	5	62,000
4/15/76	54.4	51.3	49.0	517	11	146,000
9/ 1/76	55.8	50.8	47.1	517	16	224,000
4/ 5/77	55.3	49.6	46.4	517	23	332,000
8/18/77	54.6	48.8	45.8	517	28	410,000
Section 2 - Flint Chat						
10/ 7/75	55.4	47.6	42.8	390	5	58,000
4/15/76	55.0	53.4	49.2	476	11	136,000
9/ 1/76	59.2	54.4	49.9	476	16	208,000
4/ 5/77	57.1	52.4	48.8	476	23	308,000
8/18/77	57.7	52.2	47.5	476	28	379,000
Section 3 - Flint Chat						
10/ 7/75	58.2	52.0	46.4	390	5	58,000
4/15/76	59.0	56.7	54.1	476	11	136,000
9/ 1/76	63.4	57.8	53.8	476	16	208,000
4/ 5/77	59.7	55.5	51.5	476	23	308,000
8/18/77	60.6	56.1	52.4	476	28	379,000

TABLE XV-A

SKID TESTS AND TRAFFIC DATA

ROUTE 160
GREENE COUNTY

Date Tested	SN 20	SN 30	SN 40	SN 50	SN 60	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Limestone and Flint Chat Sand								
11/16/70	--	64.1	66.0	60.6	--	685	1	21,000
3/10/71	--	64.5	61.7	--	--	732	4	85,000
7/13/71	--	54.8	50.0	--	--	732	8	173,000
10/13/71	62.4	53.4	48.0	--	--	732	11	239,000
3/14/72	--	53.4	48.5	--	--	780	16	351,000
6/27/72	--	54.4	48.2	--	--	780	20	445,000
11/ 9/72	--	54.8	49.6	--	--	780	24	539,000
4/17/73	67.8	56.2	47.1	--	--	802	30	682,000
2/21/74	68.0	58.9	53.0	--	--	720	40	917,000
10/ 3/74	64.3	54.5	46.9	--	--	720	47	1,069,000
4/ 3/75	67.6	54.8	50.8	--	--	748	53	1,201,000
Section 2 - Limestone and Flint Chat Sand								
11/16/70	--	--	65.5	58.4	59.4	800	1	24,000
3/10/71	--	--	67.5	63.4	54.4	865	4	100,000
7/13/71	--	--	53.0	51.2	43.4	865	8	204,000
10/13/71	64.9	--	50.6	47.5	41.6	865	11	282,000
3/14/72	--	--	57.2	49.0	42.8	930	16	415,000
6/27/72	--	--	51.9	48.8	40.0	930	20	527,000
11/ 9/72	--	--	50.8	43.4	40.2	930	24	638,000
4/17/73	--	--	51.0	44.1	38.2	1023	30	817,000
2/26/74	--	54.4	54.4	43.3	--	1013	40	1,123,000
10/ 3/74	--	--	47.6	43.6	--	1013	47	1,336,000
4/ 3/75	--	57.4	53.6	44.1	--	1008	53	1,518,000
Section 3 - Limestone and Flint Chat Sand								
11/16/70	--	--	66.9	67.1	56.5	1020	1	31,000
3/10/71	66.8	--	65.6	63.1	53.7	1040	4	124,000
7/13/71	--	--	53.4	50.7	45.8	1040	8	248,000
10/13/71	--	--	52.7	46.5	43.7	1040	11	342,000
3/14/72	--	--	56.6	50.1	42.7	1060	16	499,000
6/27/72	--	--	52.6	48.6	42.1	1060	20	626,000
11/ 9/72	--	--	50.6	43.5	39.2	1060	24	754,000
4/17/73	--	--	51.2	47.2	38.8	1050	30	943,000
2/26/74	--	--	53.4	--	--	939	40	1,252,000
10/ 3/74	--	54.8	48.8	44.8	--	939	47	1,449,000
4/ 3/75	--	57.0	52.2	45.1	--	961	53	1,620,000

TABLE XV-A (Continued)

SKID TESTS AND TRAFFIC DATA

ROUTE 160
GREENE COUNTY

Date Tested	SN 20	SN 30	SN 40	SN 50	SN 60	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 4 - Limestone and Flint Chat Sand								
11/16/70	--	--	64.4	60.4	53.4	1775	1	53,000
3/10/71	61.8	--	61.3	57.0	49.9	1912	4	221,000
7/13/71	--	--	48.6	45.2	44.2	1912	8	451,000
10/13/71	--	--	44.8	42.8	34.2	1912	11	623,000
3/14/72	--	--	49.8	43.3	33.5	2050	16	918,000
6/27/72	--	--	47.8	44.0	35.3	2050	20	1,164,000
11/ 9/72	--	--	41.1	37.3	29.4	2050	24	1,410,000
4/17/73	66.6	52.9	39.4	--	28.9	2110	30	1,786,000
2/27/74	66.2	50.1	45.0	37.0	--	1901	40	2,406,000
10/ 3/74	--	45.2	39.0	34.8	--	1901	47	2,806,000
4/ 3/75	--	49.2	44.4	38.6	--	1977	53	3,155,000
Section 5 - Limestone, Flint Chat and Flint Chat Sand								
11/17/70	65.8	66.6	63.0	57.2	--	1775	1	53,000
3/10/71	69.8	65.4	63.2	57.9	--	1912	4	221,000
7/14/71	63.9	55.8	49.2	48.4	--	1912	8	451,000
10/13/71	63.0	54.8	49.0	43.6	--	1912	11	623,000
3/14/72	--	59.8	52.8	--	--	2050	16	918,000
6/27/72	59.0	57.4	50.2	--	--	2050	20	1,164,000
11/ 9/72	64.2	54.4	46.4	--	--	2050	24	1,410,000
4/17/73	69.8	57.5	46.4	--	--	2259	30	1,804,000
2/27/74	70.7	59.0	51.4	--	--	2151	40	2,475,000
10/ 3/74	63.6	55.4	46.8	--	--	2151	47	2,927,000
4/ 3/75	68.6	55.8	50.2	--	--	2237	53	3,322,000
Section 6 - Limestone, Flint Chat and Flint Chat Sand								
11/17/70	--	--	62.8	62.4	51.0	1775	1	53,000
3/10/71	--	--	61.6	63.2	44.9	1912	4	221,000
7/13/71	--	--	50.0	51.8	45.2	1912	8	451,000
10/14/71	64.1	56.8	50.0	47.8	39.6	1912	11	623,000
3/14/72	--	--	51.7	48.5	--	2050	16	918,000
6/27/72	--	57.4	50.8	--	--	2050	20	1,164,000
11/ 9/72	64.4	54.4	47.0	--	--	2050	24	1,410,000
4/17/73	67.8	56.8	47.8	--	--	3034	30	1,897,000
2/27/74	68.8	56.1	50.3	--	--	3644	40	2,844,000
10/ 3/74	58.6	52.2	48.0	--	--	3644	47	3,609,000
4/ 3/75	69.2	57.5	50.0	--	--	3789	53	4,278,000

TABLE XV-A (Continued)

SKID TESTS AND TRAFFIC DATA

ROUTE 160
GREENE COUNTY

Date Tested	SN 20	SN 30	SN 40	SN 50	SN 60	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 7 - Limestone Screening and Flint Chat								
11/17/70	--	--	69.2	63.6	62.5	2033	1	61,000
3/10/71	--	--	66.0	62.2	52.5	2248	4	257,000
7/13/71	--	--	54.8	52.9	46.7	2248	8	527,000
10/14/71	66.3	--	53.8	50.1	45.2	2248	11	729,000
3/14/72	--	--	57.0	51.6	44.8	2464	16	1,079,000
6/27/72	--	59.2	54.4	50.5	--	2464	20	1,375,000
11/ 9/72	--	59.0	53.8	48.0	--	2464	24	1,670,000
4/17/73	--	61.2	55.0	51.5	--	3102	30	2,191,000
2/27/74	71.6	63.4	58.1	53.4	--	4029	40	3,177,000
10/ 3/74	--	60.8	53.6	51.0	--	4029	47	4,023,000
4/ 3/75	--	60.6	55.5	51.2	--	3984	53	4,744,000

TABLE XV-B

SKID TESTS AND TRAFFIC DATA

ROUTE 160
GREENE COUNTY

Date Tested	SN 20	SN 30	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Limestone and Flint Chat Sand							
3/31/77	60.0	52.2	41.0	--	1611	23	542,000
8/16/77	55.8	42.5	37.2	--	1611	28	663,000
Section 2 - Limestone and Flint Chat Sand							
3/31/77	--	50.6	44.8	37.5	2205	23	738,000
8/16/77	--	42.4	35.0	32.8	2205	28	903,000
Section 3 - Limestone and Flint Chat Sand							
3/31/77	--	50.4	45.7	38.8	2244	23	741,000
8/16/77	--	47.6	40.2	38.2	2244	28	910,000
Section 4 - Limestone and Flint Chat Sand							
3/31/77	--	41.8	35.2	28.2	5025	23	1,605,000
8/16/77	--	36.9	30.6	29.3	5025	28	1,982,000
Section 5 - Limestone and Flint Chat Sand							
3/31/77	41.5	33.4	24.4	--	5333	23	1,737,000
8/16/77	37.5	31.3	24.1	--	5333	28	2,137,000
Section 6 - Limestone and Flint Chat Sand							
3/31/77	40.4	29.2	21.0	--	6854	23	2,452,000
8/16/77	36.6	28.1	24.5	--	6854	28	2,966,000
Section 7 - Limestone and Flint Chat Sand							
3/31/77	--	37.0	30.0	24.6	7317	23	2,634,000
8/16/77	--	30.9	26.5	23.4	7317	28	3,182,000

TABLE XVI

SKID TESTS AND TRAFFIC DATA

ROUTE 160
DADE COUNTY

Date Tested	SN 30	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Limestone and Flint Chat Sand						
6/27/72	60.0	58.8	55.5	650	1	20,000
11/ 9/72	55.0	50.0	46.2	650	5	98,000
4/17/73	55.9	49.6	45.1	698	11	220,000
2/21/74	62.2	54.8	45.2	656	21	427,000
10/ 3/74	53.6	48.4	42.1	656	28	565,000
4/ 3/75	55.6	51.0	44.4	682	34	685,000
3/31/77	51.3	45.0	40.4	682	58	1,176,000
8/16/77	51.3	44.6	39.7	682	63	1,279,000

TABLE XVII

SKID TESTS AND TRAFFIC DATA

ROUTE 50
JOHNSON COUNTY

Date Tested	SN 30	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Limestone (Burlington)						
10/21/74	43.8	38.4	34.4	1603	28	1,289,000
4/15/75	55.8	48.2	41.9	1596	33	1,529,000
9/24/75	45.9	41.2	37.2	1596	39	1,817,000
4/12/76	45.6	41.3	36.1	1596	45	2,112,000
9/17/76	38.0	35.0	29.8	1692	51	2,417,000
6/ 9/77	42.3	39.9	34.8	1692	60	2,874,000
Section 2 - Limestone (Burlington)						
10/21/74	41.6	37.8	32.3	1576	28	1,275,000
4/15/75	57.8	51.0	43.5	1594	33	1,513,000
9/24/75	43.0	38.5	35.2	1594	39	1,800,000
4/12/76	47.0	43.1	35.7	1690	45	2,095,000
9/17/76	38.0	34.7	29.7	1690	51	2,400,000
6/ 9/77	41.3	37.0	33.7	1690	60	2,856,000
Section 3 - Limestone (Burlington)						
10/21/74	45.4	40.6	35.8	1600	28	1,290,000
4/15/75	58.3	52.5	46.0	1585	33	1,529,000
9/24/75	47.7	42.2	38.8	1585	39	1,814,000
4/12/76	52.2	44.7	39.1	1680	45	2,108,000
9/17/76	42.6	37.6	33.3	1680	51	2,410,000
6/ 9/77	45.9	40.0	36.8	1680	60	2,864,000

TABLE XVIII

SKID TESTS AND TRAFFIC DATA

ROUTE I-70
LAFAYETTE COUNTY

Date Tested	SN 40	SN 50	SN 60	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Limestone (Bethany Falls)						
10/26/71	40.6	35.5	--	6204	3	558,000
5/ 3/73	36.6	32.7	26.7	6136	21	3,900,000
10/22/74	30.8	28.1	--	4865	39	6,833,000
4/15/75	42.7	38.6	--	5243	44	7,596,000
10/ 9/75	32.9	29.6	--	5243	50	8,540,000
4/13/76	34.9	31.5	--	5556	56	9,512,000
10/15/76	33.4	31.5	--	5556	62	10,512,000
5/ 6/77	33.9	33.2	--	5556	69	11,679,000
8/ 3/77	33.8	30.6	--	5556	72	12,179,000
Section 2 - Limestone (Bethany Falls)						
10/26/71	42.3	36.8	--	6204	3	558,000
5/ 3/73	36.5	32.7	--	6606	21	3,957,000
10/22/74	32.3	29.5	--	4607	39	6,924,000
4/15/75	44.1	38.1	--	5076	44	7,657,000
10/ 9/75	32.3	29.2	--	5076	50	8,571,000
4/13/76	36.4	32.4	--	5320	56	9,512,000
10/15/76	33.8	30.7	--	5320	62	10,481,000
5/ 6/77	36.5	36.5	--	5320	69	11,611,000
8/ 3/77	34.6	31.5	--	5320	72	12,095,000
Section 3 - Limestone (Bethany Falls)						
10/26/71	42.7	37.9	--	6204	3	558,000
5/ 3/73	39.5	33.4	29.4	7384	21	4,050,000
10/22/74	31.6	28.9	--	5229	39	7,391,000
4/15/75	44.8	39.4	--	5761	44	8,223,000
10/ 9/75	32.0	30.2	--	5761	50	9,260,000
4/13/76	34.9	31.8	--	6107	56	10,328,000
10/15/76	34.4	31.5	--	6107	62	11,428,000
5/ 6/77	37.5	37.6	--	6107	69	12,710,000
8/ 3/77	33.7	31.3	--	6107	72	13,260,000

TABLE XVIII (Continued)

SKID TESTS AND TRAFFIC DATA

ROUTE I-70
LAFAYETTE COUNTY

Date Tested	SN 40	SN 50	SN 60	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 4 - Limestone (Winterset)						
10/26/71	46.6	39.4	--	6219	3	560,000
5/ 3/73	39.4	34.0	--	7053	21	4,017,000
10/22/74	34.5	31.9	--	4954	39	7,196,000
4/15/75	46.0	40.8	--	5989	44	8,032,000
10/ 9/75	34.0	31.1	--	5989	50	9,110,000
4/13/76	37.8	35.6	--	6348	56	10,220,000
10/15/76	37.3	33.3	--	6348	62	11,363,000
5/ 6/77	42.0	37.4	--	6348	69	12,696,000
8/ 3/77	33.6	28.3	--	6348	72	13,267,000
Section 5 - Limestone (Winterset)						
10/26/71	46.5	39.4	--	6219	3	560,000
5/ 3/73	39.8	36.7	31.0	6761	21	3,982,000
10/22/74	35.2	31.3	--	4716	39	7,019,000
4/15/75	48.9	43.0	--	5701	44	7,815,000
10/ 9/75	36.9	33.8	--	5701	50	8,841,000
4/13/76	40.5	37.0	--	6043	56	9,898,000
10/15/76	37.7	34.5	--	6043	62	10,986,000
5/ 6/77	43.4	38.9	--	6043	69	12,254,000
8/ 3/77	33.2	32.4	--	6043	72	12,798,000
Section 6 - Limestone (Winterset)						
10/26/71	45.2	37.9	--	6219	3	556,000
5/ 3/73	41.8	35.0	--	6157	21	3,910,000
10/22/74	35.2	31.6	--	4294	39	6,675,000
4/15/75	48.4	42.4	--	5192	44	7,400,000
10/ 9/75	37.6	34.5	--	5192	50	8,335,000
4/13/76	40.7	36.9	--	5503	56	9,297,000
10/15/76	39.6	35.8	--	5503	62	10,287,000
5/ 6/77	42.9	40.8	--	5503	69	11,443,000
8/ 3/77	35.9	33.7	--	5503	72	11,938,000

TABLE XIX

SKID TESTS AND TRAFFIC DATA

ROUTE 141
ST. LOUIS COUNTY

Date Tested	SN 30	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Limestone (St. Louis)						
10/16/74	34.9	30.9	27.8	5678	19	3,406,000
4/28/75	45.6	38.8	32.3	5351	25	4,389,000
8/26/75	41.0	37.4	31.0	5351	29	5,031,000
4/29/76	44.8	42.4	36.7	5672	37	6,354,000
9/21/76	34.1	28.9	26.0	5672	42	7,204,000
5/11/77	31.6	29.0	25.2	5672	49	8,396,000
8/ 8/77	38.5	34.4	30.7	5672	52	8,906,000
Section 2 - Limestone (St. Louis)						
10/16/74	38.2	34.1	30.0	10004	19	5,905,000
4/28/75	50.7	42.6	35.2	9499	25	7,645,000
8/26/75	44.6	38.8	34.1	9499	29	8,785,000
4/29/76	51.0	43.6	37.2	10049	37	11,131,000
9/21/76	35.4	31.4	28.6	10049	42	12,638,000
5/11/77	31.6	27.2	24.1	10049	49	14,748,000
8/ 8/77	40.2	33.7	31.0	10049	52	15,653,000

TABLE XX

SKID TESTS AND TRAFFIC DATA

ROUTE I-44
NEWTON COUNTY

Date Tested	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Limestone (Burlington)					
11/13/72	57.3	52.8	3866	1	116,000
4/24/73	44.1	40.7	4401	7	876,000
9/30/74	47.7	44.6	4079	24	3,034,000
4/ 7/75	57.0	43.4	3918	30	3,753,000
10/ 8/75	45.3	41.2	3918	36	4,459,000
4/15/76	44.0	38.5	4193	42	5,188,000
9/ 1/76	49.7	44.9	4193	46	5,692,000
4/ 5/77	42.0	37.4	4193	53	6,572,000
8/18/77	47.8	44.0	4193	58	7,201,000
Section 2 - Limestone (Burlington)					
11/13/72	60.8	53.4	6005	1	180,000
4/24/73	44.5	39.6	6214	7	1,286,000
9/30/74	44.0	39.9	5397	24	4,235,000
4/ 7/75	45.6	40.1	5611	30	5,226,000
10/ 8/75	42.4	39.0	5611	36	6,235,000
4/15/76	40.3	34.6	6250	42	7,303,000
9/ 1/76	46.0	42.1	6250	46	8,053,000
4/ 5/77	40.0	37.0	6250	53	9,365,000
8/18/77	44.7	38.7	6250	58	10,323,000
Section 3 - Limestone (Burlington)					
11/13/72	61.9	53.4	3951	1	119,000
4/24/73	47.8	43.0	4695	7	919,000
9/30/74	49.4	44.0	4375	24	3,227,000
4/ 7/75	55.7	44.0	4525	30	3,981,000
10/ 8/75	48.0	43.0	4525	36	4,701,000
4/15/76	43.9	39.4	4810	42	5,495,000
9/ 1/76	49.9	45.3	4810	46	6,072,000
4/ 5/77	44.9	38.8	4810	53	7,082,000
8/18/77	48.6	43.9	4810	58	7,804,000

TABLE XX (Continued)

SKID TESTS AND TRAFFIC DATA

ROUTE I-44
NEWTON COUNTY

Date Tested	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 4 - Limestone (Burlington)					
11/13/72	61.4	53.5	6136	1	184,000
4/24/73	46.2	42.0	6589	7	1,343,000
9/30/74	47.2	42.6	5576	24	4,430,000
4/ 7/75	45.8	41.1	5443	30	5,422,000
10/ 8/75	44.1	40.8	5443	36	6,401,000
4/15/76	42.0	37.4	5630	42	7,398,000
9/ 1/76	47.3	43.2	5630	46	8,073,000
4/ 5/77	40.1	35.8	5630	53	9,256,000
8/18/77	43.8	39.1	5630	58	10,100,000

TABLE XXI

SKID TESTS AND TRAFFIC DATA

ROUTE 291
JACKSON COUNTY

Date Tested	SN 30	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Limestone (Bethany Falls)						
10/23/74	40.3	36.7	31.2	5041	17	2,598,000
4/10/75	53.0	43.2	37.8	5242	22	3,372,000
9/24/75	41.8	33.6	30.4	5242	28	4,316,000
4/ 1/76	53.0	45.8	36.9	6620	34	5,384,000
9/13/76	36.8	31.7	25.5	6620	39	6,377,000
5/ 5/77	49.3	39.8	33.0	6620	47	7,965,000
8/ 3/77	41.6	36.1	29.3	6620	50	8,561,000
Section 2 - Limestone (Bethany Falls)						
10/23/74	42.0	37.4	31.5	4540	17	2,340,000
4/10/75	54.0	42.2	35.5	4722	22	3,037,000
9/24/75	40.8	33.6	29.4	4722	28	3,887,000
4/ 1/76	53.2	43.0	36.3	6570	34	4,904,000
9/13/76	35.8	30.2	25.2	6570	39	5,889,000
5/ 5/77	51.6	41.6	34.0	6570	47	7,466,000
8/ 3/77	43.7	37.8	31.3	6570	50	8,057,000

TABLE XXII

SKID TESTS AND TRAFFIC DATA

ROUTE I-44
GREENE COUNTY

Date Tested	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Limestone (Burlington)					
4/19/73	49.5	39.1	6142	9	1,577,000
3/ 6/74	45.0	--	5664	19	3,391,000
10/ 7/74	31.3	26.5	5664	26	4,580,000
4/ 3/75	36.0	29.8	5638	32	5,597,000
10/ 6/75	33.6	30.5	5638	38	6,612,000
4/20/76	45.9	38.8	6351	45	7,882,000
9/ 2/76	31.4	26.9	6351	49	8,644,000
4/ 1/77	31.3	26.2	6351	56	9,977,000
8/17/77	33.1	27.4	6351	61	10,930,000
Section 2 - Limestone (Burlington)					
4/19/73	48.7	42.2	5973	9	1,556,000
3/ 6/74	47.8	--	5507	19	3,320,000
10/ 7/74	32.8	28.5	5507	26	4,477,000
4/ 3/75	36.8	31.5	5709	32	5,486,000
10/ 6/75	36.0	33.0	5709	38	6,514,000
4/20/76	49.0	35.6	6373	45	7,792,000
9/ 2/76	32.9	28.7	6373	49	8,557,000
4/ 1/77	33.6	29.9	6373	56	9,895,000
8/17/77	35.8	29.8	6373	61	10,851,000

TABLE XXIII

SKID TESTS AND TRAFFIC DATA

ROUTE I-55
PEMISCOT COUNTY

Date Tested	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 1 - Limestone (Plattin)					
10/19/74	37.1	35.2	3449	4	414,000
3/26/75	36.4	33.9	4019	9	983,000
10/ 1/75	31.3	29.2	4019	15	1,706,000
5/ 5/76	21.2	19.5	4260	22	2,579,000
10/20/76	30.9	29.2	4260	28	3,346,000
3/29/77	30.4	25.7	4260	33	3,985,000
8/10/77	26.0	26.0	4260	37	4,496,000
Section 2 - Limestone (Ste. Genevieve)					
10/19/74	46.3	42.6	3449	4	414,000
3/26/75	49.4	45.2	4019	9	983,000
10/ 1/75	44.4	41.9	4019	15	1,706,000
5/ 5/76	33.8	31.5	4260	22	2,579,000
10/20/76	43.5	40.1	4260	28	3,346,000
3/29/77	45.1	40.1	4260	33	3,985,000
8/10/77	40.6	42.4	4260	37	4,496,000
Section 3 - Limestone (Ste. Genevieve)					
10/19/74	47.7	42.7	3449	4	414,000
3/26/75	50.0	47.2	4019	9	983,000
10/ 1/75	46.3	42.7	4019	15	1,706,000
5/ 5/76	36.4	34.6	4260	22	2,579,000
10/20/76	45.7	42.8	4260	28	3,346,000
3/29/77	46.1	41.5	4260	33	3,985,000
8/10/77	43.2	40.3	4260	37	4,496,000

TABLE XXIII (Continued)

SKID TESTS AND TRAFFIC DATA

ROUTE I-55
PEMISCOT COUNTY

Date Tested	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 4 - Limestone (Ste. Genevieve)					
10/19/74	49.0	45.2	3449	4	414,000
3/26/75	50.2	47.5	4019	9	983,000
10/ 1/75	46.2	42.4	4019	15	1,706,000
5/ 5/76	39.0	37.4	4260	22	2,579,000
10/20/76	46.6	43.1	4260	28	3,346,000
3/29/77	46.8	41.1	4260	33	3,985,000
8/10/77	44.8	41.4	4260	37	4,496,000
Section 5 - Limestone (Ste. Genevieve)					
10/19/74	50.1	44.7	3449	4	414,000
3/26/75	50.4	45.9	4019	9	983,000
10/ 1/75	44.6	42.4	4019	15	1,706,000
5/ 5/76	42.9	40.4	4260	22	2,579,000
10/20/76	44.3	41.9	4260	28	3,346,000
3/29/77	44.7	40.9	4260	33	3,985,000
8/10/77	47.8	45.0	4260	37	4,496,000
Section 6 - Limestone (Ste. Genevieve)					
10/19/74	49.6	45.6	3479	4	418,000
3/26/75	50.0	47.3	4029	9	989,000
10/ 1/75	44.5	42.0	4029	15	1,714,000
5/ 5/76	42.3	40.5	4271	22	2,589,000
10/20/76	43.5	40.5	4271	28	3,358,000
3/29/77	45.5	41.0	4271	33	3,999,000
8/10/77	44.9	41.1	4271	37	4,511,000

TABLE XXIII (Continued)

SKID TESTS AND TRAFFIC DATA

ROUTE I-55
PEMISCOT COUNTY

Date Tested	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Section 7 - Limestone (Ste. Genevieve)					
10/19/74	51.0	46.1	4061	4	487,000
3/26/75	50.9	46.8	4222	9	1,111,000
10/ 1/75	45.9	42.2	4222	15	1,871,000
5/ 5/76	44.3	43.0	4476	22	2,788,000
10/20/76	43.9	41.5	4476	28	3,593,000
3/29/77	45.2	41.6	4476	33	4,265,000
8/10/77	48.7	45.0	4476	37	4,802,000
Section 8 - Limestone (Ste. Genevieve)					
10/19/74	50.7	47.2	4061	4	487,000
3/26/75	49.4	45.6	4222	9	1,111,000
10/ 1/75	46.6	41.6	4222	15	1,871,000
5/ 5/76	45.4	42.4	4476	22	2,788,000
10/20/76	45.5	41.1	4476	28	3,593,000
3/29/77	45.7	42.0	4476	33	4,265,000
8/10/77	48.9	45.5	4476	37	4,802,000
Section 9 - Limestone (Ste. Genevieve)					
10/19/74	51.3	45.9	3718	4	446,000
3/26/75	49.8	45.9	3865	9	1,017,000
10/ 1/75	46.4	42.4	3865	15	1,713,000
5/ 5/76	44.7	43.0	4097	22	2,552,000
10/20/76	45.2	41.0	4097	28	3,290,000
3/29/77	45.3	41.7	4097	33	3,904,000
8/10/77	47.3	45.0	4097	37	4,396,000

TABLE XXIV

SKID TESTS AND TRAFFIC DATA

ROUTE TT
JASPER COUNTY

Date Tested	SN 20	SN 30	SN 40	AADT /Lane	Age in Months	Est. Acc. Traffic
4/15/76	71.0	65.2	58.7	702	3	63,000
9/ 1/76	74.2	66.7	57.8	702	8	168,000
4/ 5/76	66.2	58.9	53.9	702	15	316,000
8/18/77	69.6	62.5	56.5	702	20	421,000

TABLE XXV

SKID TESTS AND TRAFFIC DATA

ROUTE I-44
ST. LOUIS COUNTY

Date Tested	SN 40	SN 50	AADT /Lane	Age in Months	Est. Acc. Traffic
Eastbound Section - Position 2 - Steel Slag					
9/30/75	41.6	35.4	14,182	2	851,000
4/30/76	38.4	33.5	15,034	9	3,931,000
9/21/76	36.5	29.7	15,034	14	6,186,000
6/ 7/77	28.5	23.4	15,034	23	10,246,000
Eastbound Section - Position 4 - Steel Slag					
9/30/75	40.1	34.7	14,182	2	851,000
4/30/76	39.8	32.5	15,034	9	3,931,000
9/21/76	37.0	32.0	15,034	14	6,186,000
6/ 7/77	29.6	25.7	15,034	23	10,246,000
Westbound Section - Position 2 - Steel Slag					
9/30/75	40.9	35.9	14,651	2	879,000
4/30/76	41.8	35.7	15,530	9	4,061,000
9/21/76	36.4	33.5	15,530	14	6,391,000
6/ 7/77	32.0	27.6	15,530	23	10,584,000
Westbound Section - Position 4 - Steel Slag					
9/30/75	39.0	35.7	14,651	2	879,000
4/30/76	41.5	35.4	15,530	9	4,061,000
9/21/76	33.6	31.0	15,530	14	6,391,000
6/ 7/77	29.2	25.8	15,530	23	10,584,000