
Research Report
KTC 90-26A

PERFORMANCE EVALUATIONS OF
CRUSHED SANDSTONE AGGREGATES
IN BITUMINOUS BASES
(DATA APPENDIX TO REPORT KTC 90-26)

by

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in cooperation with
Kentucky Transportation Cabinet

and

Federal Highway Administration
US Department of Transportation

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December 1990



COMMONWEALTH OF KENTUCKY
TRANSPORTATION CABINET
FRANKFORT, KENTUCKY 40622

DON C. KELLY, P.E.
SECRETARY
AND
COMMISSIONER OF HIGHWAYS

BRETON C. JONES
GOVERNOR

December 20, 1991

Mr. Paul E. Toussaint
Division Administrator
Federal Highway Administration
330 West Broadway
Frankfort, Kentucky 40602-0536

Dear Mr. Toussaint:

SUBJECT: IMPLEMENTATION STATEMENT
KYHPR 84-99, Evaluation of Sandstone Base and Surfaces

Research Report KTC 90-26, entitled "Performance Evaluations of Crushed Sandstone Aggregates in Bituminous Bases" describes performance evaluations of bituminous pavements containing crushed sandstone aggregates in the base layers. The primary study objective was to develop historical performance data relative to visual distress surveys or condition ratings, pavement rutting characteristics, and structural condition using Road Rater deflection measurements. Additionally, laboratory tests were conducted to characterize the engineering properties of the bituminous sandstone base mixtures.

It was concluded that pavements constructed using bituminous sandstone base mixtures in the pavement structure do not develop excessive permanent deformation, such as rutting, shoving and pushing, under heavy traffic loadings. However, those pavements do exhibit several forms of cracking earlier than pavements constructed using bituminous limestone base mixtures. Engineers with the Kentucky Department of Highways have indicated general satisfaction with the use and performance of bituminous sandstone base and surface mixtures. The use of bituminous sandstone mixtures addresses concerns such as haul costs, rutting, skid resistance, etc.

Mr. Paul E. Toussaint
December 20, 1991
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As a result of this research study evaluating sandstone aggregates in bituminous mixtures, bituminous sandstone mixtures will be specified as an alternate paving material when sandstone aggregate is locally available.

Sincerely,



Glen M. Kelly, P. E.
Acting State Highway Engineer

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16. Abstract <p>The principal objective of the research effort was to develop historical performance data for bituminous sandstone pavements and bituminous limestone pavements relative to visual distress, pavement rutting characteristics, and structural condition using deflection measurements. Data relative to Road Rater deflections, pavement rutting, condition ratings based on subjective visual surveys and objective data such as skid resistance and rideability, were collected and analyzed during the course of the study and reported herein for the routes investigated.</p> <p>It was concluded, based upon information gained during the evaluation period and presented in this report, that pavements constructed with bituminous sandstone bases do not develop excessive rut depths, are more resistant to shoving and pushing, but appear to exhibit cracking at an earlier age than pavements constructed with bituminous limestone bases. The use of bituminous sandstone mixtures addresses problems such as haul costs, rutting, skid resistance, etc. Field engineers indicated that although bituminous sandstone surface mixtures have a slight tendency to ravel, they are very resistant to rutting and applications of bituminous sandstone base and surface mixtures have been very successful in their estimation.</p>					
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EXECUTIVE SUMMARY

The objectives of this research study were A) to measure the properties of base and surface mixtures containing sandstone aggregates; B) to utilize the information obtained from Objective A for development of modifications for mix design and/or thickness design procedures if appropriate; C) to develop historical performance data relative to visual distress, pavement rutting, structural condition using deflection measurements, and other factors if appropriate; and, D) to develop guidelines and recommendations for implementation. The anticipated benefits to be derived from the research study were increased use of abundantly available sandstone aggregate in eastern Kentucky and reduced highway construction costs associated with using sandstone as opposed to importing limestone. Improved state-of-the-art design and construction techniques for use of sandstone aggregates in bituminous base and surface courses were other anticipated benefits.

The final report KTC 90-26 details the study approach, analyses, results and conclusions. A comprehensive review of available literature concerning the use of sandstone aggregates in bituminous mixtures was conducted. A majority of the literature, published by the Kentucky Department of Highways, Division of Research, was related to experience with the use of sandstone aggregates for highway construction in Kentucky. As early as the mid-1920's, Kentucky investigated the use of sandstone aggregates in portland cement concrete. The first all bituminous sandstone pavement was constructed from Paintsville to Inez in Johnson County during the 1941 construction season.

During the course of this study, information relative to Road Rater deflections, pavement rutting, condition ratings based on subjective visual surveys and objective data such as skid resistance and rideability, were gathered, analyzed and reported herein. It was concluded that pavements constructed using bituminous sandstone bases in the pavement structure were not as susceptible to development of excessive permanent deformation such as deep ruts, and shoving and pushing. However, pavements constructed using bituminous sandstone bases in the pavement structure were more susceptible to cracking at an earlier age than pavements constructed from conventional bituminous limestone mixtures.

Engineers with the Kentucky Department of Highways have indicated general satisfaction with the use and performance of bituminous sandstone base and surface mixtures. The use of bituminous sandstone mixtures addresses problems such as haul costs, rutting, skid resistance, etc. Field engineers indicated that although bituminous sandstone surface mixtures have a tendency to ravel, they are very resistant to rutting and applications of bituminous sandstone base and surface mixtures have been successful in their estimation. Although there no longer are any quarries producing sandstone coarse aggregates for bituminous mixtures in Kentucky's eastern sandstone region, it is recommended that Kentucky Specification 413 covering Bituminous Concrete Base, Binder, and Surface, Class S, remain in the Kentucky Department of Highways' Standard Specifications for Road and Bridge Construction.

APPENDIX A

KY 80

HAZARD TO WATERGAP

Design Criteria

The 42-mile route consists of eight distinct and different pavement designs including both portland cement concrete and bituminous designs. The sections containing bituminous pavement designs stretch from approximate Milepost (MP) 5.1 in Knott County, just west of the Hindman Connector, east to approximate MP 14.3 in Floyd County at the junction of US 23. The bituminous sections containing different designs were designated Design Section A through Design Section G by KTC personnel for evaluation purposes. Design Sections B and C were supposed to have different thicknesses but were determined to be the same thickness during field coring operations. Therefore, the two sections were combined for evaluation purposes. The typical section for the entire roadway consists of two 24-foot pavements separated by a 14-foot raised median. Outside shoulders are 10 feet in width. Total asphaltic concrete thicknesses throughout the area monitored ranged from 12 to 20 inches. Typical sections for the various pavement designs utilized on KY 80 are given in Figures A1 through A6. Traffic projections for design were developed by the Department of Highways, Division of Planning. The following data were obtained from information available from project files.

Geometric Design Criteria

Class of Highway*	1
Type of Terrain:	Mountainous
Design Speed:	60 MPH
Maximum Curvature:	5° - 30'
Maximum Grade:	+/- 7%
Stopping Sight Distance:	475' (minimum) 565' (desirable)
Superelevation:	0.10 ft/ft
Typical Section:	2 - 24-ft pavement sections 14-ft median 12-ft shoulder

* Maximum grade for a Class 1 Highway (60 MPH) is +/- 6%.

Traffic Volume:

Section A:

ADT (1976):	---
ADT (1998):	3,700
DHV:	410
D (%):	60
T (%):	15
Level of Service:	"B"

Section B:	
ADT (1976):	1,103
ADT (1998):	2,900
<hr/>	
DHV:	330
D (%):	60
T (%):	15
Level of Service:	"B"

Section C:	
ADT (1976):	947
ADT (1998):	2,300
DHV:	250
D (%):	60
T (%):	15
Level of Service:	"B"

Sections D, E, F, and G:	
ADT (1976):	3,400
ADT (1998):	6,800
DHV:	750
D (%):	60
T (%):	15
Level of Service:	"C"

Pavement Design Criteria

Design Section A (STA 0+00 to STA 166+00):
 EAL = 21.28×10^6 (Design year, 2001)
 CBR = 11 (Rock Subgrade)

Pavement Design:
 6" Cement Treated Base
 8" Bituminous Concrete Base - Class S
 3" Bituminous Concrete Base
1" Bituminous Concrete Surface
 18" Total

Design Section B (STA 166+00 to STA 449+00):
 EAL = 16.88×10^6 (Design year, 2001)
 CBR = 11 (Rock Subgrade)

Pavement Design:
 10" Bituminous Concrete Base - Class S
 2" Bituminous Concrete Base
1" Bituminous Concrete Surface
 13" Total

Design Section C (STA 449+00 to STA 793+00):
EAL = 16.88×10^6 (Design year, 2001)
CBR = 11 (Rock Subgrade)

Pavement Design:
10" Bituminous Concrete Base - Class S
4" Bituminous Concrete Base
1" Bituminous Concrete Surface
15" Total

Design Section D (STA 793+00 to STA 915+00):
EAL = 14.52×10^6 (Design year, 2001)
CBR = 11 (Rock Subgrade)

Pavement Design:
9" Bituminous Concrete Base - Class S
2" Bituminous Concrete Base
1" Bituminous Concrete Surface
12" Total

Design Section E (STA 915+00 to STA 1051+50):
EAL = 24.60×10^6 (Design year, 2001)
CBR = 11 (Rock Subgrade)

Pavement Design:
11" Bituminous Concrete Base - Class S
2" Bituminous Concrete Base
1" Bituminous Concrete Surface
14" Total

Design Section F (STA 1051+50 to STA 1157+15):
EAL = 119.06×10^6 (Design year, 2001)
CBR = 11 (Rock Subgrade)

Pavement Design:
15" Bituminous Concrete Base - Class S
4" Bituminous Concrete Base
1" Bituminous Concrete Surface
20" Total

Design Section G (STA 1157+15 to STA 1542+90):
EAL = 107.74×10^6 (Design year, 2001)
CBR = 11 (Rock Subgrade)

Pavement Design:
6" Cement Treated Base
13" Bituminous Concrete Base - Class S

2" Bituminous Concrete Base
1" Bituminous Concrete Surface
22" Total

Performance Monitoring

Construction of the Hazard to Water Gap route was completed and opened to traffic in 1981. Initial condition surveys for this study were conducted in June, 1985. Subsequent surveys were conducted in November 1986, and again in July 1987. Performance monitoring of KY 80 encompassed only the bituminous sections. The total distance evaluated for long-term performance was approximately 154,290 feet or 29.2 miles. Thirty survey sections were established during the initial survey for purposes of visual surveys, rut depth determinations, and condition evaluations. The survey sections were maintained throughout the study period. With the exception of the first and last sections, all survey sections were approximately one mile in length, corresponding closely to milepost makers located adjacent to the roadway.

Pavement rut depths were obtained within every section, usually at 1,300-foot intervals. Table A1 contains information relative this task. Rutting was not a significant problem on KY 80 when compared to other distresses. However, maintenance overlays may have concealed the more profound rutting. A review of the data indicates the only consistent rutting occurred in survey sections number 6 and 7. These sections are located between MP 11 to MP 13 in Knott County and within an area that was severely distressed. The rut depths remained nearly 1/2 inch during the evaluation period. Rutting in the eastbound shoulder lane of Design Section D however, particularly in the left wheel path at STA 832+00, was the deepest encountered. Rut depths were 3/4 inch during the 1985 survey but decreased to about 5/8 inch in 1987. The decrease may be because the survey crew did not obtain rut data in the same exact location year in and year out. The nearly one-inch rut depth obtained in the westbound median lane at STA 72+25 during 1985 was deemed to be erroneous. Rut measurements obtained at that location in subsequent years were not as great. A general observation with regard to the rut depths encountered would be the thinner bituminous sandstone pavements exhibited a higher degree of pavement rutting, although overall rut depths appeared to be only minor compared to other distress types.

During the condition rating surveys, the rating crew always began on the west end of the route, at the portland cement concrete pavement and bituminous pavement interface (established as STA 0+00). The crew proceeded in an easterly direction to what was considered the end of the route, a bridge over US 23 at Watergap. Condition survey data are contained in Tables A2 and A3 for the Kentucky System and Asphalt Institute System, respectively. Condition survey data for each respective technique were averaged and rounded for the purpose of this report.

Survey section numbers 0, 1, and 2 were considered to be within Design Section A. The eastbound shoulder lane was rated lowest overall when compared to the other lanes. The major distresses were manifested in cracking and rutting. Condition ratings for the westbound median lane and shoulder lane were similar. Corrugated pavement approaching the Hindman connector was the primary distress. Survey section numbers 3 through 14 were considered to be within Design Sections B and C. Survey section numbers 6, 7, and 8 in Knott County (between MP 11 and MP 14) had the worst overall condition rating among all survey sections. Specifically, the westbound shoulder lane was rated lowest for the entire design section although the eastbound shoulder lane had deeper pavement rutting. The westbound shoulder lane exhibited serious cracking, including an abnormally high quantity of alligator, longitudinal and transverse cracking. There were also potholes and raveling of the pavement surface. Figure A7 exemplifies the problem of water emerging from cracks in the pavement. This photograph of the westbound lanes near MP 13.95 was taken one day after rain had fallen in the area. A maintenance overlay may be seen in the shoulder lane. Potholes, patched potholes, and longitudinal cracking may be seen in the median lane. Figure A8 is of the same area, however the view is back to the west. Longitudinal cracks are reflecting through the thin maintenance overlay. Figure A9 shows water emerging from cracks in the pavement and from the lip curb of the raised median. This photograph, taken the same day, is of the eastbound median lane near MP 13.72 in Knott County. Figure A10 is of the westbound lanes near MP 15. On the right-hand side of the figure water can be seen coming up through the paved shoulder and making its way toward the ditch line. There also is water coming through the longitudinal cracks in the left-wheel path where the patched area is located. The median lane has raveled. Figure A11 illustrates severe stripping of the bituminous limestone surface as a result of the emerging water. This photograph is of the westbound lanes near MP 15.4 in Knott County.

Survey section numbers 15 and 16 were considered to be within Design Section D. The eastbound shoulder lane was rated lower than its westbound counterpart. The principal

distresses were alligator cracking and rutting. Survey section numbers 17, 18 and 19 were considered to be within Design Section E. Again, the eastbound shoulder lane was rated lowest. However, alligator cracking developed rapidly in the westbound shoulder lane and actually had a lower overall rating in 1987. The dominant distresses were alligator cracking, raveling, rutting, and poor appearance. Survey section numbers 20 and 21 were considered to be within Design Section F. The eastbound shoulder lane received the lowest rating primarily due to high demerit points given for cracking, rutting, poor appearance and poor ride quality. Survey section numbers 22 through 29 were considered to be within Design Section G. The eastbound shoulder lane exhibited cracking and poor appearance. In survey section number 28, the pavement surface of the eastbound shoulder lane had a significant number of potholes which contributed to the low rating.

It is difficult to surmise the performance characteristics of the bituminous sandstone materials used in the construction of KY 80 because the evaluations should probably not have covered such a vast expanse of pavement. The researchers failed to narrow their focus and evaluate only a small area within each design section. The condition ratings relative to the different design sections were largely inconclusive because of the inflated ratings some survey sections received. The inflated condition ratings were a result of maintenance overlays which were placed during the evaluation period (see Figure A12). This figure shows an overlay placed in the relative center of the eastbound lanes. However, two conclusions may be deduced from the overall condition ratings. Design Section G performed best relative to all other design sections. This design section did not receive any maintenance overlays during the evaluation period and thus, did not have artificially inflated ratings. The other conclusion that may be inferred is that Design Sections B and C performed poorly. However, the poor performance of these design sections may necessarily not be attributed to the bituminous sandstone paving materials. Other factors such as the lack of drainage facilities, poor median design, and inferior construction procedures are likely contributors.

Results of Road Rater deflection testing and modulus calculations are contained in Table A4. The deflection analyses were divided into separate tables for informational purposes. Road Rater deflections were to be obtained along the KY 80 site during 1985, 1986 and 1987, however, there were no 1986 data available for any portion of the route. It is believed that the data were lost during down loading to the mainframe computer.

Design Section A had deflection data for 1987 only. The average back-calculated asphaltic concrete (AC) layer modulus of the design section approximated the 1,200,000 psi at 25

Hz and 70°F for asphaltic concrete normally estimated in deflection analyses. This is corroborated by the increase in the condition rating for the section and due to the section receiving a bituminous overlay. The subgrade moduli for the design section was essentially the same for both directions. The CBR of the crushed sandstone may be estimated to be about 29 percent. Deflection analyses for Design Sections B and C indicate a slight increase in the average back-calculated AC moduli. This likely is a result of a maintenance overlay which was placed after the 1985 tests and before the 1987 tests. Again, the condition ratings for the design section show an improvement in the pavement condition from the 1986 rating to the 1987 rating indicating that an overlay was placed during this period. It is unfortunate there are no deflection data available for 1986. The subgrade moduli values decreased somewhat for both directions, which may be evidence of a deteriorating subgrade. The subgrade modulus for the eastbound direction decreased only slightly and the subgrade modulus for the westbound direction decreased some 26 percent, from 43,000 psi to 32,000 psi. The estimated CBR of the crushed sandstone subgrade in the eastbound lane and westbound lane decreased from about 25 percent to 22 percent and from about 29 percent 21 percent, respectively.

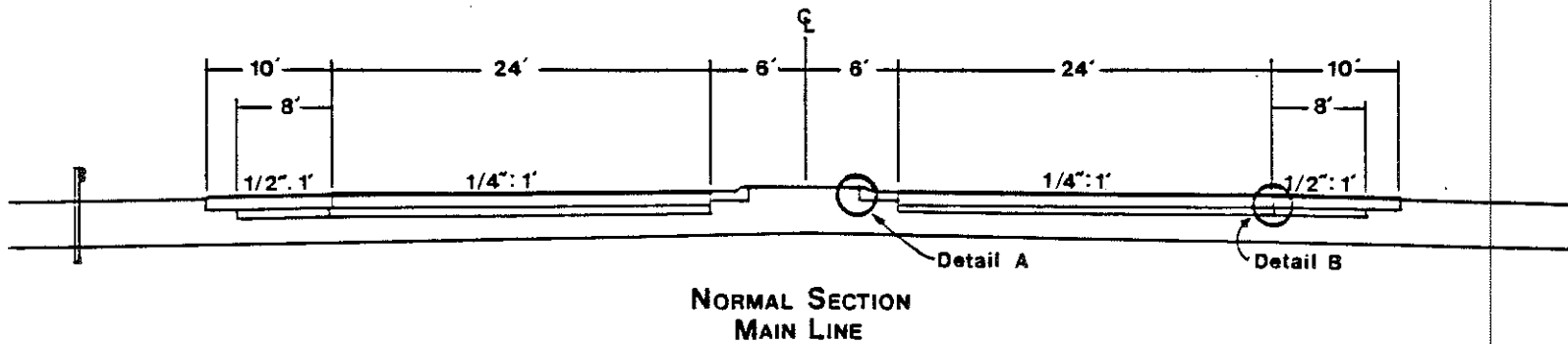
Deflection analyses of Design Section D again revealed an overall increase in the AC layer moduli. However, if the temperature of the pavement and uncorrected deflections are examined closely, the trend is contrary to normal convention i.e., a higher pavement temperature at the time of the test should provide higher deflections. The resolution to this problem could be related to the test equipment. The Kentucky Transportation Center, formerly The Kentucky Transportation Research Program, changed the vehicle that it used to house the deflection equipment, and also upgraded the equipment during the summer of 1986. The crushed rock subgrade of the eastbound lane and westbound lane showed an increase and decrease, respectively, from 1985 to 1987. The estimated CBR of the crushed sandstone subgrade of the eastbound lane increased from about 19 percent to 23 percent. The estimated CBR of the crushed sandstone subgrade of the westbound lane decreased from around 23 percent to 20 percent.

Deflection analyses of Design Section E indicate an increase in the AC layer moduli from the 1985 test to the 1987 test for both the eastbound and westbound lane. The condition rating data do not support this. The subgrade moduli remained essentially the same over the evaluation period. Evaluation of the back-calculated layer moduli from the deflection analyses of Design Section F indicates an increase with respect to the AC layer moduli. This may be due to the substantial decrease in the values of subgrade layer moduli. The subgrade moduli of the eastbound direction changed from 59,000 psi (CBR equal to

approximately 39 percent) to 36,000 psi (CBR equal to approximately 24 percent), or about 39 percent decrease over the study period. The subgrade moduli of the westbound direction decreased 54 percent from 68,000 psi (CBR of about 45 percent) in 1985 to 31,000 psi (CBR of about 21 percent) in 1987. Similarly, the analyses of Road Rater deflections obtained within Design Section G also indicate an increase in the AC layer moduli and a decrease in the subgrade moduli, although not quite as severe. The estimated subgrade CBR value decreased from 60 percent to 39 percent and from 46 percent to 34 percent, respectively, for the eastbound and westbound direction.

Information relative to laboratory testing of cores obtained along KY 80 is contained in Tables A5 through A8. Table A5 contains laboratory data for the bituminous sandstone portion of the field cores tested for fundamental longitudinal frequency to determine Young's modulus of elasticity. The Young's modulus for 124 bituminous sandstone specimens tested averaged 987,700 psi. The unit weight for the bituminous sandstone specimens averaged 142.3 pcf. Table A6 contains information relative to fundamental longitudinal frequency tests for the bituminous limestone portion of cores where specimens having satisfactory length to diameter ratios were obtained. The Young's modulus for six bituminous limestone specimens averaged 2,435,000 psi. The unit weight for the bituminous limestone specimens averaged 148.6 pcf.

Table A7 and Table A8 contain information relative to resilient modulus testing of bituminous sandstone and bituminous limestone layers of cores obtained along KY 80, respectively. Twenty bituminous sandstone specimens were evaluated. The resilient modulus of the bituminous sandstone mix averaged 273,300 psi. The unit weight of the specimens averaged 140.9 pcf. Five bituminous limestone specimens were tested. The resilient modulus of the bituminous limestone layers averaged 346,000 and the average unit weight was 146.2 pcf.



SECTION A

MEDIAN

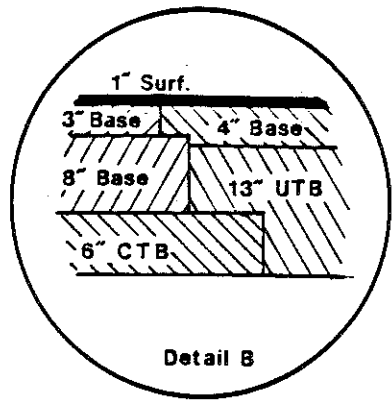
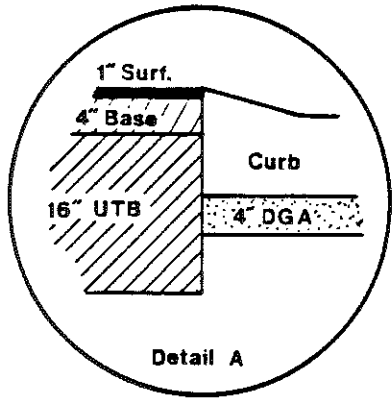
- 1" Bituminous Concrete Surface [LS]
- 4" Bituminous Concrete Base Class S [SP NO 42 A (79)]
- 16" Untreated Crushed Sandstone Base [SP NO 40A (79)]

TRAVEL LANE

- 1" Bituminous Concrete Surface [LS]
- 3" Bituminous Concrete Base [LS]
- 8" Bituminous Concrete Base Class S [SP NO 42 A (79)]
- 6" Cement Treated Sandstone Base [SP NO 41 A (79)]

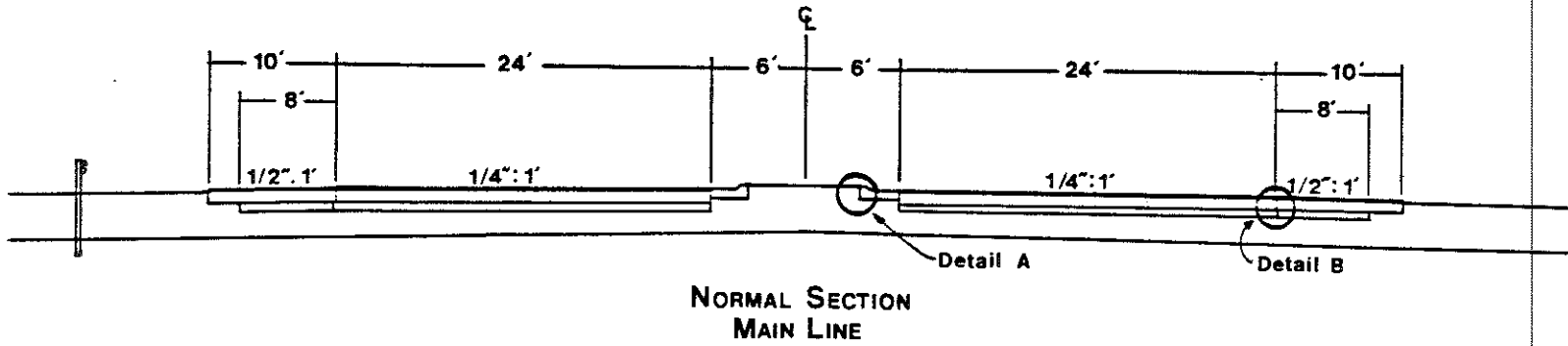
SHOULDER

- 1" Bituminous Concrete Surface [LS]
- 4" Bituminous Concrete Base Class S [SP NO 42 A (79)]
- 13" Untreated Crushed Sandstone Base [SP NO 40 A (79)]

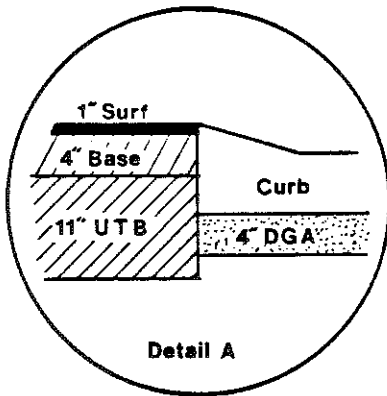


A.10

Figure A1. Typical Section and Detail for Main Line Section STA 0+00 to STA 166+00 (Section A).

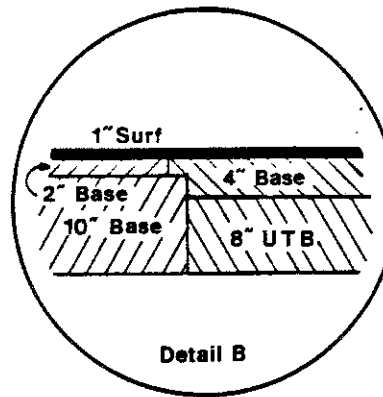


SECTIONS B & C



MEDIAN

- 1" Bituminous Concrete Surface (LS)
- 4" Bituminous Concrete Base Class S (SP N° 42 A(79))
- 11" Untreated Crushed Sandstone Base (SP N° 40 A(79))



TRAVEL LANE

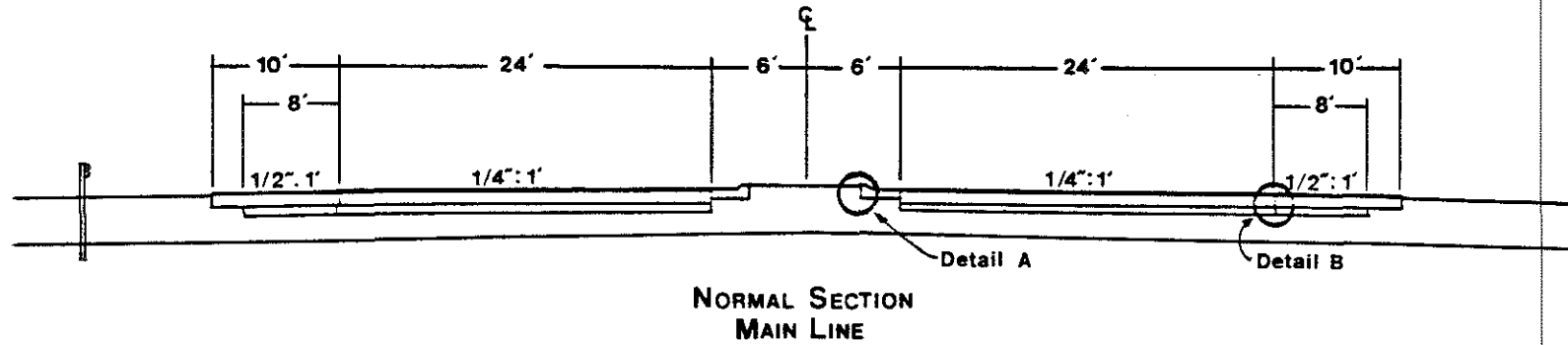
- 1" Bituminous Concrete Surface (LS)
- 2" Bituminous Concrete Base (LS)
- 10" Bituminous Concrete Base Class S (SP N° 42 A(79))

SHOULDER

- 1" Bituminous Concrete Surface (LS)
- 4" Bituminous Concrete Base Class S (SP N° 42 A(79))
- 8" Untreated Crushed Sandstone Base (SP N° 40 A(79))

Figure A2. Typical Section and Detail for Main Line Section STA 166+00 to STA 793+00 (Sections B & C).

A.12



SECTION D

MEDIAN

- 1" Bituminous Concrete Surface [LS]
- 4" Bituminous Concrete Base Class S [SP NO 42 A(79)]
- 10" Untreated Crushed Sandstone Base [SP NO 40 A(79)]

TRAVEL LANE

- 1" Bituminous Concrete Surface [LS]
- 2" Bituminous Concrete Base [LS]
- 9" Bituminous Concrete Base Class S [SP NO 42 A(79)]

SHOULDER

- 1" Bituminous Concrete Surface [LS]
- 4" Bituminous Concrete Base Class S [SP NO 42 A(79)]
- 7" Untreated Crushed Sandstone Base [SP NO 40 A(79)]

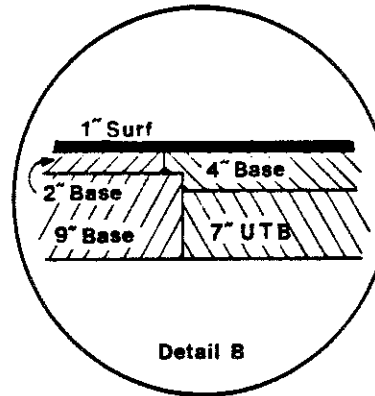
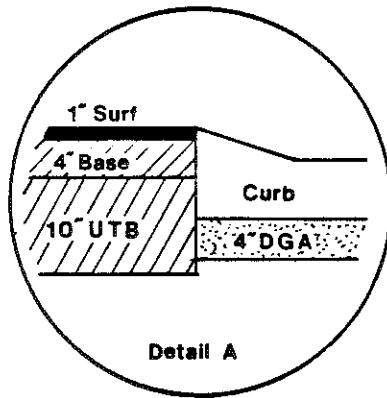
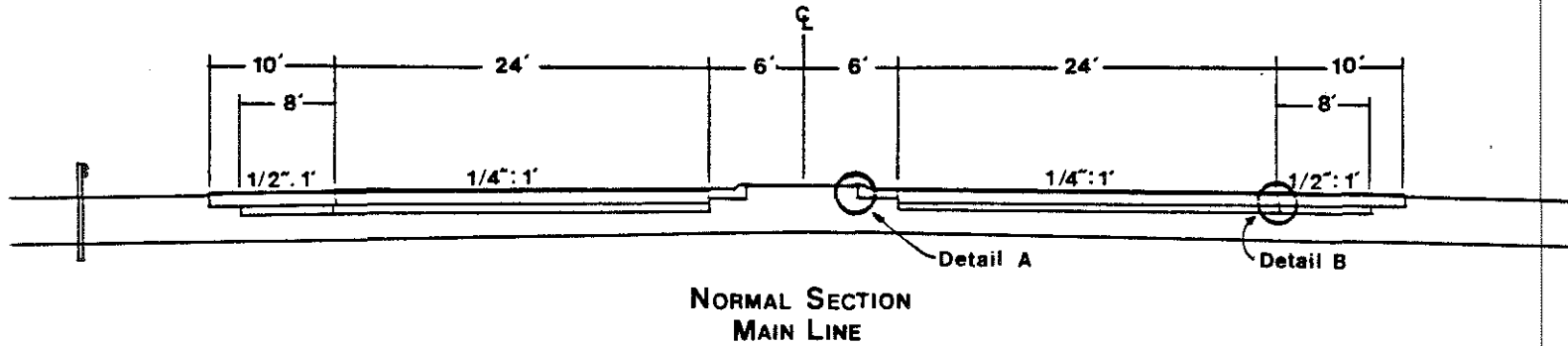


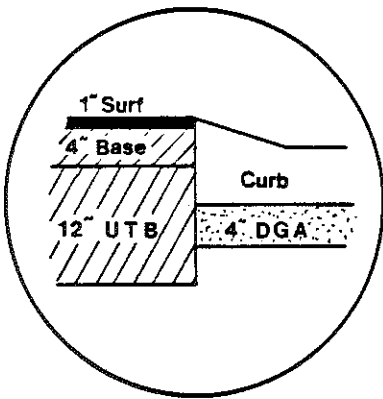
Figure A3. Typical Section and Detail for Main Line Section STA 793+00 to STA 915+00 (Section D).



SECTION E

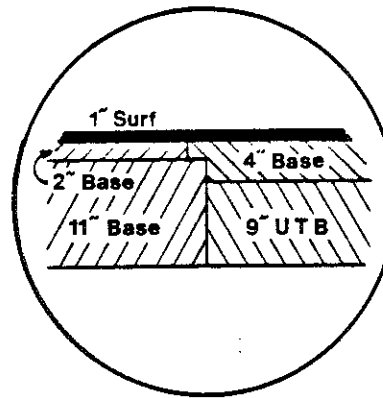
MEDIAN

- 1" Bituminous Concrete Surface (LS)
- 4" Bituminous Concrete Base Class S (SP N° 42 A(79))
- 12" Untreated Crushed Sandstone Base (SP N° 40 A(79))



TRAVEL LANE

- 1" Bituminous Concrete Surface (LS)
- 2" Bituminous Concrete Base (LS)
- 11" Bituminous Concrete Base Class S (SP N° 42 A(79))

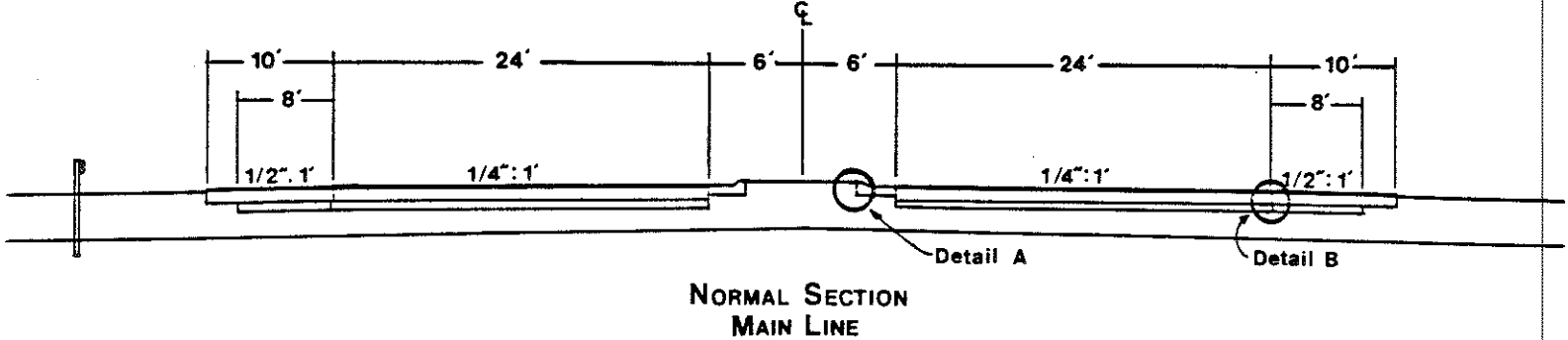


SHOULDER

- 1" Bituminous Concrete Surface (LS)
- 4" Bituminous Concrete Base Class S (SP N° 42 A(79))
- 9" Untreated Crushed Sandstone Base (SP N° 40 A(79))

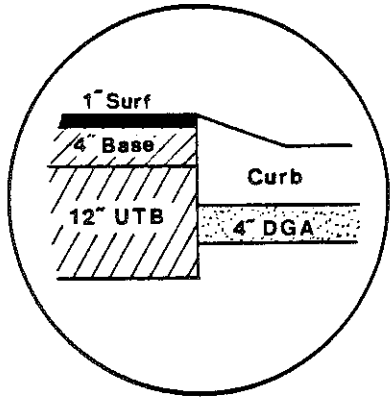
A.13

Figure A4. Typical Section and Detail for Main Line Section STA 915+00 to STA 1051+50 (Section E).



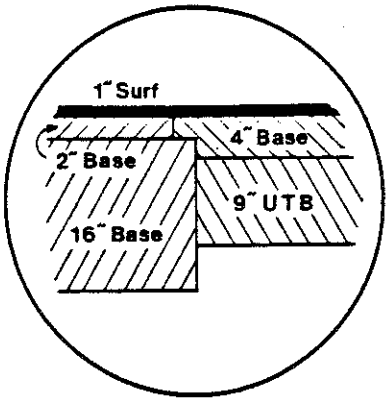
SECTION F

MEDIAN



- 1" Bituminous Concrete Surface [LS]
- 4" Bituminous Concrete Base Class S [SP N° 42 A(79)]
- 12" Untreated Crushed Sandstone Base [SP N° 40A(79)]

TRAVEL LANE



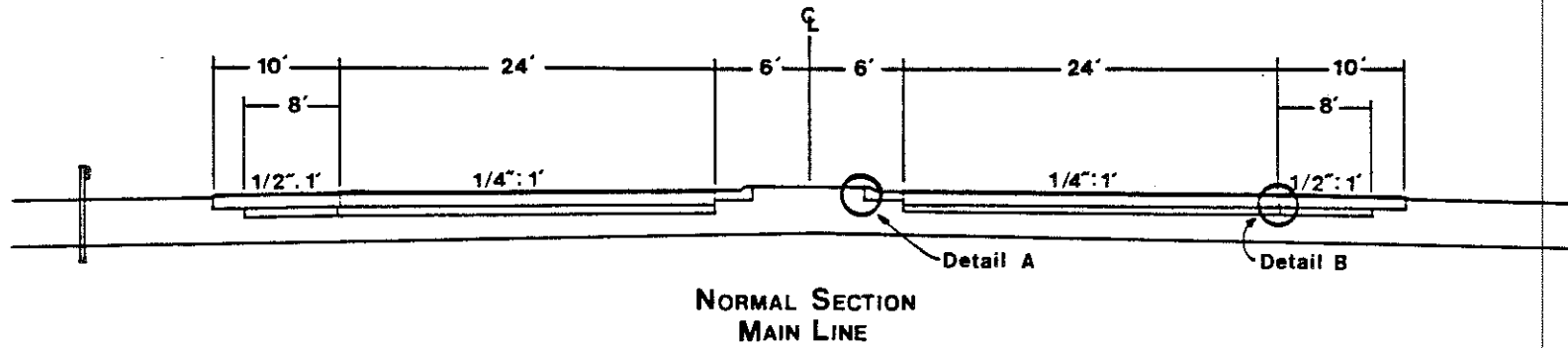
- 1" Bituminous Concrete Surface [LS]
- 2" Bituminous Concrete Base [LS]
- 1 " Bituminous Concrete Base Class S [SP N° 42 A(79)]

SHOULDER

- 1" Bituminous Concrete Surface [LS]
- 4" Bituminous Concrete Base Class S [SP N° 42 A(79)]
- 9" Untreated Crushed Sandstone Base [SP N° 40 A(79)]

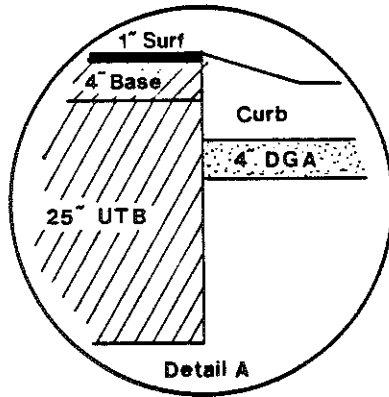
A.14

Figure A5. Typical Section and Detail for Main Line Section STA 1051+50 to STA 1157+15 (Section F).



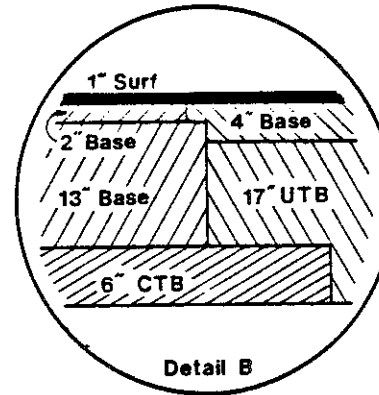
SECTION G

MEDIAN



- 1" Bituminous Concrete Surface (LS)
- 4" Bituminous Concrete Base Class S (SP NO 42A(79))
- 25" Untreated Crushed Sandstone Base (SP NO 40A(79))

TRAVEL LANE



- 1" Bituminous Concrete Surface (LS)
 - 2" Bituminous Concrete Base (LS)
 - 13" Bituminous Concrete Base Class S (SP NO 42A(79))
 - 6" Cement Treated Crushed Sandstone Base (SP NO 41A(79))
- SHOULDER**
- 1" Bituminous Concrete Surface (LS)
 - 4" Bituminous Concrete Base Class S (SP NO 42A(79))
 - 17" Untreated Crushed Sandstone Base (SP NO 40A(79))

A.15

Figure A6. Typical Section and Detail for Main Line Section STA 1157+15 to STA 1542+90 (Section G).



Figure A7. Severe Potholes and Emerging Water from Longitudinal Cracks in the Pavement in Survey Section Number 8.



Figure A8. Severe Potholes, Emerging Water, and Longitudinal Cracking (looking Westbound in Survey Section Number 8).



Figure A9. Water Emerging from Longitudinal Cracks in the Median Lane and from under the Lip Curb of the Raised Median near Survey Station 456+10.



Figure A10. Water Seeping through the Shoulder Pavement near MP 15. Potholes, Longitudinal Cracking, and Surface Raveling are Dominant in both Lanes.



Figure A11. Westbound Shoulder Lane was Overlaid in the Fall of 1985. Median Lane Exhibits Excessive Stripping of the Bituminous Limestone Surface near Survey Station 558+75 in the Spring of 1986.



Figure A12. Maintenance Overlays Artificially Inflated Condition Ratings.

TABLE A.1. 1985 RUTTING DATA -- KY 80, KNOTT COUNTY

STATION	EASTBOUND				WESTBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 0 -- STA 0+00 to STA 46+25, DESIGN SECTION A								
10+00	0.1	0.1	0.3	0.3	0.3	0.1	0.3	0.1
20+00	0.3	0.1	0.1	0.4	0.4	0.3	0.4	0.1
32+00	0.1	0.1	0.1	0.4	0.3	0.1	0.1	0.3
46+25	0.1	0.1	0.3	0.4	0.3	0.1	0.1	0.1
Average	0.2	0.1	0.2	0.3	0.3	0.2	0.2	0.2
Std. Dev.	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1
SURVEY SECTION 1 -- STA 46+25 to STA 99+05, DESIGN SECTION A								
59+25	0.3	0.4	0.5	0.4	0.3	0.1	0.3	0.3
72+25	0.3	0.3	0.3	0.4	0.9	0.8	0.5	0.3
85+25	0.4	0.3	0.3	0.3	0.3	0.1	0.3	0.3
99+05	0.1	0.1	0.3	0.3	0.1	0.1	0.3	0.1
Average	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.2
Std. Dev.	0.1	0.1	0.1	0.1	0.3	0.3	0.1	0.1
SURVEY SECTION 2 -- STA 99+05 to STA 152+10, DESIGN SECTION A								
112+05	0.3	0.0	0.3	0.3	0.3	0.1	0.1	0.1
125+05	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
138+05	0.0	0.3	0.3	0.3	0.4	0.3	0.3	0.1
152+10	0.1	0.1	0.1	0.3	0.1	0.0	0.3	0.4
Average	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2
Std. Dev.	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
SURVEY SECTION 3 -- STA 152+10 to STA 205+85, DESIGN SECTIONS B & C BEGIN AT STA 166+00,								
165+10	0.3	0.1	0.3	0.1	0.5	0.4	0.3	0.3
178+10	0.3	0.3	0.1	0.1	0.3	0.0	0.1	0.1
191+10	0.8	0.3	0.1	0.0	0.3	0.1	0.1	0.0
205+85	0.0	0.0	0.3	0.4	0.1	0.0	0.0	0.1
Average	0.3	0.2	0.2	0.2	0.3	0.1	0.1	0.1
Std. Dev.	0.3	0.1	0.1	0.1	0.1	0.2	0.1	0.1
SURVEY SECTION 4 -- STA 205+85 to STA 258+25, DESIGN SECTIONS B & C								
218+85	0.4	0.1	0.3	0.3	0.3	0.1	0.1	0.0
231+85	0.4	0.1	0.1	0.3	0.3	0.1	0.3	0.0
244+85	0.4	0.3	0.1	0.3	0.3	0.1	0.3	0.0
258+25	0.3	0.0	0.1	0.1	0.3	0.0	0.1	0.1
Average	0.3	0.1	0.2	0.2	0.3	0.1	0.2	0.0
Std. Dev.	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1

TABLE A1 (continued). 1985 RUTTING DATA -- KY 80, KNOTT COUNTY

STATION	EASTBOUND				WESTBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 5 -- STA 258+25 to STA 311+05, DESIGN SECTIONS B & C								
271+25	0.3	0.0	0.0	0.1	0.3	0.1	0.1	0.1
284+25	0.1	0.0	0.0	0.1	0.3	0.1	0.0	0.1
297+25	0.3	0.0	0.0	0.1	0.1	0.0	0.1	0.1
311+05	0.4	0.1	0.1	0.1	0.3	0.1	0.1	0.3
Average	0.3	0.0	0.0	0.1	0.2	0.1	0.1	0.2
Std. Dev.	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
SURVEY SECTION 6 -- STA 311+05 to STA 364+20, DESIGN SECTIONS B & C								
324+05	0.5	0.3	0.3	0.0	0.3	0.1	0.1	0.1
337+05	0.3	0.1	0.1	0.3	0.4	0.3	0.1	0.3
358+05	0.3	0.1	0.3	0.4	0.3	0.1	0.1	0.1
364+20	0.1	0.1	0.3	0.4	0.3	0.1	0.0	0.3
Average	0.3	0.2	0.2	0.3	0.3	0.2	0.1	0.2
Std. Dev.	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1
SURVEY SECTION 7 -- STA 364+20 to STA 417+10, DESIGN SECTIONS B & C								
377+20	0.1	0.0	0.3	0.4	0.3	0.1	0.1	0.3
390+20	0.1	0.1	0.1	0.4	0.3	0.3	0.1	0.3
403+20	0.3	0.1	0.3	0.4	0.4	0.3	0.1	0.1
417+10	0.3	0.3	0.4	0.5	0.3	0.0	0.0	0.1
Average	0.2	0.1	0.3	0.4	0.3	0.2	0.1	0.2
Std. Dev.	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
SURVEY SECTION 8 -- STA 417+10 to STA 470+05, DESIGN SECTIONS B & C								
430+10	0.3	0.3	0.3	0.4	0.3	0.1	0.1	0.1
443+10	0.1	0.3	0.1	0.3	0.1	0.3	0.1	0.3
456+10	0.3	0.1	0.0	0.0	0.1	0.3	0.1	0.3
470+05	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Average	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.2
Std. Dev.	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1
SURVEY SECTION 9 -- STA 470+05 to STA 523+05, DESIGN SECTIONS B & C								
483+05	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.0
496+05	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.3
509+05	0.1	0.1	0.5	0.0	0.5	0.3	0.1	0.0
523+05	0.3	0.0	0.3	0.1	0.1	0.1	0.3	0.0
Average	0.2	0.1	0.3	0.1	0.2	0.2	0.2	0.1
Std. Dev.	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1

TABLE A1 (continued). 1985 RUTTING DATA -- KY 80, KNOTT COUNTY

STATION	EASTBOUND				WESTBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 10 -- STA 523+05 to STA 576+15, DESIGN SECTIONS B & C								
536+05	0.3	0.0	0.3	0.1	0.4	0.3	0.3	0.0
549+05	0.3	0.1	0.3	0.3	0.3	0.3	0.1	0.0
562+05	0.3	0.1	0.1	0.0	0.3	0.1	0.1	0.1
576+15	0.1	0.1	0.4	0.1	0.3	0.1	0.0	0.0
Average	0.2	0.1	0.3	0.1	0.3	0.2	0.1	0.0
Std. Dev.	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
SURVEY SECTION 11 -- STA 576+15 to STA 629+20, DESIGN SECTIONS B & C								
589+15	0.1	0.1	0.3	0.0	0.1	0.0	0.1	0.0
602+15	0.3	0.0	0.3	0.1	0.3	0.1	0.1	0.1
615+15	0.1	0.1	0.3	0.3	0.1	0.0	0.1	0.1
629+20	0.3	0.1	0.1	0.1	0.1	0.0	0.3	0.1
Average	0.2	0.1	0.2	0.1	0.2	0.0	0.2	0.1
Std. Dev.	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
SURVEY SECTION 12 -- STA 629+20 to STA 682+20, DESIGN SECTIONS B & C								
643+50	0.4	0.3	0.3	0.3	0.1	0.0	0.1	0.1
655+45	0.4	0.1	0.0	0.1	0.0	0.0	0.1	0.3
668+45	0.1	0.1	0.3	0.1	0.1	0.0	0.1	0.1
682+20	0.3	0.1	0.4	0.3	0.1	0.0	0.1	0.1
Average	0.3	0.2	0.2	0.2	0.1	0.0	0.1	0.2
Std. Dev.	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1
SURVEY SECTION 13 -- STA 682+20 to STA 735+40, DESIGN SECTIONS B & C								
695+20	0.0	0.0	0.3	0.1	0.0	0.0	0.3	0.1
707+70	0.4	0.1	0.1	0.3	0.3	0.0	0.1	0.3
720+70	0.1	0.1	0.1	0.3	0.1	0.0	0.1	0.1
735+40	0.1	0.0	0.1	0.1	0.0	0.0	0.3	0.1
Average	0.2	0.1	0.2	0.2	0.1	0.0	0.2	0.2
Std. Dev.	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1
SURVEY SECTION 14 -- STA 735+40 to STA 793+00, DESIGN SECTIONS B & C								
748+40	0.1	0.0	0.3	0.3	0.1	0.1	0.1	0.1
761+40	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.1
774+40	0.3	0.1	0.1	0.3	0.1	0.1	0.1	0.1
793+00	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1
Average	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1
Std. Dev.	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0

TABLE A1 (continued). 1985 RUTTING DATA -- KY 80, FLOYD COUNTY

STATION	EASTBOUND				WESTBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 15 -- STA 793+00 to STA 845+70, DESIGN SECTION D								
806+00	0.1	0.1	0.1	0.3	0.1	0.0	0.1	0.1
819+00	0.1	0.1	0.4	0.4	0.1	0.0	0.1	0.1
832+00	0.3	0.1	0.8	0.3	0.1	0.0	0.1	0.1
845+70	0.1	0.1	0.3	0.3	0.0	0.0	0.1	0.1
Average	0.2	0.1	0.4	0.3	0.1	0.0	0.1	0.1
Std. Dev.	0.1	0.0	0.2	0.1	0.1	0.0	0.0	0.0
SURVEY SECTION 16 -- STA 845+70 to STA 893+55, DESIGN SECTION D								
859+40	0.3	0.1	0.1	0.3	0.1	0.0	0.1	0.1
873+70	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1
884+70	0.1	0.1	0.3	0.3	0.0	0.1	0.1	0.0
893+55	0.3	0.0	0.3	0.3	0.0	0.3	0.1	0.0
Average	0.2	0.1	0.2	0.2	0.0	0.1	0.1	0.1
Std. Dev.	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1
SURVEY SECTION 17 -- STA 893+55 to STA 946+15, DESIGN SECTION E BEGINS AT STA 915+00								
906+55	0.3	0.1	0.3	0.3	0.0	0.3	0.1	0.0
919+55	0.1	0.0	0.4	0.4	0.0	0.3	0.1	0.0
932+55	0.1	0.0	0.3	0.1	0.1	0.4	0.1	0.0
946+15	0.1	0.0	0.3	0.3	0.3	0.4	0.1	0.0
Average	0.2	0.0	0.3	0.3	0.1	0.3	0.1	0.0
Std. Dev.	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0
SURVEY SECTION 18 -- STA 946+15 to STA 998+70, DESIGN SECTION E								
959+15	0.1	0.0	0.4	0.3	0.1	0.1	0.1	0.1
972+15	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.1
985+15	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.1
998+70	0.3	0.1	0.3	0.1	0.1	0.0	0.1	0.1
Average	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1
Std. Dev.	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0
SURVEY SECTION 19 -- STA 998+70 to STA 1051+50, DESIGN SECTION E								
1011+70	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.1
1024+70	0.1	0.0	0.3	0.3	0.1	0.1	0.1	0.1
1041+70	0.1	0.0	0.3	0.3	0.1	0.1	0.1	0.1
1051+50	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1
Average	0.1	0.0	0.2	0.2	0.1	0.1	0.1	0.1
Std. Dev.	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0

NOTES: Section No. 16 contains a bridge approximately 960 feet in length.
 Section No. 18 contains a bridge approximately 480 feet in length.

TABLE A1 (continued). 1985 RUTTING DATA -- KY 80, FLOYD COUNTY

STATION	EASTBOUND				WESTBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 20 -- STA 1051+50 to STA 1104+30, DESIGN SECTION F								
1064+50	0.1	0.0	0.3	0.3	0.1	0.0	0.3	0.3
1077+50	0.1	0.1	0.3	0.3	0.1	0.0	0.1	0.1
1090+50	0.3	0.0	0.3	0.3	0.1	0.0	0.1	0.1
1104+30	0.4	0.1	0.1	0.3	0.3	0.0	0.1	0.1
Average	0.2	0.1	0.2	0.3	0.2	0.0	0.2	0.2
Std. Dev.	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1
SURVEY SECTION 21 -- STA 1104+30 to STA 1157+15, DESIGN SECTION F								
1117+30	0.3	0.0	0.3	0.3	0.0	0.0	0.1	0.3
1130+30	0.3	0.1	0.3	0.3	0.1	0.0	0.1	0.1
1143+30	0.3	0.1	0.3	0.3	0.1	0.1	0.1	0.1
1157+15	0.3	0.0	0.3	0.3	0.1	0.1	0.3	0.3
Average	0.3	0.1	0.3	0.3	0.1	0.1	0.2	0.2
Std. Dev.	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1
SURVEY SECTION 22 -- STA 1157+15 to STA 1210+05, DESIGN SECTION G								
1170+15	0.3	0.0	0.3	0.3	0.0	0.1	0.3	0.1
1183+15	0.1	0.0	0.1	0.1	0.0	0.1	0.3	0.1
1196+15	0.3	0.0	0.1	0.1	0.1	0.1	0.1	0.1
1210+05	0.1	0.3	0.3	0.0	0.3	0.1	0.4	0.1
Average	0.2	0.1	0.2	0.1	0.1	0.1	0.3	0.1
Std. Dev.	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0
SURVEY SECTION 23 -- STA 1210+05 to STA 1262+70, DESIGN SECTION G								
1223+05	0.3	0.0	0.1	0.3	0.1	0.0	0.1	0.1
1235+05	0.4	0.1	0.1	0.4	0.3	0.1	0.3	0.3
1249+05	0.3	0.1	0.3	0.3	0.3	0.1	0.1	0.3
1262+70	0.3	0.1	0.1	0.1	0.3	0.1	0.1	0.3
Average	0.3	0.1	0.2	0.3	0.2	0.1	0.2	0.2
Std. Dev.	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
SURVEY SECTION 24 -- STA 1262+70 to STA 1315+45, DESIGN SECTION G								
1279+70	0.3	0.1	0.3	0.3	0.1	0.3	0.1	0.1
1288+70	0.1	0.1	0.3	0.0	0.1	0.0	0.4	0.1
1301+70	0.0	0.0	0.0	0.3	0.1	0.0	0.0	0.0
1315+45	0.1	0.1	0.3	0.3	0.1	0.1	0.1	0.1
Average	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1
Std. Dev.	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1

NOTES: Section No. 20 contains a bridge approximately 410 feet in length.
Section No. 22 contains a bridge approximately 235 feet in length.

Section No. 23 contains two bridges. The first bridge is approximately 235 feet in length and the second bridge is approximately 605 feet in length.

TABLE A1 (continued). 1985 RUTTING DATA -- KY 80, FLOYD COUNTY

STATION	EASTBOUND				WESTBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 25 -- STA 1315+45 to STA 1368+05, DESIGN SECTION G								
1328+45	0.1	0.1	0.3	0.3	0.1	0.0	0.1	0.3
1341+45	0.1	0.3	0.3	0.4	0.1	0.0	0.1	0.3
1354+45	0.1	0.0	0.3	0.3	0.0	0.0	0.0	0.1
1368+05	0.4	0.1	0.3	0.3	0.3	0.1	0.1	0.1
Average	0.2	0.1	0.3	0.3	0.1	0.0	0.1	0.2
Std. Dev.	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1
SURVEY SECTION 26 -- STA 1368+05 to STA 1420+50, DESIGN SECTION G								
1381+05	0.3	0.0	0.3	0.3	0.1	0.1	0.1	0.1
1394+05	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1407+05	0.3	0.1	0.1	0.3	0.1	0.0	0.1	0.1
1420+50	0.1	0.1	0.1	0.3	0.1	0.0	0.1	0.3
Average	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.2
Std. Dev.	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1
SURVEY SECTION 27 -- STA 1420+50 to STA 1473+15, DESIGN SECTION G								
1433+50	0.3	0.0	0.1	0.3	0.0	0.0	0.1	0.3
1446+50	0.3	0.0	0.1	0.3	0.1	0.0	0.1	0.3
1459+50	0.3	0.0	0.1	0.3	0.1	0.1	0.1	0.3
1473+15	0.1	0.1	0.3	0.3	0.1	0.0	0.1	0.3
Average	0.2	0.0	0.2	0.3	0.1	0.0	0.1	0.3
Std. Dev.	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0
SURVEY SECTION 28 -- STA 1473+15 to STA 1525+75, DESIGN SECTION G								
1486+15	0.1	0.0	0.3	0.3	0.1	0.0	0.1	0.3
1499+15	0.3	0.1	0.1	0.3	0.1	0.1	0.1	0.1
1512+15	0.3	0.0	0.1	0.3	0.3	0.1	0.1	0.3
1525+75	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1
Average	0.2	0.0	0.2	0.2	0.2	0.1	0.1	0.2
Std. Dev.	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1
SURVEY SECTION 29 -- STA 1525+75 to STA 1542+90, DESIGN SECTION G								
1534+75	0.1	0.0	0.3	0.3	0.1	0.0	0.1	0.3
Average	0.1	0.0	0.3	0.3	0.1	0.0	0.1	0.3
Std. Dev.								

TABLE A1 (continued). 1986 RUTTING DATA -- KY 80, KNOTT COUNTY

STATION	EASTBOUND				WESTBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 0 -- STA 0+00 to STA 46+25, DESIGN SECTION A								
10+00	0.1	0.1	0.3	0.3	0.1	0.1	0.2	0.2
20+00	0.3	0.1	0.1	0.4	0.3	0.3	0.3	0.1
32+00	0.1	0.1	0.2	0.3	0.2	0.1	0.1	0.3
46+25	0.2	0.2	0.2	0.3	0.1	0.1	0.1	0.1
Average	0.2	0.1	0.2	0.3	0.2	0.1	0.2	0.2
Std. Dev.	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1
SURVEY SECTION 1 -- STA 46+25 to STA 99+05, DESIGN SECTION A								
59+25	0.3	0.4	0.4	0.3	0.1	0.1	0.1	0.2
72+25	0.1	0.1	0.3	0.4	0.1	0.1	0.4	0.3
85+25	0.3	0.2	0.3	0.3	0.1	0.1	0.3	0.2
99+05	0.0	0.2	0.3	0.4	0.1	0.1	0.4	0.2
Average	0.2	0.2	0.3	0.3	0.1	0.1	0.3	0.2
Std. Dev.	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0
SURVEY SECTION 2 -- STA 99+05 to STA 152+10, DESIGN SECTION A								
112+05	0.3	0.1	0.3	0.3	0.1	0.1	0.1	0.1
125+05	0.1	0.1	0.3	0.3	0.3	0.1	0.2	0.2
138+05	0.1	0.1	0.3	0.3	0.2	0.4	0.2	0.2
152+10	0.1	0.3	0.1	0.3	0.1	0.0	0.2	0.3
Average	0.1	0.1	0.2	0.3	0.2	0.1	0.2	0.2
Std. Dev.	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1
SURVEY SECTION 3 -- STA 152+10 to STA 205+85, DESIGN SECTIONS B & C BEGIN AT STA 166+00								
165+10	0.2	0.1	0.3	0.1	0.4	0.2	0.2	0.2
178+10	0.3	0.4	0.1	0.1	0.3	0.1	0.1	0.2
191+10	0.1	0.4	0.2	0.1	0.1	0.1	0.1	0.0
205+85	0.0	0.1	0.4	0.4	0.1	0.0	0.1	0.2
Average	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1
Std. Dev.	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.1
SURVEY SECTION 4 -- STA 205+85 to STA 258+25, DESIGN SECTIONS B & C								
218+85	0.4	0.2	0.3	0.3	0.2	0.1	0.1	0.0
231+85	0.3	0.0	0.1	0.2	0.3	0.1	0.3	0.0
244+85	0.3	0.2	0.1	0.3	0.4	0.1	0.3	0.0
258+25	0.3	0.1	0.1	0.1	0.2	0.0	0.1	0.2
Average	0.3	0.1	0.2	0.2	0.3	0.0	0.2	0.0
Std. Dev.	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1

TABLE A1 (continued). 1986 RUTTING DATA -- KY 80, KNOTT COUNTY

STATION	EASTBOUND				WESTBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 5 -- STA 258+25 to STA 311+05, DESIGN SECTIONS B & C								
271+25	0.2	0.1	0.1	0.3	0.2	0.0	0.2	0.2
284+25	0.2	0.1	0.1	0.2	0.3	0.1	0.1	0.1
297+25	0.1	0.2	0.2	0.2	0.1	0.2	0.1	0.1
311+05	0.3	0.1	0.2	0.1	0.1	0.0	0.1	0.2
Average	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1
Std. Dev.	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
SURVEY SECTION 6 -- STA 311+05 to STA 364+20, DESIGN SECTIONS B & C								
324+05	0.3	0.1	0.2	0.1	0.2	0.1	0.0	0.1
337+05	0.5	0.2	0.2	0.3	0.3	0.1	0.2	0.2
358+05	0.2	0.0	0.3	0.4	0.2	0.1	0.1	0.2
364+20	0.2	0.1	0.3	0.4	0.1	0.1	0.1	0.2
Average	0.3	0.1	0.2	0.3	0.2	0.1	0.1	0.2
Std. Dev.	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.1
SURVEY SECTION 7 -- STA 364+20 to STA 417+10, DESIGN SECTIONS B & C								
377+20	0.1	0.1	0.2	0.4	0.2	0.2	0.1	0.2
390+20	0.1	0.1	0.1	0.4	0.3	0.1	0.1	0.3
403+20	0.2	0.1	0.4	0.4	0.2	0.1	0.1	0.2
417+10	0.1	0.1	0.4	0.6	0.1	0.1	0.1	0.1
Average	0.1	0.1	0.3	0.5	0.2	0.1	0.1	0.2
Std. Dev.	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.1
SURVEY SECTION 8 -- STA 417+10 to STA 470+05, DESIGN SECTIONS B & C								
430+10	0.3	0.1	0.3	0.4	0.1	0.1	0.1	0.2
443+10	0.2	0.1	0.1	0.3	0.1	0.2	0.1	0.3
456+10	0.1	0.2	0.2	0.1	0.1	0.3	0.1	0.3
470+05	0.3	0.1	0.2	0.1	0.2	0.1	0.2	0.0
Average	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.2
Std. Dev.	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.1
SURVEY SECTION 9 -- STA 470+05 to STA 523+05, DESIGN SECTIONS B & C								
483+05	0.2	0.1	0.3	0.2	0.1	0.1	0.2	0.1
496+05	0.1	0.1	0.3	0.2	0.2	0.1	0.1	0.3
509+05	0.2	0.1	0.4	0.1	0.3	0.1	0.2	0.1
523+05	0.1	0.0	0.3	0.1	0.1	0.1	0.4	0.1
Average	0.1	0.1	0.3	0.2	0.1	0.1	0.2	0.1
Std. Dev.	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.1

TABLE A1 (continued). 1986 RUTTING DATA -- KY 80, KNOTT COUNTY

STATION	EASTBOUND				WESTBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 10 -- STA 523+05 to STA 576+15, DESIGN SECTIONS B & C								
536+05	0.2	0.0	0.3	0.1	0.2	0.2	0.3	0.1
549+05	0.2	0.0	0.2	0.2	0.1	0.2	0.1	0.0
562+05	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1
576+15	0.1	0.1	0.7	0.1	0.3	0.2	0.3	0.1
Average	0.1	0.1	0.3	0.1	0.2	0.2	0.2	0.1
Std. Dev.	0.1	0.1	0.2	0.1	0.1	0.0	0.1	0.0
SURVEY SECTION 11 -- STA 576+15 to STA 629+20, DESIGN SECTIONS B & C								
589+15	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1
602+15	0.3	0.1	0.3	0.3	0.1	0.1	0.1	0.1
615+15	0.3	0.1	0.3	0.3	0.0	0.0	0.1	0.2
629+20	0.3	0.2	0.1	0.1	0.1	0.0	0.1	0.2
Average	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1
Std. Dev.	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1
SURVEY SECTION 12 -- STA 629+20 to STA 682+20, DESIGN SECTIONS B & C								
643+50	0.4	0.1	0.2	0.3	0.1	0.0	0.1	0.2
655+45	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.3
668+45	0.1	0.1	0.3	0.1	0.1	0.0	0.1	0.2
682+20	0.3	0.1	0.4	0.3	0.1	0.1	0.1	0.1
Average	0.3	0.1	0.2	0.2	0.1	0.0	0.1	0.2
Std. Dev.	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.1
SURVEY SECTION 13 -- STA 682+20 to STA 735+40, DESIGN SECTIONS B & C								
695+20	0.1	0.1	0.2	0.2	0.1	0.0	0.1	0.1
707+70	0.3	0.1	0.1	0.1	0.3	0.0	0.1	0.2
720+70	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
735+40	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
Average	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1
Std. Dev.	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
SURVEY SECTION 14 -- STA 735+40 to STA 793+00, DESIGN SECTIONS B & C								
748+40	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1
761+40	0.1	0.0	0.2	0.2	0.1	0.0	0.1	0.1
774+40	0.1	0.1	0.3	0.2	0.2	0.1	0.2	0.1
793+00	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1
Average	0.1	0.0	0.2	0.2	0.1	0.1	0.1	0.1
Std. Dev.	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0

TABLE A1 (continued). 1986 RUTTING DATA -- KY 80, FLOYD COUNTY

STATION	EASTBOUND				WESTBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 15 -- STA 793+00 to STA 845+70, DESIGN SECTION D								
806+00	0.2	0.1	0.2	0.3	0.1	0.1	0.2	0.1
819+00	0.1	0.1	0.4	0.3	0.1	0.1	0.1	0.1
832+00	0.2	0.1	0.7	0.3	0.1	0.0	0.1	0.1
845+70	0.2	0.1	0.2	0.2	0.0	0.0	0.1	0.1
Average	0.2	0.1	0.4	0.3	0.1	0.0	0.1	0.1
Std. Dev.	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.0
SURVEY SECTION 16 -- STA 845+70 to STA 893+55, DESIGN SECTION D								
859+40	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.2
873+70	0.1	0.1	0.2	0.2	0.1	0.0	0.1	0.1
884+70	0.1	0.1	0.3	0.3	0.0	0.2	0.3	0.0
893+55	0.1	0.1	0.3	0.3	0.1	0.2	0.3	0.0
Average	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1
Std. Dev.	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1
SURVEY SECTION 17 -- STA 893+55 to STA 946+15, DESIGN SECTION E BEGINS AT STA 915+00								
906+55	0.1	0.1	0.2	0.3	0.1	0.2	0.1	0.0
919+55	0.1	0.1	0.4	0.4	0.1	0.2	0.2	0.1
932+55	0.1	0.1	0.2	0.2	0.1	0.3	0.2	0.1
946+15	0.1	0.1	0.3	0.3	0.1	0.3	0.1	0.1
Average	0.1	0.1	0.3	0.3	0.1	0.2	0.2	0.1
Std. Dev.	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
SURVEY SECTION 18 -- STA 946+15 to STA 998+70, DESIGN SECTION E								
959+15	0.1	0.1	0.4	0.3	0.1	0.1	0.1	0.1
972+15	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1
985+15	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1
998+70	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.1
Average	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.1
Std. Dev.	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
SURVEY SECTION 19 -- STA 998+70 to STA 1051+50, DESIGN SECTION E								
1011+70	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1
1024+70	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.1
1041+70	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.1
1051+50	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.1
Average	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1
Std. Dev.	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

NOTES: Section No. 16 contains a bridge approximately 960 feet in length.
Section No. 18 contains a bridge approximately 480 feet in length.

TABLE A1 (continued). 1986 RUTTING DATA -- KY 80, FLOYD COUNTY

STATION	EASTBOUND				WESTBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 20 -- STA 1051+50 to STA 1104+30, DESIGN SECTION F								
1064+50	0.1	0.1	0.2	0.2	0.1	0.1	0.3	0.2
1077+50	0.1	0.1	0.3	0.3	0.1	0.1	0.1	0.2
1090+50	0.2	0.1	0.2	0.3	0.0	0.1	0.2	0.2
1104+30	0.3	0.2	0.2	0.3	0.3	0.1	0.2	0.2
Average	0.2	0.1	0.2	0.3	0.1	0.1	0.2	0.2
Std. Dev.	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0
SURVEY SECTION 21 -- STA 1104+30 to STA 1157+15, DESIGN SECTION F								
1117+30	0.3	0.2	0.2	0.3	0.1	0.1	0.2	0.2
1130+30	0.3	0.1	0.2	0.3	0.1	0.1	0.2	0.2
1143+30	0.2	0.1	0.1	0.3	0.2	0.1	0.2	0.2
1157+15	0.2	0.1	0.2	0.3	0.1	0.1	0.4	0.3
Average	0.2	0.1	0.2	0.3	0.1	0.1	0.2	0.2
Std. Dev.	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0
SURVEY SECTION 22 -- STA 1157+15 to STA 1210+05, DESIGN SECTION G								
1170+15	0.1	0.1	0.2	0.3	0.1	0.1	0.3	0.2
1183+15	0.3	0.3	0.1	0.2	0.1	0.1	0.2	0.4
1196+15	0.1	0.0	0.1	0.1	0.2	0.1	0.1	0.1
1210+05	0.1	0.2	0.2	0.1	0.1	0.1	0.3	0.1
Average	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2
Std. Dev.	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1
SURVEY SECTION 23 -- STA 1210+05 to STA 1262+70, DESIGN SECTION G								
1223+05	0.3	0.1	0.2	0.2	0.2	0.1	0.2	0.1
1235+05	0.3	0.1	0.1	0.3	0.1	0.1	0.3	0.2
1249+05	0.1	0.1	0.2	0.3	0.2	0.1	0.1	0.2
1262+70	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2
Average	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.2
Std. Dev.	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SURVEY SECTION 24 -- STA 1262+70 to STA 1315+45, DESIGN SECTION G								
1279+70	0.3	0.2	0.1	0.3	0.2	0.2	0.1	0.1
1288+70								
1301+70	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.1
1315+45	0.1	0.1	0.2	0.3	0.1	0.1	0.1	0.1
Average	0.2	0.1	0.1	0.3	0.1	0.1	0.1	0.1
Std. Dev.	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0

NOTES:

Section No. 20 contains a bridge approximately 410 feet in length.

Section No. 22 contains a bridge approximately 235 feet in length.

Section No. 23 contains two bridges. The first bridge is approximately 235 feet in length and the second bridge is approximately 605 feet in length.

No measurements were taken at STA 1288+70 during 1986 due to failure of a culvert in this section.

TABLE A1 (continued). 1986 RUTTING DATA -- KY 80, FLOYD COUNTY

STATION	EASTBOUND				WESTBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 25 -- STA 1315+45 to STA 1368+05, DESIGN SECTION G								
1328+45	0.1	0.1	0.3	0.3	0.2	0.0	0.1	0.2
1341+45	0.1	0.1	0.2	0.4	0.1	0.0	0.1	0.2
1354+45	0.1	0.1	0.2	0.4	0.1	0.0	0.1	0.1
1368+05	0.3	0.2	0.3	0.3	0.2	0.2	0.1	0.2
Average	0.2	0.1	0.2	0.3	0.1	0.0	0.1	0.2
Std. Dev.	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0
SURVEY SECTION 26 -- STA 1368+05 to STA 1420+50, DESIGN SECTION G								
1381+05	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1
1394+05	0.2	0.1	0.2	0.3	0.2	0.1	0.1	0.1
1407+05	0.3	0.1	0.2	0.2	0.1	0.1	0.2	0.2
1420+50	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1
Average	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1
Std. Dev.	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
SURVEY SECTION 27 -- STA 1420+50 to STA 1473+15, DESIGN SECTION G								
1433+50	0.2	0.3	0.1	0.2	0.1	0.0	0.1	0.3
1446+50	0.1	0.0	0.2	0.2	0.1	0.1	0.1	0.3
1459+50	0.2	0.0	0.2	0.2	0.1	0.1	0.1	0.2
1473+15	0.2	0.1	0.2	0.3	0.2	0.1	0.2	0.2
Average	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.2
Std. Dev.	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
SURVEY SECTION 28 -- STA 1473+15 to STA 1525+75, DESIGN SECTION G								
1486+15	0.1	0.0	0.2	0.3	0.1	0.1	0.1	0.2
1499+15	0.2	0.3	0.1	0.3	0.1	0.1	0.1	0.1
1512+15	0.4	0.1	0.1	0.2	0.2	0.1	0.1	0.2
1525+75	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1
Average	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.2
Std. Dev.	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
SURVEY SECTION 29 -- STA 1525+75 to STA 1542+90, DESIGN SECTION G								
1534+75	0.3	0.3	0.1	0.1	0.2	0.1	0.2	0.1
Average	0.3	0.3	0.1	0.1	0.2	0.1	0.2	0.1
Std. Dev.								

TABLE A1 (continued). 1987 RUTTING DATA -- KY 80, KNOTT COUNTY

STATION	EASTBOUND				WESTBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 0 -- STA 0+00 to STA 46+25, DESIGN SECTION A								
10+00	0.1	0.1	0.3	0.3	0.2	0.1	0.2	0.2
20+00	0.3	0.1	0.1	0.4	0.3	0.1	0.3	0.3
32+00	0.1	0.1	0.2	0.4	0.1	0.1	0.1	0.3
46+25	0.2	0.2	0.3	0.3	0.2	0.1	0.1	0.1
Average	0.2	0.1	0.2	0.3	0.2	0.1	0.2	0.2
Std. Dev.	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.1
SURVEY SECTION 1 -- STA 46+25 to STA 99+05, DESIGN SECTION A								
59+25	0.1	0.3	0.4	0.4	0.2	0.1	0.1	0.2
72+25	0.1	0.2	0.2	0.4	0.2	0.5	0.2	0.2
85+25	0.1	0.1	0.3	0.4	0.2	0.1	0.3	0.2
99+05	0.1	0.2	0.2	0.4	0.1	0.0	0.1	0.1
Average	0.1	0.2	0.3	0.4	0.2	0.2	0.2	0.2
Std. Dev.	0.0	0.0	0.1	0.0	0.1	0.2	0.1	0.1
SURVEY SECTION 2 -- STA 99+05 to STA 152+10, DESIGN SECTION A								
112+05	0.1	0.1	0.3	0.3	0.1	0.1	0.1	0.1
125+05	0.1	0.1	0.3	0.4	0.1	0.1	0.2	0.2
138+05	0.0	0.1	0.2	0.3	0.2	0.1	0.2	0.2
152+10	0.1	0.1	0.1	0.3	0.2	0.1	0.1	0.3
Average	0.1	0.1	0.2	0.3	0.1	0.1	0.1	0.2
Std. Dev.	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0
SURVEY SECTION 3 -- STA 152+10 to STA 205+85, DESIGN SECTIONS B & C BEGIN AT STA 166+00								
165+10	0.1	0.1	0.3	0.1	0.3	0.4	0.1	0.2
178+10	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1
191+10	0.0	0.4	0.2	0.2	0.2	0.1	0.1	0.0
205+85	0.1	0.1	0.3	0.4	0.1	0.0	0.1	0.2
Average	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1
Std. Dev.	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1
SURVEY SECTION 4 -- STA 205+85 to STA 258+25, DESIGN SECTIONS B & C								
218+85	0.3	0.1	0.3	0.3	0.1	0.1	0.2	0.0
231+85	0.2	0.1	0.2	0.3	0.2	0.1	0.2	0.0
244+85	0.2	0.1	0.1	0.3	0.1	0.0	0.3	0.0
258+25	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Average	0.2	0.1	0.2	0.3	0.1	0.0	0.2	0.0
Std. Dev.	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1

TABLE A1 (continued). 1987 RUTTING DATA -- KY 80, KNOTT COUNTY

STATION	EASTBOUND				WESTBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 5 -- STA 258+25 to STA 311+05, DESIGN SECTIONS B & C								
271+25	0.3	0.1	0.1	0.3	0.1	0.1	0.3	0.1
284+25	0.1	0.1	0.3	0.2	0.2	0.1	0.1	0.1
297+25	0.1	0.2	0.3	0.2	0.1	0.1	0.1	0.1
311+05	0.3	0.1	0.1	0.1	0.2	0.1	0.1	0.3
Average	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1
Std. Dev.	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1
SURVEY SECTION 6 -- STA 311+05 to STA 364+20, DESIGN SECTIONS B & C								
324+05	0.3	0.3	0.2	0.0	0.1	0.1	0.1	0.1
337+05	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.3
358+05	0.2	0.1	0.1	0.3	0.1	0.1	0.1	0.2
364+20	0.2	0.1	0.2	0.4	0.1	0.0	0.1	0.3
Average	0.2	0.1	0.2	0.2	0.1	0.0	0.1	0.2
Std. Dev.	0.1	0.1	0.0	0.2	0.0	0.0	0.1	0.1
SURVEY SECTION 7 -- STA 364+20 to STA 417+10, DESIGN SECTIONS B & C								
377+20	0.1	0.1	0.1	0.4	0.1	0.1	0.1	0.3
390+20	0.1	0.1	0.1	0.4	0.1	0.1	0.2	0.3
403+20	0.1	0.1	0.3	0.5	0.1	0.2	0.2	0.3
417+10	0.2	0.2	0.4	0.6	0.1	0.1	0.1	0.1
Average	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.3
Std. Dev.	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1
SURVEY SECTION 8 -- STA 417+10 to STA 470+05, DESIGN SECTIONS B & C								
430+10	0.2	0.2	0.3	0.4	0.1	0.1	0.1	0.2
443+10	0.1	0.1	0.1	0.3	0.1	0.2	0.1	0.3
456+10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3
470+05	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.1
Average	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.2
Std. Dev.	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.1
SURVEY SECTION 9 -- STA 470+05 to STA 523+05, DESIGN SECTIONS B & C								
483+05	0.1	0.2	0.3	0.1	0.1	0.1	0.3	0.1
496+05	0.1	0.1	0.3	0.3	0.1	0.1	0.1	0.3
509+05	0.1	0.1	0.4	0.1	0.2	0.1	0.1	0.3
523+05	0.1	0.1	0.3	0.1	0.1	0.2	0.4	0.1
Average	0.1	0.1	0.3	0.1	0.1	0.1	0.2	0.2
Std. Dev.	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1

TABLE A1 (continued). 1987 RUTTING DATA -- KY 80, KNOTT COUNTY

STATION	EASTBOUND				WESTBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 10 -- STA 523+05 to STA 576+15, DESIGN SECTIONS B & C								
536+05	0.1	0.1	0.2	0.1	0.1	0.1	0.3	0.1
549+05	0.1	0.0	0.1	0.1	0.1	0.1	0.3	0.0
562+05	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1
576+15	0.2	0.1	0.4	0.1	0.1	0.1	0.1	0.1
Average	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.0
Std. Dev.	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0
SURVEY SECTION 11 -- STA 576+15 to STA 629+20, DESIGN SECTIONS B & C								
589+15	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1
602+15	0.3	0.1	0.4	0.3	0.1	0.1	0.1	0.1
615+15	0.1	0.1	0.3	0.3	0.0	0.1	0.2	0.2
629+20	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.2
Average	0.2	0.1	0.2	0.2	0.1	0.0	0.1	0.1
Std. Dev.	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.1
SURVEY SECTION 12 -- STA 629+20 to STA 682+20, DESIGN SECTIONS B & C								
643+50	0.1	0.1	0.3	0.3	0.1	0.0	0.1	0.1
655+45	0.2	0.1	0.1	0.2	0.0	0.0	0.1	0.3
668+45	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1
682+20	0.3	0.1	0.2	0.3	0.1	0.0	0.2	0.1
Average	0.2	0.1	0.2	0.2	0.0	0.0	0.1	0.2
Std. Dev.	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.1
SURVEY SECTION 13 -- STA 682+20 to STA 735+40, DESIGN SECTIONS B & C								
695+20	0.1	0.0	0.2	0.2	0.0	0.1	0.1	0.1
707+70	0.2	0.1	0.1	0.2	0.1	0.0	0.1	0.3
720+70	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.1
735+40	0.1	0.0	0.1	0.1	0.1	0.1	0.2	0.2
Average	0.1	0.0	0.1	0.2	0.1	0.0	0.1	0.2
Std. Dev.	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
SURVEY SECTION 14 -- STA 735+40 to STA 793+00, DESIGN SECTIONS B & C								
748+40	0.1	0.0	0.1	0.2	0.2	0.1	0.2	0.1
761+40	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1
774+40	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.1
793+00	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Average	0.1	0.0	0.1	0.2	0.1	0.1	0.1	0.1
Std. Dev.	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0

TABLE A1 (continued). 1987 RUTTING DATA -- KY 80, FLOYD COUNTY

STATION	EASTBOUND				WESTBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 15 -- STA 793+00 to STA 845+70, DESIGN SECTION D								
806+00	0.1	0.1	0.2	0.3	0.1	0.1	0.2	0.2
819+00	0.1	0.1	0.4	0.4	0.1	0.1	0.1	0.1
832+00	0.2	0.2	0.6	0.3	0.1	0.0	0.1	0.2
845+70	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1
Average	0.1	0.1	0.3	0.3	0.1	0.0	0.1	0.2
Std. Dev.	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.0
SURVEY SECTION 16 -- STA 845+70 to STA 893+55, DESIGN SECTION D								
859+40	0.2	0.1	0.1	0.3	0.1	0.1	0.1	0.2
873+70	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
884+70	0.1	0.1	0.2	0.2	0.1	0.3	0.3	0.1
893+55	0.1	0.1	0.2	0.2	0.0	0.2	0.3	0.1
Average	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.1
Std. Dev.	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1
SURVEY SECTION 17 -- STA 893+55 to STA 946+15, DESIGN SECTION E BEGINS AT STA 915+00								
906+55	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.1
919+55	0.1	0.1	0.4	0.4	0.1	0.1	0.2	0.1
932+55	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.0
946+15	0.0	0.1	0.2	0.3	0.1	0.2	0.2	0.1
Average	0.1	0.1	0.2	0.3	0.1	0.2	0.2	0.0
Std. Dev.	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0
SURVEY SECTION 18 -- STA 946+15 to STA 998+70, DESIGN SECTION E								
959+15	0.1	0.1	0.4	0.3	0.1	0.1	0.1	0.1
972+15	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1
985+15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
998+70	0.1	0.1	0.4	0.2	0.1	0.1	0.1	0.1
Average	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.1
Std. Dev.	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
SURVEY SECTION 19 -- STA 998+70 to STA 1051+50, DESIGN SECTION E								
1011+70	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1
1024+70	0.2	0.1	0.2	0.3	0.1	0.1	0.1	0.1
1041+70	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.2
1051+50	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1
Average	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1
Std. Dev.	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0

NOTES: Section No. 16 contains a bridge approximately 960 feet in length.
Section No. 18 contains a bridge approximately 480 feet in length.

TABLE A1 (continued). 1987 RUTTING DATA -- KY 80, FLOYD COUNTY

STATION	EASTBOUND				WESTBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 20 -- STA 1051+50 to STA 1104+30, DESIGN SECTION F								
1064+50	0.1	0.1	0.2	0.2	0.1	0.1	0.3	0.3
1077+50	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.1
1090+50	0.1	0.1	0.3	0.3	0.1	0.1	0.1	0.1
1104+30	0.3	0.1	0.2	0.3	0.3	0.1	0.1	0.2
Average	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.2
Std. Dev.	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.1
SURVEY SECTION 21 -- STA 1104+30 to STA 1157+15, DESIGN SECTION F								
1117+30	0.3	0.1	0.2	0.3	0.0	0.1	0.1	0.2
1130+30	0.3	0.1	0.3	0.3	0.1	0.1	0.1	0.2
1143+30	0.1	0.1	0.2	0.3	0.1	0.1	0.1	0.2
1157+15	0.1	0.1	0.2	0.3	0.1	0.1	0.3	0.3
Average	0.2	0.1	0.2	0.3	0.1	0.1	0.2	0.2
Std. Dev.	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.1
SURVEY SECTION 22 -- STA 1157+15 to STA 1210+05, DESIGN SECTION G								
1170+15	0.1	0.1	0.3	0.3	0.1	0.1	0.1	0.2
1183+15	0.1	0.0	0.1	0.2	0.1	0.0	0.2	0.3
1196+15	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
1210+05	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1
Average	0.1	0.1	0.1	0.2	0.1	0.0	0.2	0.2
Std. Dev.	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1
SURVEY SECTION 23 -- STA 1210+05 to STA 1262+70, DESIGN SECTION G								
1223+05	0.2	0.1	0.2	0.2	0.3	0.1	0.2	0.2
1235+05	0.3	0.1	0.1	0.3	0.1	0.1	0.2	0.2
1249+05	0.1	0.1	0.2	0.3	0.3	0.1	0.1	0.2
1262+70	0.2	0.1	0.1	0.2	0.3	0.1	0.1	0.2
Average	0.2	0.1	0.2	0.2	0.3	0.1	0.2	0.2
Std. Dev.	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0
SURVEY SECTION 24 -- STA 1262+70 to STA 1315+45, DESIGN SECTION G								
1279+70								
1288+70								
1301+70								
1315+45	0.3	0.1	0.3	0.3	0.1	0.1	0.2	0.2
Average	0.3	0.1	0.3	0.3	0.1	0.1	0.2	0.2
Std. Dev.								

NOTES: Section No. 20 contains a bridge approximately 410 feet in length.
Section No. 22 contains a bridge approximately 235 feet in length.
Section No. 23 contains two bridges. The first bridge is approximately 235 feet in length and the second bridge is approximately 605 feet in length.

No measurements taken at first three stations of Section No. 24 due to culvert repair.

TABLE A1 (continued). 1987 RUTTING DATA -- KY 80, FLOYD COUNTY

STATION	EASTBOUND				WESTBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 25 -- STA 1315+45 to STA 1368+05, DESIGN SECTION G								
1328+45	0.1	0.1	0.3	0.3	0.2	0.0	0.1	0.2
1341+45	0.1	0.1	0.3	0.3	0.0	0.0	0.2	0.2
1354+45	0.1	0.1	0.3	0.3	0.1	0.1	0.1	0.1
1368+05	0.4	0.1	0.3	0.3	0.2	0.1	0.2	0.2
Average	0.2	0.1	0.3	0.3	0.1	0.0	0.1	0.2
Std. Dev.	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.0
SURVEY SECTION 26 -- STA 1368+05 to STA 1420+50, DESIGN SECTION G								
1381+05	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1
1394+05	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.1
1407+05	0.3	0.1	0.1	0.2	0.1	0.0	0.1	0.2
1420+50	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2
Average	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.2
Std. Dev.	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SURVEY SECTION 27 -- STA 1420+50 to STA 1473+15, DESIGN SECTION G								
1433+50	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.2
1446+50	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.2
1459+50	0.2	0.0	0.2	0.2	0.1	0.1	0.1	0.2
1473+15	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2
Average	0.1	0.0	0.2	0.2	0.1	0.0	0.1	0.2
Std. Dev.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SURVEY SECTION 28 -- STA 1473+15 to STA 1525+75, DESIGN SECTION G								
1486+15	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.1
1499+15	0.1	0.1	0.1	0.3	0.2	0.1	0.1	0.1
1512+15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3
1525+75	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Average	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2
Std. Dev.	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
SURVEY SECTION 29 -- STA 1525+75 to STA 1542+90, DESIGN SECTION G								
1534+75	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Average	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Std. Dev.								

TABLE A2. PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 0 From STA 0+00 to STA 46+25 Design Section A		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	4.5	5.0	3.5	3.5	4.0	3.5	5.0	5.0	4.0	5.0	4.0	4.0
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.2	1.5	1.5	1.2	1.2	1.8	1.5	1.8	1.5	1.2	1.2	1.5
Edge Failures:	1.0	1.0	1.0	0.9	1.2	0.9	0.0	0.9	1.5	0.0	0.9	1.2
Out of Section:	3.0	3.0	2.5	2.5	2.5	2.5	3.0	3.0	3.0	3.0	2.5	3.0
Appearance:	2.0	3.0	2.0	2.0	3.0	3.0	3.0	4.0	3.0	3.0	2.0	3.0
Rideability:	3.9	0.0	n/a	3.9	0.0	n/a	3.9	0.0	n/a	3.9	0.0	n/a
Rutting:	3.8	3.5	4.0	1.7	2.4	3.0	2.4	2.4	3.0	2.4	2.4	3.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,280											
Travel Speed:	MPH: 55											
Totals:	26.5	28.0	25.5	26.7	25.3	25.7	29.8	28.1	27.0	29.5	24.0	26.7

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 1 From STA 46+25 to STA 99+05 Design Section A		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	3.5	4.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.5
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.5	1.8	1.2	1.5	2.2	1.5	1.2	1.5	1.5	1.2	1.2	1.2
Edge Failures:	1.0	1.0	1.3	1.0	1.0	1.3	0.0	1.0	1.2	0.9	1.0	1.2
Out of Section:	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.0	2.0	3.5
Appearance:	2.0	3.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0
Rideability:	3.9	0.0	n/a	3.9	0.0	n/a	3.9	0.0	n/a	3.9	0.0	n/a
Rutting:	4.4	4.8	6.0	3.4	2.9	3.0	3.4	3.6	3.0	4.0	1.9	3.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,280											
Travel Speed:	MPH: 55											
Totals:	30.3	29.1	28.0	29.3	25.6	26.3	29.5	27.1	26.2	30.5	22.6	27.4

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 2 From STA 99+05 to STA 152+10 Design Section A		DEFICIENCY POINTS											
		EASTBOUND					WESTBOUND						
		Shoulder Lane			Median Lane		Shoulder Lane			Median Lane			
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		5.0	5.0	4.5	4.0	5.0	4.5	3.5	3.5	3.0	3.5	3.0	5.0
Base Failures:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:		1.2	1.5	1.5	1.5	1.8	1.2	1.5	1.8	1.2	1.5	1.5	1.5
Edge Failures:		1.0	1.0	1.3	0.9	1.0	0.9	0.0	0.9	1.0	0.0	1.0	1.3
Out of Section:		2.0	3.0	3.0	2.5	3.0	2.5	3.0	3.0	3.5	3.0	2.5	3.0
Appearance:		3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0
Rideability:		3.9	3.9	n/a	3.9	3.9	n/a	3.9	1.0	n/a	3.9	1.0	n/a
Rutting:		2.8	3.4	4.0	1.9	2.0	2.0	2.8	2.6	3.0	2.6	2.4	2.0
Skid Resistance:		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume: AADT: 3,470													
Travel Speed: MPH: 55		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Totals:		29.9	31.8	28.3	28.7	30.7	25.1	27.7	26.8	25.7	28.5	25.4	26.8

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 3 From STA 152+10 to STA 205+85 Design Sections B & C begin at STA 166+00		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	5.0	5.0	4.0	5.0	4.5	3.5	3.5	3.5	3.5	3.5	7.0	4.5
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	2.2	2.2	1.5	2.2	1.5	1.2	1.8	1.8	1.5	1.8	1.8	1.8
Edge Failures:	1.0	1.3	1.3	0.9	1.3	1.3	0.0	1.0	1.5	0.0	1.3	1.0
Out of Section:	3.0	3.0	3.0	3.0	2.5	2.5	3.5	3.5	3.5	3.0	2.5	3.0
Appearance:	4.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0
Rideability:	3.9	7.7	n/a	3.9	7.7	n/a	3.9	2.5	n/a	3.9	2.5	n/a
Rutting:	2.3	3.3	4.0	2.9	2.9	2.0	1.5	2.1	2.0	2.9	2.3	3.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,660											
Travel Speed:	MPH: 55		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Totals:	32.4	37.5	27.8	32.9	34.4	24.5	28.2	28.4	26.0	29.1	32.4	27.3

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 4 From STA 205+85 to STA 258+25 Design Sections B & C		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	4.5	5.0	3.5	3.5	4.5	3.5	2.5	3.5	3.5	3.5	4.5	6.0
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.8	1.8	1.5	1.8	1.2	1.2	1.5	1.8	1.5	1.5	1.2	1.8
Edge Failures:	0.0	0.9	1.5	0.0	1.3	1.0	0.0	0.9	1.5	0.9	1.0	1.2
Out of Section:	4.5	4.5	3.0	4.0	2.5	3.0	3.5	3.5	3.0	3.5	2.5	2.5
Appearance:	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	3.0	3.0	4.0
Rideability:	0.0	5.4	n/a	0.0	5.4	n/a	0.0	2.5	n/a	0.0	2.5	n/a
Rutting:	2.3	3.0	3.0	3.4	3.0	3.0	1.3	1.6	2.0	2.1	2.1	2.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,660											
Travel Speed:	MPH: 55											
Totals:	27.1	34.6	26.5	26.7	31.9	25.7	21.8	26.8	24.5	25.5	27.8	28.5

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Knott					WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete			
Survey Section No. 5 From STA 258+25 to STA 311+05 Design Sections B & C		DEFICIENCY POINTS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
DESCRIPTION:		3.5	4.0	3.5	3.0	4.5	3.5	4.5	5.0	6.0	4.5	4.5	5.0
Cracking:		3.5	4.0	3.5	3.0	4.5	3.5	4.5	5.0	6.0	4.5	4.5	5.0
Base Failures:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:		1.8	1.8	1.5	1.8	1.5	1.8	1.8	1.8	1.5	1.5	1.5	1.5
Edge Failures:		0.9	1.0	1.3	0.0	1.2	0.9	0.0	0.9	1.3	0.0	1.3	1.5
Out of Section:		3.5	3.5	3.0	3.0	2.5	2.5	3.0	3.0	3.0	3.0	2.5	3.0
Appearance:		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.0	3.0	3.0	4.0
Rideability:		1.0	5.4	n/a	1.0	5.4	n/a	1.0	2.5	n/a	1.0	2.5	n/a
Rutting:		0.9	2.4	3.0	1.8	2.5	3.0	1.5	2.0	2.0	1.9	2.0	2.0
Skid Resistance:		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume: AADT: 3,660													
Travel Speed: MPH: 55		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Totals:		25.6	32.1	26.3	24.6	31.6	25.7	25.8	29.2	29.8	25.9	28.3	28.0

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 6 From STA 311+05 to STA 364+20 Design Sections B & C		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	5.0	5.0	3.5	4.5	4.5	3.5	7.0	7.0	7.0	5.0	4.5	4.5
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.8	1.8	1.2	1.5	1.5	1.5	1.5	1.8	2.2	1.5	1.8	1.2
Edge Failures:	1.3	1.3	1.2	2.0	1.5	1.4	0.0	0.9	1.5	0.9	1.0	1.3
Out of Section:	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0	2.5	3.0
Appearance:	3.0	3.0	3.0	4.0	3.0	3.0	4.0	5.0	5.0	3.0	3.0	3.0
Rideability:	5.4	5.4	n/a	5.4	5.4	n/a	1.0	1.0	n/a	1.0	1.0	n/a
Rutting:	3.2	3.6	4.0	2.9	2.8	3.0	1.7	2.0	3.0	2.8	2.4	2.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,660											
Travel Speed:	MPH: 55		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Totals:	33.7	34.1	26.9	34.3	32.7	26.4	29.2	31.7	33.2	28.2	27.2	26.0

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 7 From STA 364+20 to STA 417+10 Design Sections B & C		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	4.5	4.5	4.5	4.0	3.5	4.5	7.0	7.0	7.0	5.0	6.0	4.5
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.2	1.5	1.5	1.5	1.2	1.5	1.8	1.8	1.8	1.8	2.2	2.2
Edge Failures:	1.0	1.0	1.3	1.3	1.3	0.9	0.0	1.0	1.5	0.9	1.3	1.0
Out of Section:	3.0	3.0	3.0	2.5	2.5	3.0	2.5	3.0	2.5	2.5	3.0	3.5
Appearance:	3.0	3.0	3.0	3.0	2.0	3.0	5.0	5.0	5.0	4.0	4.0	4.0
Rideability:	2.5	3.9	n/a	2.5	3.9	n/a	0.0	1.0	n/a	0.0	1.0	n/a
Rutting:	4.8	5.9	6.0	1.9	1.8	2.0	1.7	2.1	3.0	2.8	2.3	2.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,660											
Travel Speed:	MPH: 55											
Totals:	31.0	33.8	30.3	27.7	27.2	25.9	29.0	31.9	31.8	28.0	30.8	28.2

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 8 From STA 417+10 to STA 470+05 Design Sections B & C		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	4.5	4.5	4.5	4.0	5.0	5.0	6.0	6.0	9.0	5.5	5.0	4.5
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.5	1.8	1.5	1.8	2.2	1.8	2.2	2.2	2.6	2.2	1.8	1.5
Edge Failures:	1.0	1.0	1.2	1.3	1.0	1.2	0.9	1.0	1.3	0.9	1.5	0.9
Out of Section:	3.0	3.0	2.5	3.0	3.0	2.5	3.0	3.0	3.0	2.5	3.0	3.0
Appearance:	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	5.0	3.0	3.0	4.0
Rideability:	2.5	3.9	n/a	2.5	3.9	n/a	0.0	1.0	n/a	0.0	1.0	n/a
Rutting:	2.1	2.9	3.0	2.4	2.1	3.0	1.7	2.6	3.0	2.1	2.1	2.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,660											
Travel Speed:	MPH: 55		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Totals:	28.6	31.1	26.7	29.0	31.2	28.5	28.8	30.8	34.9	27.2	28.4	26.9

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 9 From STA 470+05 to STA 523+05 Design Sections B & C		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	3.5	4.5	3.5	6.0	7.0	4.5	2.0	3.0	6.0	4.5	3.5	5.5
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.2	1.5	1.5	1.5	2.5	2.2	2.2	2.2	1.8	2.6	2.6	2.6
Edge Failures:	0.0	0.9	1.5	1.5	1.0	1.2	0.0	0.9	1.3	0.9	1.3	1.0
Out of Section:	4.0	4.0	3.0	3.0	2.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Appearance:	2.0	3.0	2.0	3.0	4.0	4.0	2.0	2.0	4.0	4.0	3.0	5.0
Rideability:	2.5	3.9	n/a	2.5	3.9	n/a	0.0	1.0	n/a	0.0	1.0	n/a
Rutting:	2.7	3.5	4.0	1.5	1.6	2.0	1.3	2.6	3.0	2.5	2.0	2.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,660											
Travel Speed:	MPH: 55											
Totals:	26.9	32.3	26.5	30.0	33.5	27.9	21.5	25.7	30.1	28.5	27.4	30.1

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 10 From STA 523+05 to STA 576+15 Design Sections B & C		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	3.0	3.5	8.0	7.0	5.0	6.0	4.5	3.5	7.0	4.5	4.5	4.5
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	2.2	2.2	2.9	2.2	1.9	2.2	2.2	2.6	2.2	2.6	2.2	2.2
Edge Failures:	0.0	0.9	1.5	1.7	1.0	1.3	1.2	1.3	1.5	0.9	1.0	1.0
Out of Section:	3.5	3.5	3.0	3.5	2.5	2.5	3.0	3.0	2.5	3.0	3.0	3.5
Appearance:	2.0	3.0	5.0	5.0	3.0	4.0	4.0	4.0	5.0	4.0	2.0	4.0
Rideability:	2.5	3.9	n/a	2.5	3.9	n/a	0.0	1.0	n/a	0.0	1.0	n/a
Rutting:	2.4	3.3	3.0	1.9	1.8	2.0	0.9	1.9	2.0	2.5	2.8	2.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,660											
Travel Speed:	MPH: 55		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Totals:	26.6	31.3	34.4	34.8	30.1	29.0	26.8	28.3	31.2	28.5	27.5	28.2

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 11 From STA 576+15 to STA 629+20 Design Sections B & C		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	3.5	3.5	4.5	4.5	3.5	4.5	6.0	6.0	9.0	6.0	3.5	3.0
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.5	1.8	2.2	1.8	1.2	1.5	2.6	2.6	2.2	3.2	1.9	1.2
Edge Failures:	1.0	1.0	1.3	1.3	1.0	1.0	1.3	1.3	2.3	0.0	0.9	1.2
Out of Section:	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.5
Appearance:	3.0	3.0	4.0	3.0	2.0	3.0	4.0	4.0	5.0	5.0	2.0	2.0
Rideability:	2.5	3.9	n/a	2.5	3.9	n/a	0.0	1.0	n/a	0.0	1.0	n/a
Rutting:	2.1	3.0	4.0	1.7	2.1	2.0	1.5	1.6	2.0	1.1	1.1	1.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,660											
Travel Speed:	MPH: 55		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Totals:	28.1	30.7	30.5	29.3	27.7	26.0	29.4	30.5	34.5	29.3	24.4	21.9

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 12 From STA 629+20 to STA 682+20 Design Sections B & C		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	4.5	4.5	9.0	4.5	3.5	4.5	5.5	6.0	8.0	4.5	3.0	3.5
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.2	1.5	2.9	1.5	1.2	1.5	2.9	2.9	2.6	2.9	1.8	1.8
Edge Failures:	0.9	1.0	1.7	1.0	1.2	1.3	0.0	1.0	1.5	0.9	1.0	1.3
Out of Section:	3.0	3.0	3.5	2.5	2.0	3.0	3.0	3.0	3.0	3.0	2.5	3.0
Appearance:	3.0	3.0	5.0	3.0	2.0	3.0	5.0	5.0	5.0	5.0	2.0	3.0
Rideability:	2.5	3.9	n/a	2.5	3.9	n/a	0.0	1.0	n/a	0.0	1.0	n/a
Rutting:	2.6	3.3	3.0	3.0	2.9	3.0	1.7	2.5	3.0	0.6	1.1	1.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,660											
Travel Speed:	MPH: 55		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Totals:	28.7	31.2	36.1	29.0	27.7	27.3	29.1	32.4	34.1	27.9	23.4	24.6

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 13 From STA 682+20 to STA 735+40 Design Sections B & C		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	4.5	5.0	6.0	5.0	3.0	4.5	8.0	8.0	8.0	4.5	3.5	3.0
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.5	1.8	2.2	1.8	1.2	1.5	1.8	2.2	2.2	1.5	1.5	1.2
Edge Failures:	1.3	1.3	1.3	1.0	1.3	1.2	1.9	1.9	3.0	0.0	1.0	0.9
Out of Section:	3.5	3.5	3.5	3.0	2.5	3.0	2.5	3.0	3.0	3.0	3.0	2.5
Appearance:	3.0	3.0	4.0	3.0	2.0	3.0	5.0	5.0	5.0	3.0	3.0	2.0
Rideability:	2.5	3.9	n/a	2.5	3.9	n/a	0.0	1.0	n/a	0.0	1.0	n/a
Rutting:	2.1	2.6	3.0	1.5	1.6	2.0	2.1	2.1	3.0	0.6	1.1	1.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,660											
Travel Speed:	MPH: 55											
Totals:	29.4	32.1	31.0	28.8	26.5	26.2	32.3	34.2	35.2	23.6	25.1	21.6

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 14 From STA 735+40 to STA 793+00 Design Sections B & C		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	3.5	3.5	5.0	3.5	3.0	4.0	4.5	4.5	4.5	3.5	3.5	3.0
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.8	1.8	1.8	1.5	1.2	1.2	1.8	1.8	1.5	1.2	1.2	1.5
Edge Failures:	0.9	1.0	1.7	1.0	1.9	0.9	0.0	0.9	1.3	0.0	0.9	1.0
Out of Section:	3.5	3.5	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	2.5
Appearance:	3.0	3.0	4.0	3.0	2.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0
Rideability:	2.5	3.9	n/a	2.5	3.9	n/a	0.0	1.0	n/a	0.0	1.0	n/a
Rutting:	2.1	2.8	3.0	1.3	1.1	2.0	1.5	1.9	3.0	0.9	1.6	2.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,660											
Travel Speed:	MPH: 55											
Totals:	28.3	30.5	29.5	26.8	26.1	25.1	24.8	27.1	27.3	21.6	24.2	23.0

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 15 From STA 793+00 to STA 845+70 Design Section D		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	7.0	7.0	6.0	6.0	3.5	4.5	4.5	4.5	6.0	3.5	3.5	4.0
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.5	1.8	1.5	1.2	1.2	1.5	1.2	1.2	1.8	1.5	1.2	1.5
Edge Failures:	0.0	0.9	1.3	0.9	1.5	1.3	0.0	0.9	1.5	0.0	1.0	1.2
Out of Section:	3.0	3.0	3.0	3.0	2.5	2.5	3.0	3.0	2.5	3.0	2.5	2.5
Appearance:	4.0	4.0	4.0	4.0	2.0	3.0	3.0	4.0	4.0	3.0	2.0	3.0
Rideability:	2.5	1.0	n/a	2.5	1.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:	4.4	4.4	5.0	1.7	2.1	3.0	1.5	2.0	2.0	0.6	0.9	2.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,683											
Travel Speed:	MPH: 55											
Totals:	33.4	33.1	31.8	30.3	24.8	26.8	24.2	26.6	28.8	22.6	22.1	25.2

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 16 From STA 845+70 to STA 893+55 Design Section D		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	6.0	6.0	6.0	5.5	4.0	3.5	5.5	6.0	6.0	4.5	3.0	3.5
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.2	1.5	1.8	1.2	1.2	1.2	1.2	1.5	2.5	1.2	1.2	1.5
Edge Failures:	0.0	1.0	1.3	0.9	1.2	1.2	0.0	0.0	1.3	0.0	1.0	1.5
Out of Section:	3.0	3.0	3.0	3.0	3.0	3.0	2.5	3.0	3.0	2.5	2.0	3.0
Appearance:	3.0	3.0	4.0	3.0	2.0	3.0	3.0	3.0	4.0	3.0	2.0	3.0
Rideability:	2.5	1.0	n/a	2.5	1.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:	2.4	3.0	3.0	1.7	1.8	2.0	1.1	1.5	2.0	0.8	1.4	2.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 4,790											
Travel Speed:	MPH: 55											
Totals:	31.1	31.5	32.1	30.8	27.2	26.9	26.3	28.0	31.8	25.0	23.6	27.5

NOTES: n/a indicates information for the description was unavailable.
Section No. 16 contains a bridge approximately 960 feet in length.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 17 From STA 893+55 to STA 946+15 Design Section E begins at STA 915+00		DEFICIENCY POINTS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987	
Cracking:	5.5	5.5	5.0	5.0	3.5	4.5	2.0	3.0	7.0	2.0	2.0	2.0	
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Raveling:	1.2	1.5	1.5	1.5	1.2	1.2	1.2	1.5	3.2	1.2	1.5	1.2	
Edge Failures:	0.0	0.9	1.3	0.0	1.0	1.3	0.0	0.0	1.5	0.0	0.9	0.9	
Out of Section:	2.5	2.5	3.0	3.0	2.0	3.0	2.0	2.5	3.5	2.5	2.0	2.5	
Appearance:	3.0	3.0	4.0	3.0	2.0	3.0	1.0	1.0	5.0	1.0	2.0	1.0	
Rideability:	0.0	1.0	n/a	0.0	1.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a	
Rutting:	3.6	4.4	4.0	1.1	1.5	2.0	0.8	1.8	2.0	2.8	2.3	2.0	
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Traffic Volume:	AADT: 5,898												
Travel Speed:	MPH: 55												
Totals:	29.8	32.8	32.8	27.6	26.2	29.0	21.0	23.8	36.2	23.5	24.7	23.6	

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 18 From STA 946+15 to STA 998+70 Design Section E		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	3.5	3.5	4.5	4.5	4.5	7.0	6.0	6.0	9.0	4.5	5.0	3.5
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.2	1.5	1.8	1.2	1.2	1.2	1.5	1.8	2.5	1.2	1.2	1.5
Edge Failures:	0.0	0.0	1.0	0.0	1.3	1.2	0.0	0.0	1.7	0.0	1.2	0.9
Out of Section:	3.0	3.0	3.0	3.0	2.5	3.0	3.0	3.0	3.0	2.5	2.0	3.0
Appearance:	2.0	3.0	3.0	2.0	3.0	4.0	4.0	4.0	5.0	3.0	3.0	2.0
Rideability:	0.0	1.0	n/a	0.0	1.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:	2.6	3.8	4.0	1.3	1.6	2.0	1.5	2.0	2.0	0.8	1.3	2.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 5,898											
Travel Speed:	MPH: 55		14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
Totals:	26.3	29.8	31.3	26.0	29.1	32.4	30.0	30.8	37.2	26.0	27.7	26.9

NOTES: n/a indicates information for the description was unavailable.
Section No. 18 contains a bridge approximately 480 feet in length.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 19 From STA 998+70 to STA 1051+50 Design Section E		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	6.0	6.0	4.5	4.5	4.5	3.5	8.0	8.0	8.0	6.0	3.5	3.5
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.2	1.8	2.5	1.2	1.2	1.2	1.5	1.8	2.2	1.5	1.2	1.2
Edge Failures:	0.0	0.9	1.3	0.0	1.0	0.9	0.0	0.0	1.5	0.9	1.0	0.9
Out of Section:	3.0	3.0	2.5	3.0	2.5	3.0	3.0	3.0	3.0	3.0	2.0	2.5
Appearance:	3.0	3.0	3.0	3.0	2.0	3.0	5.0	5.0	5.0	4.0	2.0	3.0
Rideability:	11.2	1.0	n/a	11.2	1.0	n/a	1.0	0.0	n/a	1.0	0.0	n/a
Rutting:	2.1	2.4	3.0	0.8	1.5	2.0	1.3	2.0	3.0	0.8	1.6	2.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 5,898											
Travel Speed:	MPH: 55											
Totals:	40.5	32.1	30.8	37.7	27.7	27.6	33.8	33.8	36.7	31.2	25.3	27.1

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 20 From STA 1051+50 to STA 1104+30 Design Section F		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	4.5	4.5	4.5	4.5	3.5	3.5	4.5	4.5	7.0	3.5	4.0	3.5
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.5	1.5	1.5	1.5	1.2	1.2	1.5	1.5	2.2	1.8	1.5	1.2
Edge Failures:	0.0	0.9	1.3	0.0	1.3	1.0	0.0	0.9	1.5	0.0	1.5	1.3
Out of Section:	3.0	3.0	3.0	3.0	2.5	3.0	3.0	3.0	3.0	3.0	2.0	2.5
Appearance:	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	4.0	3.0	3.0	3.0
Rideability:	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:	2.8	3.3	4.0	1.9	2.0	2.0	1.9	2.9	3.0	0.9	1.6	2.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 5,898											
Travel Speed:	MPH: 55											
Totals:	28.8	30.2	31.3	27.9	26.5	27.7	27.9	29.8	34.7	26.2	27.6	27.5

NOTES: n/a indicates information for the description was unavailable.
Section No. 20 contains a bridge approximately 410 feet in length.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 21 From STA 1104+30 to STA 1157+15 Design Section F		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	4.5	5.5	3.5	3.5	3.5	3.5	4.5	4.5	3.5	3.5	3.0	3.5
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.2	1.5	1.5	1.2	1.2	1.5	1.2	1.5	1.8	1.5	1.2	1.2
Edge Failures:	0.0	0.9	1.3	0.0	1.0	0.9	0.0	0.9	1.0	0.0	0.9	1.2
Out of Section:	3.0	3.0	3.0	3.5	2.0	3.0	3.0	3.0	3.0	3.0	2.5	2.5
Appearance:	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0
Rideability:	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:	3.0	3.6	4.0	1.9	2.3	2.0	2.1	3.4	4.0	0.9	1.8	2.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 8,995											
Travel Speed:	MPH: 55											
Totals:	31.7	34.5	33.3	30.1	29.0	30.9	30.8	33.3	33.3	28.9	28.4	30.4

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 22 From STA 1157+15 to STA 1210+05 Design Section G		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	4.5	4.5	4.5	3.5	3.5	3.5	4.5	5.5	5.0	3.5	3.0	3.0
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.2	1.5	1.5	1.2	1.2	1.5	2.2	2.2	1.8	1.5	1.2	1.2
Edge Failures:	0.0	0.0	1.2	0.0	1.3	1.3	1.0	1.0	1.3	0.0	1.0	1.0
Out of Section:	3.0	3.0	3.0	3.0	2.5	3.0	2.5	3.0	3.0	2.0	2.0	3.0
Appearance:	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
Rideability:	0.0	0.0	n/a	0.0	0.0	n/a	1.0	0.0	n/a	1.0	0.0	n/a
Rutting:	1.9	2.4	3.0	1.5	2.3	2.0	2.4	3.1	3.0	1.3	1.5	2.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 8,995											
Travel Speed:	MPH: 55											
Totals:	30.6	31.4	33.2	29.2	29.8	31.3	33.6	34.8	34.1	29.3	27.7	29.2

NOTES: n/a indicates information for the description was unavailable.
Section No. 22 contains a bridge approximately 235 feet in length.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 23 From STA 1210+05 to STA 1262+70 Design Section G		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	4.5	4.5	3.5	3.5	3.5	3.5	3.5	3.0	3.5	3.5	3.0	3.5
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.2	1.5	1.8	1.2	1.5	1.2	1.5	1.5	1.8	1.2	1.2	1.5
Edge Failures:	0.0	1.0	1.0	0.9	1.0	1.3	0.0	1.0	1.0	0.9	1.0	0.9
Out of Section:	3.0	3.0	3.0	3.0	2.0	3.0	2.5	2.0	2.5	2.5	2.0	3.0
Appearance:	3.0	3.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0
Rideability:	1.0	0.0	n/a	1.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:	2.6	2.9	3.0	2.4	2.4	3.0	2.3	2.8	3.0	1.9	2.4	4.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 10,130											
Travel Speed:	MPH: 55											
Totals:	32.3	32.9	32.3	32.0	29.4	32.0	29.8	29.3	31.8	30.0	28.6	32.9

NOTES: n/a indicates information for the description was unavailable.
Section No. 23 contains two bridges. The first bridge is approximately 235 feet in length and the second bridge is approximately 605 feet in length.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 24 From STA 1262+70 to STA 1315+45 Design Section G		DEFICIENCY POINTS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987	
Cracking:	3.5	3.5	*	3.5	3.0	*	4.5	3.5	*	3.0	2.0	*	
Base Failures:	0.0	0.0	*	0.0	0.0	*	0.0	0.0	*	0.0	0.0	*	
Raveling:	1.2	1.5	*	1.2	1.5	*	2.2	1.2	*	1.9	1.2	*	
Edge Failures:	0.0	0.9	*	0.9	1.0	*	0.0	1.4	*	0.9	1.0	*	
Out of Section:	3.0	3.0	*	3.0	2.5	*	2.5	2.0	*	2.5	2.0	*	
Appearance:	3.0	3.0	*	3.0	3.0	*	3.0	2.0	*	3.0	2.0	*	
Rideability:	0.0	0.0	*	0.0	0.0	*	0.0	0.0	*	0.0	0.0	*	
Rutting:	2.3	2.5	*	1.3	2.0	*	1.7	1.7	*	1.3	1.8	*	
Skid Resistance:	n/a	n/a	*	n/a	n/a	*	n/a	n/a	*	n/a	n/a	*	
Traffic Volume:	AADT: 9,820												
Travel Speed:	MPH: 55		17.0	17.0	*	17.0	17.0	*	17.0	17.0	*	17.0	*
Totals:	30.0	31.4	*	29.9	30.0	*	30.9	28.8	*	29.6	27.0	*	

NOTES: n/a indicates information for the description was unavailable.

* Section No.24 not rated in 1987. Construction zone was established within this section to repair steel culvert failure.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 25 From STA 1315+45 to STA 1368+05 Design Section G		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	4.5	4.5	3.5	3.5	4.0	3.5	3.5	4.5	3.5	2.5	3.5	3.5
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.2	1.2	2.5	1.2	1.2	1.5	1.2	1.5	1.5	1.2	1.2	1.5
Edge Failures:	0.0	0.0	1.3	0.9	1.0	0.9	1.4	1.4	1.5	0.9	0.9	1.0
Out of Section:	3.0	3.0	2.5	3.0	2.5	3.0	2.0	3.0	3.5	2.5	2.0	3.0
Appearance:	3.0	3.0	3.0	3.0	2.0	2.0	3.0	2.0	3.0	3.0	2.0	3.0
Rideability:	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:	3.4	4.1	4.0	1.9	1.9	3.0	1.7	2.3	3.0	0.9	1.5	2.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 9,850											
Travel Speed:	MPH: 55											
Totals:	32.1	32.8	33.8	30.5	29.6	30.9	29.8	31.7	33.0	28.0	28.1	31.0

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 26 From STA 1368+05 to STA 1420+50 Design Section G		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	3.5	3.5	4.5	3.5	3.5	3.5	2.5	4.5	3.5	2.0	4.5	3.5
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.2	1.5	1.2	1.5	1.2	1.2	2.6	1.5	1.9	1.5	1.2	1.5
Edge Failures:	0.0	0.9	1.3	1.0	1.3	1.0	0.0	1.2	0.9	0.0	0.9	0.9
Out of Section:	3.0	3.0	2.5	3.5	2.5	2.5	2.5	2.5	3.0	2.5	2.5	3.0
Appearance:	3.0	3.0	3.0	3.0	2.0	2.0	3.0	3.0	3.0	2.0	3.0	3.0
Rideability:	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:	2.3	2.8	3.0	1.9	1.9	2.0	1.7	2.3	3.0	1.1	1.9	2.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 9,820											
Travel Speed:	MPH: 55											
Totals:	30.0	31.7	32.5	31.4	29.4	29.2	29.3	32.0	32.3	26.1	31.0	30.9

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 27 From STA 1420+50 to STA 1473+15 Design Section G		DEFICIENCY POINTS										
		EASTBOUND						WESTBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	2.5	3.5	4.5	3.0	4.5	5.5	3.5	5.5	5.0	2.0	5.0	4.5
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.2	1.2	1.5	1.2	1.5	1.5	2.6	2.2	2.2	1.2	1.5	1.5
Edge Failures:	0.0	0.9	1.0	0.0	1.0	0.9	0.0	1.4	1.5	0.0	0.9	1.3
Out of Section:	2.0	2.5	3.0	2.5	3.0	3.0	2.0	2.5	3.0	2.0	2.5	3.0
Appearance:	2.0	2.0	3.0	2.0	2.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0
Rideability:	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:	2.4	2.9	3.0	1.5	2.3	2.0	2.3	2.6	3.0	0.8	1.5	2.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 9,820											
Travel Speed:	MPH: 55											
Totals:	27.1	30.0	33.0	27.2	31.3	32.9	30.4	34.2	34.7	25.0	31.4	32.3

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 28 From STA 1473+15 to STA 1525+75 Design Section G		DEFICIENCY POINTS											
		EASTBOUND					WESTBOUND						
		Shoulder Lane			Median Lane		Shoulder Lane			Median Lane			
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		4.5	4.5	4.0	3.5	4.5	3.5	3.0	5.0	5.0	2.0	5.0	3.5
Base Failures:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:		1.5	1.8	2.5	1.2	1.2	1.2	1.2	1.5	1.5	1.2	1.5	1.5
Edge Failures:		0.0	0.0	1.0	0.0	1.0	0.9	0.0	1.0	1.3	0.9	1.0	1.2
Out of Section:		3.0	3.0	3.0	3.0	2.5	3.0	2.0	2.5	3.0	2.0	2.0	3.0
Appearance:		3.0	3.0	3.0	2.0	3.0	2.0	2.0	3.0	3.0	2.0	3.0	3.0
Rideability:		0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:		2.3	2.5	2.0	1.3	2.0	2.0	1.9	2.3	3.0	1.3	1.6	2.0
Skid Resistance:		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume: AADT: 9,820													
Travel Speed: MPH: 55		17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
Totals:		31.3	31.8	32.5	28.0	31.2	29.6	27.1	32.3	33.8	26.4	31.1	31.2

NOTE: n/a indicates information for the description was unavailable.

TABLE A2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete				
Survey Section No. 29 From STA 1525+75 to STA 1542+90 Design Section G		DEFICIENCY POINTS										
		EASTBOUND					WESTBOUND					
		Shoulder Lane			Median Lane		Shoulder Lane			Median Lane		
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	2.0	3.0	2.0	2.5	3.5	2.5	4.5	4.5	5.0	3.0	6.0	2.0
Base Failures:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.5	1.2
Edge Failures:	0.0	0.0	0.9	0.0	1.0	1.2	0.0	1.0	1.0	0.0	1.0	0.9
Out of Section:	3.0	3.0	2.0	3.0	2.0	2.5	2.0	2.0	2.5	2.0	2.5	2.0
Appearance:	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0
Rideability:	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:	1.5	2.0	2.0	3.0	3.0	3.0	1.5	2.5	3.0	1.5	2.0	2.0
Skid Resistance:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 9,820											
Travel Speed:	MPH: 55											
Totals:	26.7	28.2	27.1	28.7	29.7	29.4	28.2	30.2	31.7	26.7	33.0	27.1

NOTE: n/a indicates information for the description was unavailable.

TABLE A3. PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 0 From STA 0+00 to STA 46+25 Design Section A		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	2	2	1	2	2	2	2	2	2	2	2	2
Longitudinal Cracks	0-5	2	3	2	2	2	2	2	2	2	2	2	2
Alligator Cracks	0-10	0	1	2	1	3	2	3	3	2	2	2	2
Shrinkage Cracks	0-5	0	0	1	0	1	1	1	2	1	0	1	1
Rutting	0-10	4	4	3	2	2	2	2	2	4	3	2	2
Corrugations	0-5	1	1	1	1	1	1	3	3	2	4	3	1
Raveling	0-5	1	1	1	1	1	1	2	3	1	3	3	1
Shoving or Pushing	0-10	0	0	1	0	1	1	0	0	1	0	1	1
Potholes	0-10	1	1	1	0	1	1	2	3	1	1	1	1
Excess Asphalt	0-10	2	2	2	1	1	1	1	1	1	1	1	1
Polished Aggregate	0-5	2	2	2	2	2	1	3	4	2	2	2	1
Overall Riding Quality	0-10	4	4	4	4	4	4	5	6	5	6	6	5
	Sum of Defects	19	21	21	16	21	19	26	31	24	26	26	20
	Condition Rating (= 90-Sum of Defects)	71	69	69	74	69	71	64	59	66	64	64	70

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 1 From STA 46+25 to STA 99+05 Design Section A		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	2	2	1	3	3	1	1	2	0	1	2	1
Longitudinal Cracks	0-5	3	3	2	3	3	1	3	3	1	2	2	2
Alligator Cracks	0-10	5	6	2	3	4	2	4	4	2	1	2	1
Shrinkage Cracks	0-5	2	2	1	1	1	1	0	1	1	0	1	1
Rutting	0-10	4	5	3	3	3	3	3	4	5	4	2	2
Corrugations	0-5	2	2	1	1	1	1	3	3	1	4	3	1
Raveling	0-5	2	2	1	1	1	1	1	1	1	1	2	1
Shoving or Pushing	0-10	0	0	1	0	1	0	0	0	0	0	1	0
Potholes	0-10	1	2	1	1	2	1	0	0	1	1	2	1
Excess Asphalt	0-10	2	2	2	0	1	1	0	0	1	0	1	1
Polished Aggregate	0-5	3	4	2	2	2	1	3	3	2	2	2	1
Overall Riding Quality	0-10	4	4	4	3	3	3	4	5	4	6	6	4
	Sum of Defects	30	34	21	21	25	16	22	26	24	22	26	16
	Condition Rating (= 90-Sum of Defects)	60	56	69	69	65	74	68	64	71	68	64	74

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 2 From STA 99+05 to STA 152+10 Design Section A		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	2	2	1	3	3	1	1	2	1	2	2	1
Longitudinal Cracks	0-5	4	4	3	2	2	1	2	2	2	2	2	1
Alligator Cracks	0-10	5	5	2	1	2	2	2	2	3	2	2	2
Shrinkage Cracks	0-5	0	0	1	2	1	1	1	2	1	1	1	1
Rutting	0-10	3	3	3	2	2	2	3	3	4	3	2	1
Corrugations	0-5	3	3	1	2	1	1	3	3	1	3	2	1
Raveling	0-5	3	3	2	1	1	1	0	1	1	0	1	1
Shoving or Pushing	0-10	0	0	1	0	1	0	0	0	0	0	1	0
Potholes	0-10	1	2	1	2	2	1	0	1	1	1	1	1
Excess Asphalt	0-10	2	2	1	1	1	1	1	1	1	1	1	1
Polished Aggregate	0-5	3	3	2	2	2	1	3	3	2	2	2	1
Overall Riding Quality	0-10	3	4	3	3	3	3	4	4	4	5	5	3
	Sum of Defects	29	31	21	21	21	15	20	24	21	22	22	14
	Condition Rating (= 90-Sum of Defects)	61	56	69	69	69	75	70	66	69	68	68	76

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 3 From STA 152+10 to STA 205+85 Design Sections B & C begin at STA 166+00		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	1	2	2	2	1	2	2	2	3	3	2
Longitudinal Cracks	0-5	1	2	3	1	2	1	1	2	3	2	2	2
Alligator Cracks	0-10	1	1	2	3	3	1	4	4	3	2	3	2
Shrinkage Cracks	0-5	1	1	1	1	1	1	0	1	1	0	1	2
Rutting	0-10	2	3	2	3	3	3	2	2	3	3	2	2
Corrugations	0-5	1	2	1	1	1	1	4	4	1	3	3	1
Raveling	0-5	2	2	2	2	2	1	2	2	2	3	3	2
Shoving or Pushing	0-10	1	1	1	1	1	0	0	0	1	0	1	0
Potholes	0-10	0	0	2	3	2	1	1	2	2	1	1	1
Excess Asphalt	0-10	2	3	2	1	1	1	2	2	1	2	2	1
Polished Aggregate	0-5	3	3	2	2	2	1	3	3	2	3	2	1
Overall Riding Quality	0-10	4	4	4	5	5	4	6	6	5	6	6	4
	Sum of Defects	19	23	24	25	25	16	27	30	26	28	29	20
	Condition Rating (= 90-Sum of Defects)	71	67	66	65	65	74	63	60	64	62	61	70

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 4 From STA 205+85 to STA 258+25 Design Sections B & C		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	2	1	1	1	0	0	1	0	0	0	0
Longitudinal Cracks	0-5	3	3	2	3	2	2	1	1	1	2	2	2
Alligator Cracks	0-10	3	3	2	3	3	2	1	1	1	3	3	2
Shrinkage Cracks	0-5	1	1	1	1	1	1	0	1	1	0	1	1
Rutting	0-10	2	3	2	3	3	2	1	2	3	2	2	2
Corrugations	0-5	2	2	1	1	1	1	2	0	1	2	2	1
Raveling	0-5	2	2	2	0	1	1	0	1	0	2	2	1
Shoving or Pushing	0-10	1	1	1	1	1	0	0	0	0	0	1	0
Potholes	0-10	1	2	1	1	2	1	1	1	1	1	2	1
Excess Asphalt	0-10	1	1	1	1	1	1	2	2	1	1	1	1
Polished Aggregate	0-5	3	3	2	2	2	1	2	2	2	2	2	1
Overall Riding Quality	0-10	5	5	4	4	4	3	4	4	4	4	5	4
	Sum of Defects	25	28	20	21	22	15	14	16	15	19	23	16
	Condition Rating (= 90-Sum of Defects)	65	62	70	69	68	75	76	74	75	71	67	74

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 5 From STA 258+25 to STA 311+05 Design Sections B & C		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	2	1	2	2	1	0	1	1	0	1	0
Longitudinal Cracks	0-5	2	2	2	2	2	2	2	2	3	2	2	2
Alligator Cracks	0-10	3	3	4	1	2	3	3	3	3	1	2	2
Shrinkage Cracks	0-5	1	1	2	1	1	1	2	2	3	0	1	1
Rutting	0-10	1	2	2	2	3	2	2	2	1	2	2	2
Corrugations	0-5	1	1	2	1	1	1	4	4	2	3	2	1
Raveling	0-5	2	2	2	1	1	2	2	3	2	1	2	2
Shoving or Pushing	0-10	0	0	3	0	1	1	0	0	1	0	1	0
Potholes	0-10	2	3	2	0	2	2	2	2	2	0	1	1
Excess Asphalt	0-10	2	2	2	1	1	1	1	1	1	1	1	1
Polished Aggregate	0-5	2	2	2	2	2	1	3	3	2	2	2	1
Overall Riding Quality	0-10	4	4	5	5	5	5	6	6	6	5	6	5
	Sum of Defects	21	24	29	18	23	22	27	29	27	17	23	18
	Condition Rating (= 90-Sum of Defects)	69	66	61	72	67	68	63	61	63	73	67	72

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 6 From STA 311+05 to STA 364+20 Design Sections B & C		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	3	3	2	1	1	1	2	3	2	2	2	1
Longitudinal Cracks	0-5	4	4	2	1	2	2	3	3	4	3	2	2
Alligator Cracks	0-10	5	5	3	1	2	2	5	5	7	2	3	2
Shrinkage Cracks	0-5	1	1	1	1	1	1	3	4	2	1	1	1
Rutting	0-10	3	4	3	3	3	1	2	2	3	3	2	3
Corrugations	0-5	2	2	1	1	1	1	4	4	1	2	1	1
Raveling	0-5	0	1	1	0	1	1	1	2	3	1	1	2
Shoving or Pushing	0-10	0	0	2	1	1	0	0	0	2	0	1	1
Potholes	0-10	0	1	2	0	1	1	1	2	2	0	2	2
Excess Asphalt	0-10	1	1	2	1	1	1	2	2	1	1	1	1
Polished Aggregate	0-5	3	3	2	2	2	1	2	2	2	2	2	1
Overall Riding Quality	0-10	4	4	4	4	5	4	6	6	6	5	6	5
	Sum of Defects	26	29	25	16	21	16	31	35	35	22	24	22
	Condition Rating (= 90-Sum of Defects)	64	61	65	74	69	74	59	55	55	68	66	68

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 7 From STA 364+20 to STA 417+10 Design Sections B & C		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	1	1	1	1	0	3	4	2	3	3	2
Longitudinal Cracks	0-5	2	2	2	1	1	1	4	5	4	3	3	3
Alligator Cracks	0-10	3	4	2	1	2	1	6	6	6	3	3	4
Shrinkage Cracks	0-5	1	1	1	1	1	1	4	4	4	3	2	1
Rutting	0-10	5	6	3	2	2	2	2	2	5	3	2	2
Corrugations	0-5	2	2	1	2	1	1	4	4	3	2	2	1
Raveling	0-5	1	1	1	0	1	1	3	4	3	3	2	3
Shoving or Pushing	0-10	0	0	1	0	0	0	0	0	1	0	1	1
Potholes	0-10	1	2	1	0	0	1	1	3	2	1	2	2
Excess Asphalt	0-10	1	2	2	1	1	1	2	2	1	2	2	1
Polished Aggregate	0-5	3	3	2	2	2	1	3	3	2	2	2	1
Overall Riding Quality	0-10	4	5	4	4	4	4	5	6	6	5	6	5
	Sum of Defects	23	29	21	15	16	14	37	43	39	30	30	26
	Condition Rating (= 90-Sum of Defects)	67	61	69	75	74	76	53	47	51	60	60	64

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 8 From STA 417+10 to STA 470+05 Design Sections B & C		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	2	2	1	3	3	1	3	3	2	2	2	2
Longitudinal Cracks	0-5	2	3	2	4	4	2	3	4	4	3	3	3
Alligator Cracks	0-10	4	4	4	6	6	3	6	6	7	3	3	4
Shrinkage Cracks	0-5	1	2	2	1	1	1	3	3	3	1	1	1
Rutting	0-10	2	3	3	2	2	2	2	3	3	2	2	2
Corrugations	0-5	2	2	1	1	1	1	4	4	3	2	2	1
Raveling	0-5	1	1	2	2	2	2	2	3	3	2	2	3
Shoving or Pushing	0-10	0	1	2	0	1	1	0	0	1	0	1	1
Potholes	0-10	0	1	2	2	2	2	0	2	2	0	1	2
Excess Asphalt	0-10	3	3	2	2	1	1	2	2	1	1	1	1
Polished Aggregate	0-5	2	2	2	2	2	1	3	3	2	2	2	1
Overall Riding Quality	0-10	4	4	5	4	5	4	5	6	6	4	4	4
	Sum of Defects	23	28	28	29	30	21	33	39	37	22	24	25
	Condition Rating (= 90-Sum of Defects)	67	62	62	61	60	69	57	51	53	68	66	

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 9 From STA 470+05 to STA 523+05 Design Sections B & C		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	1	1	4	3	2	0	1	1	2	2	3
Longitudinal Cracks	0-5	0	1	2	3	3	3	1	1	3	1	3	3
Alligator Cracks	0-10	0	1	3	4	5	4	2	2	4	2	3	4
Shrinkage Cracks	0-5	1	1	1	1	1	1	0	0	1	0	1	1
Rutting	0-10	3	4	3	2	2	2	1	3	3	3	2	2
Corrugations	0-5	1	2	1	1	1	1	2	2	1	3	2	1
Raveling	0-5	1	1	2	3	3	3	1	1	2	4	4	4
Shoving or Pushing	0-10	0	0	1	1	1	1	0	0	1	0	1	1
Potholes	0-10	0	1	2	1	4	4	1	1	2	2	2	2
Excess Asphalt	0-10	1	1	3	2	1	1	2	2	1	2	2	1
Polished Aggregate	0-5	1	2	2	2	2	1	2	2	2	2	2	1
Overall Riding Quality	0-10	3	4	4	4	4	4	4	5	5	5	5	6
	Sum of Defects	12	19	25	28	30	27	16	20	26	26	29	29
	Condition Rating (= 90-Sum of Defects)	78	71	65	62	60	63	74	70	64	64	61	61

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 10 From STA 523+05 to STA 576+15 Design Sections B & C		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	2	1	2	2	1	0	1	1	1	1	1
Longitudinal Cracks	0-5	2	2	3	3	3	2	2	2	2	1	2	3
Alligator Cracks	0-10	2	2	6	4	4	3	3	3	3	1	2	3
Shrinkage Cracks	0-5	1	1	2	1	1	1	0	1	1	0	1	1
Rutting	0-10	2	3	1	2	2	2	1	2	3	3	3	2
Corrugations	0-5	2	2	2	2	2	1	2	3	1	2	1	1
Raveling	0-5	1	2	4	3	2	3	3	1	2	3	2	2
Shoving or Pushing	0-10	0	0	2	1	1	1	0	0	2	0	1	1
Potholes	0-10	2	2	3	2	3	3	0	1	2	0	1	1
Excess Asphalt	0-10	2	2	3	2	2	1	2	2	1	1	1	1
Polished Aggregate	0-5	2	2	2	3	3	1	2	2	2	2	2	1
Overall Riding Quality	0-10	4	4	5	3	3	4	3	3	4	4	4	4
	Sum of Defects	21	24	34	28	28	23	18	21	24	18	21	21
	Condition Rating (= 90-Sum of Defects)	69	66	56	62	62	67	72	69	66	72	69	69

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 11 From STA 576+15 to STA 629+20 Design Sections B & C		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	1	1	1	1	0	2	3	1	1	1	0
Longitudinal Cracks	0-5	0	1	3	2	2	1	3	4	3	2	2	2
Alligator Cracks	0-10	1	1	4	1	2	2	6	6	5	1	2	2
Shrinkage Cracks	0-5	1	1	2	1	1	1	1	2	1	0	1	1
Rutting	0-10	2	3	2	2	2	1	2	2	3	1	1	2
Corrugations	0-5	2	2	1	1	2	2	3	3	1	2	1	1
Raveling	0-5	1	1	2	2	2	2	3	3	3	2	2	2
Shoving or Pushing	0-10	0	0	1	1	1	0	0	0	1	0	1	1
Potholes	0-10	1	2	2	2	3	2	1	3	2	0	1	2
Excess Asphalt	0-10	1	1	2	2	2	1	1	1	1	1	2	1
Polished Aggregate	0-5	2	2	2	3	2	1	2	2	2	2	2	1
Overall Riding Quality	0-10	4	4	4	4	4	4	5	6	6	5	5	4
	Sum of Defects	15	19	26	22	24	17	29	35	29	17	21	19
	Condition Rating (= 90-Sum of Defects)	75	71	64	68	66	73	61	55	61	73	69	71

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 12 From STA 629+20 to STA 682+20 Design Sections B & C		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	2	0	2	2	1	1	2	1	1	1	1
Longitudinal Cracks	0-5	2	2	2	2	2	2	3	3	3	1	2	2
Alligator Cracks	0-10	4	4	5	3	3	2	5	5	5	1	3	2
Shrinkage Cracks	0-5	1	1	2	1	1	2	1	2	1	0	1	1
Rutting	0-10	3	3	2	3	3	1	2	3	3	1	1	2
Corrugations	0-5	2	2	1	1	1	1	3	3	3	2	1	1
Raveling	0-5	2	2	2	2	2	2	3	1	3	2	3	2
Shoving or Pushing	0-10	1	1	1	1	1	1	0	0	1	0	0	1
Potholes	0-10	1	2	2	2	2	2	0	1	3	2	2	2
Excess Asphalt	0-10	2	2	2	2	2	1	2	2	1	2	2	1
Polished Aggregate	0-5	2	2	2	2	2	2	3	3	2	2	2	2
Overall Riding Quality	0-10	4	4	4	4	5	4	5	6	6	4	5	4
	Sum of Defects	25	27	25	25	26	21	28	31	32	18	23	21
	Condition Rating (= 90-Sum of Defects)	65	63	65	65	64	69	62	59	58	72	67	69

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 13 From STA 682+20 to STA 735+80 Design Sections B & C		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	1	1	0	0	0	0	0	0	0	1	1
Longitudinal Cracks	0-5	1	1	2	1	1	1	2	2	3	1	1	1
Alligator Cracks	0-10	2	3	3	1	1	1	5	5	4	0	1	1
Shrinkage Cracks	0-5	1	1	1	1	1	1	1	1	1	1	1	1
Rutting	0-10	2	3	2	2	2	1	2	2	3	1	1	1
Corrugations	0-5	3	3	3	2	2	2	3	3	3	2	1	1
Raveling	0-5	1	2	2	1	1	1	2	3	2	2	2	2
Shoving or Pushing	0-10	1	1	1	1	1	1	0	0	1	0	0	1
Potholes	0-10	1	2	2	1	1	1	1	2	2	0	1	1
Excess Asphalt	0-10	2	2	2	1	1	1	1	1	1	1	1	1
Polished Aggregate	0-5	2	3	3	1	2	1	3	3	2	2	2	2
Overall Riding Quality	0-10	4	5	5	3	4	4	5	5	5	4	4	4
	Sum of Defects	21	27	27	15	17	15	25	27	27	14	16	17
	Condition Rating (= 90-Sum of Defects)	69	63	63	75	73	75	65	63	63	76	74	73

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Knott			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 14 From STA 735+80 to STA 793+00 Design Sections B & C		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	2	1	2	2	1	0	1	1	0	0	1
Longitudinal Cracks	0-5	1	1	2	2	2	2	3	3	3	1	1	1
Alligator Cracks	0-10	1	2	3	4	4	4	4	4	3	0	0	1
Shrinkage Cracks	0-5	1	1	1	1	1	1	1	2	1	0	0	1
Rutting	0-10	2	3	2	1	1	2	2	2	2	1	2	1
Corrugations	0-5	2	2	2	2	1	1	3	3	3	1	1	1
Raveling	0-5	1	2	2	2	2	2	1	1	2	1	1	1
Shoving or Pushing	0-10	1	1	1	1	1	1	0	0	1	0	0	1
Potholes	0-10	1	2	2	1	1	1	0	1	1	0	0	0
Excess Asphalt	0-10	2	2	2	2	2	1	1	1	1	1	1	1
Polished Aggregate	0-5	2	2	2	3	3	2	3	3	2	2	2	2
Overall Riding Quality	0-10	4	4	4	3	4	4	5	5	5	3	3	4
	Sum of Defects	19	24	24	24	24	22	23	26	25	10	11	14
	Condition Rating (= 90-Sum of Defects)	71	66	66	66	66	68	67	64	65	80	79	76

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued), PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 15 From STA 793+00 to STA 845+70 Design Section D		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	2	1	1	2	2	1	2	2	1	2	2
Longitudinal Cracks	0-5	2	2	3	2	3	2	3	3	3	2	2	2
Alligator Cracks	0-10	5	5	5	2	3	3	4	4	4	1	2	2
Shrinkage Cracks	0-5	1	1	1	1	1	1	1	1	2	1	1	1
Rutting	0-10	4	4	2	2	2	1	2	2	5	1	1	2
Corrugations	0-5	2	2	2	1	1	1	2	2	2	1	1	1
Raveling	0-5	1	2	2	1	1	1	1	1	2	1	1	1
Shoving or Pushing	0-10	1	1	2	1	1	1	0	0	1	0	1	1
Potholes	0-10	2	2	2	1	1	1	0	1	2	0	1	1
Excess Asphalt	0-10	1	1	2	1	1	1	1	1	1	1	1	2
Polished Aggregate	0-5	3	3	3	2	2	2	3	3	2	2	2	2
Overall Riding Quality	0-10	3	5	4	2	3	4	4	4	5	3	3	3
	Sum of Defects	26	30	29	17	21	20	22	24	31	14	18	20
	Condition Rating (= 90-Sum of Defects)	64	60	61	73	69	70	68	66	59	76	72	70

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 16 From STA 845+70 to STA 893+55 Design Section D		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	1	1	0	0	1	0	0	1	0	1	1
Longitudinal Cracks	0-5	2	2	2	2	2	2	3	3	2	1	1	1
Alligator Cracks	0-10	4	4	3	1	1	1	3	4	3	0	1	1
Shrinkage Cracks	0-5	1	1	1	1	1	1	1	1	1	0	1	1
Rutting	0-10	2	3	2	2	2	2	1	2	3	1	1	2
Corrugations	0-5	2	2	2	1	1	1	1	1	1	2	1	1
Raveling	0-5	1	1	2	1	1	1	1	1	1	1	1	1
Shoving or Pushing	0-10	1	1	1	0	0	0	0	0	1	0	1	1
Potholes	0-10	1	2	1	1	1	1	0	1	2	0	1	1
Excess Asphalt	0-10	2	2	2	1	1	1	1	1	1	1	1	1
Polished Aggregate	0-5	3	3	2	2	2	2	2	2	2	2	2	2
Overall Riding Quality	0-10	3	3	4	3	4	4	3	3	4	4	4	4
	Sum of Defects	22	25	23	15	16	17	16	19	22	12	16	17
	Condition Rating (= 90-Sum of Defects)	68	65	67	75	74	73	74	71	68	78	74	73

NOTES: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.
Section No. 16 contains a bridge approximately 960 feet in length.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 17 From STA 893+55 to STA 946+15 Design Section E begins at STA 915+00		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	2	2	1	1	1	0	0	1	0	0	0
Longitudinal Cracks	0-5	2	2	2	2	2	2	0	0	3	0	1	1
Alligator Cracks	0-10	4	4	3	1	2	2	0	1	5	0	0	1
Shrinkage Cracks	0-5	1	2	2	1	1	1	0	1	1	0	0	1
Rutting	0-10	4	4	2	1	2	2	1	2	4	3	2	1
Corrugations	0-5	2	2	2	1	1	1	0	0	1	0	1	1
Raveling	0-5	2	2	2	1	1	1	1	1	3	1	1	2
Shoving or Pushing	0-10	1	1	1	0	0	0	0	0	2	0	0	0
Potholes	0-10	2	2	2	1	1	1	0	0	5	0	0	1
Excess Asphalt	0-10	2	2	2	1	1	1	1	1	1	1	1	1
Polished Aggregate	0-5	3	3	3	2	2	2	1	1	2	1	1	1
Overall Riding Quality	0-10	3	3	4	3	3	4	2	2	5	2	3	3
	Sum of Defects	27	29	27	15	17	17	6	9	33	8	10	13
	Condition Rating (= 90-Sum of Defects)	63	61	63	75	73	73	84	81	57	82	80	77

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 18 From STA 946+15 to STA 998+70 Design Section E		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	1	1	0	1	1	2	2	2	1	1	1
Longitudinal Cracks	0-5	2	2	2	1	3	2	3	3	3	3	2	2
Alligator Cracks	0-10	3	3	4	2	3	3	5	6	5	2	2	2
Shrinkage Cracks	0-5	1	1	1	0	1	1	1	2	2	0	1	1
Rutting	0-10	3	4	2	1	2	1	2	2	3	1	1	2
Corrugations	0-5	2	2	1	2	2	2	1	1	1	1	1	1
Raveling	0-5	1	1	1	1	1	1	1	2	2	0	1	2
Shoving or Pushing	0-10	0	1	1	0	0	0	0	0	1	0	1	1
Potholes	0-10	1	1	2	1	1	1	0	3	2	0	1	1
Excess Asphalt	0-10	2	2	2	2	2	1	1	1	1	1	1	1
Polished Aggregate	0-5	3	3	2	2	2	2	3	3	2	2	2	2
Overall Riding Quality	0-10	4	4	4	3	4	4	3	3	4	3	4	4
	Sum of Defects	22	25	23	15	22	19	22	28	28	14	18	20
	Condition Rating (= 90-Sum of Defects)	68	65	67	75	68	71	68	62	62	76	72	70

NOTES: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.
Section No. 18 contains a bridge approximately 480 feet in length.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 19 From STA 998+70 to STA 1051+50 Design Section E		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	2	2	1	1	1	1	2	2	0	0	0
Longitudinal Cracks	0-5	2	4	3	2	3	3	3	3	3	1	2	2
Alligator Cracks	0-10	4	4	4	1	3	2	5	5	5	1	2	1
Shrinkage Cracks	0-5	2	2	2	1	1	1	1	2	2	1	1	1
Rutting	0-10	2	2	2	1	2	1	1	2	3	1	2	2
Corrugations	0-5	2	2	2	1	1	1	3	3	3	1	1	1
Raveling	0-5	2	3	3	1	1	1	1	1	2	1	1	1
Shoving or Pushing	0-10	1	1	2	0	0	0	0	0	1	0	1	1
Potholes	0-10	2	3	3	1	1	1	0	1	2	1	1	1
Excess Asphalt	0-10	2	2	2	2	1	1	1	1	1	1	1	1
Polished Aggregate	0-5	3	3	2	2	2	2	3	3	2	2	2	2
Overall Riding Quality	0-10	4	4	5	3	3	4	5	6	5	3	4	4
	Sum of Defects	27	32	32	16	19	18	24	29	31	13	18	17
	Condition Rating (= 90-Sum of Defects)	63	58	58	74	71	72	66	61	59	77	72	73

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 20 From STA 1051+50 to STA 1104+30 Design Section F		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	2	1	2	1	1	2	3	3	1	1	1
Longitudinal Cracks	0-5	2	2	3	2	3	3	3	3	3	2	2	2
Alligator Cracks	0-10	4	4	4	2	3	3	4	4	4	3	3	2
Shrinkage Cracks	0-5	2	2	2	1	1	1	0	1	1	0	1	1
Rutting	0-10	3	3	2	2	2	2	2	3	3	1	2	2
Corrugations	0-5	2	2	2	1	1	1	2	2	2	2	1	1
Raveling	0-5	1	2	2	1	1	2	1	1	2	0	1	1
Shoving or Pushing	0-10	1	1	1	0	0	1	0	0	1	0	1	1
Potholes	0-10	2	2	2	1	1	1	0	2	2	0	1	1
Excess Asphalt	0-10	2	2	1	2	2	1	3	3	2	2	1	2
Polished Aggregate	0-5	3	3	3	2	2	2	3	3	2	2	2	2
Overall Riding Quality	0-10	4	5	5	4	4	4	4	4	5	3	3	4
	Sum of Defects	27	30	28	20	21	22	24	29	30	16	19	20
	Condition Rating (= 90-Sum of Defects)	63	60	62	70	69	68	66	61	60	74	71	70

NOTES: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.
Section No. 20 contains a bridge approximately 410 feet in length.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 21 From STA 1104+30 to STA 1157+15 Design Section F		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	2	2	1	1	1	1	2	2	1	1	1
Longitudinal Cracks	0-5	3	3	3	2	2	2	3	3	2	1	1	2
Alligator Cracks	0-10	3	3	4	1	1	2	2	2	3	0	1	1
Shrinkage Cracks	0-5	1	1	2	1	1	1	0	1	2	0	1	1
Rutting	0-10	3	4	3	2	2	1	2	3	3	1	2	2
Corrugations	0-5	2	2	2	1	1	1	2	2	2	2	1	1
Raveling	0-5	1	2	2	1	1	1	1	2	2	1	1	1
Shoving or Pushing	0-10	0	1	2	0	0	0	0	0	1	0	1	1
Potholes	0-10	2	2	2	1	1	1	0	2	2	1	1	1
Excess Asphalt	0-10	2	2	1	2	1	1	2	2	2	1	1	1
Polished Aggregate	0-5	3	3	3	2	2	2	3	3	2	2	2	2
Overall Riding Quality	0-10	4	4	5	3	3	4	4	4	4	4	4	3
	Sum of Defects	25	29	31	17	16	17	20	26	27	14	17	17
	Condition Rating (= 90-Sum of Defects)	65	61	59	73	74	73	70	64	63	76	73	73

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 22 From STA 1157+15 to STA 1210+05 Design Section G		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	0	0	0	0	0	0	1	1	0	0	0
Longitudinal Cracks	0-5	2	3	2	2	2	2	3	3	2	1	1	1
Alligator Cracks	0-10	1	2	3	1	1	2	0	1	1	1	1	1
Shrinkage Cracks	0-5	1	1	1	1	1	1	0	1	1	0	1	1
Rutting	0-10	2	2	3	2	2	1	2	3	2	1	2	1
Corrugations	0-5	2	2	2	1	1	1	3	3	3	1	1	1
Raveling	0-5	1	2	2	0	0	1	2	2	2	0	1	1
Shoving or Pushing	0-10	0	1	1	0	0	0	0	0	0	0	0	0
Potholes	0-10	1	2	1	0	0	1	0	1	2	1	0	2
Excess Asphalt	0-10	2	2	2	2	1	1	1	1	1	1	1	2
Polished Aggregate	0-5	3	3	2	2	2	2	3	3	2	2	2	2
Overall Riding Quality	0-10	4	5	5	3	3	3	5	5	5	3	3	3
	Sum of Defects	19	25	24	14	13	15	19	24	22	11	13	15
	Condition Rating (= 90-Sum of Defects)	71	65	66	76	77	75	71	66	68	79	77	75

NOTES: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.
Section No. 22 contains a bridge approximately 235 feet in length.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 23 From STA 1210+05 to STA 1262+70 Design Section G		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	1	1	0	0	0	0	0	0	0	1	1
Longitudinal Cracks	0-5	2	2	2	1	1	1	3	2	2	1	1	1
Alligator Cracks	0-10	2	3	2	1	1	1	0	1	1	0	2	1
Shrinkage Cracks	0-5	1	1	1	1	1	1	0	1	1	0	1	1
Rutting	0-10	3	3	3	2	2	3	2	3	3	2	2	2
Corrugations	0-5	2	2	2	1	1	1	2	1	2	1	1	1
Raveling	0-5	1	1	2	0	0	1	1	1	1	0	1	1
Shoving or Pushing	0-10	0	0	1	0	0	0	0	1	1	0	1	1
Potholes	0-10	0	2	2	0	0	0	0	2	1	0	2	2
Excess Asphalt	0-10	1	1	1	1	1	1	1	2	1	1	1	1
Polished Aggregate	0-5	3	3	2	2	2	2	2	2	2	2	2	2
Overall Riding Quality	0-10	4	4	4	3	3	3	4	4	4	3	3	3
	Sum of Defects	19	23	23	12	12	14	15	20	19	10	18	17
	Condition Rating (= 90-Sum of Defects)	71	67	67	78	78	76	75	70	71	80	72	73

NOTES: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.
Section No. 23 contains two bridges. The first bridge is approximately 235 feet in length and the second bridge is approximately 605 feet in length.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 24 From STA 1262+70 to STA 1315+45 Design Section G		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	2	*	0	0	*	0	1	*	0	0	*
Longitudinal Cracks	0-5	2	2	*	2	2	*	2	2	*	1	1	*
Alligator Cracks	0-10	2	2	*	2	2	*	1	1	*	0	1	*
Shrinkage Cracks	0-5	0	1	*	1	1	*	0	1	*	0	0	*
Rutting	0-10	2	3	*	1	2	*	2	2	*	1	2	*
Corrugations	0-5	3	3	*	2	2	*	3	1	*	2	2	*
Raveling	0-5	0	1	*	0	0	*	2	1	*	2	2	*
Shoving or Pushing	0-10	0	0	*	0	0	*	0	1	*	0	0	*
Potholes	0-10	0	1	*	0	0	*	0	1	*	0	1	*
Excess Asphalt	0-10	1	1	*	1	1	*	3	1	*	2	1	*
Polished Aggregate	0-5	3	3	*	2	2	*	3	2	*	2	2	*
Overall Riding Quality	0-10	5	5	*	4	5	*	4	4	*	4	4	*
	Sum of Defects	18	24	*	15	17	*	20	19	*	14	16	*
	Condition Rating (= 90-Sum of Defects)	72	66	*	75	73	*	70	71	*	76	74	*

NOTES: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.
 * Section No. 24 not rated in 1987. Construction zone was established within this section to repair corrugated steel culvert failure.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 25 From STA 1315+45 to STA 1368+05 Design Section G		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	2	2	1	2	2	1	1	1	1	1	1
Longitudinal Cracks	0-5	3	3	2	2	2	2	2	2	2	2	2	2
Alligator Cracks	0-10	2	2	3	0	2	2	1	2	2	0	1	1
Shrinkage Cracks	0-5	1	1	1	1	1	2	0	0	1	0	0	1
Rutting	0-10	3	4	3	2	2	1	2	2	4	1	2	2
Corrugations	0-5	2	2	2	1	1	1	3	1	1	1	1	1
Raveling	0-5	1	2	3	0	0	1	2	2	1	1	1	2
Shoving or Pushing	0-10	0	0	2	0	0	0	0	1	1	0	1	1
Potholes	0-10	2	1	1	0	0	0	0	1	1	0	1	1
Excess Asphalt	0-10	2	2	3	2	3	2	2	2	1	1	1	2
Polished Aggregate	0-5	3	3	3	2	2	2	3	2	2	2	2	2
Overall Riding Quality	0-10	4	4	4	3	3	3	4	4	4	3	3	4
	Sum of Defects	24	26	29	14	18	18	20	20	22	12	16	20
	Condition Rating (= 90-Sum of Defects)	66	64	61	76	72	72	70	70	68	78	74	70

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 26 From STA 1368+05 to STA 1420+50 Design Section G		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	0	0	0	0	0	0	0	0	0	0	0
Longitudinal Cracks	0-5	3	3	2	1	2	2	1	2	2	2	2	2
Alligator Cracks	0-10	3	3	2	1	1	2	2	2	2	0	2	1
Shrinkage Cracks	0-5	0	1	1	1	1	2	0	1	1	0	1	1
Rutting	0-10	2	3	2	2	2	2	2	2	3	1	2	2
Corrugations	0-5	1	1	1	1	1	1	1	1	1	1	1	1
Raveling	0-5	0	1	1	1	1	1	2	1	1	0	1	1
Shoving or Pushing	0-10	0	0	1	0	0	0	0	0	0	0	0	1
Potholes	0-10	1	1	1	1	1	1	0	1	1	0	0	0
Excess Asphalt	0-10	3	3	2	1	1	1	2	2	1	0	1	1
Polished Aggregate	0-5	3	3	2	2	2	2	3	2	2	2	2	2
Overall Riding Quality	0-10	3	4	4	3	4	3	3	3	4	2	3	3
	Sum of Defects	19	23	19	14	16	17	16	17	18	8	15	15
	Condition Rating (= 90-Sum of Defects)	71	67	71	76	74	73	74	73	72	82	75	75

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 27 From STA 1420+50 to STA 1473+15 Design Section G		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	2	3	0	1	1	1	1	1	1	1	1
Longitudinal Cracks	0-5	3	3	3	3	3	2	2	2	2	2	2	2
Alligator Cracks	0-10	2	3	3	1	2	2	0	2	2	0	1	1
Shrinkage Cracks	0-5	2	2	2	0	1	1	0	0	1	0	1	1
Rutting	0-10	2	3	3	2	2	1	2	3	3	1	2	1
Corrugations	0-5	1	1	1	1	1	1	1	1	1	1	1	1
Raveling	0-5	1	1	1	0	1	1	2	1	1	0	0	1
Shoving or Pushing	0-10	0	0	1	0	0	0	0	0	0	0	0	0
Potholes	0-10	2	2	1	0	1	1	1	1	2	1	1	1
Excess Asphalt	0-10	2	3	2	1	1	2	2	1	1	1	1	1
Polished Aggregate	0-5	3	4	3	2	2	2	3	2	2	2	2	2
Overall Riding Quality	0-10	3	4	4	3	4	3	3	4	4	3	3	3
	Sum of Defects	22	28	27	13	19	18	17	18	20	12	15	15
	Condition Rating (= 90-Sum of Defects)	68	62	63	77	71	72	73	72	70	78	75	75

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 28 From STA 1473+15 to STA 1525+75 Design Section G		RATINGS											
		EASTBOUND						WESTBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	2	3	3	2	2	2	0	0	0	0	0	0
Longitudinal Cracks	0-5	3	3	3	2	3	2	3	2	2	2	2	2
Alligator Cracks	0-10	4	4	4	1	2	2	2	2	1	0	2	1
Shrinkage Cracks	0-5	3	4	3	1	1	2	0	1	1	0	1	1
Rutting	0-10	2	3	2	1	2	2	2	2	2	1	2	1
Corrugations	0-5	2	2	2	1	1	1	1	1	1	1	1	1
Raveling	0-5	1	1	2	0	1	1	0	0	0	0	0	1
Shoving or Pushing	0-10	1	1	2	0	0	0	0	0	0	0	0	0
Potholes	0-10	3	3	3	0	1	1	0	0	0	0	0	1
Excess Asphalt	0-10	2	3	2	0	1	1	2	2	2	1	1	1
Polished Aggregate	0-5	3	3	3	2	2	2	3	2	2	2	2	2
Overall Riding Quality	0-10	4	4	5	3	4	4	3	3	3	3	3	3
	Sum of Defects	30	34	34	13	20	20	16	15	14	10	14	14
	Condition Rating (= 90-Sum of Defects)	60	56	56	77	70	70	74	75	76	80	76	76

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 80		COUNTY: Floyd			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 29 From STA 1525+75 to STA 1542+90 Design Section G		RATINGS											
		EASTBOUND					WESTBOUND						
		Shoulder Lane		Median Lane			Shoulder Lane			Median Lane			
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	1	1	0	0	0	0	0	0	0	0	0
Longitudinal Cracks	0-5	2	2	1	1	2	2	3	2	2	2	2	2
Alligator Cracks	0-10	1	1	1	1	2	2	1	1	2	0	1	1
Shrinkage Cracks	0-5	0	1	1	1	1	2	0	0	1	0	1	1
Rutting	0-10	2	2	3	3	3	2	2	3	2	2	2	3
Corrugations	0-5	2	2	2	1	1	1	2	2	2	1	1	1
Raveling	0-5	0	0	1	0	0	0	0	1	1	0	1	1
Shoving or Pushing	0-10	0	0	0	0	0	0	0	0	0	0	0	0
Potholes	0-10	1	0	0	0	0	0	0	0	0	0	1	1
Excess Asphalt	0-10	1	1	2	1	1	1	1	1	1	1	1	1
Polished Aggregate	0-5	3	3	2	3	3	2	3	2	2	2	2	2
Overall Riding Quality	0-10	4	4	4	2	3	4	4	4	4	2	3	3
	Sum of Defects	16	17	18	13	16	16	16	16	17	10	15	16
	Condition Rating (= 90-Sum of Defects)	74	73	72	77	74	74	74	74	73	80	75	74

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE A4. DEFLECTION ANALYSIS -- KY 80, DESIGN SECTION A

ROUTE: KY 80		COUNTY: Knott				
Section A	EASTBOUND			WESTBOUND		
	1985	1986	1987	1985	1986	1987
Temperature (°F)			90			105
5-Day Temp. (°F)			77.2			72.9
Test Time (hr)			10.00			15.50
Deflection No. 1 (mils)			0.177			0.194
Deflection No. 2 (mils)			0.132			0.137
Deflection No. 3 (mils)			0.104			0.113
Deflection No. 4 (mils)			0.078			0.078
Subgrade Modulus (psi)			44,000			43,000
AC Modulus at Test Temperature (psi)			640,000			510,000
AC Modulus at 70°F (psi)			1,260,000			1,860,000

TABLE A4 (continued). DEFLECTION ANALYSIS -- KY 80, DESIGN SECTIONS (B & C)

ROUTE: KY 80		COUNTY: Knott				
Section B and C	EASTBOUND			WESTBOUND		
	1985	1986	1987	1985	1986	1987
Temperature (°F)	77.5		94	77.5		104
5-Day Temp. (°F)	70.3		77.2	70.3		72.9
Test Time (hr)	12.75		12.25	12.75		14.67
Deflection No. 1 (mils)	0.306		0.309	0.294		0.342
Deflection No. 2 (mils)	0.190		0.226	0.171		0.238
Deflection No. 3 (mils)	0.122		0.148	0.116		0.152
Deflection No. 4 (mils)	0.100		0.093	0.088		0.088
Subgrade Modulus (psi)	37,000		33,000	43,000		32,000
AC Modulus at Test Temperature (psi)	190,000		210,000	170,000		170,000
AC Modulus at 70°F (psi)	340,000		640,000	310,000		820,000

TABLE A4 (continued). DEFLECTION ANALYSIS -- KY 80, DESIGN SECTION D

ROUTE: KY 80		COUNTY: Floyd				
Section D	EASTBOUND			WESTBOUND		
	1985	1986	1987	1985	1986	1987
Temperature (°F)	78.5		101	78.5		101
5-Day Temp. (°F)	70.3		77.2	70.3		72.9
Test Time (hr)	12.00		14.25	12.00		13.50
Deflection No. 1 (mils)	0.429		0.380	0.331		0.327
Deflection No. 2 (mils)	0.267		0.247	0.213		0.239
Deflection No. 3 (mils)	0.173		0.139	0.145		0.169
Deflection No. 4 (mils)	0.116		0.079	0.091		0.094
Subgrade Modulus (psi)	29,000		34,000	35,000		30,000
AC Modulus at Test Temperature (psi)	130,000		130,000	190,000		250,000
AC Modulus at 70°F (psi)	230,000		660,000	320,000		870,000

TABLE A4 (continued). DEFLECTION ANALYSIS -- KY 80, DESIGN SECTION E

ROUTE: KY 80		COUNTY: Floyd				
Section E	EASTBOUND			WESTBOUND		
	1985	1986	1987	1985	1986	1987
Temperature (°F)	75		102	75		100
5-Day Temp. (°F)	70.3		77.2	70.3		72.9
Test Time (hr)	10.75		14.33	10.75		13.50
Deflection No. 1 (mils)	0.370		0.362	0.324		0.297
Deflection No. 2 (mils)	0.211		0.237	0.196		0.221
Deflection No. 3 (mils)	0.142		0.133	0.132		0.135
Deflection No. 4 (mils)	0.104		0.080	0.100		0.088
Subgrade Modulus (psi)	34,000		35,000	37,000		34,000
AC Modulus at Test Temperature (psi)	120,000		120,000	150,000		200,000
AC Modulus at 70°F (psi)	180,000		660,000	220,000		740,000

TABLE A4 (continued). DEFLECTION ANALYSIS -- KY 80, DESIGN SECTION F

ROUTE: KY 80	COUNTY: Floyd					
	EASTBOUND			WESTBOUND		
Section F	1985	1986	1987	1985	1986	1987
Temperature (°F)	73		104	73		98
5-Day Temp. (°F)	70.3		77.2	70.3		72.9
Test Time (hr)	9.75		14.75	9.75		12.00
Deflection No. 1 (mils)	0.172		0.217	0.153		0.220
Deflection No. 2 (mils)	0.106		0.146	0.099		0.171
Deflection No. 3 (mils)	0.070		0.137	0.057		0.132
Deflection No. 4 (mils)	0.062		0.075	0.054		0.097
Subgrade Modulus (psi)	59,000		36,000	68,000		31,000
AC Modulus at Test Temperature (psi)	250,000		270,000	270,000		310,000
AC Modulus at 70°F (psi)	310,000		1,310,000	330,000		820,000

TABLE A4 (continued). DEFLECTION ANALYSIS -- KY 80, DESIGN SECTION G

ROUTE: KY 80		COUNTY: Floyd				
Section G	EASTBOUND			WESTBOUND		
	1985	1986	1987	1985	1986	1987
Temperature (°F)	80.5		105	78.5		97
5-Day Temp. (°F)	76.5		77.2	76.5		72.9
Test Time (hr)	8.50		15.75	8.25		11.50
Deflection No. 1 (mils)	0.168		0.188	0.209		0.164
Deflection No. 2 (mils)	0.089		0.098	0.105		0.116
Deflection No. 3 (mils)	0.053		0.100	0.065		0.090
Deflection No. 4 (mils)	0.036		0.049	0.056		0.059
Subgrade Modulus (psi)	90,000		58,000	69,000		51,000
AC Modulus at Test Temperature (psi)	190,000		240,000	160,000		360,000
AC Modulus at 70°F (psi)	400,000		1,340,000	340,000		900,000

TABLE A5. SUMMARY OF LABORATORY TEST DATA FOR BITUMINOUS SANDSTONE (SECTION A)

LOCATION (MP)	CORE SAMPLE CHARACTERISTICS				TEST SAMPLE CHARACTERISTICS				SONIC MODULUS (psi)
	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	
6.45 RWP WB					7.8	4.0	7.9	141.5	607,000
6.47 RWP WB					7.6	4.0	7.7	142.2	443,000
6.47 CL WB					7.9	4.0	8.0	141.0	583,000
6.50 RWP WB					8.0	4.0	8.2	144.1	197,000
6.53 RWP WB					7.9	4.0	8.0	140.1	*
6.53 CL WB					8.0	4.0	8.3	142.2	297,000
6.55 RWP WB					7.9	4.0	8.1	141.7	917,000
Average for Site					7.9	4.0	8.0	141.8	507,000
Standard Deviation					0.1	0.0	0.2	1.2	230,000

TABLE A5 (continued). SUMMARY OF LABORATORY TEST DATA FOR BITUMINOUS SANDSTONE (SECTION A)

LOCATION (MP)	CORE SAMPLE CHARACTERISTICS				TEST SAMPLE CHARACTERISTICS				SONIC MODULUS (psi)
	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	
6.95 RWP WB	12.5	4.0	13.0	143.2	7.5	4.0	7.6	140.3	337,000
6.97 RWP WB	12.0	4.0	12.4	143.3	5.5	2.0	1.4	144.0	839,000
6.97 CL WB	12.4	4.0	12.8	144.9	4.8	2.0	1.2	142.0	506,000
7.00 RWP WB	11.4	4.0	12.4	151.2	5.8	2.0	1.5	144.1	901,000
7.03 RWP WB	12.2	4.0	12.7	144.5	5.6	2.0	1.5	149.4	994,000
7.05 RWP WB	11.5	4.0	12.0	144.9	5.5	2.0	1.4	144.6	828,000
Average for Site	12.0	4.0	12.6	145.3	5.8	2.3	2.4	144.1	734,200
Standard Deviation	0.4	0.0	0.3	2.7	0.8	0.8	2.3	2.8	232,700
6.95 RWP EB	11.4	4.0	11.9	145.4	5.1	2.0	1.3	142.1	722,000
6.97 CL EB	12.6	4.0	12.6	139.0	4.7	2.0	1.2	142.6	630,000
Average for Site	12.0	4.0	12.3	142.2	4.9	2.0	1.3	142.3	676,000
Standard Deviation	0.6	0.0	0.4	3.2	0.2	0.0	0.1	0.2	46,000

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TABLE A5 (continued). SUMMARY OF LABORATORY TEST DATA FOR BITUMINOUS SANDSTONE (SECTIONS B & C)

LOCATION (MP)	CORE SAMPLE CHARACTERISTICS				TEST SAMPLE CHARACTERISTICS				SONIC MODULUS (psi)
	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	
8.69 RWP WB					10.2	4.0	10.1	138.3	929,000
8.69 CL WB					10.8	4.0	10.8	138.4	588,000
8.70 RWP WB					11.8	4.0	11.7	138.1	292,000
8.74 RWP WB					10.2	4.0	10.2	138.9	419,000
8.77 CL WB					10.6	4.0	10.6	138.5	414,000
8.77 RWP WB					11.3	4.0	11.2	137.9	742,000
8.79 RWP WB					10.9	4.0	7.4	138.1	409,000
Average for Site					10.8	4.0	10.3	138.3	542,000
Standard Deviation					0.5	0.0	1.3	0.3	208,300
11.44 RWP WB					6.7	4.0	6.6	135.6	424,000
11.46 RWP WB					7.2	4.0	7.3	139.3	1,020,000
11.46 CL WB					3.7	4.0	3.9	143.4	*
11.49 RWP WB					9.3	4.0	9.4	139.8	328,000
11.52 CL WB					9.8	4.0	10.0	140.9	392,000
11.52 RWP WB					5.9	4.0	6.0	140.3	794,000
11.54 RWP WB					8.8	4.0	8.9	140.6	568,000
Average for Site					7.4	4.0	7.4	140.0	588,000
Standard Deviation					2.0	0.0	2.0	2.2	228,000

A.105

TABLE A5 (continued). SUMMARY OF LABORATORY TEST DATA FOR BITUMINOUS SANDSTONE (SECTIONS B & C)

LOCATION (MP)	CORE SAMPLE CHARACTERISTICS				TEST SAMPLE CHARACTERISTICS				SONIC MODULUS (psi)
	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	
12.44 RWP WB					7.3	4.0	7.3	137.8	*
12.46 RWP WB					9.3	4.0	9.3	139.3	309,000
12.46 CL WB					10.1	4.0	10.0	138.1	231,000
12.49 RWP WB					7.7	4.0	7.7	139.4	946,000
12.52 RWP WB					8.5	4.0	8.7	142.0	296,000
12.52 CL WB					8.5	4.0	8.7	141.5	821,000
Average for Site					8.6	4.0	8.6	139.7	520,600
Standard Deviation					0.9	0.0	0.9	1.6	274,000
12.69 RWP EB					9.8	4.0	9.9	140.9	1,040,000
12.70 CL EB					9.8	4.0	9.8	138.2	518,300
12.70 RWP EB					9.7	4.0	9.8	140.9	238,000
12.74 RWP EB					10.1	4.0	10.3	141.9	353,000
12.77 CL EB					10.1	4.0	10.3	141.6	303,000
12.77 RWP EB					9.7	4.0	10.0	143.5	977,000
12.79 RWP EB					9.8	4.0	10.0	143.4	199,000
Average for Site					9.8	4.0	10.0	141.5	518,000
Standard Deviation					0.2	0.0	0.2	1.7	324,000

A.106

TABLE A5 (continued). SUMMARY OF LABORATORY TEST DATA FOR BITUMINOUS SANDSTONE (SECTIONS B & C)

LOCATION (MP)	CORE SAMPLE CHARACTERISTICS				TEST SAMPLE CHARACTERISTICS				SONIC MODULUS (psi)
	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	
16.95 RWP WB	11.8	4.0	12.7	149.0	8.0	4.0	8.2	142.4	1,070,000
16.97 RWP WB	12.5	4.0	12.7	141.5	8.6	4.0	8.8	141.6	375,000
16.97 CL WB	12.2	4.0	12.4	138.9	4.8	2.0	1.2	139.7	3,030,000
17.00 RWP WB	13.5	4.0	13.9	143.0	9.2	4.0	9.5	142.7	503,000
17.03 RWP WB	12.7	4.0	12.9	141.9	4.4	2.0	1.1	144.6	440,000
17.03 CL WB	12.2	4.0	13.0	141.7	8.9	4.0	9.1	142.3	287,000
17.05 RWP WB	12.7	4.0	13.0	142.3	8.8	4.0	9.0	142.9	443,000
Average for Site	12.5	4.0	12.9	142.6	7.5	3.4	6.7	142.3	878,000
Standard Deviation	0.5	0.0	0.4	2.9	1.9	0.9	3.5	1.4	909,600
19.15 RWP WB	12.8	4.0	12.9	140.5	9.6	4.0	9.6	139.6	656,000
19.17 RWP WB	12.4	4.0	12.8	143.3	9.6	4.0	10.0	144.2	1,570,000
19.17 CL WB	12.1	4.0	12.4	142.1	5.0	2.0	1.3	143.1	3,350,000
19.20 RWP WB	13.2	4.0	13.4	141.1	9.6	4.0	9.7	139.9	364,000
19.23 CL WB	15.0	4.0	15.3	141.4	9.8	4.0	9.9	141.0	1,120,000
19.25 RWP WB	13.7	4.0	14.0	142.1	7.4	2.0	1.9	141.5	5,390,000
Average for Site	13.2	4.0	13.5	141.7	8.5	3.3	7.1	141.6	2,075,000
Standard Deviation	1.0	0.0	1.0	0.9	1.8	0.9	3.9	1.6	1,766,500

A.107

TABLE A5 (continued). SUMMARY OF LABORATORY TEST DATA FOR BITUMINOUS SANDSTONE (SECTIONS B & C)

LOCATION (MP)	CORE SAMPLE CHARACTERISTICS				TEST SAMPLE CHARACTERISTICS				SONIC MODULUS (psi)
	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	
19.55 RWP EB	12.8	4.0	13.0	141.6	4.4	2.0	1.1	142.7	384,000
19.57 CL EB	13.4	4.0	13.8	142.6	4.6	2.0	1.1	140.8	466,000
19.60 RWP EB	11.6	4.0	12.3	147.3	4.4	2.0	1.1	138.7	2,550,000
19.63 CL EB	14.2	4.0	14.5	142.2	10.2	4.0	10.8	146.4	1,300,000
19.63 RWP EB	13.5	4.0	13.9	143.3	10.0	4.0	10.2	141.7	725,000
19.65 RWP EB	13.6	4.0	14.0	143.1	4.4	2.0	1.1	141.7	617,000
Average for Site	13.2	4.0	13.6	143.4	6.3	2.6	4.2	142.0	1,007,000
Standard Deviation	0.8	0.0	0.7	1.8	2.7	0.9	4.4	2.3	750,500

TABLE A5 (continued). SUMMARY OF LABORATORY TEST DATA FOR BITUMINOUS SANDSTONE (SECTION D)

LOCATION (MP)	CORE SAMPLE CHARACTERISTICS				TEST SAMPLE CHARACTERISTICS				SONIC MODULUS (psi)
	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	
0.95 RWP WB	11.5	4.0	11.8	142.9	8.9	4.0	9.2	145.0	2,120,000
0.97 RWP WB	11.2	4.0	11.5	147.1	SAMPLE NOT TESTED				
0.97 CL WB	12.2	4.0	12.6	143.5	SAMPLE NOT TESTED				
1.00 RWP WB	12.2	4.0	12.6	143.6	9.2	4.0	9.6	144.8	516,000
1.03 CL WB	11.9	4.0	12.0	140.5	3.7	2.0	1.0	146.9	409,000
1.03 RWP WB	12.1	4.0	12.4	142.4	9.8	4.0	9.5	134.3	1,580,000
1.05 RWP WB	11.2	4.0	11.5	142.7	8.9	4.0	9.1	141.9	433,000
Average for Section	11.8	4.0	12.1	143.3	8.1	3.6	7.7	142.6	1,011,600
Standard Deviation	0.4	0.0	0.4	1.8	2.2	0.8	3.3	4.5	706,400
1.15 RWP WB	11.8	4.0	12.2	142.7	9.2	4.0	9.5	143.0	1,450,000
1.17 RWP WB	12.1	4.0	12.3	141.8	9.1	4.0	9.4	142.7	505,000
1.17 CL WB	12.4	4.0	12.5	140.3	9.2	4.0	9.4	141.3	1,370,000
1.20 RWP WB	11.4	4.0	11.8	142.8	4.4	2.0	1.1	140.5	570,000
1.23 RWP WB	12.8	4.0	13.2	142.8	10.2	4.0	10.5	142.9	1,470,000
1.23 CL WB	13.5	4.0	13.7	140.4	10.3	4.0	10.5	141.4	624,000
1.25 RWP WB	14.3	4.0	14.7	142.7	10.9	4.0	11.2	142.8	1,870,000
Average for Site	12.6	4.0	12.9	141.9	9.1	3.7	8.8	142.1	1,122,700
Standard Deviation	0.9	0.0	0.9	1.0	2.0	0.7	3.2	0.9	504,700

A.109

TABLE A5 (continued). SUMMARY OF LABORATORY TEST DATA FOR BITUMINOUS SANDSTONE (SECTION D)

LOCATION (MP)	CORE SAMPLE CHARACTERISTICS				TEST SAMPLE CHARACTERISTICS				SONIC MODULUS (psi)
	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	
1.77 CL WB	17.2	4.0	16.8	134.0	8.3	4.0	8.4	140.3	649,000
1.77 RWP WB	16.7	4.0	16.6	137.4	10.8	4.0	11.0	141.9	683,000
1.80 RWP WB	15.8	4.0	16.5	144.3	10.3	4.0	10.7	144.1	2,050,000
1.85 RWP WB	16.0	4.0	16.6	143.8	11.0	4.0	11.2	141.3	725,000
1.83 RWP WB	SAMPLE DAMAGED								
1.83 CL WB	SAMPLE DAMAGED								
Average for Site	16.4	4.0	16.6	139.9	10.1	4.0	10.3	141.9	1,026,800
Standard Deviation	0.6	0.0	0.1	4.3	1.1	0.0	1.1	1.4	591,400
1.75 RWP EB	13.7	4.0	14.4	146.2	5.0	2.0	1.3	144.9	679,000
1.77 CL EB	14.6	4.0	14.8	139.8	4.9	2.0	1.3	146.1	542,000
1.80 RWP EB	12.7	4.0	13.4	146.3	8.6	4.0	9.0	144.8	1,120,000
1.83 CL EB	12.5	4.0	12.9	143.6	5.2	2.0	1.3	145.3	758,000
1.83 RWP EB	12.0	4.0	12.6	145.6	5.4	2.0	1.4	146.4	818,000
1.85 RWP EB	12.6	4.0	12.7	139.5	3.6	2.0	0.9	145.8	405,000
Average for Site	13.0	4.0	13.5	143.5	5.4	2.3	2.5	145.6	720,300
Standard Deviation	0.9	0.0	0.8	2.9	1.5	0.8	2.9	0.6	225,000

A.110

TABLE A5 (continued). SUMMARY OF LABORATORY TEST DATA FOR BITUMINOUS SANDSTONE (SECTION E)

LOCATION (MP)	CORE SAMPLE CHARACTERISTICS				TEST SAMPLE CHARACTERISTICS				SONIC MODULUS (psi)
	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	
4.45 CL EB	14.1	4.0	14.8	145.3	8.5	4.0	8.8	143.2	1,480,000
4.45 RWP EB	13.8	4.0	14.3	143.2	7.8	4.0	8.1	143.7	956,000
4.47 CL EB	14.2	4.0	14.5	141.0	5.1	2.0	1.3	144.0	583,000
4.47 RWP EB	14.7	4.0	15.1	140.9	5.2	2.0	1.3	143.0	754,000
4.50 RWP EB	13.6	4.0	14.3	144.5	8.2	4.0	8.7	145.6	1,120,000
4.53 CL EB	14.7	4.0	15.0	139.9	11.5	4.0	11.8	140.3	781,000
4.53 RWP EB	14.0	4.0	14.6	142.9	4.5	2.0	1.2	144.6	561,000
4.55 RWP EB	14.4	4.0	15.0	141.6	7.8	4.0	8.2	143.4	1,120,000
Average for Site	14.2	4.0	14.7	142.4	7.3	3.2	6.2	143.5	919,400
Standard Deviation	0.4	0.0	0.3	1.8	2.2	1.0	4.0	1.5	292,500
4.55 RWP WB	13.5	3.9	13.6	142.8	10.7	3.9	10.8	143.1	1,020,000
4.57 RWP WB	14.5	3.9	14.7	145.0	10.4	3.9	10.5	142.8	283,000
4.57 CL WB	15.0	3.9	15.1	144.3	10.7	3.9	10.7	140.6	436,000
4.60 RWP WB	14.3	3.9	14.4	144.0	10.7	3.9	10.8	144.7	1,520,000
4.63 CL WB	13.9	4.0	14.6	142.4	5.1	2.0	1.3	145.7	582,000
4.63 RWP WB	14.1	3.9	14.1	142.0	8.2	3.9	8.3	143.5	1,440,000
4.65 RWP WB	13.9	4.0	14.6	144.0	5.2	2.0	1.3	145.4	761,000
4.65 CL WB	13.9	4.0	14.6	143.8	5.1	2.0	1.3	145.8	650,000
Average for Site	14.1	4.0	14.5	143.5	8.3	3.2	6.9	143.9	836,500
Standard Deviation	0.4	0.1	0.4	1.0	2.6	1.0	4.4	1.7	423,800

A111

TABLE A5 (continued). SUMMARY OF LABORATORY TEST DATA FOR BITUMINOUS SANDSTONE (SECTION F)

LOCATION (MP)	CORE SAMPLE CHARACTERISTICS				TEST SAMPLE CHARACTERISTICS				SONIC MODULUS (psi)
	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	
5.95 RWP EB	20.8	4.0	21.2	141.7	14.9	4.0	15.0	140.0	1,030,000
5.97 CL EB	20.1	4.0	20.6	142.2	13.5	4.0	13.7	141.0	780,000
5.97 RWP EB	19.2	4.0	19.2	139.0	11.8	4.0	11.9	140.7	223,000
6.00 RWP EB	19.4	4.0	20.1	144.1	14.00	4.0	14.2	140.9	1,130,000
6.03 CL EB	21.7	4.0	22.1	141.3	11.8	4.0	11.9	140.7	710,000
6.03 RWP EB	21.4	4.0	22.1	143.4	11.2	4.0	11.6	143.2	481,000
6.05 RWP EB	19.5	4.0	19.9	142.0	14.1	4.0	14.6	143.5	1,200,000
Average for Site	20.3	4.0	20.7	141.9	13.0	4.0	13.3	141.4	793,400
Standard Deviation	1.0	0.0	1.0	1.5	1.3	0.0	1.3	1.3	330,500
6.25 RWP WB	17.9	4.0	18.6	144.3	12.2	4.0	12.4	140.6	300,000
6.27 CL WB	18.4	4.0	18.8	142.3	10.5	4.0	10.9	143.5	385,000
6.27 RWP WB	17.6	4.0	18.3	144.5	10.9	4.0	11.1	141.7	301,000
6.30 RWP WB	20.3	4.0	21.0	143.6	10.9	4.0	11.0	140.4	705,000
6.33 CL WB	20.9	4.0	21.0	139.3	12.9	4.0	13.0	140.3	839,000
6.33 RWP WB	20.5	4.0	21.1	143.2	10.8	4.0	10.9	140.8	1,990,000
6.35 RWP WB	20.4	4.0	21.2	144.3	14.8	4.0	15.1	142.2	1,140,000
Average for Site	19.4	4.0	20.0	143.1	11.8	4.0	12.1	141.4	808,600
Standard Deviation	1.3	0.0	1.3	1.7	1.4	0.0	1.5	1.1	562,300

TABLE A5 (continued). SUMMARY OF LABORATORY TEST DATA FOR BITUMINOUS SANDSTONE (SECTION F)

LOCATION (MP)	CORE SAMPLE CHARACTERISTICS				TEST SAMPLE CHARACTERISTICS				SONIC MODULUS (psi)
	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	
6.45 RWP WB	20.7	4.0	21.3	143.2	11.4	4.0	11.8	144.0	281,000
6.47 CL WB	21.1	4.0	21.7	142.9	14.9	4.0	15.1	141.0	187,000
6.47 RWP WB	21.0	4.0	21.8	144.4	11.8	4.0	12.0	141.9	824,000
6.50 RWP WB	20.6	4.0	21.3	143.4	5.2	2.0	1.3	140.7	839,000
6.53 RWP WB	21.2	4.0	20.8	136.2	11.4	4.0	11.2	136.7	497,000
6.55 RWP WB	19.2	4.0	19.4	140.7	11.1	4.0	11.1	139.4	209,000
Average for Site	20.6	4.0	21.1	141.8	10.9	3.6	10.4	140.6	472,800
Standard Deviation	0.7	0.0	0.8	2.8	2.9	0.8	4.3	2.2	272,700

TABLE A5 (continued). SUMMARY OF LABORATORY TEST DATA FOR BITUMINOUS SANDSTONE (SECTION G)

LOCATION (MP)	CORE SAMPLE CHARACTERISTICS				TEST SAMPLE CHARACTERISTICS				SONIC MODULUS (psi)
	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	
11.15 RWP WB	17.3	4.0	17.8	143.2	4.6	2.0	1.2	140.1	651,000
11.17 RWP WB	16.7	4.0	17.4	142.6	11.4	4.0	11.8	141.3	750,000
11.17 CL WB	16.8	4.0	17.4	143.7	11.5	4.0	11.7	141.5	447,000
11.20 RWP WB	17.7	4.0	18.2	141.4	12.2	4.0	12.4	140.3	3,710,000
11.23 CL WB	17.2	4.0	17.2	139.1	10.7	4.0	10.8	140.7	3,740,000
11.23 RWP WB	16.6	4.0	17.2	142.6	11.7	4.0	12.1	141.9	3,420,000
11.25 RWP WB	16.4	4.0	17.1	142.9	11.5	4.0	11.9	142.2	383,000
Average for Site	17.0	4.0	17.5	142.2	10.5	3.7	10.3	141.1	1,871,600
Standard Deviation	0.4	0.0	0.4	1.4	2.4	0.7	3.7	0.7	1,524,200

A.114

TABLE A6. SUMMARY OF LABORATORY TEST DATA FOR BITUMINOUS LIMESTONE (SECTION A)

TEST SAMPLE CHARACTERISTICS					
LOCATION (MP)	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	SONIC MODULUS (psi)
6.45 RWP WB	4.3	4.0	4.6	150.7	*
6.47 RWP WB	4.0	4.0	4.3	151.2	*
6.47 CL WB	4.1	2.0	1.1	149.3	2,370,000
6.50 RWP WB	4.3	2.0	1.2	156.8	2,690,000
6.53 RWP WB	4.4	2.0	1.2	149.3	2,740,000
6.53 CL WB	4.4	4.0	4.7	145.2	*
6.55 RWP WB	4.6	2.0	1.2	150.8	2,950,000
Average for Site	4.3	2.8	2.6	150.5	2,690,000
Standard Deviation	0.2	1.0	1.7	3.2	157,000

Research Report
KTC 90-26A

PERFORMANCE EVALUATIONS OF
CRUSHED SANDSTONE AGGREGATES
IN BITUMINOUS BASES
(DATA APPENDIX TO REPORT KTC 90-26)

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and

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TABLE A6 (continued). SUMMARY OF LABORATORY TEST DATA FOR BITUMINOUS LIMESTONE SAMPLES (SECTION B & C)

LOCATION (MP)	TEST SAMPLE CHARACTERISTICS				
	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	SONIC MODULUS (psi)
8.69 RWP WB	4.0	2.0	1.1	146.8	2,210,000
8.69 CL WB	3.9	4.0	4.1	146.8	*
8.70 RWP WB	4.0	4.0	4.3	147.7	*
8.74 RWP WB	4.0	2.0	1.0	146.0	2,140,000
8.77 CL WB	4.6	4.0	4.7	139.3	*
8.77 RWP WB	2.7	4.0	3.0	153.6	*
8.79 RWP WB	4.2	4.0	4.4	146.2	*
Average for Site	3.9	3.4	3.2	146.6	2,180,000
Standard Deviation	0.5	0.9	1.5	3.9	18,700
11.45 RWP WB	2.6	4.0	2.6	141.6	*
11.46 RWP WB	2.4	4.0	2.6	151.6	*
11.46 CL WB	2.5	4.0	2.6	146.2	*
11.49 RWP WB	2.4	4.0	2.6	147.3	*
11.52 CL WB	2.6	4.0	2.7	143.2	*
11.52 RWP WB	2.7	4.0	2.9	151.3	*
11.54 RWP WB	2.1	4.0	2.2	139.9	*
Average for Site	2.4	4.0	2.6	145.9	*
Standard Deviation	0.2	0.0	0.2	4.2	*

TABLE A6 (continued). SUMMARY OF LABORATORY TEST DATA FOR BITUMINOUS LIMESTONE SAMPLES (SECTIONS B & C)

TEST SAMPLE CHARACTERISTICS					
LOCATION (MP)	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	SONIC MODULUS (psi)
12.44 RWP WB	2.4	4.0	2.5	138.3	*
12.46 RWP WB					
12.46 CL WB					
12.49 RWP WB	2.6	4.0	2.7	142.9	*
12.52 RWP WB	2.7	4.0	2.9	146.7	*
12.52 CL WB	2.7	4.0	2.7	137.4	
Average for Site	2.6	4.0	2.7	141.3	*
Standard Deviation	0.1	0.0	0.1	3.7	*
12.69 RWP EB	2.0	4.0	2.1	145.8	*
12.70 CL EB	2.4	4.0	2.5	144.6	*
12.70 RWP EB	1.8	4.0	2.0	151.1	*
12.74 RWP EB	1.9	4.0	2.0	148.7	*
12.77 CL EB	1.6	4.0	1.6	142.2	*
12.77 RWP EB	2.3	4.0	2.5	151.5	*
12.79 RWP EB	2.4	4.0	2.6	150.9	*
Average for Site	2.0	4.0	2.2	147.8	*
Standard Deviation	0.3	0.0	0.3	3.4	*

TABLE A7. SUMMARY OF REPEATED LOAD TESTING OF FIELD CORES --
BITUMINOUS SANDSTONE

LOCATION (MP)	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (gms)	UNIT WEIGHT (pcf)	RESILIENT MODULUS (psi)
12.2 WB#2, L#6	2.8	2.0	317.4	140.1	146,700
12.2 WB#2, L#5	2.8	2.0	312.0	135.5	312,700
12.2 WB#2, L#4	2.4	2.0	273.1	138.0	204,800
12.2 WB#2, L#3	2.7	2.0	307.0	139.2	265,500
12.3 WB, L#6	2.6	2.0	306.0	141.4	141,000
12.3 WB, L#5	3.0	2.0	347.0	139.8	203,500
6.1 EB#3, L#4	3.6	2.0	429.0	142.7	219,500
6.1 EB#3, L#3	3.0	2.0	352.1	142.0	727,100
6.1 EB#3, L#2	4.0	2.0	474.0	143.9	213,400
6.9-225, L#5	3.7	2.0	448.0	146.8	241,000
6.9-225, L#4	3.8	2.0	455.0	143.3	213,100
6.9 #1, L#4	2.2	2.0	254.0	139.8	190,100
6.9 #1, L#3	2.9	2.0	338.0	140.6	129,300
6.9 #1, L#2	4.6	2.0	549.0	145.4	383,200
8.79 RWP WB, #3	3.9	2.0	440.0	141.9	252,000
8.79 RWP WB, #2	3.0	2.0	336.0	140.9	624,900
8.79 RWP WB, #1	2.6	2.0	290.0	141.3	430,700
8.77 RWP WB, #3	2.7	2.0	292.0	135.8	221,700
8.77 RWP WB, #2	4.2	2.0	469.0	139.8	184,400
8.77 RWP WB, #1	3.0	2.0	335.0	139.0	162,200
Average	3.2	2.0	366.2	140.9	273,300
Standard Deviation	0.6	0.0	79.9	2.7	153,800

TABLE A8. SUMMARY OF REPEATED LOAD TESTING OF FIELD CORES --
BITUMINOUS LIMESTONE

LOCATION (MP)	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT(gm.)	UNIT WEIGHT (pcf)	RESILIENT MODULUS (psi)
6.1 EB#3 L#1	4.2	2.0	501.0	145.5	458,400
6.9-225 L#1	3.2	2.0	382.0	143.4	301,600
6.9 #1 L#1	4.8	2.0	574.0	145.5	375,500
8.79 RWP WB L#1,2&3	3.8	2.0	460.0	149.3	317,000
8.77 RWP WB L#1&2	2.6	2.0	303.0	147.1	277,600
Average	3.7	2.0	444.0	146.2	346,000
Standard Deviation	0.8	0.0	93.9	2.0	64,800

APPENDIX B

KY 15

WHITESBURG BYPASS

Design Criteria

The route is considered to be in light mountainous terrain. Two typical sections are encountered. One typical section, utilized for the area through the M.C. Fields and College Hill Subdivisions and the end of the route near old KY 15, consists of two 14-foot roadways separated by a 12-foot median with additional 12-foot turning lanes as required. Outside shoulders are 10-feet in width. The remainder of the route has a 24-foot roadway, 10-foot shoulders and climbing lanes as required. Total asphaltic concrete thickness throughout the route was 6.5 inches, including 5.5-inches bituminous sandstone base and one-inch bituminous limestone surface. An example of the typical section for the normal main line design utilized on Whitesburg Bypass is illustrated in Figure B1.

The design speed for the Class 2 route was 60 MPH. The 1975 average daily traffic was 5,310 vehicles per day. The design year (1990) average daily traffic was projected to be 7,840 vehicles per day with eight percent trucks. The design hour volume was 860 vehicles per hour. The designed level of service was "C" for 1975 traffic and "D" for 1990 traffic. Traffic projections for the design were developed by the Department of Highways, Division of Planning. The following data were obtained from information available from project files.

Geometric Design Criteria

Class of Highway:	2
Type of Terrain:	Light Mountainous
Design Speed:	60 MPH
Maximum Curvature:	5° - 30'
Maximum Grade:	+/- 5%
Stopping Sight Distance:	475 ft (minimum), 650 ft (desirable)
Superelevation:	1/4" : 1'
Typical Sections:	
Section 1:	2 - 24-ft pavement sections 12-ft median 10-ft shoulders 12-ft turning lanes where required
Section 2:	24-ft roadway 10-ft shoulders climbing lanes where required

Traffic Volume:		
ADT (1975):		5,310
ADT (1990):		7,840
<hr/>		
DHV (1975):		580
DHV (1990):		860
D (%):		60
T (%):		8
Level of Service	(1975):	"C"
Level of Service	(1990):	"D"

Pavement Design Criteria

EWL = 30×10^6 (Design year, 1995)

CBR = 11 (Rock Subgrade)

Pavement Design:

8-1/2"	Dense Graded Aggregate Base
5-1/2"	Bituminous Concrete Base - Class S
<u>1"</u>	Bituminous Concrete Surface
15"	Total

Performance Monitoring

Construction of the Whitesburg Bypass was completed and opened to traffic in 1983. Initial condition surveys were conducted in June, 1985. Subsequent surveys were conducted in October 1986, and again in July 1987. Performance monitoring encompassed the entire approximately 2.3-mile length of the Whitesburg Bypass. Eight survey sections were established during the initial survey and maintained throughout the study. The condition survey sections were not equal in length, but were generally divided by a natural boundary, such as bridges.

Pavement rut depths were obtained within every section during each condition rating survey. Information relative to this task is contained in Table B1. There were no significant changes of the average rut depths. Of particular interest however, are survey section numbers 1, 6 and 8. All three of these sections contained intersections. Additionally, survey section number 8 was on a grade. The maximum rut depth in section number 1 was 0.8 inch and was located in the southbound left-turn lane of the bypass' intersection with US 119. At the north end of the route's intersection with existing KY 15, the maximum rut depth, measured about 200 feet from the stop bar, was only 0.6 inch in 1987. Rutting at the bypass' intersection with Depot Street was less than 0.5

inch. Survey section number 7 had no surface course during the 1985 survey. The 5-1/2 inch Class S base had nearly a one-inch deep rut at one station. A surface course was placed between the time of the 1985 and 1986 surveys and rutting was not significant thereafter (about 1/4 inch).

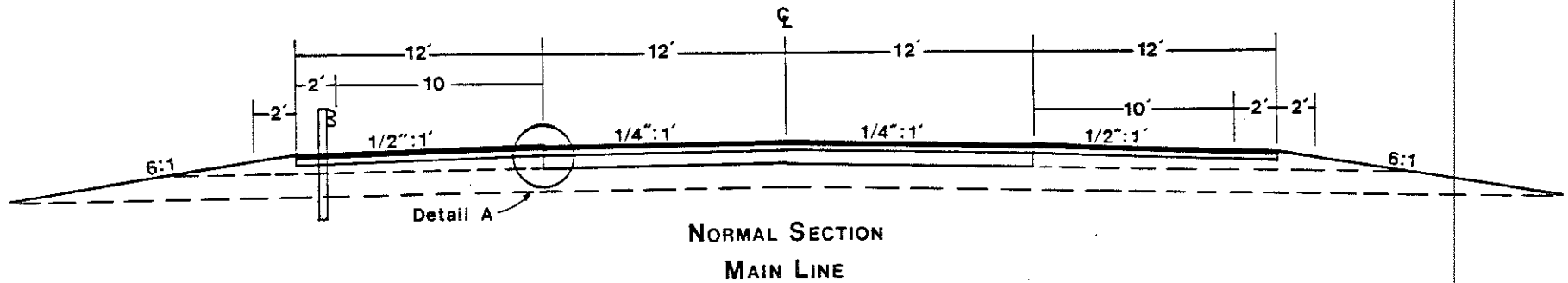
During the condition rating surveys, the rating crew always began on the south end of the bypass and proceeded in a northerly direction to the end of the route at the intersection with existing KY 15. Condition survey data are contained in Table B2 and Table B3 for the Kentucky System and the Asphalt Institute System, respectively. Condition survey data for each respective technique were averaged and rounded for the purpose of this report. Survey section numbers 1, 6, and 8 had the worst performance of the eight sections, primarily due to the above average rut depths. The pavement of these sections also exhibited increased levels of cracking and corrugations. Figures B2 and B3 typify longitudinal and transverse cracking, and corrugations observed during the 1986 survey. Figure B2 shows the southbound lanes at the northern end of the bypass near the junction of existing KY 15 and the bypass (Section No. 8). Figure B3 shows the pavement in the northbound lanes just north of the intersection with Depot Street (section No. 6). Figure B4 is a view of the intersection approach to the junction with US 119 (section No. 1). Rutting is readily apparent in both the left-turn lane and through-lane.

Information from the Asphalt Institute condition rating system, neglecting data from survey section number 7, indicates little difference in the performance of the northbound and southbound directions. The southbound lane of survey section number 1 was consistently rated lower than the northbound lane. This was due to the intersection approach contained within the survey section. Pavement corrugations, longitudinal cracking, and shoving and pushing contributed considerably to the poorer performance of the southbound lane. There were virtually no differences in the performance of the northbound lane relative to the southbound lane of survey sections two through five. The northbound lane of survey section number 6 was rated consistently lower than the southbound lane. Again, this can be attributed directly to the intersection approach contained within the survey section. Longitudinal cracking, alligator cracking, and raveling were predominant factors in the poorer performance. The performances of both northbound and southbound lanes of survey section number 8 were consistently rated lower than the other sections. An intersection approach was included in the northbound lane. The southbound lanes were on an incline. When all survey sections, except section

number 7, were considered in the performance analysis, the northbound and southbound lanes exhibited equivalent performance.

Results of Road Rater deflection testing and modulus calculations are contained in Table B4. The back-calculated average moduli values are certainly confusing. The average of the uncorrected field deflections contained in Table B4 appear to increase with time, as would be expected. However, the modulus of the crushed sandstone subgrade decreases significantly while the asphaltic concrete modulus deviates from the expected behavior. One would expect the subgrade modulus to remain fairly constant, especially over a short survey period. The estimated CBR of the crushed sandstone ranged from about 20 percent to 30 percent. A possible explanation for the increase in asphaltic concrete moduli from 1985 to 1986 would be the inclusion of deflection data obtained throughout survey section number 7, which had received its final surface between test dates.

Cores were obtained from the asphaltic concrete pavement for laboratory evaluation. Table B5 contains results from the laboratory evaluations. The sonic modulus of six bituminous sandstone base specimen obtained in the northbound lane averaged 404,000 psi. The unit weight of the six specimen averaged 141.9 pcf. As seen in Figure B5, cores obtained in the southbound lane varied considerably in their total thickness. The Class S base measured about 5-1/2 inches and is easily discernible from the bituminous limestone portions of the cores. The cores were obtained to the south and north of approximate MP 2.3, near the junction of the bypass with existing KY 15. An in-place CBR test was attempted at a location 50 feet north of the established zero line. However, the crushed sandstone subgrade could not be penetrated sufficiently to provide accurate results. The two-foot thickness of crushed sandstone provided excellent subgrade bearing support.



ALTERNATE D

TRAVEL LANE

- 1" Compacted Depth Bituminous Concrete Surface
- 0.8 lb/sq yd Bituminous Tack Coat
- 5 1/2" Compacted Depth Bituminous Concrete Base Class S (2-2 3/4" Courses)
- 8 1/2" Compacted Depth Dense Grade Aggregate Base

SHOULDER

- 2.40 lb/sq yd Bituminous Seal Coat, 20 lb/sq yd Crushed Stone Aggregate Size No. 8 (Required From Edge Of Paved Shoulder To A Point Two Feet Down The Ditch Or Fill Slope)
- 1" Compacted Depth Bituminous Concrete Surface, 0.8 lb/sq yd Bituminous Tack Coat
- 5 1/2" Compacted Depth Bituminous Concrete Base Class S (2-2 3/4" Courses)
- One Lift Of Rock Roadbed

B.6

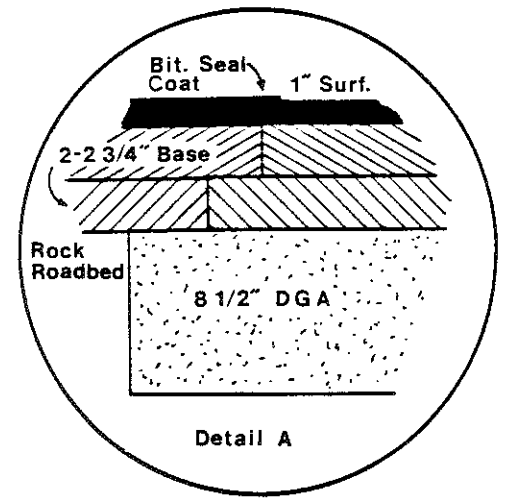


Figure B1. Typical Section and Detail for Mainline Section.



Figure B2. Transverse Cracking in the Asphaltic Concrete Surface (Section No. 8).



Figure B3. Longitudinal Cracking and Corrugations in the Asphaltic Concrete Pavement (Section No. 6).



Figure B4. Rutting of the Asphaltic Concrete Pavement at the Junction of Whitesburg Bypass and US 119 (Section No. 1).



Figure B5. Field Cores Obtained from the Whitesburg Bypass at Approximate MP 2.3 (Section No. 8).

TABLE B1. 1985 RUTTING DATA -- KY 15, WHITESBURG BYPASS

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 1 -- STA 0+00 to STA 5+21								
1+00			0.5	0.3	0.5	0.4	0.5	0.3
1+50			0.3	0.1	0.3	0.1	0.3	0.1
2+50			0.3	0.3	0.3	0.1	0.1	0.3
3+50			0.3	0.0				
4+50			0.5	0.5				
Averages			0.4	0.2	0.3	0.2	0.3	0.2
Std. Dev.			0.1	0.2	0.1	0.1	0.2	0.1
SURVEY SECTION 2 -- STA 5+21 to STA 21+54								
13+11							0.1	0.0
13+61							0.3	0.4
14+11							0.4	0.1
15+11			0.3	0.1				
17+11			0.4	0.1				
19+11			0.1	0.1				
Averages			0.3	0.1			0.3	0.2
Std. Dev.			0.1	0.0			0.1	0.2
SURVEY SECTION 3 -- STA 21+54 to STA 36+99								
26+72			0.1	0.1			0.1	0.3
28+72			0.1	0.8			0.1	0.4
30+72			0.4	0.3			0.0	0.4
Averages			0.2	0.4			0.1	0.3
Std. Dev.			0.1	0.3			0.1	0.1

NOTES: Section No. 2 contains a bridge approximately 390 feet in length.
Section No. 3 contains a bridge approximately 318 feet in length.

TABLE B1 (continued). 1985 RUTTING DATA -- KY 15, WHITESBURG BYPASS

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 4 -- STA 36+99 to STA 70+10								
43+91			0.1	0.1			0.3	0.3
45+91			0.1	0.1			0.1	0.3
47+91			0.1	0.1			0.3	0.4
49+91								
51+91								
53+91								
55+91								
57+91								
59+91								
61+91								
67+91								
69+91								
Average			0.1	0.1			0.2	0.3
Std. Dev.			0.0	0.0			0.1	0.1
SURVEY SECTION 5 -- STA 70+10 to STA 72+83								
72+83			0.3	0.1	0.1	0.1	0.1	0.1
Average			0.3	0.1	0.1	0.1	0.1	0.1
Std. Dev.								
SURVEY SECTION 6 -- STA 72+83 to STA 88+89								
74+83	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1
76+83	0.3	0.0	0.3	0.1	0.0	0.3	0.1	0.3
78+83	0.1	0.0	0.3	0.0	0.1	0.1	0.0	0.1
82+83								
84+83								
86+83								
Average	0.2	0.0	0.2	0.1	0.1	0.1	0.1	0.2
Std. Dev.	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

NOTES: Section No. 4 contains a bridge approximately 292 feet in length.
Section No. 5 contains a bridge approximately 152 feet in length.

TABLE B1 (continued). 1985 RUTTING DATA -- KY 15, WHITESBURG BYPASS

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 7 -- STA 88+89 to STA 100+55								
90+89	0.3	0.1	0.4	0.1	0.1	0.0	0.1	0.1
92+89	0.1	0.1	0.3	0.1	0.1	0.1	0.3	0.9
Average	0.2	0.1	0.3	0.1	0.1	0.1	0.2	0.5
Std. Dev.	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.4
SURVEY SECTION 8 -- STA 100+55 to STA 120+65								
104+55			0.3	0.3	0.0	0.1	0.3	0.3
106+55			0.1	0.3	0.0	0.0	0.4	0.3
112+55			0.1	0.3	0.1	0.1	0.4	0.1
Average			0.2	0.3	0.0	0.1	0.3	0.2
Std. Dev.			0.1	0.0	0.1	0.1	0.1	0.1

NOTE: Section No. 7 had no surface course during the 1985 survey.

TABLE B1 (continued). 1986 RUTTING DATA -- KY 15, WHITESBURG BYPASS

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 1 -- STA 0+00 to STA 5+21								
1+00			0.2	0.3	0.6	0.3	0.6	0.6
1+50			0.3	0.3	0.3	0.4	0.3	0.3
2+50			0.1	0.3	0.1	0.4	0.3	0.2
3+50			0.3	0.4	0.2	0.3	0.1	0.3
4+50			0.6	0.8			0.4	0.3
Average			0.3	0.4	0.3	0.4	0.4	0.3
Std. Dev.			0.2	0.2	0.2	0.1	0.2	0.2
SURVEY SECTION 2 -- STA 5+21 to STA 21+54								
13+11			0.4	0.3			0.1	0.1
15+11			0.3	0.2			0.3	0.1
19+11			0.4	0.2			0.3	0.2
Average			0.4	0.2			0.2	0.1
Std. Dev.			0.1	0.0			0.1	0.1
SURVEY SECTION 3 -- STA 21+54 to STA 36+99								
26+72			0.2	0.3			0.2	0.3
28+72			0.3	0.4			0.3	0.3
30+72			0.4	0.2			0.1	0.3
Average			0.3	0.3			0.2	0.3
Std. Dev.			0.1	0.1			0.1	0.0

NOTES: Section No. 2 contains a bridge approximately 390 feet in length.
Section No. 3 contains a bridge approximately 318 feet in length.

TABLE B1 (continued). 1986 RUTTING DATA -- KY 15, WHITESBURG BYPASS

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 4 -- STA 36+99 to STA 70+10								
43+91			0.3	0.2			0.3	0.3
45+91			0.2	0.2			0.3	0.3
47+91			0.3	0.1			0.3	0.3
49+91			0.3	0.2			0.2	0.2
51+91			0.3	0.0			0.1	0.2
53+91			0.3	0.1			0.2	0.3
55+91			0.3	0.1			0.2	0.1
57+91			0.3	0.2	0.0	0.1	0.1	0.3
59+91			0.3	0.1	0.1	0.0	0.1	0.2
61+91			0.4	0.3	0.2	0.1	0.4	0.3
67+91			0.3	0.3	0.1	0.1	0.3	0.4
69+91			0.3	0.2	0.0	0.1	0.3	0.3
Average			0.3	0.2	0.1	0.1	0.2	0.2
Std. Dev.			0.0	0.1	0.1	0.0	0.1	0.1
SURVEY SECTION 5 -- STA 70+10 to STA 72+83								
72+83			0.3	0.2	0.1	0.1	0.2	0.1
Average			0.3	0.2	0.1	0.1	0.2	0.1
Std. Dev.								
SURVEY SECTION 6 -- STA 72+83 to STA 88+89								
74+83	0.3	0.1	0.5	0.1	0.1	0.1	0.2	0.2
76+83	0.1	0.1	0.4	0.1	0.1	0.1	0.3	0.3
78+83	0.3	0.1	0.4	0.1	0.1	0.2	0.2	0.2
82+83	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.3
84+83								
86+83								
Average	0.2	0.1	0.4	0.1	0.1	0.1	0.2	0.3
Std. Dev.	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1

NOTES: Section No. 4 contains a bridge approximately 292 feet in length.
Section No. 5 contains a bridge approximately 152 feet in length.

TABLE B1 (continued). 1986 RUTTING DATA -- KY 15, WHITESBURG BYPASS

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 7 -- STA 88+89 to STA 100+55								
90+89	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.1
92+89	0.1	0.0	0.1	0.2	0.1	0.0	0.1	0.3
Average	0.1	0.1	0.0	0.2	0.1	0.0	0.0	0.2
Std. Dev.	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1
SURVEY SECTION 8 -- STA 100+55 to 120+65								
104+55			0.3	0.1	0.0	0.1	0.3	0.3
106+55			0.2	0.2	0.2	0.1	0.4	0.2
110+00			0.2	0.2	0.1	0.1	0.3	0.1
112+55			0.1	0.3	0.1	0.1	0.4	0.1
118+55	0.3	0.3	0.2	0.1	0.2	0.2	0.3	0.3
Average	0.3	0.3	0.2	0.2	0.1	0.1	0.3	0.2
Std. Dev.			0.0	0.1	0.1	0.1	0.1	0.1

NOTE: Section No. 7 had been surfaced prior to the 1986 survey.

TABLE B1 (continued). 1987 RUTTING DATA -- KY 15, WHITESBURG BYPASS

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 1 -- STA 0+00 to STA 5+21								
1+00			0.3	0.3	0.8	0.6	0.6	0.3
1+50			0.3	0.3	0.3	0.3	0.4	0.3
2+50			0.3	0.3	0.2	0.2	0.1	0.4
3+50			0.4	0.5			0.3	0.3
4+50			0.6	0.8			0.3	0.4
Average			0.4	0.4	0.4	0.4	0.3	0.3
Std. Dev.			0.1	0.2	0.3	0.2	0.1	0.1
SURVEY SECTION 2 -- STA 5+21 to STA 21+54								
13+11			0.3	0.3			0.2	0.1
13+61							0.2	0.1
14+11							0.3	0.1
15+11			0.3	0.2				
17+11			0.4	0.3				
19+11			0.3	0.3			0.3	0.2
Average			0.3	0.3			0.2	0.1
Std. Dev.			0.0	0.0			0.0	0.0
SURVEY SECTION 3 -- STA 21+54 to STA 36+99								
26+72			0.3	0.2			0.2	0.3
28+72			0.2	0.2			0.3	0.4
30+72			0.4	0.3			0.4	0.1
Average			0.3	0.2			0.3	0.3
Std. Dev.			0.1	0.0			0.1	0.1

NOTES: Section No. 2 contains a bridge approximately 390 feet in length.
Section No. 3 contains a bridge approximately 318 feet in length.

TABLE B1 (continued). 1987 RUTTING DATA -- KY 15, WHITESBURG BYPASS

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 4 -- STA 36+99 to STA 70+10								
43+91			0.2	0.2			0.2	0.3
45+91			0.2	0.1			0.2	0.3
47+91			0.3	0.2			0.3	0.3
49+91			0.3	0.2			0.1	0.2
51+91			0.3	0.1			0.1	0.3
53+91			0.3	0.1			0.2	0.3
55+91			0.4	0.1			0.2	0.1
57+91			0.3	0.3	0.1	0.1	0.1	0.2
59+91			0.4	0.2	0.1	0.1	0.1	0.2
61+91			0.4	0.3	0.1	0.1	0.1	0.2
67+91			0.3	0.3	0.1	0.1	0.1	0.4
69+91			0.4	0.3	0.0	0.1	0.2	0.3
Average			0.3	0.2	0.1	0.1	0.1	0.2
Std. Dev.			0.1	0.1	0.1	0.0	0.1	0.1
SURVEY SECTION 5 -- STA 70+10 to STA 72+83								
72+83			0.3	0.3	0.1	0.1	0.2	0.2
Average			0.3	0.3	0.1	0.1	0.2	0.2
Std. Dev.								
SURVEY SECTION 6 -- STA 72+83 to STA 88+89								
74+83	0.3	0.1	0.5	0.1	0.1	0.1	0.2	0.2
76+83	0.1	0.1	0.4	0.1	0.1	0.1	0.3	0.4
78+83	0.4	0.1	0.3	0.1	0.1	0.1	0.2	0.2
82+83	0.2	0.1	0.3	0.2	0.1	0.1	0.2	0.3
84+83	0.1	0.0	0.4	0.2	0.1	0.1	0.3	0.3
86+83	0.1	0.1	0.3	0.2	0.0	0.0	0.1	0.3
Average	0.2	0.1	0.3	0.1	0.1	0.1	0.2	0.3
Std. Dev.	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1

NOTES: Section No. 4 contains a bridge approximately 292 feet in length.
 Section No. 5 contains a bridge approximately 152 feet in length.

TABLE B1 (continued). 1987 RUTTING DATA -- KY 15, WHITESBURG BYPASS

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 7 -- STA 88+89 to STA 100+55								
90+89	0.1	0.0	0.1	0.2	0.1	0.1	0.0	0.2
92+89	0.0	0.0	0.1	0.2	0.2	0.0	0.1	0.2
Average	0.1	0.0	0.1	0.2	0.1	0.0	0.0	0.2
Std. Dev.	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
SURVEY SECTION 8 -- STA 100+55 to STA 120+65								
104+55			0.3	0.1	0.1	0.1	0.3	0.3
106+55			0.3	0.3	0.1	0.1	0.3	0.3
108+55			0.2	0.3	0.1	0.0	0.3	0.3
110+00			0.3	0.3	0.1	0.1	0.2	0.3
112+55			0.1	0.4	0.1	0.1	0.4	0.2
114+55			0.2	0.3	0.1	0.1	0.4	0.3
118+55	0.3	0.4	0.3	0.3	0.3	0.2	0.6	0.4
Average	0.3	0.4	0.2	0.3	0.1	0.1	0.3	0.3
Std. Dev.			0.1	0.1	0.1	0.1	0.1	0.1

TABLE B2. PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 15; Whitesburg Bypass		COUNTY: Letcher			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 1 From STA 0+00 to STA 5+21		DEFICIENCY POINTS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		2.0	3.5	2.0				0.0	0.0	0.0			
Base Failures:		0.0	0.0	0.0				0.0	0.0	0.0			
Raveling:		0.0	1.2	1.2				0.0	0.0	0.0			
Edge Failures:		0.0	0.0	0.9				0.0	0.0	0.0			
Out of Section:		0.0	2.0	2.0				0.0	0.0	0.0			
Appearance:		2.0	2.0	2.0				1.0	2.0	2.0			
Rideability:		5.4	5.4	n/a				5.4	0.0	n/a			
Rutting:		3.6	5.2	5.0				4.2	4.6	6.0			
Skid Resistance:		n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume:	AADT: 2,838												
Travel Speed:	MPH: 60	10.0	10.0	10.0				10.0	10.0	10.0			
TOTALS:		23.0	29.3	23.1				20.6	16.6	18.0			

NOTE: n/a indicates information for the description was unavailable.

TABLE B2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 15; Whitesburg Bypass	COUNTY: Letcher	WIDTH: 12-foot lane						TYPE: Asphaltic Concrete					
Survey Section No. 2 From STA 5+21 to STA 21+54		DEFICIENCY POINTS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		0.0	2.0	2.0				0.0	0.0	2.0			
Base Failures:		0.0	0.0	0.0				0.0	0.0	0.0			
Raveling:		0.0	0.0	1.2				0.0	0.0	1.5			
Edge Failures:		0.0	0.0	0.9				0.0	0.0	0.0			
Out of Section:		0.0	2.0	2.0				2.0	2.0	2.0			
Appearance:		2.0	2.0	2.0				1.0	1.0	1.0			
Rideability:		3.9	5.4	n/a				5.4	0.0	n/a			
Rutting:		3.0	2.2	3.0				2.5	4.5	5.0			
Skid Resistance:		n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume:	AADT: 4,020												
Travel Speed:	MPH: 60	12.0	12.0	12.0				12.0	12.0	12.0			
TOTALS:		20.9	25.6	23.1				22.9	19.5	23.5			

NOTES: n/a indicates information for the description was unavailable.
Section No. 2 contains a bridge approximately 390 feet in length.

TABLE B2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 15; Whitesburg Bypass	COUNTY: Letcher	WIDTH: 12-foot lane						TYPE: Asphaltic Concrete					
Survey Section No. 3 From STA 21+54 to STA 36+99		DEFICIENCY POINTS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		2.0	2.0	2.5				4.0	4.0	4.0			
Base Failures:		0.0	0.0	0.0				0.0	0.0	0.0			
Raveling:		0.0	0.0	1.2				0.0	0.0	1.2			
Edge Failures:		0.0	0.0	1.0				1.5	1.7	2.1			
Out of Section:		0.0	2.0	2.0				0.0	2.0	2.5			
Appearance:		1.0	1.0	2.0				2.0	2.0	2.0			
Rideability:		3.9	5.4	n/a				9.8	0.0	n/a			
Rutting:		3.0	3.8	5.0				3.9	4.2	3.5			
Skid Resistance:		n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume:	AADT: 4,020												
Travel Speed:	MPH: 60	12.0	12.0	12.0				12.0	12.0	12.0			
TOTALS:		21.9	26.2	25.7				33.2	25.9	25.3			

NOTES: n/a indicates information for the description was unavailable.
Section No. 3 contains a bridge approximately 318 feet in length.

TABLE B2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 15; Whitesburg Bypass	COUNTY: Letcher	WIDTH: 12-foot lane						TYPE: Asphaltic Concrete					
Survey Section No. 4 From STA 36+99 to STA 70+10		DEFICIENCY POINTS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		0.0	3.5	4.0				0.0	2.0	3.0			
Base Failures:		0.0	0.0	0.0				0.0	0.0	0.0			
Raveling:		0.0	1.5	1.8				1.2	1.2	1.2			
Edge Failures:		0.0	0.0	0.9				0.0	0.0	0.9			
Out of Section:		0.0	2.0	2.0				0.0	2.0	2.0			
Appearance:		1.0	2.0	2.0				1.0	1.0	2.0			
Rideability:		3.9	6.9	n/a				5.4	2.5	n/a			
Rutting:		3.3	2.5	3.0				1.5	3.0	4.0			
Skid Resistance:		n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume:	AADT: 3,355												
Travel Speed:	MPH: 60	11.0	11.0	11.0				11.0	11.0	11.0			
TOTALS:		19.2	29.4	24.7				20.1	22.7	24.1			

NOTES: n/a indicates information for the description was unavailable.
Section No. 4 contains a bridge approximately 292 feet in length.

TABLE B2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 15; Whitesburg Bypass	COUNTY: Letcher	WIDTH: 12-foot lane						TYPE: Asphaltic Concrete					
Survey Section No. 5 From STA 70+10 to STA 72+83		DEFICIENCY POINTS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		0.0	0.0	0.0				2.0	3.5	6.0			
Base Failures:		0.0	0.0	0.0				0.0	0.0	0.0			
Raveling:		0.0	0.0	0.0				1.2	1.9	1.9			
Edge Failures:		0.0	0.0	0.0				0.0	0.0	0.0			
Out of Section:		0.0	0.0	0.0				0.0	0.0	0.0			
Appearance:		1.0	1.0	1.0				1.0	2.0	3.0			
Rideability:		3.9	26.0	n/a				5.4	26.0	n/a			
Rutting:		1.5	2.0	2.0				2.3	3.0	3.0			
Skid Resistance:		n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume:	AADT: 2,863												
Travel Speed:	MPH: 60	11.0	11.0	11.0				11.0	11.0	11.0			
TOTALS:		17.4	40.0	14.0				22.9	47.4	24.9			

NOTES: n/a indicates information for the description was unavailable.
Section No. 5 contains a bridge approximately 152 feet in length.

TABLE B2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 15; Whitesburg Bypass	COUNTY: Letcher	WIDTH: 12-foot lane						TYPE: Asphaltic Concrete					
Survey Section No. 6 From STA 72+83 to STA 88+89		DEFICIENCY POINTS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		0.0	2.0	3.0				4.5	5.0	7.0			
Base Failures:		0.0	0.0	0.0				0.0	0.0	0.0			
Raveling:		1.2	1.2	1.5				2.2	2.2	2.9			
Edge Failures:		0.0	0.0	0.9				0.0	0.9	1.3			
Out of Section:		2.0	2.0	2.0				0.0	2.0	2.5			
Appearance:		2.0	2.0	2.0				3.0	3.0	4.0			
Rideability:		6.9	26.0	n/a				12.7	26.0	n/a			
Rutting:		1.4	2.6	3.0				1.5	3.0	3.0			
Skid Resistance:		n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume:	AADT: 2,863												
Travel Speed:	MPH: 60	11.0	11.0	11.0				11.0	11.0	11.0			
TOTALS:		24.5	46.8	23.4				34.9	53.1	31.7			

NOTE: n/a indicates information for the description was unavailable.

TABLE B2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 15; Whitesburg Bypass	COUNTY: Letcher	WIDTH: 12-foot lane						TYPE: Asphaltic Concrete					
Survey Section No. 7 From STA 88+89 to STA 100+55		DEFICIENCY POINTS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		10.0	2.0	2.0				8.0	2.0	2.0			
Base Failures:		0.0	0.0	0.0				0.0	0.0	0.0			
Raveling:		4.0	1.5	1.8				3.2	0.0	1.2			
Edge Failures:		2.1	0.9	1.0				0.0	1.0	1.0			
Out of Section:		3.5	2.0	2.5				4.5	2.0	2.0			
Appearance:		5.0	2.0	2.0				4.0	1.0	2.0			
Rideability:		20.1	15.7	n/a				17.2	17.2	n/a			
Rutting:		2.6	1.0	2.0				2.4	1.5	2.0			
Skid Resistance:		n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume:	AADT: 7,760												
Travel Speed:	MPH: 60	17.0	17.0	17.0				17.0	17.0	17.0			
TOTALS:		64.3	42.1	28.3				56.3	40.7	27.2			

NOTES: n/a indicates information for the description was unavailable.
 Section No. 7 is within an area which experienced slope failure. The pavement did not have a wearing course during the 1985 survey.

TABLE B2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 15; Whitesburg Bypass	COUNTY: Letcher	WIDTH: 12-foot lane						TYPE: Asphaltic Concrete					
Survey Section No. 8 From STA 100+55 to STA 120+65		DEFICIENCY POINTS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		6.0	7.0	8.0				5.5	7.0	9.0			
Base Failures:		0.0	0.0	0.0				0.0	0.0	0.0			
Raveling:		2.6	2.6	2.6				1.2	1.8	1.8			
Edge Failures:		0.0	1.3	1.7				0.0	1.0	1.5			
Out of Section:		0.0	2.5	3.0				3.0	3.5	3.5			
Appearance:		3.0	4.0	4.0				2.0	4.0	5.0			
Rideability:		11.2	0.0	n/a				9.8	0.0	n/a			
Rutting:		2.3	2.7	3.0				2.5	2.8	4.0			
Skid Resistance:		n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume:	AADT: 6,383												
Travel Speed:	MPH: 60	15.0	15.0	15.0				15.0	15.0	15.0			
TOTALS:		40.1	35.1	37.3				39.0	35.1	39.8			

NOTE: n/a indicates information for the description was unavailable.

TABLE B3. PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 15; Whitesburg Bypass		COUNTY: Letcher			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 1		RATINGS											
From STA. 0+00 to STA. 5+21		SOUTHBOUND						NORTHBOUND					
DEFECTS	POINT RANGE	Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	0	1				0	0	0			
Longitudinal Cracks	0-5	2	2	2				0	0	0			
Alligator Cracks	0-10	1	0	1				0	0	0			
Shrinkage Cracks	0-5	0	0	1				0	0	0			
Rutting	0-10	4	5	5				4	5	6			
Corrugations	0-5	2	2	2				0	1	2			
Raveling	0-5	0	1	1				0	1	0			
Shoving or Pushing	0-10	1	3	5				0	1	3			
Potholes	0-10	0	1	0				0	0	0			
Excess Asphalt	0-10	4	4	3				1	2	2			
Polished Aggregate	0-5	2	2	2				1	2	2			
Overall Riding Quality	0-10	3	4	6				2	2	4			
	Sum of Defects	19	24	29				8	14	19			
	Condition Rating (= 90-Sum of Defects)	71	66	61				82	76	71			

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE B3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 15; Whitesburg Bypass		COUNTY: Letcher			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 2 From STA. 5+21 to STA. 21+54		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	1	1				0	0	1			
Longitudinal Cracks	0-5	0	0	0				0	0	0			
Alligator Cracks	0-10	0	1	0				0	0	1			
Shrinkage Cracks	0-5	0	0	1				0	0	1			
Rutting	0-10	3	2	3				3	5	4			
Corrugations	0-5	1	1	1				2	2	1			
Raveling	0-5	0	0	1				0	0	1			
Shoving or Pushing	0-10	0	0	1				0	0	0			
Potholes	0-10	0	1	0				2	2	0			
Excess Asphalt	0-10	2	2	1				1	1	1			
Polished Aggregate	0-5	2	2	2				1	2	2			
Overall Riding Quality	0-10	2	2	3				2	3	4			
	Sum of Defects	10	12	14				11	15	16			
	Condition Rating (= 90-Sum of Defects)	80	78	76				79	75	74			

NOTES: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.
Section No. 2 contains a bridge approximately 390 feet in length.

TABLE B3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 15; Whitesburg Bypass		COUNTY: Letcher			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 3 From STA. 21+54 to STA. 36+99		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	0	0				1	1	0			
Longitudinal Cracks	0-5	1	1	1				1	1	1			
Alligator Cracks	0-10	0	1	0				0	1	1			
Shrinkage Cracks	0-5	0	0	0				0	0	1			
Rutting	0-10	3	4	5				4	4	4			
Corrugations	0-5	1	1	1				1	1	1			
Raveling	0-5	0	0	0				0	0	1			
Shoving or Pushing	0-10	0	1	1				0	0	0			
Potholes	0-10	0	1	0				0	1	0			
Excess Asphalt	0-10	2	2	1				1	1	1			
Polished Aggregate	0-5	2	2	2				1	2	2			
Overall Riding Quality	0-10	2	3	3				2	3	4			
	Sum of Defects	11	16	14				11	15	16			
	Condition Rating (= 90-Sum of Defects)	79	74	76				79	75	74			

NOTES: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.
Section No. 3 contains a bridge approximately 318 feet in length.

TABLE B3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 15; Whitesburg Bypass		COUNTY: Letcher			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 4 From STA. 36+99 to STA. 70+10		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	0	1				0	0	1			
Longitudinal Cracks	0-5	0	1	1				0	1	1			
Alligator Cracks	0-10	0	2	1				0	1	0			
Shrinkage Cracks	0-5	0	0	1				0	0	1			
Rutting	0-10	3	3	2				2	3	4			
Corrugations	0-5	1	1	1				1	1	1			
Raveling	0-5	0	0	1				1	1	1			
Shoving or Pushing	0-10	0	1	0				0	0	0			
Potholes	0-10	0	2	2				0	2	2			
Excess Asphalt	0-10	2	2	2				2	2	2			
Polished Aggregate	0-5	2	2	2				1	2	2			
Overall Riding Quality	0-10	2	3	3				2	2	3			
	Sum of Defects	10	17	17				9	15	18			
	Condition Rating (= 90-Sum of Defects)	80	73	73				81	75	72			

NOTES: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.
Section No. 4 contains a bridge approximately 292 feet in length.

TABLE B3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 15; Whitesburg Bypass		COUNTY: Letcher			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 5 From STA. 70+10 to STA. 72+83		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	0	0				0	1	1			
Longitudinal Cracks	0-5	0	0	1				1	2	2			
Alligator Cracks	0-10	0	0	1				0	0	0			
Shrinkage Cracks	0-5	0	0	1				0	0	1			
Rutting	0-10	2	2	2				2	3	3			
Corrugations	0-5	1	1	1				0	1	1			
Raveling	0-5	0	0	1				1	2	2			
Shoving or Pushing	0-10	0	1	1				0	1	1			
Potholes	0-10	0	1	1				0	1	2			
Excess Asphalt	0-10	2	2	1				0	1	2			
Polished Aggregate	0-5	1	2	2				1	2	2			
Overall Riding Quality	0-10	2	3	3				2	2	3			
	Sum of Defects	8	12	14				7	16	20			
	Condition Rating (= 90-Sum of Defects)	82	78	76				83	74	70			

NOTES: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.
Section No. 5 contains a bridge approximately 152 feet in length.

TABLE B3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 15; Whitesburg Bypass		COUNTY: Letcher			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 6 From STA. 72+83 to STA. 88+89		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	0	1				1	1	1			
Longitudinal Cracks	0-5	0	1	1				3	3	3			
Alligator Cracks	0-10	0	1	1				3	4	3			
Shrinkage Cracks	0-5	0	1	1				1	1	2			
Rutting	0-10	2	3	2				2	3	3			
Corrugations	0-5	2	1	2				1	1	1			
Raveling	0-5	1	2	1				2	3	3			
Shoving or Pushing	0-10	2	1	1				0	1	2			
Potholes	0-10	2	2	1				3	3	2			
Excess Asphalt	0-10	2	2	2				1	2	2			
Polished Aggregate	0-5	1	2	2				1	2	2			
Overall Riding Quality	0-10	2	3	3				3	3	4			
	Sum of Defects	14	19	18				21	27	28			
	Condition Rating (= 90-Sum of Defects)	76	71	72				69	63	62			

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE B3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 15; Whitesburg Bypass		COUNTY: Letcher			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 7 From STA. 88+89 to STA. 100+55		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	4	1	2				4	1	1			
Longitudinal Cracks	0-5	4	2	2				5	1	2			
Alligator Cracks	0-10	8	1	0				7	0	1			
Shrinkage Cracks	0-5	3	0	1				3	0	1			
Rutting	0-10	3	1	2				4	2	1			
Corrugations	0-5	2	0	1				3	0	0			
Raveling	0-5	4	0	0				4	0	0			
Shoving or Pushing	0-10	2	0	0				4	0	0			
Potholes	0-10	7	0	0				8	0	0			
Excess Asphalt	0-10	5	2	1				8	2	1			
Polished Aggregate	0-5	2	1	1				2	1	1			
Overall Riding Quality	0-10	8	3	3				8	3	2			
	Sum of Defects	50	11	13				60	10	10			
	Condition Rating (= 90-Sum of Defects)	40	79	77				30	80	80			

NOTES: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.
Section No. 7 is within an area which experienced slope failure and the pavement had not yet been surfaced in 1985.

TABLE B3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 15; Whitesburg Bypass		COUNTY: Letcher			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 8 From STA. 100+55 to STA. 120+65		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	2	2	2				2	2	2			
Longitudinal Cracks	0-5	2	3	3				2	3	3			
Alligator Cracks	0-10	4	4	3				2	4	3			
Shrinkage Cracks	0-5	1	1	2				0	1	1			
Rutting	0-10	2	3	3				3	3	4			
Corrugations	0-5	1	1	2				2	1	2			
Raveling	0-5	2	3	2				1	2	2			
Shoving or Pushing	0-10	0	1	2				0	1	3			
Potholes	0-10	2	2	3				0	2	3			
Excess Asphalt	0-10	2	2	2				3	2	2			
Polished Aggregate	0-5	1	2	2				1	2	2			
Overall Riding Quality	0-10	3	4	4				2	3	4			
	Sum of Defects	22	28	30				18	26	31			
	Condition Rating (= 90-Sum of Defects)	68	62	60				72	64	59			

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE B4. DEFLECTION ANALYSIS -- KY 15, WHITESBURG BYPASS

ROUTE: Whitesburg Bypass		COUNTY: Letcher				
	NORTHBOUND			SOUTHBOUND		
	1985	1986	1987	1985	1986	1987
Temperature (°F)	103	94	91	106	103	91
5-Day Temp. (°F)	76.6	83.6	76.5	76.6	83.6	76.5
Test Time (hr)	13.25	13.00	12.00	13.75	14.00	13.00
Deflection No. 1 (mils)	0.351	0.353	0.429	0.308	0.340	0.370
Deflection No. 2 (mils)	0.201	0.258	0.279	0.180	0.235	0.213
Deflection No. 3 (mils)	0.091	0.124	0.144	0.085	0.133	0.131
Deflection No. 4 (mils)	0.062	0.074	0.083	0.058	0.072	0.072
Subgrade Modulus (psi)	45,000	35,000	31,000	50,000	36,000	39,000
AC Modulus at Test Temperature (psi)	170,000	320,000	210,000	210,000	200,000	350,000
AC Modulus at 70°F (psi)	590,000	840,000	450,000	780,000	1,190,000	480,000

TABLE B5. SUMMARY OF SONIC MODULUS TEST DATA FOR BITUMINOUS SANDSTONE -- KY 15, WHITESBURG BYPASS

LOCATION (MP)	CORE SAMPLE CHARACTERISTICS				TEST SAMPLE CHARACTERISTICS				SONIC MODULUS (psi)
	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	
2.35 RWP SB	17.6	4.0	18.4	143.8					
2.33 CL SB	10.8	3.9	11.0	147.3					
2.31 RWP SB	8.7	3.9	8.9	147.5					
2.30 RWP SB	7.1	4.0	7.1	137.5					
2.29 RWP SB	5.7	3.9	5.7	144.3					
2.27 RWP SB	5.6	3.9	5.5	142.3					
2.25 LWP SB	7.1	3.9	7.2	146.7					
Average for Site	8.9	3.9	9.1	144.2					
Standard Deviation	4.2	0.0	4.5	3.5					
2.28 RWP NB	6.3	3.9	6.4	146.9	5.5	2.0	1.4	140.0	516,000
2.29 CL NB	5.2	3.9	5.2	144.6	4.0	2.0	1.0	137.5	265,000
2.30 RWP NB	6.1	3.9	6.2	147.0	5.4	2.0	1.4	142.6	633,000
2.31 CL NB	6.4	3.9	6.4	144.6	4.9	2.0	1.3	145.9	443,000
2.32 LWP NB	6.2	3.9	6.4	149.3	5.7	2.0	1.5	144.7	267,000
2.33 RWP NB	6.6	3.9	6.6	144.6	4.7	2.0	1.2	140.4	300,000
Average for Site	6.1	3.9	6.2	146.2	5.0	2.0	1.3	141.9	404,000
Standard Deviation	0.5	0.0	0.53	1.9	0.6	0.0	0.2	3.1	152,000

APPENDIX C

US 119

BUCKLEY CREEK

Design Criteria

This 3.5-mile mountainous arterial route consists of two typical sections. One typical section consists of two 24-foot roadways divided by a 20-foot raised median. Outside shoulders are paved 10 feet in width. The second typical section consists of two 24-foot roadways separated by an 11-foot flush median with a concrete median barrier centered in the median. This typical section extends through a cut area where a narrower pavement width was desirable. Total asphaltic concrete thickness throughout both sections was 11.6 inches, including 10.6-inches bituminous sandstone base and one-inch bituminous limestone surface. The typical section for the pavement design utilized on throughout US 119, except on the narrowed section is illustrated in Figure C1.

The design speed for the arterial route was 60 MPH. Present average daily traffic (1975) was projected to be 7,600. Future average daily traffic (1996) was projected to be 11,800. In each case, the designed level of service was "B". The design hour volume was 1,300 with five percent trucks. Traffic projections for design were developed by the Department of Highways, Division of Planning. The following data were obtained from information available from project files.

Geometric Design Criteria

Class of Highway:	Arterial
Type of Terrain:	Mountainous
Design Speed:	60 MPH
Maximum Curvature:	6°
Maximum Grade:	+/- 6 %
Stopping Sight Distance:	475 ft (minimum), 650 ft (desirable)
Superelevation:	1/4" : 1'
Typical Section:	
Sections A and C:	
(STA 1000+49 - STA 1109+00) and STA (1133+00 - STA 1187+73)	
	2 - 24-ft pavement sections
	20-ft median
	10-ft paved shoulder
Section B:	
	2 - 24-ft pavement sections
	11-ft median with concrete barrier
	10-ft paved shoulder

Note: STA 1109+00 to STA 1113+50 transition from 20-ft raised median to 11-ft flush median. STA 1128+50 to STA 1133+00 transition from 11-ft flush median to 20-ft raised median.

Traffic Volume:	
ADT (1975):	7,600
ADT (1996):	11,800
DHV (1996):	1,300
T (%):	5
Level of Service:	"B" (1975); "B" (1990)

Pavement Design Criteria

EWL = 59×10^6
EAL = 1.85×10^6
CBR = 11 (Crushed Sandstone Subgrade)

Pavement Design:

10-5/8"	Bituminous Concrete Base, Class S
1"	Bituminous Concrete Surface
11-5/8"	Total

Performance Monitoring

Construction of US 119 was completed and the route was opened to traffic in 1984. The initial condition rating survey was conducted in October 1986. A second condition rating was performed in July 1987. Performance monitoring of the Buckley Creek route encompassed the entire 3.5 miles. Four survey sections were established during the initial survey and maintained throughout the study.

Pavement rut depths were obtained within every section during each condition rating survey. Information relative to this task is given in Table C1. Rut depths were insignificant, none greater than 0.4 inch. That occurred in the northbound shoulder lane nearest the northern limit of survey section number 1 in an area that was severely cracked (see Figure C2).

During the condition rating surveys, the survey crews always began on the north end of the project and proceeded in a southerly direction to the end of the route at the junction of US 119 and US 23. The first section extended from a construction joint between the old and new pavement sections (established as STA 0+00) approximately 3,010 feet to MP 3.0. The three remaining sections were approximately one-mile sections extending between mileposts located along the route. The total distance surveyed was 18,800 feet or about 3.5 miles. Survey section lengths were determined using a rolling wheel distance

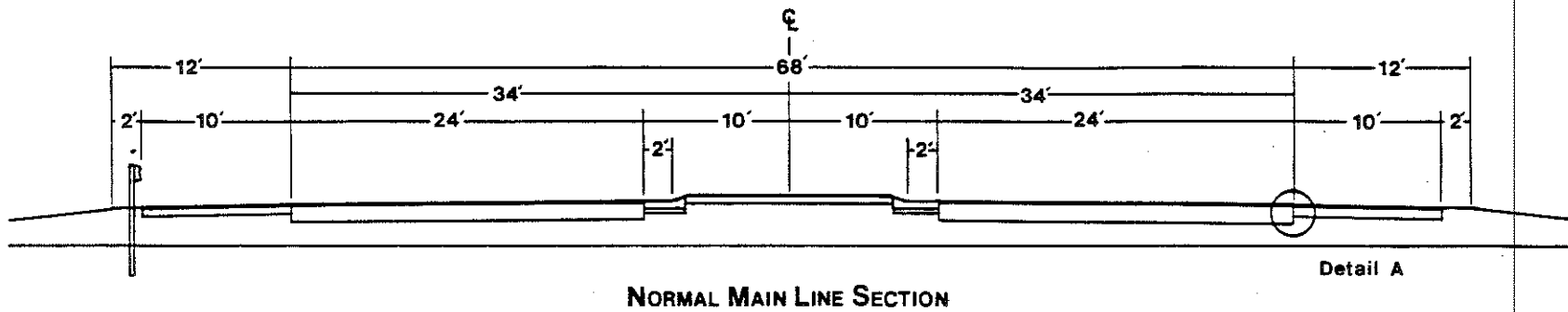
measuring device. Condition survey data are contained in Table C2 and Table C3 for the Kentucky System and the Asphalt Institute System, respectively. Condition ratings were performed by two crews. The ratings, using each respective technique, were averaged and rounded for reporting purposes.

Because of the short rating cycle, there were no discernible differences from one rating to the next. However, there were obvious differences in the condition of the shoulder lane and the median lane, and the shoulder lanes of the southbound and the northbound directions. The southbound shoulder lane was typically rated lower than the northbound lane during both surveys. The most significant distresses were manifested in cracking and raveling of the asphaltic concrete pavement and emerging water through the cracks. This is very similar to the pavement distresses seen on KY 80 in Knott County between MP 9 and MP 15. Figure C3 is illustrative of this problem encountered on US 119. The photograph was taken of the southbound lanes near survey station 7+00 in survey section number 1. Water can be seen emerging from the lip curb - pavement interface and from a longitudinal crack along the centerline between the shoulder and median lanes. Figure C4 shows water emerging from around the lip curb at the intersection of KY 1426 (survey STA 48+00; section number 2). Over a period of time, as a result of water being forced up through the pavement under hydrostatic pressures, raveling and potholes occur in the pavement surface (see Figure C5).

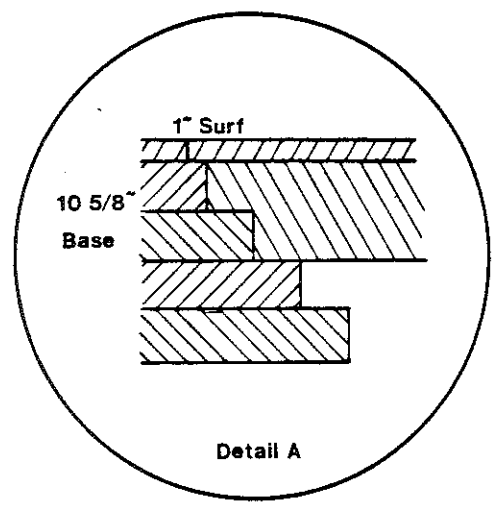
Results of Road Rater deflection testing and modulus calculations are contained in Table C4. The back-calculated moduli values indicate increasing stiffness of the pavement materials. The first deflection data were obtained the year the pavement was opened to traffic. Subsequent tests indicated age-hardening of the bituminous sandstone mixture. The condition rating surveys support this conclusion. The subgrade modulus remained fairly constant during the evaluation period. The estimated CBR of the crushed sandstone subgrade ranged from a high of about 26 percent in 1985 to a low of about 20 percent during 1987.

Cores were obtained from the pavement of US 119 during 1987. Information relative to laboratory testing activities is contained in Table C5. The Young's modulus of elasticity of eleven specimens, calculated using the fundamental longitudinal frequency, averaged 466,000 psi. The unit weight of those specimens averaged 142.3 pcf. Two Sites were cored, both in the southbound lanes. The milepost location given in Table C5 are approximate and correspond to milepost markers located adjacent to the route. The total core lengths (includes bituminous sandstone base and bituminous limestone surface

courses) ranged from 10.6 inches to 13.1 inches. The unit weight of the undisturbed field cores ranged from about 141.2 pcf to 144.5 pcf and averaged 143.5 pcf.



C.6



**NEW CONSTRUCTION GRADE, DRAIN, and SURFACING
- USING -**

TRAVEL LANE

- 1" Compacted Depth Bituminous Concrete Surface Class A**
- 0.80 lbs/sy Bituminous Tack Coat**
- 10 5/8" Compacted Depth Bituminous Concrete Base Class S (4 Courses)**

Figure C1. Typical Section and Detail for Main Line Section of US 119.



Figure C2. Pavement Cracking and Rutting near STA 1+00.



Figure C3. Longitudinal and Transverse Cracking, and Emerging Water near STA 7+00.



Figure C4. Water Flowing from beneath Lip Curb near STA 48+00.



Figure C5. Raveling and Potholes in Pavement Surface near STA 138+25.

TABLE C1. 1986 RUTTING DATA -- US 119, BUCKLEY CREEK

STATION	SOUTHBOUND				NORTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 1 -- STA 0+00 to STA 30+10								
10+00	0.1	0.3	0.1	0.2	0.1	0.1	0.3	0.1
20+00	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1
30+00	0.1	0.1	0.4	0.1	0.1	0.1	0.2	0.2
Average	0.1	0.1	0.3	0.1	0.1	0.1	0.2	0.1
Std. Dev.	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1
SURVEY SECTION 2 -- STA 30+10 to STA 82+77								
40+00	0.0	0.0	0.3	0.1	0.1	0.1	0.2	0.2
50+00	0.0	0.1	0.4	0.1	0.1	0.0	0.1	0.1
60+00	0.1	0.0	0.4	0.1	0.0	0.1	0.1	0.1
70+00	0.0	0.1	0.1	0.2	0.0	0.1	0.1	0.1
80+00	0.0	0.1	0.1	0.1	0.1	0.3	0.2	0.4
Average	0.0	0.1	0.3	0.1	0.0	0.1	0.1	0.2
Std. Dev.	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.1
SURVEY SECTION 3 -- STA 82+77 to STA 135+58								
90+00	0.0	0.0	0.2	0.1	0.0	0.2	0.4	0.2
100+00	0.0	0.0	0.2	0.2	0.0	0.2	0.1	0.1
110+00	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.2
120+00	0.0	0.1	0.3	0.1	0.0	0.1	0.2	0.1
130+00	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.1
Average	0.0	0.0	0.2	0.1	0.1	0.1	0.2	0.1
Std. Dev.	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
SURVEY SECTION 4 -- STA 135+58 to STA 188+00								
140+00	0.1	0.1	0.3	0.1	0.0	0.1	0.2	0.1
150+00	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.1
160+00	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1
170+00	0.1	0.0	0.2	0.1	0.1	0.1	0.1	0.0
180+00	0.1	0.1	0.1	0.1	0.1	0.0	0.2	0.1
Average	0.1	0.0	0.2	0.1	0.1	0.1	0.2	0.1
Std. Dev.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TABLE C1 (continued). 1987 RUTTING DATA -- US 119, BUCKLEY CREEK

STATION	SOUTHBOUND				NORTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 1 -- STA 0+00 to STA 30+10								
10+00	0.1	0.0	0.1	0.1	0.1	0.1	0.3	0.0
20+00	0.1	0.1	0.2	0.1	0.0	0.1	0.4	0.1
30+00	0.1	0.1	0.1	0.2	0.2	0.0	0.4	0.1
Average	0.1	0.0	0.1	0.1	0.1	0.0	0.4	0.0
Std. Dev.	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0
SURVEY SECTION 2 -- STA 30+10 to STA 82+77								
40+00	0.0	0.1	0.1	0.2	0.0	0.0	0.3	0.2
50+00	0.1	0.0	0.1	0.1	0.1	0.1	0.4	0.1
60+00	0.0	0.0	0.1	0.2	0.1	0.0	0.3	0.0
70+00	0.0	0.0	0.1	0.1	0.0	0.0	0.2	0.1
80+00	0.1	0.1	0.4	0.1	0.0	0.1	0.2	0.1
Average	0.0	0.0	0.2	0.2	0.0	0.1	0.3	0.1
Std. Dev.	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1
SURVEY SECTION 3 -- STA 82+77 to STA 135+58								
90+00	0.0	0.1	0.3	0.3	0.0	0.0	0.3	0.1
100+00	0.1	0.0	0.1	0.1	0.0	0.0	0.2	0.3
110+00	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1
120+00	0.0	0.0	0.1	0.2	0.0	0.1	0.2	0.1
130+00	0.2	0.0	0.1	0.1	0.0	0.1	0.1	0.1
Average	0.1	0.0	0.1	0.2	0.0	0.0	0.2	0.1
Std. Dev.	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.1
SURVEY SECTION 4 -- STA 135+58 to STA 188+00								
140+00	0.0	0.0	0.3	0.1	0.1	0.1	0.2	0.1
150+00	0.0	0.1	0.2	0.1	0.0	0.0	0.1	0.1
160+00	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.1
170+00	0.1	0.1	0.2	0.1	0.1	0.0	0.1	0.1
180+00	0.1	0.0	0.2	0.1	0.0	0.1	0.1	0.1
Average	0.0	0.0	0.2	0.1	0.1	0.0	0.1	0.1
Std. Dev.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TABLE C2. PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: US 119		COUNTY: Pike			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 1 From STA 0+00 to STA 30+10		DEFICIENCY POINTS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:			8.0	8.0		3.5	3.5		6.0	7.0		2.0	3.5
Base Failures:			0.0	2.0		0.0	0.0		0.0	0.0		0.0	0.0
Raveling:			1.2	2.6		1.2	1.5		1.5	2.6		0.0	1.5
Edge Failures:			2.8	2.4		0.9	1.0		2.4	2.2		0.0	1.0
Out of Section:			3.0	3.0		3.0	2.5		2.5	3.0		2.5	3.0
Appearance:			5.0	4.0		2.0	2.0		4.0	4.0		2.0	2.0
Rideability:			0.0	n/a		0.0	n/a		0.0	n/a		0.0	n/a
Rutting:			3.2	3.0		1.5	2.0		2.0	3.0		1.3	2.0
Skid Resistance:			n/a	n/a		n/a	n/a		n/a	n/a		n/a	n/a
Traffic Volume: AADT: 10,310													
Travel Speed: MPH: 50			15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0
Totals:			38.2	40.0		27.1	27.5		33.4	36.8		22.8	28.0

NOTE: n/a indicates information for the description was unavailable.

TABLE C2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: US 119		COUNTY: Pike			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 2 From STA 30+10 to STA 82+77		DEFICIENCY POINTS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:			7.0	4.0		3.5	3.5		5.0	6.0		3.0	2.5
Base Failures:			0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Raveling:			1.2	1.8		1.2	1.5		1.2	1.8		0.0	1.5
Edge Failures:			2.4	1.9		0.9	0.9		2.4	2.1		1.0	0.9
Out of Section:			2.5	3.0		2.5	2.5		2.0	3.0		2.0	3.0
Appearance:			5.0	3.0		2.0	2.0		4.0	4.0		2.0	2.0
Rideability:			0.0	n/a		0.0	n/a		0.0	n/a		0.0	n/a
Rutting:			3.0	3.0		0.6	1.0		2.2	3.0		0.9	1.0
Skid Resistance:			n/a	n/a		n/a	n/a		n/a	n/a		n/a	n/a
Traffic Volume: AADT: 8,240													
Travel Speed: MPH: 50			14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0
Totals:			35.1	30.7		24.7	25.4		30.8	31.9		22.9	24.9

NOTE: n/a indicates information for the description was unavailable.

TABLE C2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: US 119		COUNTY: Pike			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 3		DEFICIENCY POINTS											
From STA 82+77 to STA 135+58		SOUTHBOUND					NORTHBOUND						
		Shoulder Lane			Median Lane		Shoulder Lane			Median Lane			
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:			5.0	6.0		3.0	3.5		3.5	4.0		3.0	3.5
Base Failures:			0.0	0.0		0.0	0.0		0.0	2.5		0.0	0.0
Raveling:			1.5	2.2		1.5	1.2		1.5	1.8		1.2	1.2
Edge Failures:			1.9	1.7		0.9	0.9		2.4	1.5		0.9	1.0
Out of Section:			2.0	3.0		2.0	3.0		3.0	3.0		3.0	2.5
Appearance:			4.0	3.0		2.0	2.0		3.0	3.0		2.0	2.0
Rideability:			0.0	n/a		0.0	n/a		0.0	n/a		0.0	n/a
Rutting:			2.3	3.0		0.3	1.0		2.5	3.0		1.2	1.0
Skid Resistance:			n/a	n/a		n/a	n/a		n/a	n/a		n/a	n/a
Traffic Volume: AADT: 6,170													
Travel Speed: MPH: 50			12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0
Totals:			28.7	30.9		21.7	23.6		27.9	30.8		23.3	23.2

NOTE: n/a indicates information for the description was unavailable.

TABLE C2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: US 119		COUNTY: Pike			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 4 From STA 135+58 to STA 188+00		DEFICIENCY POINTS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:			4.5	5.0		2.0	3.5		3.5	5.0		2.5	4.5
Base Failures:			0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Raveling:			2.6	2.6		0.0	1.5		1.8	1.8		0.0	1.8
Edge Failures:			1.5	1.9		0.9	1.0		1.3	1.5		0.9	1.5
Out of Section:			3.0	3.0		2.0	2.5		2.0	2.5		2.0	2.5
Appearance:			3.0	4.0		1.0	3.0		2.0	3.0		1.0	3.0
Rideability:			0.0	n/a		0.0	n/a		0.0	n/a		0.0	n/a
Rutting:			2.0	2.0		0.7	1.0		1.7	2.0		0.9	1.0
Skid Resistance:			n/a	n/a		n/a	n/a		n/a	n/a		n/a	n/a
Traffic Volume:	AA DT: 10,580												
Travel Speed:	MPH: 50		15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0
Totals:			31.6	33.5		21.6	27.5		27.3	30.8		22.3	29.3

NOTE: n/a indicates information for the description was unavailable.

TABLE C3. PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: US 119		COUNTY: Pike			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 1 From STA 0+00 to STA 30+10		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5		2	1		0	2		2	2		1	0
Longitudinal Cracks	0-5		3	3		1	1		3	2		1	1
Alligator Cracks	0-10		3	5		1	2		3	3		0	1
Shrinkage Cracks	0-5		1	2		0	1		1	1		0	0
Rutting	0-10		3	2		2	1		2	3		1	1
Corrugations	0-5		1	2		1	1		1	1		1	1
Raveling	0-5		1	2		1	1		2	1		1	1
Shoving or Pushing	0-10		0	2		0	0		1	1		1	0
Potholes	0-10		1	2		0	1		2	1		1	1
Excess Asphalt	0-10		2	1		1	1		2	1		1	1
Polished Aggregate	0-5		1	2		1	1		2	2		1	1
Overall Riding Quality	0-10		2	4		2	3		3	3		1	1
	Sum of Defects		20	28		11	15		24	21		10	9
	Condition Rating (= 90-Sum of Defects)		70	62		79	75		66	69		80	81

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE C3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: US 119		COUNTY: Pike			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 2 From STA 30+10 to STA 82+77		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5		2	1		0	1		2	2		0	1
Longitudinal Cracks	0-5		3	2		1	2		3	2		1	1
Alligator Cracks	0-10		2	3		0	2		4	4		0	1
Shrinkage Cracks	0-5		1	1		0	1		1	1		0	1
Rutting	0-10		3	3		1	0		2	3		1	1
Corrugations	0-5		1	1		0	1		1	1		1	1
Raveling	0-5		2	2		1	1		2	2		1	1
Shoving or Pushing	0-10		1	0		0	0		2	1		1	0
Potholes	0-10		2	1		1	0		2	2		1	1
Excess Asphalt	0-10		2	2		1	1		2	2		2	1
Polished Aggregate	0-5		1	2		1	1		2	2		1	1
Overall Riding Quality	0-10		3	4		2	2		3	4		2	2
	Sum of Defects		23	22		8	12		26	26		11	12
	Condition Rating (= 90-Sum of Defects)		67	68		82	78		64	64		79	78

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE C3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: US 119		COUNTY: Pike			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 3 From STA 82+77 to STA 135+58		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5		1	2		0	1		1	2		0	0
Longitudinal Cracks	0-5		3	3		1	1		2	2		1	1
Alligator Cracks	0-10		2	4		0	1		0	2		1	1
Shrinkage Cracks	0-5		1	2		0	1		1	1		0	1
Rutting	0-10		2	2		0	1		3	2		1	0
Corrugations	0-5		1	2		0	1		1	1		0	0
Raveling	0-5		2	2		0	1		2	2		1	1
Shoving or Pushing	0-10		1	1		0	0		1	1		0	0
Potholes	0-10		2	2		1	0		1	2		1	1
Excess Asphalt	0-10		2	1		1	1		2	2		2	1
Polished Aggregate	0-5		2	2		1	1		2	2		1	1
Overall Riding Quality	0-10		2	3		1	2		3	4		2	2
	Sum of Defects		21	26		5	11		19	22		10	9
	Condition Rating (= 90-Sum of Defects)		69	64		85	79		71	68		80	81

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE C3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: US 119		COUNTY: Pike			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 4 From STA 135+58 to STA 188+00		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5		1	1		0	0		0	1		0	1
Longitudinal Cracks	0-5		3	3		0	1		2	2		1	1
Alligator Cracks	0-10		2	4		0	1		1	3		0	1
Shrinkage Cracks	0-5		1	2		0	1		1	1		0	1
Rutting	0-10		2	2		1	0		2	2		1	1
Corrugations	0-5		1	2		1	1		1	1		1	1
Raveling	0-5		3	2		1	1		2	1		1	1
Shoving or Pushing	0-10		1	1		1	1		1	1		0	1
Potholes	0-10		2	4		1	2		1	2		1	1
Excess Asphalt	0-10		2	2		1	1		2	1		1	1
Polished Aggregate	0-5		2	2		1	1		2	2		1	1
Overall Riding Quality	0-10		2	4		2	2		3	4		2	3
	Sum of Defects		22	29		9	12		18	21		9	14
	Condition Rating (= 90-Sum of Defects)		68	61		81	78		72	69		81	76

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE C4. DEFLECTION ANALYSIS -- US 119, BUCKLEY CREEK

	ROUTE: US 119			COUNTY: Pike		
	NORTHBOUND			SOUTHBOUND		
	1985	1986	1987	1985	1986	1987
Temperature (°F)	85.5	76	93	89	88	94
5-Day Temp. (°F)	68.5	81.5	76.4	68.5	81.5	76.4
Test Time (hr)	10.67	9.50	10.00	11.38	14.00	14.50
Deflection No. 1 (mils)	0.354	0.303	0.299	0.358	0.295	0.254
Deflection No. 2 (mils)	0.230	0.231	0.242	0.237	0.227	0.210
Deflection No. 3 (mils)	0.150	0.174	0.164	0.160	0.167	0.149
Deflection No. 4 (mils)	0.010	0.099	0.099	0.010	0.094	0.093
Subgrade Modulus (psi)	39,000	30,000	30,000	37,000	31,000	32,000
AC Modulus at Test Temperature (psi)	130,000	330,000	330,000	140,000	330,000	480,000
AC Modulus at 70°F (psi)	200,000	480,000	660,000	250,000	820,000	1,180,000

TABLE C5. SUMMARY OF SONIC MODULUS TEST DATA FOR BITUMINOUS SANDSTONE -- US 119

LOCATION (MP)	CORE SAMPLE CHARACTERISTICS				TEST SAMPLE CHARACTERISTICS				SONIC MODULUS (psi)
	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	
0.52 RWP SB	11.4	3.9	11.3	141.8					
0.54 RWP SB	11.9	3.9	11.9	143.2	10.8	3.9	10.9	145.0	393,700
0.54 CL SB	12.0	3.9	13.1	142.6					
0.57 RWP SB	13.1	3.9	13.1	142.6	12.3	3.9	12.4	142.3	753,000
0.60 CL SB	12.1	3.9	12.2	143.9	11.2	3.9	11.3	144.0	406,000
0.60 RWP SB	12.0	3.9	12.2	144.2	11.7	3.9	11.1	138.0	408,000
0.62 RWP SB	12.8	3.9	12.9	144.5	12.2	3.9	12.4	144.7	343,000
Average for Site	12.2	3.9	12.2	143.1	11.6	3.9	11.7	142.8	461,000
Standard Deviation	0.5	0.0	0.6	1.1	0.7	0.0	0.7	2.9	165,000
2.39 RWP SB	10.6	3.9	10.5	142.4	9.5	3.9	9.6	143.6	632,000
2.40 RWP SB	11.2	3.9	11.2	144.2					
2.40 CL SB	12.0	3.9	12.1	144.4	11.2	3.9	11.2	144.3	678,000
2.43 RWP SB	11.2	3.9	11.2	144.1	10.6	3.9	10.5	140.9	388,000
2.46 CL SB	12.0	3.9	12.1	144.1	11.4	3.9	11.3	141.3	391,000
2.46 RWP SB	11.4	3.9	11.5	144.1	10.8	3.9	10.7	141.5	358,000
2.48 RWP SB	11.1	3.9	11.2	143.0	10.6	3.9	10.4	139.0	379,000
Average for Site	11.4	3.9	11.4	143.8	10.7	3.9	10.6	141.8	471,000
Standard Deviation	0.5	0.0	0.5	0.7	0.7	0.0	0.6	1.9	144,000

APPENDIX D

KY 519

POMP TO YOCUM

Design Criteria

This Class 2 (modified) highway is considered to be in light mountainous terrain. The typical section consists of a 24-foot roadway with 5-foot shoulders. Passing lanes and truck climbing lanes are as required. Total asphaltic concrete thickness throughout the section was 12 inches, including 11-inches limestone bituminous base and one-inch limestone bituminous surface. The typical section for the pavement design utilized on KY 519 is illustrated in Figure D1.

The design speed for the route was 50 MPH. The 1978 average daily traffic volume was 1,400 vehicles. The design year (2002) volume was projected to be 3,200 vehicles per day with 18 percent trucks. The design hour volume was 380 vehicles with 12 percent trucks. The designed level of service was "C". Traffic projections for design were developed by the Department of Highways, Division of Planning. The following data were obtained from information available from project files.

Geometric Design Criteria

Class of Highway:	2 (modified)
Type of Terrain:	Light Mountainous
Design Speed:	50 MPH
Maximum Horizontal Curve:	8° - 30'
Maximum Grade:	+/- 7%
Stopping Sight Distance:	350 ft (minimum), 450 ft (desirable)
Required NPSD:	350 ft
Required PSD:	1,500 ft
Superelevation:	1/4" : 1'
Typical Section (Modified shoulder width):	
Section 1:	2 - 12-ft pavement sections 5-ft shoulders climbing lanes where required
Traffic Volume:	
ADT (1978):	1,400
ADT (2002):	3,200
DHV:	380
T (%):	18 (ADT); 12 (DHV)
Level of Service:	"C"

Pavement Design Criteria

EWL = 291.7×10^6 (Design year, 2002)

EAL = 9.1×10^6

CBR = 9 (Rock Subgrade)

Pavement Design:

7"	Dense Graded Aggregate Base
11"	Bituminous Concrete Base
<u>1"</u>	Bituminous Concrete Surface
19"	Total

Performance Monitoring

Construction of KY 519 was completed and opened to traffic in 1983. The initial condition rating survey was conducted in June 1985. Subsequent surveys were conducted in October 1986, and again in July 1987. Performance monitoring of KY 519 encompassed the entire three-mile realignment section. Five survey sections were established during the initial survey and maintained throughout the study.

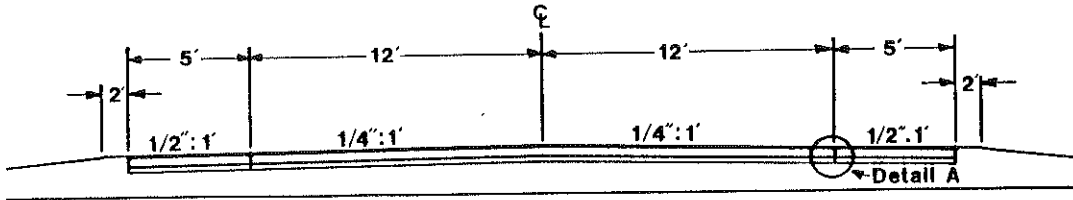
Pavement rut depths were obtained within every section during each condition rating survey. Information relative to this task is contained in Table D1. There were no significant changes in the rut depths for any section during the three-year survey period. The maximum rut depth for any section was 0.9 inch. The maximum average rut depth of 0.5 inch occurred in Section 4 during 1985.

During the condition rating surveys, the survey crew always began on the north end of the project and proceeded in a southerly direction to the end of the route at the intersection of KY 519 with KY 7. The first section extended from a construction joint between the old and new pavement sections (established as STA 0+00) and extended some 2,800 feet. Three additional sections were 2,800 feet in length and the fifth section was 2,280 feet. The total distance surveyed was 13,480 feet or about 2.6 miles. Survey section lengths were determined using a rolling wheel distance measuring device. Condition survey data are contained in Table D2 and Table D3 for the Kentucky System and the Asphalt Institute System, respectively. Condition ratings using each respective technique were averaged and rounded for the purpose of this report. Survey section number 2, specifically the southbound lane, was the most distressed section. Noticeable

progressive deterioration in the overall condition of the pavement surface was detected during the consecutive condition surveys. Figures D2 through D4 represent the typical pavement condition observed within survey section number 2. Raveling and severe surface pitting in the southbound lane is shown in Figures D2 and D3. Figure D4 also shows aggregate pop-outs in the surface along with excess asphalt at a construction joint in the southbound lane. An entrance to an asphalt plant was located within survey section number 2, on the west side of the highway, and contributed to the accelerated deterioration and poor performance of the southbound lane in that area. Figure D5 illustrates a longitudinal crack along a construction joint between the main line and a truck climbing lane of northbound KY 519 in survey section No. 4. With the exception of survey section number 2, the overall condition of the pavement did not change significantly from year to year.

Results of Road Rater deflection testing and analyses are contained in Table D4. The average back-calculated moduli values for the asphaltic concrete indicated very little change over the two year evaluation period. The variations that were encountered were not considered significant. The subgrade modulus was constant throughout the period. Estimated CBR of the rock subgrade varied from 18 to 21 percent.

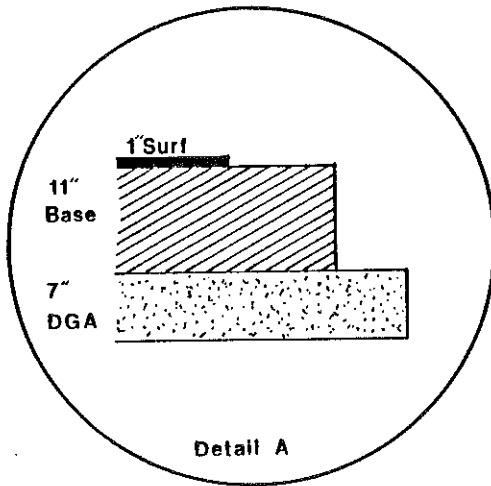
Laboratory evaluations of field cores obtained from KY 519 were not completed.



NORMAL MAIN LINE SECTION

**NEW CONSTRUCTION GRADE, DRAIN, and SURFACING
-USING-**

TRAVEL LANE



- 1" Compacted Depth Bituminous Concrete Surface**
- 0.80 lb/sy Bituminous Tack Coat**
- 11" +/- Compacted Depth Bituminous Concrete Base (4-2 3/4" Courses)**
- 7" +/- Compacted Depth Dense Graded Aggregate Base**

Figure D1. Typical Section and Detail for Main Line Section of KY 519.



Figure D2. Severe Surface Pitting and Raveling in the Southbound Lane of Survey Section No. 2.



Figure D3. Raveling and Surface Pitting in the Southbound Truck Lane of Survey Section No. 2.



Figure D4. Surface Pitting and Excess Asphalt in the Southbound Lane of Survey Section No. 2.



Figure D5. Longitudinal Crack in the Construction Joint between the Main Line and Truck Climbing Lane of Survey Section No. 4.

TABLE D1. 1985 RUTTING DATA -- KY 519, POMP TO YOCUM

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 1 -- STA 0+00 to STA 28+00								
0+00			0.3	0.3			0.3	0.1
7+00			0.3	0.4	0.1	0.3	0.1	0.3
14+00	0.3	0.1	0.1	0.3	0.3	0.4	0.1	0.3
21+00	0.4	0.1	0.1	0.3	0.1	0.1	0.1	0.3
Average	0.3	0.1	0.2	0.3	0.2	0.3	0.2	0.2
Std. Dev.	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1
SURVEY SECTION 2 -- STA 28+00 to STA 56+00								
28+00	0.3	0.1	0.1	0.0	0.3	0.1	0.1	0.1
35+00	0.1	0.3	0.1	0.0			0.1	0.4
42+00	0.1	0.1	0.1	0.1			0.1	0.3
49+00			0.1	0.1			0.0	0.3
56+00			0.1	0.3			0.3	0.3
Average	0.2	0.2	0.1	0.1	0.3	0.1	0.1	0.3
Std. Dev.	0.1	0.1	0.0	0.1			0.1	0.1
SURVEY SECTION 3 -- STA 56+00 to STA 84+00								
63+00			0.1	0.3			0.3	0.4
70+00	0.3	0.1	0.1	0.1	0.4	0.1	0.0	0.0
77+00	0.4	0.1	0.0	0.4	0.1	0.1	0.0	0.1
84+00	0.3	0.1	0.0	0.1	0.4	0.3	0.1	0.4
Average	0.3	0.1	0.1	0.2	0.3	0.2	0.1	0.2
Std. Dev.	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.2
SURVEY SECTION 4 -- STA 84+00 to STA 112+00								
91+00	0.4	0.1	0.0	0.3	0.1	0.0	0.0	0.1
98+00	0.3	0.1	0.0	0.0			0.1	0.3
105+00	0.9	0.1	0.3	0.5			0.3	0.3
112+00			0.1	0.1			0.1	0.3
Average	0.5	0.1	0.1	0.2	0.1	0.0	0.1	0.2
Std. Dev.	0.3	0.0	0.1	0.2			0.1	0.1
SURVEY SECTION 5 -- STA 112+00 to STA 134+80								
119+00			0.1	0.1			0.1	0.3
126+00			0.3	0.1			0.1	0.4
133+00			0.3	0.1			0.3	0.3
Average			0.2	0.1			0.2	0.3
Std. Dev.			0.1	0.0			0.1	0.1

TABLE D1 (continued). 1986 RUTTING DATA -- KY 519, POMP TO YOCUM

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 1 -- STA 0+00 to STA 28+00								
0+00			0.3	0.4			0.3	0.3
7+00			0.1	0.2	0.0	0.1	0.1	0.2
14+00	0.1	0.1	0.2	0.1	0.0	0.1	0.2	0.4
21+00	0.1	0.2	0.3	0.1	0.0	0.1	0.2	0.1
Average	0.1	0.2	0.2	0.2	0.0	0.1	0.2	0.2
Std. Dev.	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1
SURVEY SECTION 2 -- STA 28+00 to STA 56+00								
28+00	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3
35+00	0.1	0.1	0.2	0.2			0.1	0.4
42+00	0.1	0.3	0.1	0.0			0.1	0.2
49+00			0.1	0.1			0.1	0.2
56+00			0.1	0.2			0.2	0.2
Average	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2
Std. Dev.	0.0	0.1	0.0	0.1			0.1	0.1
SURVEY SECTION 3 -- STA 56+00 to STA 84+00								
63+00			0.4	0.3			0.3	0.4
70+00	0.3	0.1	0.1	0.2	0.3	0.2	0.1	0.1
77+00	0.1	0.1	0.0	0.2	0.2	0.1	0.1	0.1
84+00	0.1	0.1	0.1	0.2	0.4	0.3	0.1	0.1
Average	0.2	0.1	0.1	0.2	0.3	0.2	0.1	0.2
Std. Dev.	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1
SURVEY SECTION 4 -- STA 84+00 to STA 112+00								
91+00	0.1	0.3	0.3	0.3	0.1	0.1	0.3	0.0
98+00	0.0	0.1	0.2	0.1			0.2	0.2
105+00	0.0	0.4	0.3	0.1			0.1	0.2
112+00			0.1	0.1			0.1	0.3
Average	0.0	0.3	0.2	0.1	0.1	0.1	0.2	0.2
Std. Dev.	0.1	0.2	0.1	0.1			0.1	0.1
SURVEY SECTION 5 -- STA 112+00 to STA 134+80								
119+00			0.2	0.1			0.1	0.2
126+00			0.1	0.1			0.1	0.6
133+00			0.3	0.1			0.3	0.3
Average			0.2	0.1			0.2	0.3
Std. Dev.			0.1	0.0			0.1	0.2

TABLE D1 (continued). 1987 RUTTING DATA -- KY 519, POMP TO YOCUM

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 1 -- STA 0+00 to STA 28+00								
0+00			0.1	0.2			0.3	0.3
7+00			0.1	0.3	0.1	0.2	0.1	0.4
14+00	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.4
21+00	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1
Average	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.3
Std. Dev.	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1
SURVEY SECTION 2 -- STA 28+00 to STA 56+00								
28+00	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.3
35+00	0.1	0.1	0.2	0.1			0.1	0.3
42+00	0.1	0.1	0.1	0.1			0.1	0.2
49+00			0.1	0.1			0.1	0.2
56+00			0.1	0.2			0.1	0.1
Average	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Std. Dev.	0.0	0.1	0.1	0.0			0.0	0.1
SURVEY SECTION 3 -- STA 56+00 to STA 84+00								
63+00			0.2	0.3			0.2	0.3
70+00	0.1	0.2	0.2	0.1	0.1	0.1	0.3	0.2
77+00	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
84+00	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.3
Average	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.2
Std. Dev.	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.0
SURVEY SECTION 4 -- STA 84+00 to STA 112+00								
91+00	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1
98+00	0.0	0.1	0.1	0.1			0.2	0.3
105+00	0.1	0.1	0.2	0.1			0.2	0.2
112+00			0.1	0.1			0.1	0.3
Average	0.0	0.1	0.2	0.1	0.1	0.1	0.2	0.2
Std. Dev.	0.0	0.0	0.1	0.0			0.0	0.1
SURVEY SECTION 5 -- STA 112+00 to STA 134+80								
119+00			0.2	0.2			0.1	0.3
126+00			0.1	0.1			0.1	0.3
133+00			0.2	0.1			0.3	0.3
Average			0.2	0.1			0.2	0.3
Std. Dev.			0.0	0.0			0.1	0.0

TABLE D2. PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 519; Pomp to Yocum	COUNTY: Morgan	WIDTH: 12-foot lane						TYPE: Asphaltic Concrete					
Survey Section No. 1 From STA 0+00 to STA 28+00		DEFICIENCY POINTS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		4.5	4.5	4.5				2.5	3.5	4.5			
Base Failures:		0.0	0.0	0.0				0.0	0.0	0.0			
Raveling:		2.2	2.6	2.6				1.8	1.8	1.8			
Edge Failures:		1.3	1.3	1.3				0.9	1.3	1.9			
Out of Section:		2.5	3.0	2.5				3.0	3.0	3.0			
Appearance:		3.0	3.0	3.0				2.0	2.0	3.0			
Rideability:		0.0	8.4	n/a				0.0	8.4	n/a			
Rutting:		2.5	2.0	3.0				3.0	2.4	3.0			
Skid Resistance:		n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume:	AADT: 1,344												
Travel Speed:	MPH: 50	6.0	6.0	6.0				6.0	6.0	6.0			
TOTALS:		22.0	30.8	22.9				19.2	28.4	23.2			

NOTE: n/a indicates information for the description was unavailable.

TABLE D2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 519; Pomp to Yocum	COUNTY: Morgan	WIDTH: 12-foot lane						TYPE: Asphaltic Concrete					
Survey Section No. 2 From STA 28+00 to STA 56+00		DEFICIENCY POINTS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		6.0	6.0	6.0				3.5	5.0	6.0			
Base Failures:		0.0	0.0	0.0				0.0	0.0	0.0			
Raveling:		2.9	2.9	2.9				1.5	2.2	2.6			
Edge Failures:		2.1	2.1	1.9				0.9	1.2	1.5			
Out of Section:		0.0	3.5	3.0				0.0	2.0	2.5			
Appearance:		4.0	4.0	4.0				2.0	3.0	4.0			
Rideability:		0.0	1.0	n/a				0.0	1.0	n/a			
Rutting:		2.5	2.2	2.0				1.6	1.9	2.0			
Skid Resistance:		n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume:	AADT: 1,344												
Travel Speed:	MPH: 50	6.0	6.0	6.0				6.0	6.0	6.0			
TOTALS:		23.5	26.8	25.8				15.5	22.3	24.6			

NOTE: n/a indicates information for the description was unavailable.

TABLE D2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 519; Pomp to Yocum	COUNTY: Morgan	WIDTH: 12-foot lane						TYPE: Asphaltic Concrete					
Survey Section No. 3 From STA 56+00 to STA 84+00		DEFICIENCY POINTS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		4.5	4.5	4.5				6.0	6.0	6.0			
Base Failures:		0.0	0.0	0.0				0.0	0.0	0.0			
Raveling:		2.2	2.2	2.6				2.6	2.6	2.6			
Edge Failures:		1.5	1.5	1.5				2.1	2.1	2.1			
Out of Section:		2.0	2.5	3.0				2.5	3.0	3.0			
Appearance:		3.0	3.0	3.0				4.0	4.0	4.0			
Rideability:		0.0	1.0	n/a				0.0	1.0	n/a			
Rutting:		2.7	2.6	3.0				2.5	2.4	2.0			
Skid Resistance:		n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume:	AADT: 1,344												
Travel Speed:	MPH: 50	6.0	6.0	6.0				6.0	6.0	6.0			
TOTALS:		21.9	23.3	23.6				25.6	27.1	25.7			

NOTE: n/a indicates information for the description was unavailable.

TABLE D2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 519; Pomp to Yocum	COUNTY: Morgan	WIDTH: 12-foot lane						TYPE: Asphaltic Concrete					
Survey Section No. 4 From STA 84+00 to STA 112+00		DEFICIENCY POINTS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		5.0	5.0	5.0				2.5	3.0	4.5			
Base Failures:		0.0	0.0	0.0				0.0	0.0	0.0			
Raveling:		1.8	1.8	2.2				1.5	1.5	2.2			
Edge Failures:		1.3	1.5	1.5				0.9	1.3	1.3			
Out of Section:		2.0	3.0	3.0				0.0	2.0	2.5			
Appearance:		3.0	3.0	3.0				2.0	2.0	3.0			
Rideability:		0.0	0.0	n/a				0.0	0.0	n/a			
Rutting:		1.8	2.3	3.0				2.9	2.5	2.0			
Skid Resistance:		n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume:	AADT: 1,344												
Travel Speed:	MPH: 50	6.0	6.0	6.0				6.0	6.0	6.0			
TOTALS:		20.9	22.6	23.7				15.8	18.3	21.5			

NOTE: n/a indicates information for the description was unavailable.

TABLE D2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 519; Pomp to Yocum	COUNTY: Morgan	WIDTH: 12-foot lane						TYPE: Asphaltic Concrete					
Survey Section No. 5 From STA 112+00 to STA 134+80		DEFICIENCY POINTS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		3.5	4.5	4.5				2.0	3.0	4.0			
Base Failures:		0.0	0.0	0.0				0.0	0.0	0.0			
Raveling:		1.2	1.5	1.8				1.2	1.5	1.8			
Edge Failures:		0.9	1.0	1.3				0.9	1.2	1.3			
Out of Section:		0.0	2.0	2.5				0.0	2.0	2.5			
Appearance:		2.0	3.0	3.0				2.0	2.0	3.0			
Rideability:		0.0	0.0	n/a				0.0	0.0	n/a			
Rutting:		3.0	3.7	3.0				2.0	2.3	3.0			
Skid Resistance:		n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume:	AADT: 1,344												
Travel Speed:	MPH: 50	6.0	6.0	6.0				6.0	6.0	6.0			
TOTALS:		17.4	20.7	22.1				14.1	18.0	21.6			

NOTE: n/a indicates information for the description was unavailable.

TABLE D3. PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 519; Pomp to Yocum		COUNTY: Morgan			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 1		RATINGS											
From STA 0+00 to STA 28+00		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	2	1	2				1	1	2			
Longitudinal Cracks	0-5	2	2	2				2	3	3			
Alligator Cracks	0-10	2	2	1				1	2	6			
Shrinkage Cracks	0-5	1	1	2				1	1	3			
Rutting	0-10	3	2	3				3	2	2			
Corrugations	0-5	1	2	1				2	2	2			
Raveling	0-5	1	2	1				2	2	1			
Shoving or Pushing	0-10	1	2	2				1	2	2			
Potholes	0-10	1	2	1				1	2	1			
Excess Asphalt	0-10	2	2	2				3	3	2			
Polished Aggregate	0-5	2	2	2				2	2	2			
Overall Riding Quality	0-10	3	4	5				3	4	5			
	Sum of Defects	21	24	24				22	26	31			
	Condition Rating (= 90-Sum of Defects)	69	66	66				68	64	59			

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE D3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 519; Pomp to Yocum		COUNTY: Morgan			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 2 From STA 28+00 to STA 56+00		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	2	1	1				1	2	1			
Longitudinal Cracks	0-5	3	3	3				3	4	3			
Alligator Cracks	0-10	4	3	3				2	4	4			
Shrinkage Cracks	0-5	1	1	1				1	1	2			
Rutting	0-10	3	2	2				2	2	1			
Corrugations	0-5	2	2	3				3	2	2			
Raveling	0-5	3	2	2				3	2	1			
Shoving or Pushing	0-10	2	2	1				2	2	0			
Potholes	0-10	3	3	2				2	2	1			
Excess Asphalt	0-10	5	4	2				4	3	1			
Polished Aggregate	0-5	2	2	2				2	2	2			
Overall Riding Quality	0-10	4	4	5				4	4	4			
	Sum of Defects	34	29	27				29	30	22			
	Condition Rating (= 90-Sum of Defects)	56	61	63				61	60	68			

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE D3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 519; Pomp to Yocum		COUNTY: Morgan			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 3 From STA 56+00 to STA 84+00		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	1	1				1	1	0			
Longitudinal Cracks	0-5	2	2	2				4	3	3			
Alligator Cracks	0-10	2	2	3				2	3	2			
Shrinkage Cracks	0-5	1	1	2				1	1	2			
Rutting	0-10	3	3	3				3	2	2			
Corrugations	0-5	2	2	1				2	1	1			
Raveling	0-5	3	2	2				3	3	2			
Shoving or Pushing	0-10	2	2	1				2	2	0			
Potholes	0-10	2	2	1				2	2	1			
Excess Asphalt	0-10	5	4	2				3	2	1			
Polished Aggregate	0-5	2	2	2				2	2	2			
Overall Riding Quality	0-10	4	5	4				3	3	3			
	Sum of Defects	29	28	24				28	25	19			
	Condition Rating (= 90-Sum of Defects)	61	62	66				62	65	71			

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE D3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 519; Pomp to Yocum		COUNTY: Morgan			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 4 From STA 84+00 to STA 112+00		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	1	1				1	1	1			
Longitudinal Cracks	0-5	2	3	2				2	2	2			
Alligator Cracks	0-10	1	2	3				2	2	2			
Shrinkage Cracks	0-5	1	1	1				1	1	1			
Rutting	0-10	2	2	2				3	3	2			
Corrugations	0-5	2	2	1				2	1	1			
Raveling	0-5	3	2	2				3	2	1			
Shoving or Pushing	0-10	1	2	1				2	1	0			
Potholes	0-10	2	3	1				2	2	1			
Excess Asphalt	0-10	4	4	1				3	2	1			
Polished Aggregate	0-5	2	2	2				2	2	2			
Overall Riding Quality	0-10	3	3	4				4	4	4			
	Sum of Defects	24	27	21				27	23	18			
	Condition Rating (= 90-Sum of Defects)	66	63	69				63	67	72			

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE D3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 519; Pomp to Yocum		COUNTY: Morgan			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 5 From STA 112+00 to STA 134+80		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	1	1				1	1	0			
Longitudinal Cracks	0-5	2	3	2				0	2	2			
Alligator Cracks	0-10	1	3	2				1	2	2			
Shrinkage Cracks	0-5	1	1	1				1	1	1			
Rutting	0-10	3	4	3				2	2	3			
Corrugations	0-5	1	2	1				1	1	1			
Raveling	0-5	3	3	1				2	1	2			
Shoving or Pushing	0-10	1	1	0				0	2	0			
Potholes	0-10	2	2	1				1	2	0			
Excess Asphalt	0-10	3	2	1				2	1	2			
Polished Aggregate	0-5	3	2	2				2	2	2			
Overall Riding Quality	0-10	3	5	5				3	3	4			
	Sum of Defects	24	29	20				16	20	19			
	Condition Rating (= 90-Sum of Defects)	66	61	70				74	70	71			

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE D4. DEFLECTION ANALYSIS -- KY 519, POMP TO YOCUM

	ROUTE: KY 519			COUNTY: Morgan		
	NORTHBOUND			SOUTHBOUND		
	1985	1986	1987	1985	1986	1987
Temperature (°F)	104.7	77	90	106	84	91
5-Day Temp. (°F)	73.2	81.3	75.7	73.2	81.3	75.7
Test Time (hr)	15.00	9.67	9.50	11.25	12.50	11.00
Deflection No. 1 (mils)	0.289	0.257	0.259	0.313	0.299	0.234
Deflection No. 2 (mils)	0.227	0.202	0.222	0.214	0.218	0.196
Deflection No. 3 (mils)	0.151	0.173	0.163	0.158	0.159	0.139
Deflection No. 4 (mils)	0.107	0.111	0.114	0.110	0.109	0.098
Subgrade Modulus (psi)	30,000	27,000	27,000	28,000	30,000	32,000
AC Modulus at Test Temperature (psi)	380,000	530,000	480,000	260,000	270,000	460,000
AC Modulus at 70°F (psi)	1,200,000	890,000	990,000	850,000	670,000	980,000

APPENDIX E

KY 205

HELECHAWA TO INDEX

Design Criteria

The route is considered to be in light mountainous terrain. The typical section consists of a 24-foot roadway with 12-foot shoulders and truck climbing lanes as required. However, KY 205 contains two different pavement designs. From STA 10+00 to STA 129+00, the total asphaltic concrete thickness is seven inches and includes six-inches bituminous concrete base and one-inch bituminous concrete surface. From STA 129+00 to STA 653+50, the thickness of asphaltic concrete is 9.5 inches and includes 8.5-inches bituminous concrete base and one-inch bituminous concrete surface. An example of the typical section for the normal main line design utilized on the Helechawa to Index route is illustrated in Figures E1 and E2.

The design speed for the Class 2 route was 60 MPH. The 1978 average daily traffic was 880 vehicles per day. The design year (2002) average daily traffic was projected to be 2,000 vehicles per day, and the design hour volume was 240 vehicles per hour with twelve percent trucks. The designed level of service was "C". Traffic projections for the design were developed by the Department of Highways, Division of Planning. The following data were obtained from information available from project files.

Geometric Design Criteria

Class of Highway:	2
Type of Terrain:	Light Mountainous
Design Speed:	60 MPH
Maximum Curvature:	5° - 30'
Maximum Grade:	+/- 6%
Stopping Sight Distance:	475 ft (minimum) 650 ft (desirable)
Passing Sight Distance:	1,500 ft
Superelevation:	1/4 : 1'
Typical Sections:	2 - 24-ft pavement sections 12-ft shoulders climbing lanes where required
Traffic Volume:	
ADT (1978):	880
ADT (2002):	2,000

DHV:	580
T (%):	12
Level of Service:	"C"

Pavement Design Criteria

$$EWL = 23.9 \times 10^6$$

$$EAL = 7.47 \times 10^6$$

Pavement Design:

Section 1: STA 10+00 to STA 129+00

$$CBR = 5$$

12.5" Dense Graded Aggregate Base

6" Bituminous Concrete Base

1" Bituminous Concrete Surface

19.5" Total

Section 2: STA 129+00 to STA 330+50

$$CBR = 3.5$$

5" Dense Graded Aggregate Base

8.5" Bituminous Concrete Base

1" Bituminous Concrete Surface

14.5" Total

Performance Monitoring

Construction of the Helechawa to Index route was completed and the route was opened to traffic in 1982. The initial condition survey was conducted in June, 1985. Subsequent surveys were conducted in October 1986, and again in July 1987. Performance monitoring of KY 205 encompassed approximately 8.9 miles. The 8.9 miles were divided into nine sections for evaluation purposes. Sections were established during the initial survey and maintained throughout the survey period. The survey crew always began on the south end of the route near its intersection with KY 191 and the Mountain Parkway and proceeded in a northerly direction (designated as STA 0+00). The first eight survey sections were 5,280 feet in length. The ninth survey section was 4,481 feet in length making the total distance surveyed 46,721 feet. The ninth survey section terminated at

the intersection with US 460. Distances for each survey section were determined using a rolling wheel distance measuring device.

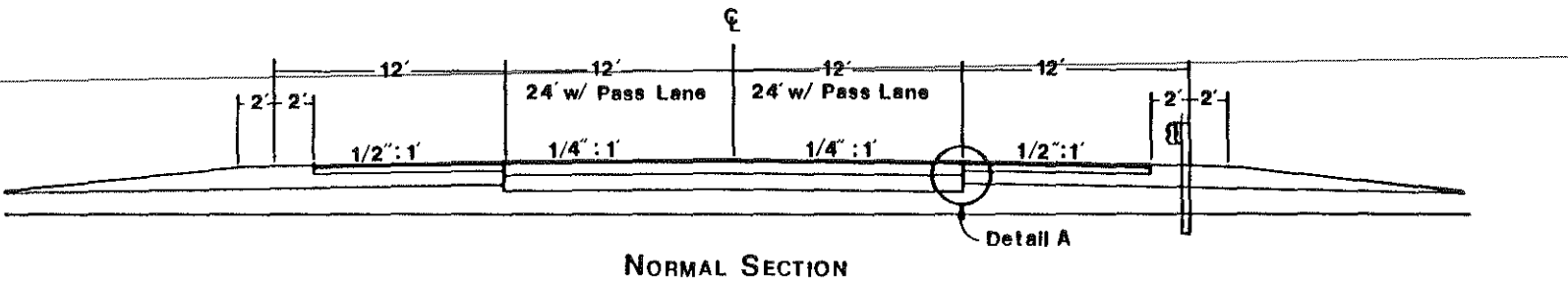
Pavement rut depths were obtained within every section during each condition rating survey. Information relative to this task is contained in Table E1. There were no significant rutting encountered and virtually no changes in the average rut depths for any survey section when considering only the shoulder lanes. There was one rut measurement station, STA 290+00 in survey section number 6, that exhibited excessive rutting in the 1985 survey. However, this is believed to have been the result of a change in the superelevation between the passing lane and shoulder lane and the method used to obtain the rut depth. The 1986 rutting data do not indicate excessive rutting. Excluding this station, the maximum rut depth for any station was less than 0.5 inch.

Condition rating data are contained in Table E2 and Table E3 for the Kentucky System and the Asphalt Institute System, respectively. Condition rating data for each respective technique were averaged and rounded for the purpose of this report. The northbound direction of survey section number 9, which contained an intersection approach to US 460, was consistently rated lower than all other sections. This was chiefly due to the amount of rutting and longitudinal cracking within the section. Figure E3 shows a longitudinal crack in the northbound lane of survey section number 7. It appears that the cracking may have initiated along a cold joint in the pavement. Figure E4 typifies slight raveling and transverse cracking along a cold construction joint. Surface raveling was prominent within survey section number 2. Figure E5 shows raveling of the bituminous surface of section number 2. Figure E6 was taken of the southbound passing lane near the crest of a vertical curve in survey section number 7. A ball cap was inadvertently left lying on the bituminous base course while the bituminous surface course was applied. A pothole was the result. Overall, there was little variation in the condition ratings over the evaluation period. There were no noticeable differences in the performance of the northbound lane relative to the southbound lane, with the exception of survey section number 9 as discussed previously. Additionally, there was no difference detected in the performance of one thickness design relative to the other.

Results of Road Rater deflection testing and modulus calculations are contained in Table E4. The average of the uncorrected field deflections taken in 1986 in the northbound lane of Design Sections A and B are considered to be unreasonably low and may have been due to equipment malfunctions. When the deflections are corrected for temperature effects, the low deflections result in an unrealistic high AC modulus value. A substantial

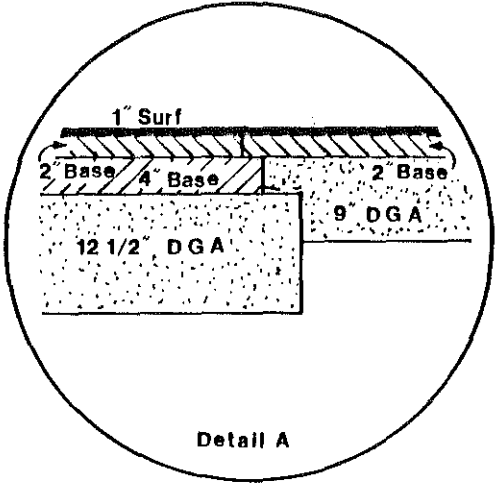
decrease in subgrade moduli in the southbound lane of Design Section A is apparent from the back-calculated modulus values. The estimated CBR in the southbound lane of Design Section A decreased from about 24 percent to around 14 percent while the subgrade bearing capacity in the northbound direction remained fairly constant over the evaluation period. The subgrade bearing capacity of both the northbound and southbound lanes of Design Section B also remained constant during the evaluation period.

There were no laboratory tests completed on cores obtained from KY 205.



NORMAL SECTION

STA. 10+00 TO 129+00
GRADE, DRAIN, and FLEXIBLE PAVEMENT
 - USING -



TRAVEL LANE

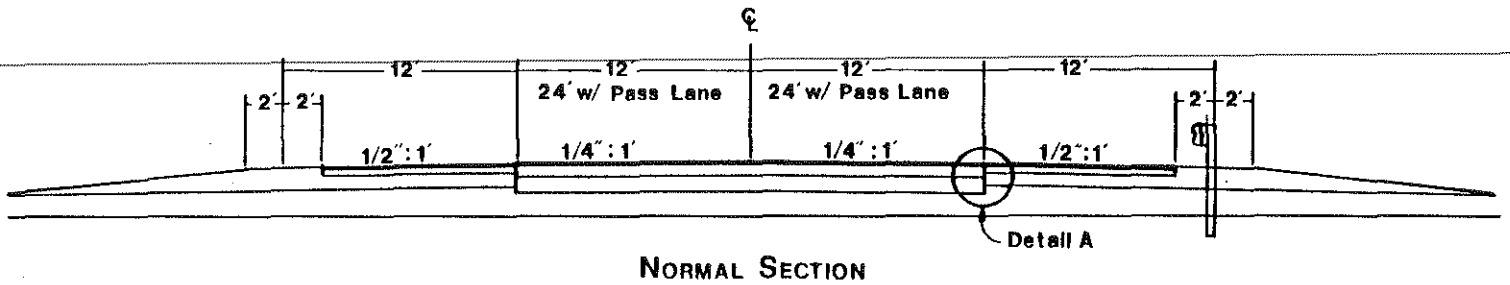
- 1" Compacted Bituminous Concrete Surface Type B (AC-20) (1)
- 0.80 lbs/sy Bituminous Tack Coat Apply As Directed By The Engineer
- 6" Compacted Bituminous Concrete Base (AC-20) (Construct In 4" And 2" Courses)
- 12 1/2" Compacted Dense Graded Aggregate Base

SHOULDER

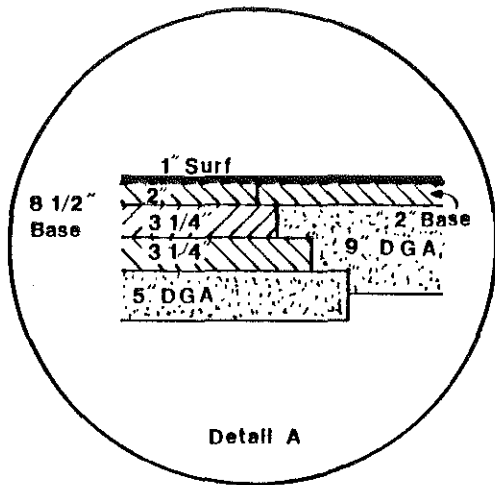
- 20 lbs/sy Crushed Aggregate Size No. 8
- 2.00 lbs/sy Bituminous Seal Coat
- 1" Compacted Bituminous Concrete Surface Type B (AC-20) (1)
- 0.80 lbs/sy Bituminous Tack Coat Apply As Directed By The Engineer
- 2" Compacted Bituminous Concrete Base (AC-20)
- 9" Compacted Dense Graded Aggregate Base

- (1) Nonpolishing Sand Required.
- (2) The Last Course Of Oil And Aggregate Shall Extend Throughout The Shoulder And Two Foot Down The Ditch Or Fill Slope To Help Prevent Erosion.

Figure E1. Typical Section and Detail for Main Line Section of KY 205 (STA 10+00 to STA 129+00).



STA. 129+00 TO 653+50
GRADE, DRAIN, and FLEXIBLE PAVEMENT
 - USING -



TRAVEL LANE

- 1" Compacted Depth Bituminous Concrete Surface
- 0.80 lbs/sy Bituminous Tack Coat
- 8 1/2" Compacted Depth Bituminous Concrete Base (2", 3 1/4", & 3 1/4" Courses)
- 5" Compacted Depth Dense Graded Aggregate Base

SHOULDER

- 20 lbs/sy Crushed Aggregate Size No. 8
- 2.00 lbs/sy Bituminous Seal Coat
- 1" Compacted Depth Bituminous Concrete Surface
- 0.80 lbs/sy Bituminous Tack Coat
- 2" Compacted Depth Bituminous Concrete Base
- 9" Compacted Depth Dense Graded Aggregate Base

(1) Bituminous Seal Coat Required Throughout The Paved Shoulder To A Point Two Foot Down The Ditch Or Fill Slope To Retard Vegetation Growth.

Figure E2. Typical Section and Detail for Main Line Section of KY 205 (STA 129+00 to STA 653+50).

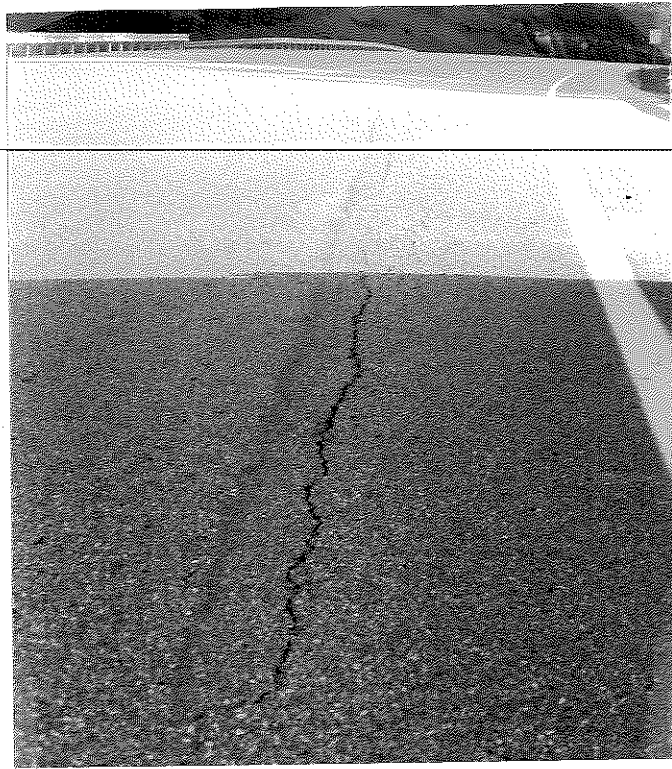


Figure E3. Longitudinal Cracking in Northbound Lane of Survey Section Number 7.



Figure E4. Slight Raveling of Transverse Crack above Construction Joint (Survey Section Number 6).



Figure E5. Raveling of the Bituminous Surface in the Northbound Lane of Survey Section Number 2.



Figure E6. Pothole Formed in Southbound Lane as a Result of Paving over a Hat (Survey Section Number 7).

TABLE E1. 1985 RUTTING DATA -- KY 205, HELECHAWA TO INDEX

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 1 -- STA 0+00 to STA 52+80, DESIGN SECTION A								
10+00			0.3	0.3			0.1	0.1
20+00			0.1	0.3			0.1	0.3
30+00			0.3	0.3			0.1	0.1
40+00			0.1	0.1			0.1	0.1
50+00			0.1	0.1			0.1	0.1
Average			0.2	0.2			0.1	0.2
Std. Dev.			0.1	0.1			0.0	0.1
SURVEY SECTION 2 -- STA 52+80 to 105+60, DESIGN SECTION A								
60+00			0.3	0.3			0.3	0.3
70+00			0.1	0.1			0.1	0.1
80+00			0.1	0.1			0.3	0.1
90+00			0.3	0.1			0.1	0.1
100+00	0.4	0.4	0.1	0.3	0.3	0.1	0.1	0.1
Average	0.4	0.4	0.2	0.2	0.3	0.1	0.2	0.2
Std. Dev.			0.1	0.1			0.1	0.1
SURVEY SECTION 3 -- STA 105+60 to STA 158+40, DESIGN SECTION B BEGINS AT STA 123+50								
110+00	0.4	0.0	0.3	0.1	0.3	0.4	0.0	0.0
120+00			0.1	0.4	0.4	0.3	0.0	0.0
130+00			0.1	0.1			0.1	0.1
140+00			0.1	0.1			0.0	0.1
150+00			0.1	0.3			0.1	0.1
Average	0.4	0.0	0.2	0.2	0.3	0.3	0.1	0.1
Std. Dev.			0.1	0.1	0.1	0.1	0.1	0.1

TABLE E1 (continued). 1985 RUTTING DATA -- KY 205, HELECHAWA TO INDEX

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 4 -- STA 158+40 to STA 211+20, DESIGN SECTION B								
160+00			0.1	0.1			0.0	0.1
170+00			0.1	0.1			0.0	0.1
180+00			0.1	0.1			0.1	0.1
190+00			0.1	0.1			0.1	0.1
200+00			0.1	0.3			0.1	0.1
210+00			0.1	0.1			0.1	0.1
Average			0.1	0.1			0.1	0.1
Std. Dev.			0.0	0.0			0.1	0.0
SURVEY SECTION 5 -- STA 211+20 to STA 264+00, DESIGN SECTION B								
220+00			0.1	0.1			0.0	0.1
230+00			0.1	0.3			0.0	0.1
240+00			0.1	0.1			0.0	0.1
250+00			0.1	0.1			0.0	0.3
260+00			0.1	0.3			0.1	0.1
Average			0.1	0.2			0.0	0.2
Std. Dev.			0.0	0.1			0.1	0.1
SURVEY SECTION 6 -- STA 264+00 to STA 316+80, DESIGN SECTION B								
270+00			0.1	0.1			0.1	0.1
280+00			0.1	0.1			0.1	0.1
290+00			0.1	0.0	1.5	1.0	0.5	1.0
300+00	0.1	0.1	0.1	0.3	0.1	0.3	0.0	0.1
310+00	0.0	0.1	0.0	0.1	0.4	0.4	0.0	0.4
Average	0.1	0.1	0.1	0.1	0.7	0.5	0.2	0.4
Std. Dev.	0.1	0.0	0.1	0.1	0.6	0.3	0.2	0.3

TABLE E1 (continued). 1985 RUTTING DATA -- KY 205, HELECHAWA TO INDEX

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 7 -- STA 316+80 to STA 369+60, DESIGN SECTION B								
320+00			0.1	0.1			0.1	0.1
330+00			0.3	0.1			0.0	0.3
340+00			0.1	0.1			0.0	0.1
350+00	0.3	0.3	0.1	0.1			0.1	0.1
360+00	0.1	0.1	0.1	0.1			0.1	0.1
Average	0.2	0.2	0.2	0.1			0.1	0.2
Std. Dev.	0.1	0.1	0.1	0.0			0.1	0.1
SURVEY SECTION 8 -- STA 369+60 to STA 422+40, DESIGN SECTION B								
370+00	0.1	0.3	0.1	0.1			0.3	0.1
380+00	0.4	0.3	0.0	0.1	0.0	0.3	0.0	0.1
390+00			0.1	0.0	0.4	0.3	0.0	0.3
400+00			0.3	0.3	0.1	0.0	0.1	0.1
410+00			0.3	0.1	0.1	0.1	0.0	0.0
420+00			0.3	0.4	0.1	0.1	0.1	0.1
Average	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1
Std. Dev.	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1
SURVEY SECTION 9 -- STA 422+40 to STA 467+21, DESIGN SECTION B								
430+00			0.1	0.3	0.1	0.3	0.1	0.3
440+00			0.3	0.3			0.1	0.1
450+00			0.3	0.3			0.1	0.1
460+00			0.4	0.1			0.1	0.1
Average			0.3	0.2	0.1	0.3	0.1	0.2
Std. Dev.			0.1	0.1			0.0	0.1

TABLE E1 (continued). 1986 RUTTING DATA -- KY 205, HELECHAWA TO INDEX

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 1 -- STA 0+00 to STA 52+80, DESIGN SECTION A								
10+00			0.2	0.1			0.1	0.2
20+00			0.1	0.1			0.1	0.1
30+00			0.1	0.2			0.1	0.1
40+00			0.2	0.1			0.1	0.2
50+00			0.1	0.2			0.1	0.1
Average			0.2	0.1			0.1	0.2
Std. Dev.			0.0	0.0			0.0	0.0
SURVEY SECTION 2 -- STA 52+80 to 105+60, DESIGN SECTION A								
60+00			0.2	0.2			0.2	0.1
70+00			0.1	0.1			0.1	0.1
80+00			0.1	0.1			0.0	0.1
90+00			0.3	0.1			0.1	0.1
100+00	0.0	0.0	0.1	0.3	0.1	0.1	0.1	0.1
Average	0.0	0.0	0.2	0.2	0.1	0.1	0.1	0.1
Std. Dev.			0.1	0.1			0.1	0.0
SURVEY SECTION 3 -- STA 105+60 to STA 158+40, DESIGN SECTION B BEGINS AT STA 123+50								
110+00	0.0	0.0	0.4	0.1	0.0	0.1	0.2	0.3
120+00			0.0	0.3	0.0	0.1	0.4	0.1
130+00			0.1	0.0			0.1	0.1
140+00			0.1	0.1			0.0	0.1
150+00			0.1	0.2			0.1	0.1
Average	0.0	0.0	0.1	0.1	0.0	0.1	0.2	0.1
Std. Dev.			0.1	0.1	0.0	0.0	0.1	0.1

TABLE E1 (continued). 1986 RUTTING DATA -- KY 205, HELECHAWA TO INDEX

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 4 -- STA 158+40 to 211+20, DESIGN SECTION B								
160+00			0.1	0.1			0.0	0.1
170+00			0.1	0.1			0.0	0.1
180+00			0.1	0.1			0.0	0.1
190+00			0.1	0.1			0.1	0.1
200+00			0.1	0.2			0.1	0.1
210+00			0.1	0.1			0.1	0.1
Average			0.1	0.1			0.0	0.1
Std. Dev.			0.0	0.0			0.0	0.0
SURVEY SECTION 5 -- STA 211+20 to STA 264+00, DESIGN SECTION B								
220+00			0.1	0.1			0.1	0.1
230+00			0.1	0.2			0.0	0.1
240+00			0.1	0.1			0.0	0.1
250+00			0.1	0.2			0.0	0.1
260+00			0.1	0.1			0.0	0.1
Average			0.1	0.2			0.0	0.1
Std. Dev.			0.0	0.0			0.0	0.0
SURVEY SECTION 6 -- STA 264+00 to STA 316+80, DESIGN SECTION B								
270+00			0.1	0.1			0.0	0.1
280+00			0.1	0.1			0.1	0.1
290+00			0.1	0.0	0.0	0.1	0.4	0.3
300+00	0.1	0.2	0.0	0.3	0.0	0.1	0.2	0.1
310+00	0.0	0.1	0.0	0.1	0.1	0.4	0.2	0.1
Average	0.0	0.1	0.1	0.1	0.0	0.2	0.2	0.1
Std. Dev.	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.1

TABLE E1 (continued). 1986 RUTTING DATA -- KY 205, HELECHAWA TO INDEX

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 7 -- STA 316+80 to STA 369+60, DESIGN SECTION B								
320+00			0.1	0.1			0.0	0.1
330+00			0.2	0.1			0.0	0.1
340+00			0.1	0.2			0.1	0.1
350+00	0.1	0.1	0.3	0.2			0.1	0.1
360+00	0.1	0.1	0.1	0.2			0.1	0.1
Average	0.1	0.1	0.1	0.2			0.0	0.1
Std. Dev.	0.0	0.0	0.1	0.0			0.0	0.0
SURVEY SECTION 8 -- STA 369+60 to STA 422+40, DESIGN SECTION B								
370+00	0.1	0.1	0.2	0.2			0.3	0.2
380+00	0.0	0.1	0.3	0.2	0.1	0.2	0.0	0.2
390+00			0.1	0.1	0.1	0.2	0.3	0.1
400+00			0.3	0.4	0.0	0.1	0.1	0.1
410+00			0.2	0.2	0.0	0.1	0.2	0.1
420+00			0.3	0.4	0.0	0.1	0.1	0.1
Average	0.0	0.1	0.2	0.2	0.0	0.1	0.2	0.1
Std. Dev.	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
SURVEY SECTION 9 -- STA 422+40 to STA 467+21, DESIGN SECTION B								
430+00			0.1	0.2	0.1	0.1	0.1	0.1
440+00			0.2	0.3			0.2	0.1
450+00			0.2	0.3			0.1	0.1
460+00			0.4	0.1			0.1	0.1
Average			0.2	0.2	0.1	0.1	0.1	0.1
Std. Dev.			0.1	0.1			0.0	0.0

TABLE E1 (continued). 1987 RUTTING DATA -- KY 205, HELECHAWA TO INDEX

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 1 -- STA 0+00 to STA 52+80, DESIGN SECTION A								
10+00			0.2	0.1			0.1	0.2
20+00			0.1	0.1			0.1	0.1
30+00			0.2	0.2			0.1	0.2
40+00			0.1	0.1			0.1	0.2
50+00			0.1	0.1			0.1	0.2
Average			0.2	0.1			0.1	0.2
Std. Dev.			0.0	0.0			0.0	0.0
SURVEY SECTION 2 -- STA 52+80 to STA 105+60, DESIGN SECTION A								
60+00			0.3	0.2			0.2	0.2
70+00			0.1	0.1			0.1	0.1
80+00			0.1	0.1			0.1	0.1
90+00			0.2	0.1			0.1	0.1
100+00	0.1	0.1	0.3	0.3	0.1	0.0	0.1	0.1
Average	0.1	0.1	0.2	0.2	0.1	0.0	0.1	0.1
Std. Dev.			0.1	0.1			0.0	0.0
SURVEY SECTION 3 -- STA 105+60 TO STA 158+40, DESIGN SECTION B BEGINS AT STA 123+50								
110+00	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.4
120+00			0.1	0.3	0.1	0.1	0.3	0.3
130+00			0.1	0.1			0.1	0.1
140+00			0.1	0.1			0.1	0.1
150+00			0.1	0.2			0.1	0.1
Average	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2
Std. Dev.			0.0	0.1	0.0	0.0	0.1	0.1

TABLE E1 (continued). 1987 RUTTING DATA - KY 205, HELECHAWA TO INDEX

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 4 -- STA 158+40 to STA 211+20, DESIGN SECTION B								
160+00			0.1	0.1			0.1	0.1
170+00			0.1	0.1			0.1	0.1
180+00			0.1	0.1			0.1	0.1
190+00			0.1	0.1			0.1	0.1
200+00			0.1	0.2			0.1	0.1
210+00			0.1	0.1			0.1	0.1
Average			0.1	0.1			0.1	0.1
Std. Dev.			0.0	0.0			0.0	0.0
SURVEY SECTION 5 -- STA 211+20 to STA 264+00, DESIGN SECTION B								
220+00			0.1	0.1			0.1	0.1
230+00			0.1	0.2			0.1	0.1
240+00			0.1	0.1			0.1	0.1
250+00			0.1	0.2			0.1	0.2
260+00			0.1	0.1			0.1	0.1
Average			0.1	0.2			0.1	0.1
Std. Dev.			0.0	0.0			0.0	0.0
SURVEY SECTION 6 -- STA 264+00 to STA 316+80, DESIGN SECTION B								
270+00			0.1	0.1			0.1	0.1
280+00			0.1	0.1			0.1	0.1
290+00			0.1	0.1	0.1	0.1	0.2	0.1
300+00	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.1
310+00	0.1	0.1	0.0	0.1	0.1	0.1	0.2	0.1
Average	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1
Std. Dev.	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0

TABLE E1 (continued). 1987 RUTTING DATA -- KY 205, HELECHAWA TO INDEX

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 7 -- STA 316+80 to STA 369+60, DESIGN SECTION B								
320+00			0.1	0.1			0.1	0.1
330+00			0.2	0.1			0.1	0.1
340+00			0.1	0.2			0.1	0.2
350+00	0.1	0.1	0.3	0.2			0.1	0.1
360+00	0.1	0.1	0.2	0.1			0.1	0.1
Average	0.1	0.1	0.2	0.2			0.1	0.1
Std. Dev.	0.0	0.0	0.1	0.0			0.0	0.0
SURVEY SECTION 8 -- STA 369+60 to STA 422+40, DESIGN SECTION B								
370+00	0.1	0.1	0.2	0.3			0.3	0.2
380+00	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.1
390+00			0.1	0.1	0.1	0.1	0.2	0.1
400+00			0.3	0.3	0.1	0.1	0.1	0.1
410+00			0.2	0.2	0.0	0.1	0.1	0.1
420+00			0.3	0.4	0.1	0.1	0.1	0.1
Average	0.1	0.1	0.2	0.2	0.0	0.1	0.1	0.1
Std. Dev.	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0
SURVEY SECTION 9 -- STA 422+40 to STA 467+21, DESIGN SECTION B								
430+00			0.1	0.1	0.1	0.0	0.1	0.1
440+00			0.3	0.2			0.1	0.2
450+00			0.3	0.2			0.1	0.1
460+00			0.4	0.1			0.1	0.1
Average			0.3	0.1	0.1	0.0	0.1	0.1
Std. Dev.			0.1	0.1			0.0	0.0

TABLE E2. PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 205; Helechawa to Index		COUNTY: Wolfe			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete				
Survey Section No. 1 From STA 0+00 to STA 52+80 Design Section A		DEFICIENCY POINTS										
		SOUTHBOUND						NORTHBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	3.5	3.5	3.5				5.0	5.0	5.0			
Base Failures:	0.0	0.0	0.0				0.0	0.0	0.0			
Raveling:	2.2	2.6	2.6				1.2	1.5	2.2			
Edge Failures:	1.0	1.3	1.3				1.3	0.9	1.0			
Out of Section:	2.0	2.5	3.0				3.5	3.0	3.5			
Appearance:	2.0	2.0	3.0				2.0	2.0	3.0			
Rideability:	0.0	3.9	n/a				2.5	3.9	n/a			
Rutting:	2.0	1.8	2.0				2.1	2.3	3.0			
Skid Resistance:	n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume: AADT: 1,081												
Travel Speed: MPH: 60	7.0	7.0	7.0				7.0	7.0	7.0			
TOTALS:	19.7	24.6	22.4				24.6	25.6	24.7			

NOTE: n/a indicates information for the description was unavailable.

TABLE E2 (continued) PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 205; Helechawa to Index		COUNTY: Wolfe			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete				
Survey Section No. 2 From STA 52+80 to STA 105+60 Design Section A		DEFICIENCY POINTS										
		SOUTHBOUND						NORTHBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	4.5	4.5	5.0				4.5	5.0	6.0			
Base Failures:	0.0	0.0	0.0				0.0	0.0	0.0			
Raveling:	1.8	1.8	2.6				2.5	2.6	2.6			
Edge Failures:	1.3	1.3	1.5				0.9	1.3	1.5			
Out of Section:	2.5	3.0	3.5				0.0	3.5	3.5			
Appearance:	3.0	3.0	3.0				3.0	2.0	3.0			
Rideability:	0.0	3.9	n/a				3.9	3.9	n/a			
Rutting:	1.8	1.3	2.0				2.8	2.3	3.0			
Skid Resistance:	n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume: AADT: 1,145												
Travel Speed: MPH: 60	7.0	7.0	7.0				7.0	7.0	7.0			
TOTALS:	21.9	25.8	24.6				24.6	27.6	26.6			

NOTE: n/a indicates information for the description was unavailable.

TABLE E2 (continued) PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 205; Helechawa to Index	COUNTY: Wolfe / Morgan			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 3 From STA 105+60 to STA 158+40 Morgan Co. line at STA 107+68 Design Section B begins at STA 119+00	DEFICIENCY POINTS											
	SOUTHBOUND						NORTHBOUND					
	Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	5.0	6.0	6.0				3.5	5.0	8.0			
Base Failures:	0.0	2.0	2.5				0.0	0.0	0.0			
Raveling:	2.9	1.8	2.2				2.2	2.2	2.6			
Edge Failures:	1.3	1.5	1.5				1.0	1.3	1.3			
Out of Section:	2.0	3.0	3.0				0.0	3.5	3.5			
Appearance:	3.0	3.0	4.0				2.0	3.0	4.0			
Rideability	1.0	3.9	n/a				2.5	3.9	n/a			
Rutting	1.8	1.9	3.0				2.4	1.8	2.0			
Skid Resistance:	n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume: AADT: 1,230												
Travel Speed: MPH: 60	7.0	7.0	7.0				7.0	7.0	7.0			
TOTALS:	24.0	30.1	29.2				19.6	27.7	28.4			

NOTE: n/a indicates information for the description was unavailable.

TABLE E2 (continued) PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 205; Helechawa to Index		COUNTY: Morgan			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete				
Survey Section No. 4 From STA 158+40 to STA 211+20 Design Section B		DEFICIENCY POINTS										
		SOUTHBOUND						NORTHBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	4.5	5.5	4.5				3.5	4.5	6.0			
Base Failures:	0.0	2.0	2.0				0.0	0.0	0.0			
Raveling:	1.8	1.8	2.2				1.5	1.8	2.2			
Edge Failures:	1.3	1.3	1.5				1.3	1.3	1.3			
Out of Section:	2.5	3.0	3.0				0.0	3.0	3.5			
Appearance:	3.0	3.0	3.0				2.0	3.0	3.0			
Rideability:	1.0	3.9	n/a				2.5	3.9	n/a			
Rutting:	1.3	1.0	2.0				1.6	1.7	2.0			
Skid Resistance:	n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume: AADT: 1,230												
Travel Speed: MPH: 60	7.0	7.0	7.0				7.0	7.0	7.0			
TOTALS:	22.4	28.5	25.2				19.4	26.2	25.0			

NOTE: n/a indicates information for the description was unavailable.

TABLE E2 (continued) PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 205; Helechawa to Index		COUNTY: Morgan			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete				
Survey Section No. 5 From STA 211+20 to STA 264+00 Design Section B		DEFICIENCY POINTS										
		SOUTHBOUND						NORTHBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	
Cracking:	6.0	6.0	6.0				3.5	4.5	4.5			
Base Failures:	0.0	0.0	0.0				0.0	0.0	0.0			
Raveling:	1.5	1.8	2.2				1.2	1.8	2.2			
Edge Failures:	2.1	2.1	2.1				1.0	1.5	1.7			
Out of Section:	2.0	2.5	3.0				0.0	3.0	3.0			
Appearance:	3.0	3.0	3.0				2.0	2.0	3.0			
Rideability:	1.0	2.5	n/a				1.0	2.5	n/a			
Rutting:	1.1	0.9	2.0				1.8	1.9	2.0			
Skid Resistance:	n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume: AADT: 1,440												
Travel Speed: MPH: 60	8.0	8.0	8.0				8.0	8.0	8.0			
TOTALS:	24.7	26.8	26.3				18.5	25.2	24.4			

NOTE: n/a indicates information for the description was unavailable.

TABLE E2 (continued) PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 205; Helechawa to Index		COUNTY: Morgan			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete				
Survey Section No. 6 From STA 264+00 to STA 316+80 Design Section B		DEFICIENCY POINTS										
		SOUTHBOUND						NORTHBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	7.0	7.0	7.0				7.0	7.0	8.0			
Base Failures:	0.0	0.0	0.0				0.0	0.0	0.0			
Raveling:	2.6	2.6	2.6				2.9	2.9	2.9			
Edge Failures:	2.1	2.2	2.4				2.1	2.1	2.1			
Out of Section:	2.5	2.5	3.0				0.0	3.0	3.0			
Appearance:	4.0	4.0	4.0				4.0	3.0	4.0			
Rideability:	1.0	2.5	n/a				1.0	2.5	n/a			
Rutting:	4.3	2.1	2.0				1.3	1.4	2.0			
Skid Resistance:	n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume: AADT: 1,440												
Travel Speed: MPH: 60	8.0	8.0	8.0				8.0	8.0	8.0			
TOTALS:	29.5	30.9	29.0				26.3	29.9	30.0			

NOTE: n/a indicates information for the description was unavailable.

TABLE E2 (continued) PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 205; Helechawa to Index		COUNTY: Morgan			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete				
Survey Section No. 7 From STA 316+80 to STA 369+60 Design Section B		DEFICIENCY POINTS										
		SOUTHBOUND						NORTHBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	2.5	4.5	5.0				6.0	6.0	7.0			
Base Failures:	0.0	0.0	0.0				0.0	0.0	0.0			
Raveling:	1.8	1.8	2.2				1.9	1.3	2.6			
Edge Failures:	1.0	1.3	1.3				1.0	1.3	1.5			
Out of Section:	2.0	2.5	3.0				2.0	2.5	3.0			
Appearance:	2.0	2.0	3.0				3.0	3.0	4.0			
Rideability:	0.0	2.5	n/a				0.0	2.5	n/a			
Rutting:	1.4	0.9	2.0				1.8	2.0	3.0			
Skid Resistance:	n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume: AADT: 1,440												
Travel Speed: MPH: 60	8.0	8.0	8.0				8.0	8.0	8.0			
TOTALS:	18.7	23.5	24.5				23.7	26.6	29.1			

NOTE: n/a indicates information for the description was unavailable.

TABLE E2 (continued) PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 205; Helechawa to Index		COUNTY: Morgan			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete				
Survey Section No. 8 From STA 369+60 to STA 422+40 Design Section B		DEFICIENCY POINTS										
		SOUTHBOUND						NORTHBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	2.5	4.5	5.0				6.0	7.0	7.0			
Base Failures:	0.0	0.0	0.0				0.0	0.0	0.0			
Raveling:	1.8	1.8	2.3				2.6	2.6	2.9			
Edge Failures:	0.9	1.7	1.9				1.7	2.4	2.4			
Out of Section:	0.0	3.0	3.0				2.5	3.0	3.5			
Appearance:	2.0	2.0	3.0				3.0	4.0	4.0			
Rideability:	0.0	2.5	n/a				0.0	2.5	n/a			
Rutting:	1.6	1.7	2.0				2.4	2.7	3.0			
Skid Resistance:	n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume: AADT: 1,440												
Travel Speed: MPH: 60	8.0	8.0	8.0				8.0	8.0	8.0			
TOTALS:	16.8	25.2	25.2				26.2	32.2	30.8			

NOTE: n/a indicates information for the description was unavailable.

TABLE E2 (continued) PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 205; Helechawa to Index		COUNTY: Morgan			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete				
Survey Section No. 9 From STA 422+40 to STA 467+21 Design Section B		DEFICIENCY POINTS										
		SOUTHBOUND						NORTHBOUND				
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
DESCRIPTION:	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:	2.0	4.0	5.0				5.0	6.0	8.0			
Base Failures:	0.0	0.0	0.0				0.0	0.0	0.0			
Raveling:	1.2	1.8	2.2				2.2	2.6	2.6			
Edge Failures:	1.0	1.7	1.9				2.1	2.4	2.6			
Out of Section:	0.0	3.0	3.0				0.0	4.0	4.5			
Appearance:	2.0	3.0	3.0				3.0	4.0	4.0			
Rideability:	0.0	2.5	n/a				0.0	2.5	n/a			
Rutting:	1.8	1.6	2.0				3.0	3.1	3.0			
Skid Resistance:	n/a	n/a	n/a				n/a	n/a	n/a			
Traffic Volume: AADT: 1,440												
Travel Speed: MPH: 60	8.0	8.0	8.0				8.0	8.0	8.0			
TOTALS:	16.0	25.6	25.1				23.3	32.6	32.7			

NOTE: n/a indicates information for the description was unavailable.

TABLE E3. PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 205; Helechawa to Index		COUNTY: Wolfe			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 1		RATINGS											
From STA 0+00 to STA 52+80		SOUTHBOUND						NORTHBOUND					
Design Section A		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	2	1	1				2	1	1			
Longitudinal Cracks	0-5	2	3	1				3	2	2			
Alligator Cracks	0-10	3	4	1				3	2	1			
Shrinkage Cracks	0-5	1	1	1				2	0	1			
Rutting	0-10	2	2	2				2	2	2			
Corrugations	0-5	1	1	1				1	1	1			
Raveling	0-5	1	2	1				0	2	1			
Shoving or Pushing	0-10	0	0	0				0	1	1			
Potholes	0-10	1	1	0				0	0	1			
Excess Asphalt	0-10	2	1	1				2	0	1			
Polished Aggregate	0-5	2	2	2				2	2	2			
Overall Riding Quality	0-10	4	4	4				4	5	5			
	Sum of Defects	21	23	15				21	18	19			
	Condition Rating (= 90-Sum of Defects)	69	67	75				69	72	71			

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE E3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 205; Helechawa to Index		COUNTY: Wolfe			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 2 From STA 52+80 to STA 105+60 Design Section A		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	1	2				2	2	2			
Longitudinal Cracks	0-5	2	3	2				3	3	3			
Alligator Cracks	0-10	3	3	1				4	2	3			
Shrinkage Cracks	0-5	1	1	1				2	1	1			
Rutting	0-10	2	1	2				3	2	3			
Corrugations	0-5	2	1	2				1	2	2			
Raveling	0-5	2	2	2				3	1	2			
Shoving or Pushing	0-10	1	1	1				1	1	1			
Potholes	0-10	1	2	0				0	0	1			
Excess Asphalt	0-10	2	1	1				2	1	1			
Polished Aggregate	0-5	2	2	2				3	2	2			
Overall Riding Quality	0-10	4	4	5				4	5	6			
	Sum of Defects	23	22	21				28	22	27			
	Condition Rating (= 90-Sum of Defects)	67	68	69				62	68	63			

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE E3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 205; Helechawa to Index		COUNTY: Wolfe / Morgan			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete						
Survey Section No. 3 From STA 105+60 to STA 158+40 Morgan Co. line at STA 107+68 Design Section B begins at STA 123+50		RATINGS												
		SOUTHBOUND						NORTHBOUND						
				Shoulder Lane			Median Lane			Shoulder Lane			Median Lane	
		DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986
Transverse Cracks	0-5	0	1	2				1	1	2				
Longitudinal Cracks	0-5	3	3	3				2	3	2				
Alligator Cracks	0-10	4	4	3				3	3	2				
Shrinkage Cracks	0-5	1	1	1				2	1	1				
Rutting	0-10	2	2	2				2	2	2				
Corrugations	0-5	1	1	1				1	2	1				
Raveling	0-5	3	2	2				2	1	2				
Shoving or Pushing	0-10	1	1	1				0	1	0				
Potholes	0-10	1	1	1				0	1	0				
Excess Asphalt	0-10	2	2	1				1	2	1				
Polished Aggregate	0-5	2	2	2				2	2	2				
Overall Riding Quality	0-10	4	5	6				4	4	5				
	Sum of Defects	24	25	25				20	23	20				
	Condition Rating (= 90-Sum of Defects)	66	65	65				70	67	70				

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE E3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 205; Helechawa to Index		COUNTY: Morgan			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 4 From STA 158+40 to STA 211+20 Design Section B		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	1	1				1	1	1			
Longitudinal Cracks	0-5	1	3	2				3	2	2			
Alligator Cracks	0-10	2	2	1				2	3	2			
Shrinkage Cracks	0-5	1	1	1				1	1	1			
Rutting	0-10	1	1	2				2	2	2			
Corrugations	0-5	1	2	1				1	1	2			
Raveling	0-5	1	2	1				1	1	1			
Shoving or Pushing	0-10	0	2	0				0	1	1			
Potholes	0-10	1	2	1				0	1	1			
Excess Asphalt	0-10	2	1	1				2	1	1			
Polished Aggregate	0-5	2	2	2				2	2	2			
Overall Riding Quality	0-10	3	4	4				3	3	4			
	Sum of Defects	15	23	17				18	19	20			
	Condition Rating (= 90-Sum of Defects)	75	67	73				72	71	70			

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE E3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 205; Helechawa to Index		COUNTY: Morgan			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 5 From STA 211+20 to STA 264+00 Design Section B		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	1	1				0	0	1			
Longitudinal Cracks	0-5	3	2	2				1	1	2			
Alligator Cracks	0-10	2	2	2				2	2	1			
Shrinkage Cracks	0-5	1	1	1				1	1	1			
Rutting	0-10	1	1	1				2	2	2			
Corrugations	0-5	1	1	1				1	1	2			
Raveling	0-5	1	1	1				1	1	1			
Shoving or Pushing	0-10	0	1	0				0	1	1			
Potholes	0-10	1	1	0				1	1	1			
Excess Asphalt	0-10	2	1	1				2	1	1			
Polished Aggregate	0-5	2	2	2				2	2	2			
Overall Riding Quality	0-10	4	5	5				3	4	5			
	Sum of Defects	18	19	17				16	17	20			
	Condition Rating (= 90-Sum of Defects)	72	71	73				74	73	70			

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE E3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 205; Helechawa to Index		COUNTY: Morgan			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 6 From STA 264+00 to STA 316+80 Design Section B		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	2	1	1				2	2	1			
Longitudinal Cracks	0-5	3	4	3				4	3	3			
Alligator Cracks	0-10	4	3	3				3	3	2			
Shrinkage Cracks	0-5	1	1	1				2	1	1			
Rutting	0-10	4	2	2				1	1	2			
Corrugations	0-5	1	1	1				1	1	2			
Raveling	0-5	2	1	2				1	1	2			
Shoving or Pushing	0-10	2	2	1				0	1	1			
Potholes	0-10	1	1	1				0	1	1			
Excess Asphalt	0-10	2	1	1				3	2	2			
Polished Aggregate	0-5	2	2	2				2	2	2			
Overall Riding Quality	0-10	5	5	5				5	6	6			
	Sum of Defects	29	24	23				24	24	25			
	Condition Rating (= 90-Sum of Defects)	61	66	67				66	66	65			

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE E3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 205; Helechawa to Index		COUNTY: Morgan			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 7 From STA 316+80 to STA 369+60 Design Section B		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	1	1				1	1	2			
Longitudinal Cracks	0-5	2	2	3				4	3	3			
Alligator Cracks	0-10	3	2	2				4	3	3			
Shrinkage Cracks	0-5	1	1	1				1	1	1			
Rutting	0-10	1	1	2				2	2	2			
Corrugations	0-5	1	1	1				1	1	1			
Raveling	0-5	2	2	2				2	1	2			
Shoving or Pushing	0-10	0	1	0				0	1	0			
Potholes	0-10	2	1	1				2	2	0			
Excess Asphalt	0-10	2	1	1				2	2	2			
Polished Aggregate	0-5	2	2	2				2	2	2			
Overall Riding Quality	0-10	4	4	5				4	5	6			
	Sum of Defects	21	19	24				25	24	24			
	Condition Rating (= 90-Sum of Defects)	69	71	66				65	66	66			

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE E3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 205; Helechawa to Index		COUNTY: Morgan			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 8 From STA 369+60 to STA 422+40 Design Section B		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	2	1	2				2	2	1			
Longitudinal Cracks	0-5	3	3	3				4	4	3			
Alligator Cracks	0-10	3	3	3				4	4	2			
Shrinkage Cracks	0-5	1	1	2				1	1	1			
Rutting	0-10	2	2	2				2	3	3			
Corrugations	0-5	1	1	1				1	1	2			
Raveling	0-5	2	2	2				2	2	2			
Shoving or Pushing	0-10	0	1	0				0	1	2			
Potholes	0-10	2	2	1				2	1	0			
Excess Asphalt	0-10	2	1	1				3	2	1			
Polished Aggregate	0-5	2	2	2				1	2	2			
Overall Riding Quality	0-10	4	5	6				2	5	6			
	Sum of Defects	24	24	25				18	28	25			
	Condition Rating (= 90-Sum of Defects)	66	66	65				72	62	65			

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

E.35

TABLE E3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 205; Helechawa to Index		COUNTY: Morgan			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 9 From STA 422+40 to STA 467+21 Design Section B		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	1	0				1	1	1			
Longitudinal Cracks	0-5	2	3	3				3	3	3			
Alligator Cracks	0-10	2	3	3				3	4	3			
Shrinkage Cracks	0-5	1	1	1				1	1	1			
Rutting	0-10	2	2	2				3	2	3			
Corrugations	0-5	1	1	1				2	1	3			
Raveling	0-5	1	2	1				2	2	2			
Shoving or Pushing	0-10	0	2	0				0	3	2			
Potholes	0-10	1	2	1				2	2	1			
Excess Asphalt	0-10	2	1	1				2	2	2			
Polished Aggregate	0-5	2	2	2				2	2	2			
Overall Riding Quality	0-10	4	5	5				4	4	5			
	Sum of Defects	18	25	20				25	28	28			
	Condition Rating (= 90-Sum of Defects)	72	65	70				65	62	62			

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE E4. DEFLECTION ANALYSIS -- KY 205, DESIGN SECTION A

ROUTE: KY 205		COUNTY: Wolfe				
Section A	NORTHBOUND			SOUTHBOUND		
	1985	1986	1987	1985	1986	1987
Temperature (°F)	93.0	106.0	96.0	81.0	114.0	85.5
5-Day Temp. (°F)	73.2	81.8	75.1	73.2	81.8	75.1
Test Time (hr)	13.25	13.00	14.00	10.00	13.50	9.75
Deflection No. 1 (mils)	0.393	0.296	0.307	0.300	0.365	0.286
Deflection No. 2 (mils)	0.274	0.266	0.247	0.214	0.285	0.238
Deflection No. 3 (mils)	0.180	0.173	0.171	0.126	0.172	0.200
Deflection No. 4 (mils)	0.092	0.096	0.077	0.079	0.101	0.217
Subgrade Modulus (psi)	28,000	27,000	29,000	36,000	27,000	21,000
AC Modulus at Test Temperature (psi)	280,000	880,000	660,000	410,000	400,000	2,000,000
AC Modulus at 70°F (psi)	790,000	2,580,000	1,720,000	650,000	1,890,000	2,750,000

TABLE E4 (continued). DEFLECTION ANALYSIS -- KY 205, DESIGN SECTION B

ROUTE: KY 205		COUNTY: Morgan				
Section B	NORTHBOUND			SOUTHBOUND		
	1985	1986	1987	1985	1986	1987
Temperature (°F)	84.0	114.0	91.0	89.5	91.3	95.0
5-Day Temp. (°F)	73.2	81.8	75.1	73.2	81.8	75.1
Test Time (hr)	11.00	15.17	10.79	12.50	11.50	12.00
Deflection No. 1 (mils)	0.350	0.340	0.278	0.386	0.289	0.294
Deflection No. 2 (mils)	0.249	0.275	0.232	0.279	0.252	0.234
Deflection No. 3 (mils)	0.160	0.185	0.161	0.177	0.159	0.181
Deflection No. 4 (mils)	0.103	0.096	0.084	0.117	0.097	0.093
Subgrade Modulus (psi)	31,000	27,000	31,000	27,000	29,000	29,000
AC Modulus at Test Temperature (psi)	250,000	360,000	510,000	250,000	510,000	510,000
AC Modulus at 70°F (psi)	390,000	1,690,000	880,000	500,000	1,030,000	1,010,000

APPENDIX F

KY 645

ULYSSES TO INEZ

Design Criteria

The typical section for this 11.1-mile, Class 1 route consists of two 24-foot roadways divided by a 14-foot raised median. Outside shoulders are paved 10 feet in width. Total asphaltic concrete thickness throughout was 12 inches, including 9.75 inches bituminous limestone base, 1.25 inches bituminous limestone binder, and one-inch bituminous limestone surface. The typical section for the pavement design utilized on throughout KY 645 is illustrated in Figure F1.

The design speed for the mountainous route was 60 MPH. Present average daily traffic (1978) was projected to be 2,100. Future average daily traffic (2002) was projected to be 2,300. The designed level of service was not available. The design hour volume (2002) was projected to be 230 with 16 percent trucks. Traffic projections for design were developed by the Department of Highways, Division of Planning. The following data were obtained from information available from project files.

Geometric Design Criteria

Class of Highway:	1
Type of Terrain:	Mountainous
Design Speed:	60 MPH
Maximum Curvature:	5° - 30'
Maximum Grade:	+/- 7 %
Stopping Sight Distance:	475 ft (minimum), 650 ft (desirable)
Superelevation:	1/4" : 1'
Typical Section:	2 - 24-ft pavement sections 14-ft median 10-ft paved shoulder
Traffic Volume:	
ADT (1978):	2,100
ADT (2002):	2,300
DHV (2002):	230
T (%):	16
Level of Service:	N/A

Note: Projected traffic volume did not meet the requirement for a Class 1 (4-lane) road (DHV = 650 and upward).

Pavement Design Criteria

$$EWL = 273 \times 10^6$$

$$EAL = 8.6 \times 10^6$$

$$CBR = 11 \text{ (Crushed Rock Subgrade)}$$

Pavement Design:

9.75" Bituminous Concrete Base

1.25" Bituminous Concrete Binder

1" Bituminous Concrete Surface

12" Total

Performance Monitoring

Construction of KY 645 was completed and the route opened to traffic in 1984. The initial condition rating survey was conducted in June, 1985. Subsequent surveys were conducted in October 1986, and again in July 1987. Performance monitoring of the Ulysses to Inez route encompassed about 9.9 miles, commencing at junction of KY 645 and US 23 (established as STA 0+00) in Lawrence County and ending at the junction of KY 645 and KY 40. Twelve survey sections were established during the initial survey and maintained throughout the evaluation period.

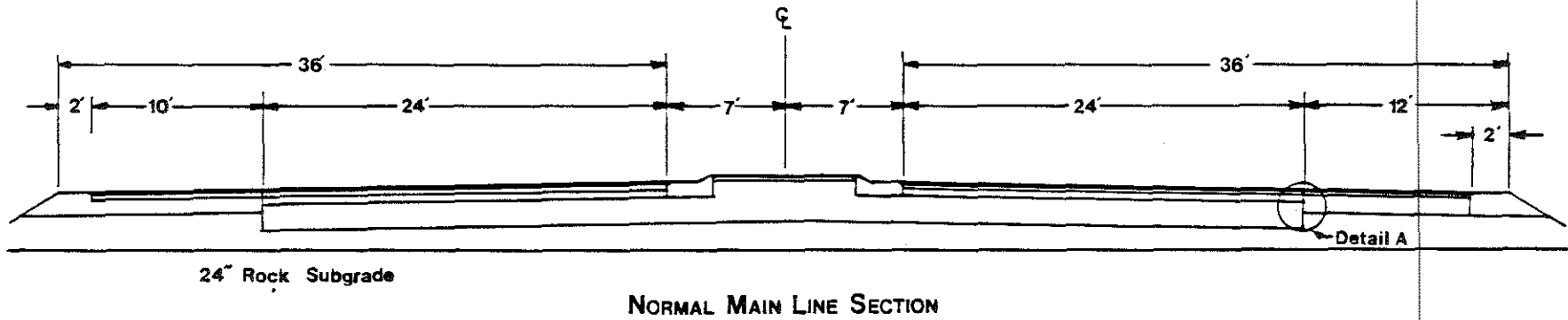
Pavement rut depths were obtained within every section during each condition rating survey. Information relative to this task is given in Table F1. Rut depths were very pronounced at each end of the route in the northbound lanes. The deeper rutting in the northbound lanes is principally due to the travel pattern of coal-haul traffic. Coal trucks travel north on KY 645 from Inez to reach US 23. United States Route 23 leads to off-loading facilities along the Big Sandy River, north of Louisa. The coal trucks return empty from the trip only to load and make the trip again. Rut depths in the northbound lanes, at either end of the route, averaged in excess of one inch during the 1987 survey.

During the condition rating surveys, the survey crews always began on the north end of the project and proceeded in a southerly direction to the end of the route at the junction of KY 645 and KY 40. The total distance surveyed was 52,030 feet or about 9.9 miles. Survey section lengths were determined using a rolling wheel distance measuring device. Condition survey data are contained in Table F2 and Table F3 for the Kentucky System and the Asphalt Institute System, respectively. Condition ratings were performed by two separate crews. The ratings, using each respective technique, were averaged and rounded

for reporting purposes. As reported in the tables, the condition rating data also reflect the movement of the coal trucks. The two survey sections exhibiting the poorest performance were located at either end of the route, the northbound shoulder lane of survey section number 12 having the poorest performance. The northbound shoulder lane of survey section number 12 deteriorated the quickest, having rut depths approaching nearly two inches, and losing 14 demerit points during the survey period. With the exception of survey section numbers 1 and 12, there were only small discernible differences in the overall pavement performance from one rating period to the next. There also were small differences in the condition of the shoulder lane relative to the median lane for a given direction. The northbound shoulder lane (general direction of travel for loaded coal trucks) performed more poorly when compared to the southbound shoulder lane. The northbound shoulder lane was generally rated lower than the southbound shoulder lane for each survey section during each survey. As shown in the condition rating information, the poorer performance was directly related to rutting of the asphaltic concrete pavement. Figure F2 is a photograph of the northbound shoulder lane at the intersection of KY 645 and US 23 (survey section number 1), taken during the 1985 condition survey. Some shoving of the asphaltic concrete pavement is apparent, however it is difficult to distinguish the nearly one-inch rut depths. Figure F3 is a photograph of the northbound shoulder lane at the south end of the route (survey section number 12). Coal truck traffic approaches from the left and turns up the incline. The slow speeds coupled with heavy loads caused extensive rutting, and shoving and pushing of the asphaltic concrete pavement. The impression of the dual truck tires can be distinguished in the photograph.

Results of Road Rater deflection testing and modulus calculations are contained in Table F4. The average back-calculated moduli values indicate virtually no change in the relative values of the asphaltic concrete stiffness during the evaluation period, especially when due consideration is given to the decrease in subgrade moduli. The subgrade modulus decreased 30 to 35 percent during the evaluation period. The estimated CBR of the rock subgrade decreased from a high of about 23 percent in 1985 to a low of about 12 percent during 1987 testing.

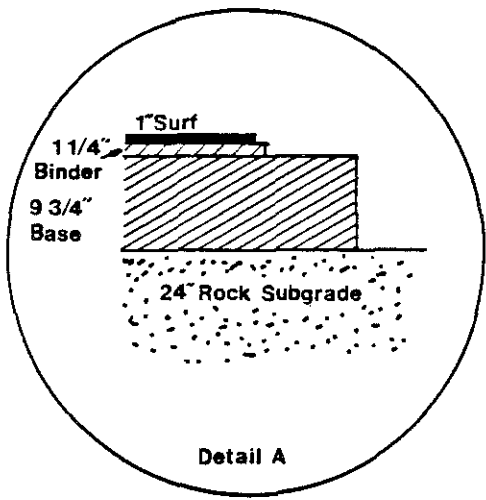
Six cores were obtained from the all bituminous limestone pavement of KY 645 during 1987. Laboratory testing, detailed in Table F5 indicated an average Young's modulus of elasticity equal to 548,300 psi. The average unit weight of the tested specimens was 148.4 pcf.



24" Rock Subgrade

**NEW CONSTRUCTION GRADE, DRAIN, and SURFACING
-USING-**

TRAVEL LANE



- 1" Compacted Depth Bituminous Concrete Surface
- 0.80 lb/sy Bituminous Tack Coat
- 1 1/4" +/- Compacted Depth Bituminous Concrete Binder
- 9 3/4" +/- Compacted Depth Bituminous Concrete Base (4-2 1/4" Courses)
- 24" Rock Subgrade

F.5

Figure F1. Typical Section and Detail for Main Line Section of KY 645.



Figure F2. View of Northbound Shoulder Lane near Junction of KY 645 with US 23.



Figure F3. View of Northbound Shoulder Lane near Junction of KY 645 and KY 40.

TABLE F1. 1985 RUTTING DATA -- KY 645, LAWRENCE COUNTY

STATION	SOUTHBOUND				NORTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)	LWP (in.)	RWP (in.)
SURVEY SECTION 1 -- STA 0+00 to STA 2+00								
1+00	0.1	0.1	0.3	0.4	0.3	0.3	0.8	0.8
2+00	0.1	0.1	0.3	0.1	0.3	0.4	0.9	0.9
Average	0.1	0.1	0.3	0.3	0.3	0.3	0.8	0.8
Std. Dev.	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1
SURVEY SECTION 2 -- STA 2+00 to STA 55+40								
15+00	0.3	0.3	0.3	0.1	0.1	0.1	0.4	0.5
28+00	0.0	0.1	0.3	0.1	0.1	0.1	0.6	0.5
41+00	0.3	0.1	0.3	0.1	0.1	0.1	0.3	0.4
55+40	0.0	0.1	0.4	0.3	0.1	0.3	0.4	0.4
Average	0.1	0.2	0.3	0.2	0.1	0.2	0.4	0.4
Std. Dev.	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1
SURVEY SECTION 3 -- STA 55+40 to STA 85+95								
68+40	0.3	0.1	0.3	0.1	0.3	0.3	0.3	0.3
79+40	0.1	0.3	0.1	0.1	0.1	0.1	0.3	0.3
Average	0.2	0.2	0.2	0.1	0.2	0.2	0.3	0.3
Std. Dev.	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0
SURVEY SECTION 4 -- STA 85+95 to STA 136+70								
106+55	0.5	0.6	0.3	0.1	0.1	0.1	0.4	0.4
119+55	0.3	0.3	0.1	0.1	0.1	0.1	0.3	0.3
132+55	0.0	0.0	0.3	0.3	0.1	0.1	0.3	0.1
Average	0.3	0.3	0.2	0.2	0.1	0.1	0.3	0.3
Std. Dev.	0.2	0.3	0.1	0.1	0.0	0.0	0.1	0.1
SURVEY SECTION 5 -- STA 136+70 to STA 194+75								
149+70	0.1	0.0	0.3	0.1	0.0	0.1	0.1	0.3
162+70	0.1	0.1	0.3	0.1	0.1	0.0	0.3	0.1
175+70	0.3	0.1	0.3	0.1	0.1	0.3	0.1	0.3
190+70	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.3
Average	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.2
Std. Dev.	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
SURVEY SECTION 6 -- STA 194+75 to STA 248+35								
207+75	0.3	0.3	0.3	0.1	0.1	0.1	0.3	0.1
220+75	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.3
233+75	0.1	0.1	0.3	0.1	0.3	0.3	0.4	0.3
248+35	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.3
Average	0.2	0.2	0.2	0.1	0.2	0.2	0.3	0.2
Std. Dev.	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1

NOTE: Section No. 4 contains a bridge approximately 760 feet in length.

TABLE F1 (continued). 1985 RUTTING DATA -- KY 645, LAWRENCE AND MARTIN COUNTIES

STATION	SOUTHBOUND				NORTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 7 -- STA 248+35 to STA 273+75								
261+35	0.3	0.1	0.3	0.1	0.1	0.3	0.3	0.1
273+75	0.3	0.1	0.3	0.1	0.3	0.3	0.3	0.1
Average	0.3	0.1	0.3	0.1	0.2	0.3	0.3	0.1
Std. Dev.	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
SURVEY SECTION 8 -- STA 273+75 to STA 328+25								
286+75	0.3	0.1	0.1	0.1	0.1	0.1	0.3	0.3
299+75	0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.3
312+75	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.3
Average	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.3
Std. Dev.	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
SURVEY SECTION 9 -- STA 328+25 to STA 393+20								
342+40	0.3	0.0	0.4	0.3	0.1	0.3	0.3	0.4
355+40	0.1	0.1	0.4	0.3	0.1	0.3	0.4	0.3
368+40	0.3	0.1	0.5	0.1	0.1	0.3	0.5	0.4
384+40	0.3	0.0	0.3	0.1	0.1	0.3	0.4	0.3
Average	0.2	0.1	0.4	0.2	0.1	0.3	0.4	0.3
Std. Dev.	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1
SURVEY SECTION 10 -- STA 393+20 to STA 448+30								
408+20	0.3	0.0	0.4	0.3	0.3	0.4	0.3	0.4
419+20	0.3	0.0	0.3	0.1	0.1	0.3	0.3	0.4
432+70	0.3	0.0	0.4	0.3	0.1	0.4	0.3	0.4
448+30	0.1	0.0	0.3	0.1	0.3	0.3	0.3	0.3
Average	0.2	0.0	0.3	0.2	0.2	0.3	0.3	0.3
Std. Dev.	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1
SURVEY SECTION 11 -- STA 448+30 to STA 504+20								
461+30	0.3	0.1	0.3	0.1	0.1	0.3	0.4	0.4
474+30	0.3	0.0	0.3	0.1	0.1	0.1	0.4	0.4
487+30	0.1	0.0	0.3	0.1	0.1	0.3	0.4	0.5
504+20	0.3	0.0	0.3	0.1	0.1	0.3	0.4	0.3
Average	0.2	0.0	0.3	0.1	0.1	0.2	0.4	0.4
Std. Dev.	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.1
SURVEY SECTION 12 -- STA 504+20 to STA 520+30								
511+20	0.4	0.3	0.1	0.1	0.3	0.5	0.8	0.9
517+20	0.4	0.3	0.3	0.1	0.1	0.3	0.3	0.9
Average	0.4	0.3	0.2	0.1	0.2	0.4	0.5	0.9
Std. Dev.	0.0	0.0	0.1	0.0	0.1	0.1	0.3	0.0

NOTES:

Section No. 9 contains a bridge approximately 115 feet in length.
Martin County line at STA 273+75.

TABLE F1 (continued). 1986 RUTTING DATA -- KY 645, LAWRENCE COUNTY

STATION	SOUTHBOUND				NORTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 1 -- STA 0+00 to STA 2+00								
1+00	0.1	0.1	0.3	0.4	0.3	0.3	0.8	1.1
2+00	0.1	0.1	0.1	0.1	0.2	0.3	0.9	1.9
Average	0.1	0.1	0.2	0.3	0.2	0.3	0.8	1.5
Std. Dev.	0.0	0.0	0.1	0.2	0.0	0.0	0.1	0.4
SURVEY SECTION 2 -- STA 2+00 to 55+40								
15+00	0.2	0.1	0.2	0.3	0.1	0.2	0.5	0.4
28+00	0.1	0.1	0.3	0.2	0.1	0.2	0.5	0.6
41+00	0.3	0.3	0.3	0.3	0.2	0.1	0.3	0.3
55+40	0.0	0.1	0.1	0.2	0.1	0.1	0.4	0.4
Average	0.1	0.1	0.2	0.2	0.1	0.2	0.4	0.4
Std. Dev.	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1
SURVEY SECTION 3 -- STA 55+40 to STA 85+95								
68+40	0.2	0.3	0.2	0.1	0.2	0.1	0.3	0.3
79+40	0.0	0.1	0.2	0.1	0.0	0.1	0.2	0.2
Average	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.2
Std. Dev.	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0
SURVEY SECTION 4 -- STA 85+95 to STA 136+70								
106+55	0.2	0.1	0.2	0.1	0.1	0.1	0.3	0.3
119+55	0.2	0.1	0.2	0.2	0.1	0.1	0.3	0.3
132+55	0.1	0.1	0.2	0.3	0.1	0.1	0.2	0.2
Average	0.1	0.1	0.2	0.2	0.1	0.1	0.3	0.3
Std. Dev.	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.1
SURVEY SECTION 5 -- STA 136+70 to STA 194+75								
149+70	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.3
162+70	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.2
175+70	0.1	0.1	0.2	0.1	0.1	0.2	0.3	0.3
190+70	0.1	0.1	0.2	0.1	0.1	0.3	0.2	0.3
Average	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.2
Std. Dev.	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
SURVEY SECTION 6 -- STA 194+75 to STA 248+35								
207+75	0.1	0.2	0.2	0.1	0.2	0.1	0.3	0.1
220+75	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3
233+75	0.1	0.1	0.3	0.1	0.3	0.3	0.4	0.2
248+35	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.3
Average	0.1	0.1	0.2	0.1	0.2	0.2	0.3	0.2
Std. Dev.	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1

NOTE: Section No. 4 contains a bridge approximately 760 feet in length.

TABLE F1 (continued). 1986 RUTTING DATA -- KY 645, LAWRENCE AND MARTIN COUNTIES

STATION	SOUTHBOUND				NORTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 7 -- STA 248+35 to STA 273+75								
261+35	0.2	0.1	0.3	0.2	0.1	0.3	0.3	0.3
273+75	0.3	0.1	0.1	0.1	0.2	0.3	0.3	0.2
Average	0.2	0.1	0.2	0.2	0.2	0.3	0.3	0.2
Std. Dev.	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
SURVEY SECTION 8 -- STA 273+75 to STA 328+25								
286+75	0.2	0.1	0.1	0.1	0.2	0.2	0.3	0.3
299+75	0.1	0.1	0.3	0.2	0.3	0.3	0.4	0.3
312+75	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3
Average	0.1	0.1	0.2	0.1	0.2	0.2	0.3	0.3
Std. Dev.	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0
SURVEY SECTION 9 -- STA 328+25 to STA 393+20								
342+40	0.2	0.1	0.4	0.2	0.1	0.2	0.2	0.3
355+40	0.1	0.1	0.3	0.3	0.1	0.1	0.4	0.2
368+40	0.2	0.1	0.4	0.2	0.1	0.3	0.7	0.3
384+40	0.2	0.0	0.3	0.1	0.1	0.2	0.4	0.3
Average	0.2	0.1	0.3	0.2	0.1	0.2	0.4	0.3
Std. Dev.	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.1
SURVEY SECTION 10 -- STA 393+20 to STA 448+30								
408+20	0.2	0.1	0.3	0.1	0.2	0.4	0.1	0.4
419+20	0.2	0.1	0.2	0.2	0.3	0.2	0.3	0.3
432+70	0.1	0.1	0.3	0.3	0.1	0.3	0.2	0.4
448+30	0.3	0.1	0.2	0.3	0.3	0.3	0.3	0.3
Average	0.2	0.1	0.3	0.2	0.2	0.3	0.2	0.3
Std. Dev.	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1
SURVEY SECTION 11 -- STA 448+30 to STA 504+20								
461+30	0.2	0.1	0.3	0.1	0.1	0.2	0.3	0.4
474+30	0.2	0.1	0.3	0.1	0.1	0.2	0.4	0.3
487+30	0.2	0.1	0.2	0.1	0.1	0.3	0.4	0.5
504+20	0.3	0.1	0.3	0.1	0.2	0.3	0.4	0.4
Average	0.2	0.1	0.2	0.1	0.1	0.2	0.4	0.4
Std. Dev.	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1
SURVEY SECTION 12 -- STA 504+20 to STA 520+30								
511+20	0.4	0.3	0.1	0.1	0.1	0.5	0.8	0.9
517+20	0.4	0.4	0.3	0.1	0.3	0.3	1.1	1.3
Average	0.4	0.3	0.2	0.1	0.2	0.4	0.9	1.1
Std. Dev.	0.0	0.1	0.1	0.0	0.1	0.1	0.2	0.2

NOTES:

Section No. 9 contains a bridge approximately 115 feet in length.
Martin County line at STA 273+75.

TABLE F1 (continued). 1987 RUTTING DATA -- KY 645, LAWRENCE COUNTY

STATION	SOUTHBOUND				NORTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 1 -- STA 0+00 to 2+00								
1+00	0.1	0.1	0.2	0.5	0.3	0.3	0.9	1.1
2+00	0.1	0.1	0.1	0.1	0.3	0.4	1.1	1.9
Average	0.1	0.1	0.2	0.3	0.3	0.3	1.0	1.5
Std. Dev.	0.0	0.0	0.0	0.2	0.0	0.1	0.1	0.4
SURVEY SECTION 2 -- STA 2+00 to STA 55+40								
15+00	0.2	0.1	0.2	0.1	0.1	0.1	0.6	0.6
28+00	0.0	0.1	0.2	0.2	0.1	0.1	0.6	0.7
41+00	0.2	0.1	0.4	0.3	0.1	0.1	0.4	0.1
55+40	0.1	0.1	0.4	0.4	0.1	0.1	0.2	0.3
Average	0.1	0.1	0.3	0.3	0.1	0.1	0.4	0.4
Std. Dev.	0.1	0.0	0.1	0.1	0.0	0.0	0.2	0.2
SURVEY SECTION 3 -- STA 55+40 to STA 85+95								
68+40	0.1	0.1	0.1	0.3	0.2	0.1	0.2	0.3
79+40	0.1	0.1	0.0	0.1	0.0	0.1	0.2	0.2
Average	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2
Std. Dev.	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0
SURVEY SECTION 4 -- STA 85+95 to STA 136+70								
106+55	0.2	0.1	0.1	0.2	0.1	0.1	0.3	0.3
119+55	0.1	0.1	0.1	0.1	0.2	0.1	0.3	0.3
132+55	0.1	0.1	0.1	0.3	0.1	0.1	0.2	0.2
Average	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2
Std. Dev.	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0
SURVEY SECTION 5 -- STA 136+90 to STA 194+75								
149+70	0.2	0.2	0.2	0.1	0.0	0.1	0.1	0.3
162+70	0.1	0.0	0.1	0.1	0.1	0.1	0.3	0.1
175+70	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.2
190+70	0.1	0.1	0.2	0.1	0.1	0.3	0.1	0.3
Average	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.2
Std. Dev.	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1
SURVEY SECTION 6 -- STA 194+75 to STA 248+35								
207+75	0.2	0.3	0.1	0.2	0.1	0.1	0.4	0.1
220+75	0.0	0.0	0.1	0.1	0.1	0.1	0.4	0.3
233+75	0.1	0.1	0.2	0.1	0.3	0.3	0.4	0.2
248+35	0.1	0.0	0.2	0.1	0.2	0.1	0.1	0.2
Average	0.1	0.1	0.1	0.1	0.2	0.1	0.3	0.2
Std. Dev.	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1

NOTE: Section No. 4 contains a bridge approximately 760 feet in length.

TABLE F1 (continued), 1987 RUTTING DATA -- KY 645, LAWRENCE AND MARTIN COUNTIES

STATION	SOUTHBOUND				NORTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 7 -- STA 248+35 TO STA 273+75								
261+35	0.1	0.1	0.3	0.2	0.1	0.2	0.2	0.2
273+75	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.2
Average	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.2
Std. Dev.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SURVEY SECTION 8 -- STA 273+75 to STA 328+25								
286+75	0.1	0.2	0.1	0.1	0.1	0.1	0.3	0.3
299+75	0.1	0.1	0.2	0.3	0.2	0.3	0.4	0.3
312+75	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.3
Average	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3
Std. Dev.	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0
SURVEY SECTION 9 -- STA 328+25 to STA 393+20								
342+40	0.1	0.1	0.3	0.3	0.1	0.3	0.1	0.3
355+40	0.1	0.1	0.3	0.3	0.1	0.1	0.5	0.2
368+40	0.1	0.1	0.3	0.2	0.1	0.2	0.6	0.4
384+40	0.1	0.1	0.3	0.1	0.1	0.1	0.4	0.2
Average	0.1	0.1	0.3	0.2	0.1	0.2	0.4	0.3
Std. Dev.	0.0	0.0	0.0	0.1	0.0	0.1	0.2	0.1
SURVEY SECTION 10 -- STA 393+20 to STA 448+30								
408+20	0.1	0.1	0.3	0.3	0.2	0.4	0.1	0.4
419+20	0.1	0.1	0.2	0.3	0.1	0.1	0.3	0.3
432+70	0.1	0.1	0.3	0.3	0.1	0.1	0.2	0.4
448+30	0.2	0.1	0.2	0.3	0.3	0.3	0.4	0.3
Average	0.1	0.1	0.2	0.3	0.2	0.2	0.3	0.3
Std. Dev.	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
SURVEY SECTION 11 -- STA 448+30 to STA 504+20								
461+30	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4
474+30	0.1	0.1	0.2	0.3	0.1	0.1	0.4	0.3
487+30	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.6
504+20	0.1	0.2	0.1	0.1	0.3	0.3	0.5	0.5
Average	0.1	0.1	0.2	0.2	0.1	0.2	0.3	0.4
Std. Dev.	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1
SURVEY SECTION 12 -- STA 540+20 to STA 520+30								
511+20	0.1	0.1	0.3	0.3	0.2	0.4	0.8	0.8
517+20	0.4	0.5	0.2	0.2	0.1	0.3	1.1	1.2
Average	0.3	0.3	0.3	0.3	0.2	0.3	1.0	1.0
Std. Dev.	0.2	0.2	0.1	0.1	0.0	0.1	0.2	0.2

NOTES: Section No. 9 contains a bridge approximately 115 feet in length.
Martin County line at STA 273+75.

TABLE F2. PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 645		COUNTY: Lawrence					WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete			
Survey Section No. 1 From STA 0+00 to STA 2+00		DEFICIENCY POINTS											
		SOUTHBOUND					NORTHBOUND						
		Shoulder Lane			Median Lane		Shoulder Lane			Median Lane			
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		0.0	0.0	2.0	3.0	0.0	0.0	0.0	2.5	3.0	0.0	2.0	2.0
Base Failures:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0
Raveling:		1.2	1.9	1.9	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	1.8
Edge Failures:		0.0	0.0	0.9	1.0	0.9	0.0	0.0	0.9	0.9	0.0	1.0	1.3
Out of Section:		0.0	0.0	2.0	0.0	2.5	2.0	0.0	2.0	2.5	0.0	2.0	2.5
Appearance:		1.0	1.0	2.0	2.0	1.0	1.0	1.0	4.0	4.0	1.0	2.0	2.0
Rideability:		0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:		3.4	3.8	4.0	1.5	1.8	2.0	10.0	10.0	10.0	3.8	3.5	5.0
Skid Resistance:		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume: AADT: 3,070													
Travel Speed: MPH: 40		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Totals:		11.6	12.7	18.8	13.5	12.2	12.2	17.0	25.4	30.4	10.8	16.5	20.6

NOTE: n/a indicates information for the description was unavailable.

TABLE F2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 645		COUNTY: Lawrence			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 2 From STA 2+00 to STA 55+40		DEFICIENCY POINTS											
		SOUTHBOUND					NORTHBOUND						
		Shoulder Lane			Median Lane		Shoulder Lane			Median Lane			
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		0.0	2.0	3.5	0.0	2.0	2.0	4.0	3.0	4.5	4.0	3.0	3.5
Base Failures:		0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.5	3.0	0.0	0.0	0.0
Raveling:		1.2	2.2	2.2	1.2	0.0	1.2	1.5	1.9	2.2	1.2	0.0	0.0
Edge Failures:		0.9	1.3	2.1	2.0	1.3	1.5	0.0	1.2	1.5	1.7	0.9	0.9
Out of Section:		2.0	2.0	3.0	2.0	2.0	2.5	2.0	2.0	2.5	2.0	2.5	2.5
Appearance:		2.0	2.0	3.0	2.0	2.0	2.0	2.0	3.0	3.0	2.0	2.0	2.0
Rideability:		0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:		2.8	2.9	5.0	1.7	1.8	2.0	6.6	6.8	7.0	1.7	2.4	2.0
Skid Resistance:		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,070												
Travel Speed:	MPH: 60	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Totals:		18.9	24.4	30.8	18.9	19.1	21.2	26.6	30.4	33.7	22.6	20.8	20.9

NOTE: n/a indicates information for the description was unavailable.

TABLE F2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 645		COUNTY: Lawrence			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 3		DEFICIENCY POINTS											
From STA 55+40 to STA 85+95		SOUTHBOUND					NORTHBOUND						
		Shoulder Lane			Median Lane		Shoulder Lane			Median Lane			
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	3.0	3.5
Base Failures:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:		0.0	0.0	1.2	0.0	0.0	1.2	1.2	1.2	1.5	1.2	0.0	1.2
Edge Failures:		0.9	0.9	1.2	1.7	1.2	1.3	0.0	0.9	1.0	1.7	1.0	0.9
Out of Section:		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	3.0
Appearance:		1.0	1.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Rideability:		0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:		1.9	2.5	2.0	2.3	2.0	2.0	3.0	3.0	3.0	2.3	1.8	2.0
Skid Resistance:		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume: AADT: 3,070													
Travel Speed: MPH: 60		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Totals:		15.8	16.4	20.4	18.0	19.2	20.5	17.2	21.1	21.5	18.2	20.3	22.6

NOTE: n/a indicates information for the description was unavailable.

TABLE F2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 645		COUNTY: Lawrence			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 4 From STA 85+95 to STA 136+70		DEFICIENCY POINTS											
		SOUTHBOUND					NORTHBOUND						
		Shoulder Lane			Median Lane		Shoulder Lane			Median Lane			
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		2.0	2.0	3.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	3.5
Base Failures:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:		1.2	0.0	1.2	1.2	0.0	1.2	0.0	1.2	1.5	0.0	0.0	1.2
Edge Failures:		0.9	1.0	1.9	1.2	1.3	1.0	0.9	1.0	1.3	1.6	1.3	1.3
Out of Section:		2.5	2.0	2.5	2.5	2.0	2.5	2.0	2.0	2.5	2.0	2.5	2.5
Appearance:		2.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0	3.0	1.0	2.0	2.0
Rideability:		0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:		2.3	2.8	3.0	6.0	1.8	2.0	3.8	3.7	3.0	1.5	1.8	2.0
Skid Resistance:		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,070												
Travel Speed:	MPH: 60	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Totals:		20.9	19.8	23.6	24.9	19.1	20.7	17.7	21.9	23.3	16.1	19.6	22.5

NOTES: n/a indicates information for the description was unavailable.
Section No. 4 contains a bridge approximately 760 feet in length.

TABLE F2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 645		COUNTY: Lawrence			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 5 From STA 136+70 to STA 194+75		DEFICIENCY POINTS											
		SOUTHBOUND					NORTHBOUND						
		Shoulder Lane			Median Lane		Shoulder Lane			Median Lane			
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		2.0	2.0	3.5	0.0	0.0	2.0	0.0	2.0	3.5	0.0	2.0	2.0
Base Failures:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:		0.0	0.0	1.5	1.2	0.0	1.2	0.0	0.0	1.2	0.0	0.0	1.2
Edge Failures:		0.9	1.4	1.3	1.7	1.0	1.0	0.0	1.2	1.3	1.3	1.3	1.3
Out of Section:		2.5	2.0	3.0	2.5	2.0	2.0	2.5	2.0	2.5	2.5	2.5	2.5
Appearance:		2.0	2.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Rideability:		0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:		2.1	2.5	3.0	1.5	1.6	2.0	2.3	2.9	3.0	1.5	2.1	2.0
Skid Resistance:		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,070												
Travel Speed:	MPH: 60	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Totals:		19.5	19.9	24.3	18.9	15.6	20.2	15.8	20.1	23.5	16.3	19.9	21.0

NOTE: n/a indicates information for the description was unavailable.

TABLE F2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 645		COUNTY: Lawrence			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 6 From STA 194+75 to STA 248+35		DEFICIENCY POINTS											
		SOUTHBOUND					NORTHBOUND						
		Shoulder Lane			Median Lane		Shoulder Lane			Median Lane			
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		0.0	2.0	3.0	0.0	2.0	2.5	0.0	2.0	3.5	0.0	2.0	3.5
Base Failures:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:		0.0	1.2	1.5	0.0	0.0	1.2	1.5	2.6	2.9	1.2	0.0	1.2
Edge Failures:		0.0	1.3	1.3	1.3	1.2	1.3	0.0	1.9	1.9	0.9	1.3	1.3
Out of Section:		2.5	2.5	3.0	2.5	2.0	2.5	2.5	2.0	2.0	2.5	2.0	2.5
Appearance:		1.0	2.0	3.0	1.0	2.0	2.0	1.0	3.0	3.0	1.0	2.0	2.0
Rideability:		0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:		1.9	2.4	3.0	1.9	1.9	2.0	3.2	3.3	5.0	2.3	3.1	2.0
Skid Resistance:		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,070												
Travel Speed:	MPH: 60	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Totals:		15.4	21.4	24.8	16.7	19.1	21.5	18.2	23.8	28.3	17.9	20.4	22.5

NOTE: n/a indicates information for the description was unavailable.

TABLE F2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 645		COUNTY: Lawrence			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 7 From STA 248+35 to STA 273+75		DEFICIENCY POINTS											
		SOUTHBOUND					NORTHBOUND						
		Shoulder Lane			Median Lane		Shoulder Lane			Median Lane			
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	3.0	0.0	2.0	2.0
Base Failures:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:		0.0	1.9	1.5	0.0	0.0	1.2	1.2	1.2	1.5	1.2	0.0	1.2
Edge Failures:		0.9	1.0	1.3	1.3	1.3	1.3	0.0	1.0	1.0	0.9	1.3	1.3
Out of Section:		2.5	2.0	2.0	2.5	2.0	2.0	2.5	2.0	2.5	2.5	2.0	2.5
Appearance:		1.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Rideability:		0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:		2.3	2.3	3.0	2.3	2.3	2.0	2.3	3.0	3.0	2.6	2.8	2.0
Skid Resistance:		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,070												
Travel Speed:	MPH: 60	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Totals:		16.7	20.2	21.8	17.1	19.6	20.5	17.0	21.2	23.0	18.2	20.1	21.0

NOTE: n/a indicates information for the description was unavailable.

TABLE F2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 645		COUNTY: Martin			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 8 From STA 273+75 to STA 328+25		DEFICIENCY POINTS											
		SOUTHBOUND					NORTHBOUND						
		Shoulder Lane			Median Lane		Shoulder Lane			Median Lane			
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	2.5
Base Failures:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:		0.0	1.2	1.2	0.0	0.0	1.2	1.2	1.2	1.2	1.2	1.5	1.8
Edge Failures:		1.0	1.2	1.5	1.2	0.9	0.9	0.0	1.2	1.2	0.0	1.0	1.2
Out of Section:		2.5	2.5	3.0	3.5	2.5	2.5	2.5	2.0	2.5	2.5	2.0	2.5
Appearance:		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0
Rideability:		0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:		2.0	2.3	2.0	1.8	2.0	2.0	2.8	4.0	4.0	2.3	2.7	2.0
Skid Resistance:		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume: AADT: 3,070													
Travel Speed: MPH: 60		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Totals:		17.5	21.2	21.7	18.5	19.4	20.6	22.5	22.4	23.9	20.0	21.2	23.0

NOTE: n/a indicates information for the description was unavailable.

TABLE F2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 645		COUNTY: Martin			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 9 From STA 328+25 to STA 393+20		DEFICIENCY POINTS											
		SOUTHBOUND					NORTHBOUND						
		Shoulder Lane			Median Lane		Shoulder Lane			Median Lane			
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		0.0	2.0	3.0	0.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0
Base Failures:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:		0.0	1.2	1.8	0.0	0.0	1.2	1.8	1.5	1.8	1.5	0.0	1.5
Edge Failures:		1.0	2.2	2.2	1.3	1.3	1.3	1.9	1.9	1.9	0.9	1.3	1.0
Out of Section:		2.5	2.0	2.5	2.5	2.0	2.0	2.5	2.0	2.5	2.5	2.0	2.0
Appearance:		1.0	2.0	3.0	1.0	2.0	2.0	3.0	3.0	3.0	2.0	2.0	2.0
Rideability:		0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:		4.0	3.6	4.0	1.7	2.0	2.0	5.1	5.3	6.0	2.3	2.3	2.0
Skid Resistance:		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,070												
Travel Speed:	MPH: 60	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Totals:		18.5	23.0	26.5	16.5	19.3	21.5	27.3	25.7	30.2	24.2	19.6	21.5

NOTES: n/a indicates information for the description was unavailable.
Section No. 9 contains a bridge approximately 115 feet in length.

TABLE F2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 645		COUNTY: Martin			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 10 From STA 393+20 to STA 448+30		DEFICIENCY POINTS											
		SOUTHBOUND					NORTHBOUND						
		Shoulder Lane			Median Lane		Shoulder Lane			Median Lane			
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		2.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	3.0	3.0	2.0	3.5
Base Failures:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:		1.5	1.2	1.5	1.8	0.0	1.2	1.5	0.0	1.2	1.5	0.0	1.2
Edge Failures:		1.3	1.9	2.4	1.3	1.3	1.3	1.0	1.0	1.3	1.2	0.9	1.2
Out of Section:		2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.5	2.0	2.0	2.5
Appearance:		2.0	2.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Rideability:		0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:		3.4	3.4	3.0	1.3	2.0	2.0	4.1	3.9	5.0	3.4	3.3	3.0
Skid Resistance:		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,070												
Travel Speed:	MPH: 60	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Totals:		22.7	22.5	24.4	20.9	19.3	20.5	23.6	20.9	25.0	23.1	20.2	23.4

NOTE: n/a indicates information for the description was unavailable.

TABLE F2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 645		COUNTY: Martin			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 11 From STA 448+30 to STA 504+20		DEFICIENCY POINTS											
		SOUTHBOUND					NORTHBOUND						
		Shoulder Lane			Median Lane		Shoulder Lane			Median Lane			
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		5.0	2.5	3.5	5.0	2.0	2.0	4.0	2.0	3.0	3.0	2.0	3.0
Base Failures:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:		1.8	1.2	1.5	1.8	0.0	1.2	1.2	1.2	1.5	1.2	0.0	1.5
Edge Failures:		0.9	1.0	1.0	1.3	1.3	1.3	0.9	1.0	1.3	0.9	1.0	1.3
Out of Section:		2.0	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.5	2.5
Appearance:		3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	2.0	2.0	2.0
Rideability:		0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:		2.3	2.4	3.0	1.5	2.5	2.0	5.9	5.8	6.0	2.1	2.5	3.0
Skid Resistance:		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,070												
Travel Speed:	MPH: 60	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Totals:		25.0	21.6	23.5	24.6	20.3	21.0	27.0	24.0	25.8	21.2	20.0	23.3

NOTE: n/a indicates information for the description was unavailable.

TABLE F2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 645		COUNTY: Martin			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 12 From STA 504+20 to STA 520+30		DEFICIENCY POINTS											
		SOUTHBOUND					NORTHBOUND						
		Shoulder Lane			Median Lane		Shoulder Lane			Median Lane			
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		2.0	2.0	2.0	2.0	2.0	3.5	2.0	2.5	2.5	2.0	2.0	2.5
Base Failures:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	4.0	0.0	0.0	0.0
Raveling:		1.5	1.2	1.5	1.2	0.0	0.0	1.2	1.2	1.2	1.2	0.0	1.2
Edge Failures:		0.0	0.9	0.9	0.0	1.0	1.0	0.0	1.0	1.3	0.9	0.9	0.9
Out of Section:		3.5	2.0	2.5	3.0	2.0	2.5	0.0	2.5	2.5	0.0	2.5	2.5
Appearance:		2.0	2.0	2.0	2.0	2.0	3.0	2.0	4.0	4.0	2.0	3.0	3.0
Rideability:		0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a	0.0	0.0	n/a
Rutting:		1.9	2.3	4.0	4.5	5.5	5.0	8.3	10.0	10.0	3.9	4.0	4.0
Skid Resistance:		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 3,070												
Travel Speed:	MPH: 60	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Totals:		20.9	20.4	22.9	22.7	22.5	25.0	23.5	35.2	35.5	20.0	22.4	24.1

NOTE: n/a indicates information for the description was unavailable.

TABLE F3. PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 645		COUNTY: Lawrence			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 1 From STA 0+00 to STA 2+00		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	0	1	1	1	1	1	1	1	1	1	1
Longitudinal Cracks	0-5	0	0	1	0	0	0	0	1	2	0	0	1
Alligator Cracks	0-10	0	0	1	0	0	0	0	1	5	0	0	1
Shrinkage Cracks	0-5	0	0	0	0	0	0	0	0	1	0	0	1
Rutting	0-10	3	4	10	2	2	5	10	10	4	4	4	2
Corrugations	0-5	2	1	2	1	1	1	3	3	2	2	2	1
Raveling	0-5	0	1	1	0	1	0	1	1	1	1	1	1
Shoving or Pushing	0-10	1	1	1	0	1	0	2	5	8	1	1	1
Potholes	0-10	0	0	1	1	1	0	0	2	1	0	1	0
Excess Asphalt	0-10	2	1	1	3	1	1	2	2	1	2	2	1
Polished Aggregate	0-5	2	2	2	2	2	1	2	2	1	2	2	2
Overall Riding Quality	0-10	4	4	6	2	3	4	4	7	8	3	4	4
	Sum of Defects	14	14	27	12	13	13	25	35	35	16	18	16
	Condition Rating (= 90-Sum of Defects)	76	76	63	78	77	77	65	55	55	74	72	74

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE F3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 645		COUNTY: Lawrence			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 2 From STA 2+00 to STA 55+40		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	1	1	1	1	0	1	1	1	1	1	1
Longitudinal Cracks	0-5	0	1	1	0	0	0	0	0	1	0	0	1
Alligator Cracks	0-10	0	0	2	0	0	0	0	0	4	0	0	0
Shrinkage Cracks	0-5	0	0	0	0	0	0	0	0	1	0	0	1
Rutting	0-10	3	3	5	2	2	2	7	7	7	2	2	2
Corrugations	0-5	1	1	1	1	1	0	1	1	2	1	2	1
Raveling	0-5	2	1	1	1	1	0	2	1	1	1	1	1
Shoving or Pushing	0-10	0	1	1	0	0	0	2	1	2	1	2	1
Potholes	0-10	0	2	1	0	1	1	0	1	1	0	1	0
Excess Asphalt	0-10	2	2	1	0	1	1	1	1	1	1	2	1
Polished Aggregate	0-5	2	2	2	1	1	0	2	2	1	1	1	1
Overall Riding Quality	0-10	2	3	4	3	3	3	3	3	5	2	3	3
	Sum of Defects	13	17	20	9	11	7	17	18	27	10	15	13
	Condition Rating (= 90-Sum of Defects)	77	73	70	81	79	83	73	72	63	80	75	77

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE F3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 645		COUNTY: Lawrence			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 3 From STA 55+40 to STA 85+95		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	0	0	0	0	0	0	0	0	0	0	0
Longitudinal Cracks	0-5	0	0	1	0	0	0	0	0	0	0	0	1
Alligator Cracks	0-10	0	0	0	0	0	0	0	0	0	0	0	0
Shrinkage Cracks	0-5	0	0	1	0	0	0	1	0	1	0	0	1
Rutting	0-10	2	3	2	2	2	2	3	3	3	2	2	1
Corrugations	0-5	2	1	1	1	1	0	1	2	1	1	1	0
Raveling	0-5	0	0	1	0	1	0	1	1	0	0	1	1
Shoving or Pushing	0-10	0	1	0	0	0	0	0	1	0	0	0	0
Potholes	0-10	0	1	1	0	0	0	0	1	0	0	0	0
Excess Asphalt	0-10	1	2	2	0	1	0	1	2	1	1	1	1
Polished Aggregate	0-5	2	2	2	1	1	0	2	2	1	1	1	0
Overall Riding Quality	0-10	3	4	4	3	4	2	3	3	3	3	4	3
	Sum of Defects	10	14	15	7	10	4	12	15	10	8	10	8
	Condition Rating (= 90-Sum of Defects)	80	76	75	83	80	86	78	75	80	82	80	82

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE F3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 645		COUNTY: Lawrence			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 4 From STA 85+95 to STA 136+70		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	0	0	0	0	0	0	0	0	0	0	0
Longitudinal Cracks	0-5	1	1	0	1	1	0	0	0	0	0	0	0
Alligator Cracks	0-10	0	0	0	0	0	0	0	0	0	0	0	0
Shrinkage Cracks	0-5	0	0	0	0	0	1	0	0	1	0	0	0
Rutting	0-10	2	3	2	6	2	2	4	4	3	2	2	2
Corrugations	0-5	2	1	1	2	1	0	2	1	1	1	1	0
Raveling	0-5	0	1	1	0	0	0	1	1	1	0	0	1
Shoving or Pushing	0-10	0	1	0	0	0	0	0	1	0	0	0	0
Potholes	0-10	0	1	1	0	1	0	0	1	1	0	0	1
Excess Asphalt	0-10	1	1	2	1	1	1	1	1	1	1	1	1
Polished Aggregate	0-5	2	2	1	1	1	0	2	2	1	1	1	0
Overall Riding Quality	0-10	3	3	4	3	3	3	3	3	4	2	3	3
	Sum of Defects	11	14	12	14	10	7	13	14	13	7	8	8
	Condition Rating (= 90-Sum of Defects)	79	76	78	76	80	83	77	76	77	83	82	82

NOTES: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.
Section No. 4 contains a bridge approximately 760 feet in length.

TABLE F3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 645		COUNTY: Lawrence			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 5 From STA 136+70 to STA 194+75		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	0	0	0	0	0	0	0	0	0	0	0
Longitudinal Cracks	0-5	0	1	1	0	0	1	0	0	1	0	0	0
Alligator Cracks	0-10	0	0	0	0	0	0	0	0	2	0	0	0
Shrinkage Cracks	0-5	0	0	0	0	0	1	0	0	1	0	0	0
Rutting	0-10	2	3	2	2	2	2	2	3	3	2	2	2
Corrugations	0-5	1	1	1	1	1	1	2	1	1	2	2	1
Raveling	0-5	1	1	1	1	1	1	2	2	1	0	1	1
Shoving or Pushing	0-10	0	2	2	0	1	1	0	1	1	0	0	0
Potholes	0-10	0	1	1	0	1	1	2	2	1	0	1	1
Excess Asphalt	0-10	1	1	1	0	1	1	1	2	1	2	2	1
Polished Aggregate	0-5	2	2	2	1	1	1	2	2	1	1	1	1
Overall Riding Quality	0-10	3	4	4	2	3	3	3	3	4	3	4	3
	Sum of Defects	10	16	15	7	11	13	14	16	17	10	13	10
	Condition Rating (= 90-Sum of Defects)	80	74	75	83	79	77	76	74	73	80	77	80

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE F3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 645		COUNTY: Lawrence			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 6 From STA 194+75 to STA 248+35		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	0	0	0	0	0	0	0	0	0	0	0
Longitudinal Cracks	0-5	0	0	0	0	0	0	0	0	1	0	0	0
Alligator Cracks	0-10	0	0	0	0	0	0	1	1	1	0	0	0
Shrinkage Cracks	0-5	0	0	0	0	0	0	0	0	1	0	0	1
Rutting	0-10	2	2	2	2	2	2	3	3	4	2	3	2
Corrugations	0-5	2	1	1	1	1	1	2	2	2	1	1	1
Raveling	0-5	1	1	1	1	0	0	1	1	1	0	1	1
Shoving or Pushing	0-10	0	1	0	0	1	1	0	1	1	0	0	0
Potholes	0-10	0	1	1	0	1	1	1	1	1	0	1	1
Excess Asphalt	0-10	3	3	2	0	1	1	1	2	1	2	2	1
Polished Aggregate	0-5	2	2	2	1	1	1	2	2	1	1	1	1
Overall Riding Quality	0-10	3	3	4	3	4	3	4	5	5	2	3	3
	Sum of Defects	13	14	13	8	11	10	15	18	19	8	12	11
	Condition Rating (= 90-Sum of Defects)	77	76	77	82	79	80	75	72	71	82	78	79

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE F3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 645		COUNTY: Lawrence			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 7 From STA 248+35 to STA 273+75		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	0	0	0	0	0	0	0	0	0	0	0
Longitudinal Cracks	0-5	1	1	1	0	0	0	0	0	0	0	0	0
Alligator Cracks	0-10	0	0	1	0	0	0	0	0	0	0	0	0
Shrinkage Cracks	0-5	0	0	0	0	0	0	0	0	1	0	0	1
Rutting	0-10	2	2	3	2	2	2	2	3	3	3	3	3
Corrugations	0-5	2	1	1	1	1	1	1	1	1	2	1	1
Raveling	0-5	1	1	1	0	1	1	0	0	0	0	0	0
Shoving or Pushing	0-10	0	1	0	0	0	0	0	1	1	0	0	0
Potholes	0-10	0	2	1	0	1	1	0	1	1	0	1	1
Excess Asphalt	0-10	2	2	1	1	1	1	1	2	1	1	1	1
Polished Aggregate	0-5	2	2	1	1	1	1	2	2	1	1	1	1
Overall Riding Quality	0-10	3	4	4	2	3	3	2	3	3	3	3	3
	Sum of Defects	13	16	14	7	10	10	8	13	12	10	10	11
	Condition Rating (= 90-Sum of Defects)	77	74	76	83	80	80	82	77	78	80	80	79

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE F3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 645		COUNTY: Lawrence / Martin			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 8 From STA 273+75 to STA 328+25		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	0	1	0	0	0	0	0	0	0	0	0
Longitudinal Cracks	0-5	0	0	0	0	0	0	1	1	1	1	1	1
Alligator Cracks	0-10	0	0	0	0	0	0	0	0	0	0	0	0
Shrinkage Cracks	0-5	0	0	0	0	0	0	0	0	1	1	1	1
Rutting	0-10	2	2	2	2	2	2	3	4	4	2	3	2
Corrugations	0-5	2	1	1	2	2	1	2	1	1	2	1	1
Raveling	0-5	0	1	1	0	0	0	1	1	1	1	1	1
Shoving or Pushing	0-10	0	1	1	0	1	1	0	1	1	0	0	0
Potholes	0-10	0	1	1	0	1	1	1	1	1	0	1	0
Excess Asphalt	0-10	2	2	1	1	1	1	1	1	1	2	2	1
Polished Aggregate	0-5	2	2	1	1	1	1	2	2	1	1	1	1
Overall Riding Quality	0-10	3	4	4	3	4	3	4	5	4	4	4	3
	Sum of Defects	11	14	13	9	12	10	15	17	16	14	15	11
	Condition Rating (= 90-Sum of Defects)	79	76	77	81	78	80	75	73	74	76	75	79

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE F3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 645		COUNTY: Martin			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete						
Survey Section No. 9 From STA 328+25 to STA 393+20		RATINGS												
		SOUTHBOUND						NORTHBOUND						
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane			
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987	
Transverse Cracks	0-5	0	0	0	0	0	0	0	0	0	0	0	0	1
Longitudinal Cracks	0-5	0	0	1	0	0	0	1	1	1	1	1	1	1
Alligator Cracks	0-10	0	0	0	0	0	0	1	1	1	1	1	1	1
Shrinkage Cracks	0-5	0	0	0	0	0	1	1	1	1	0	0	0	1
Rutting	0-10	4	4	4	2	2	2	5	5	5	2	2	2	2
Corrugations	0-5	2	1	1	2	1	1	2	2	2	2	1	1	1
Raveling	0-5	1	1	1	0	0	1	1	1	1	1	1	1	1
Shoving or Pushing	0-10	0	1	1	0	1	1	0	1	2	0	0	0	0
Potholes	0-10	0	1	1	0	0	0	1	1	1	0	1	1	1
Excess Asphalt	0-10	2	2	1	1	1	1	2	2	1	1	1	1	2
Polished Aggregate	0-5	2	2	1	1	1	1	2	2	1	1	1	1	1
Overall Riding Quality	0-10	2	2	3	3	4	3	3	3	4	3	4	4	4
	Sum of Defects	13	14	14	9	10	11	19	20	20	12	13	16	16
	Condition Rating (= 90-Sum of Defects)	77	76	76	81	80	79	71	70	70	78	77	74	74

NOTES: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.
Section No. 9 contains a bridge approximately 115 feet in length.

TABLE F3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 645		COUNTY: Martin			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 10 From STA 393+20 to STA 448+30		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	1	1	1	1	1	1	1	1	0	0	0
Longitudinal Cracks	0-5	1	1	1	1	1	1	1	1	1	1	1	1
Alligator Cracks	0-10	0	0	1	0	0	0	1	1	1	0	0	1
Shrinkage Cracks	0-5	0	0	0	0	0	1	0	0	1	0	0	1
Rutting	0-10	3	3	3	1	2	2	4	4	5	3	3	3
Corrugations	0-5	2	1	1	1	2	2	2	2	2	2	1	1
Raveling	0-5	1	1	1	0	1	1	1	1	1	1	1	1
Shoving or Pushing	0-10	0	1	1	0	0	1	0	1	2	0	1	1
Potholes	0-10	0	1	1	0	1	1	0	1	1	0	1	1
Excess Asphalt	0-10	1	2	2	1	1	1	2	2	1	1	1	1
Polished Aggregate	0-5	2	2	2	1	1	1	2	2	2	1	1	1
Overall Riding Quality	0-10	3	3	3	2	3	3	4	4	4	2	3	3
	Sum of Defects	14	16	17	8	13	15	18	20	22	11	13	15
	Condition Rating (= 90-Sum of Defects)	76	74	73	82	77	75	72	70	68	79	77	75

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE F3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 645		COUNTY: Martin			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 11 From STA 448+30 to STA 504+20		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	1	1	1	1	1	0	0	0	0	0	0
Longitudinal Cracks	0-5	1	1	1	1	1	1	1	1	1	0	0	1
Alligator Cracks	0-10	1	1	2	0	0	0	0	0	0	0	0	0
Shrinkage Cracks	0-5	1	0	1	0	0	1	0	0	0	0	0	1
Rutting	0-10	2	2	3	2	3	2	6	6	6	2	3	3
Corrugations	0-5	2	2	2	1	1	1	2	2	2	1	1	1
Raveling	0-5	1	1	1	1	1	1	1	1	1	1	0	0
Shoving or Pushing	0-10	1	1	2	0	0	0	0	1	2	0	0	0
Potholes	0-10	1	1	1	1	1	1	0	1	1	0	1	1
Excess Asphalt	0-10	2	2	2	1	1	1	2	2	2	1	1	1
Polished Aggregate	0-5	2	2	2	1	1	1	2	2	2	1	1	1
Overall Riding Quality	0-10	3	3	4	2	3	3	3	3	4	3	4	3
	Sum of Defects	18	17	22	11	13	13	17	19	21	9	11	12
	Condition Rating (= 90-Sum of Defects)	72	73	68	79	77	77	73	71	69	81	79	78

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE F3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 645		COUNTY: Martin			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 12 From STA 504+20 to STA 520+30		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	1	1	0	0	0	0	0	0	0	0	0
Longitudinal Cracks	0-5	0	0	1	1	1	1	0	0	1	0	0	0
Alligator Cracks	0-10	0	0	0	0	0	1	1	1	2	0	0	0
Shrinkage Cracks	0-5	1	0	0	1	0	1	0	0	0	0	0	1
Rutting	0-10	2	2	4	5	6	10	8	10	10	4	4	8
Corrugations	0-5	2	2	2	2	2	2	2	2	2	1	1	1
Raveling	0-5	1	1	1	1	0	1	0	1	1	0	0	0
Shoving or Pushing	0-10	0	2	2	1	2	3	2	5	8	0	0	1
Potholes	0-10	0	1	1	0	1	1	1	1	2	0	1	1
Excess Asphalt	0-10	1	2	2	2	2	2	3	2	2	1	1	1
Polished Aggregate	0-5	2	2	2	2	2	2	2	2	2	2	2	2
Overall Riding Quality	0-10	3	4	4	3	4	5	3	4	6	2	2	4
	Sum of Defects	13	17	20	18	20	29	22	28	36	10	11	19
	Condition Rating (= 90-Sum of Defects)	77	73	70	72	70	61	68	62	54	80	79	71

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE F4. DEFLECTION ANALYSIS -- KY 645, ULYSSES TO INEZ

	NORTHBOUND			SOUTHBOUND		
	1985	1986	1987	1985	1986	1987
ROUTE: KY 645	COUNTY: Lawrence/Martin					
Temperature (°F)	104	94	89	101	115	96
5-Day Temp. (°F)	72	84.1	78.8	72	84.1	76.4
Test Time (hr)	13.25	10.75	10.50	11.38	13.50	14.50
Deflection No. 1 (mils)	0.324	0.305	0.301	0.330	0.395	0.361
Deflection No. 2 (mils)	0.249	0.255	0.251	0.268	0.314	0.308
Deflection No. 3 (mils)	0.192	0.182	0.293	0.162	0.211	0.216
Deflection No. 4 (mils)	0.119	0.125	0.124	0.010	0.127	0.144
Subgrade Modulus (psi)	26,000	26,000	18,000	34,000	23,000	22,000
AC Modulus at Test Temperature (psi)	340,000	390,000	860,000	180,000	230,000	320,000
AC Modulus at 70°F (psi)	1,030,000	1,070,000	1,590,000	580,000	1,360,000	1,090,000

TABLE F5. SUMMARY OF SONIC MODULUS TEST DATA FOR BITUMINOUS LIMESTONE -- KY 645, ULYSSES TO INEZ

LOCATION (STA)	CORE SAMPLE CHARACTERISTICS				TEST SAMPLE CHARACTERISTICS				SONIC MODULUS (psi)
	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	
509+20 RWP NB	11.4	4.0	11.8	142.3	4.8	2.0	1.3	149.0	349,000
509+70 RWP NB	11.8	4.0	12.1	141.0	5.1	2.0	1.4	151.0	454,000
510+70 CL NB	11.8	4.0	12.8	149.2	11.1	4.0	12.2	151.1	887,000
511+20 RWP NB	11.1	4.0	11.8	146.2	6.2	2.0	1.7	150.8	746,000
511+70 LWP NB	10.6	4.0	10.9	141.4	5.6	2.0	1.5	147.3	546,000
512+70 RWP NB	10.6	3.9	11.2	152.8	3.9	2.0	1.0	141.0	308,000
Average for Site	11.2	4.0	11.8	145.5	6.1	2.3	3.2	148.4	548,300
Standard Deviation	0.5	0.0	0.7	4.8	2.6	0.8	4.4	3.9	228,100

APPENDIX G

KY 15

HAZARD BYPASS

Design Criteria

~~The route is considered to be in heavy mountainous terrain and is of a Class 1 design.~~
The typical section for the entire 2.1-mile route consists of two 24-foot roadways separated by a 16-foot raised median and has 10-foot shoulders and turn lanes were required. Total asphaltic concrete thickness throughout the section was 6.5 inches, including 5.5-inches bituminous limestone base and one-inch bituminous limestone surface. A typical section for the pavement design utilized on Hazard Bypass is given in Figure G1.

The design speed for the route was 60 MPH. Two separate traffic volumes were evaluated for the design; one volume for the section of the bypass North of KY 451 and one volume for the section of the bypass South of KY 451. These volumes are detailed below under the Geometric Design Criteria. Seven percent trucks was projected for the design. The designed level of service was "C". Traffic projections for the design were developed by the Department of Highways, Division of Planning. The following data were obtained from information available from project files.

Geometric Design Criteria

Class of Highway:	1
Type of Terrain:	Heavy Mountainous
Design Speed:	60 MPH
Maximum Curvature:	6°
Maximum Grade:	+/- 6 %
Stopping Sight Distance:	475 ft (minimum), 650 ft (desirable)
Superelevation:	1/4" : 1'
Typical Section:	2 - 24-ft pavement sections 16-ft median 10-ft shoulder

Traffic Volume:

Section A (North of KY 451):	
ADT (1970):	2,200
ADT (1995):	5,160
DHV (1995):	1,340
T (%):	7
Level of Service:	"C"

Section B (South of KY 451):	
ADT (1970):	4,050
ADT (1995):	9,900
DHV (1995):	1,090
T (%):	7
Level of Service:	"C"

Pavement Design Criteria

Section A (North of KY 451):

EWL = 20 to 40 x 10⁶

CBR = 9 (Rock Subgrade)

Section B (South of KY 451):

EWL = 40 to 80 x 10⁶

CBR = 9 (Rock Subgrade)

Pavement Design:

11" Dense Graded Aggregate Base

5-1/2" Bituminous Concrete Base

1" Bituminous Concrete Surface

17-1/2" Total

Performance Monitoring

Construction of the Hazard Bypass was completed and the route opened to traffic in 1981. The initial condition rating survey was conducted in June 1985. Subsequent surveys were performed in October 1986, and again in July 1987. Two rating crews, each consisting of two people, were used to rate the condition of the pavement. Within each crew, one rater would use the Pavement Management's technique (Kentucky System) to rate the condition of the pavement and the other crew member would use the Asphalt Institute's system. Performance monitoring of the Hazard Bypass encompassed the entire 2.1-mile section.

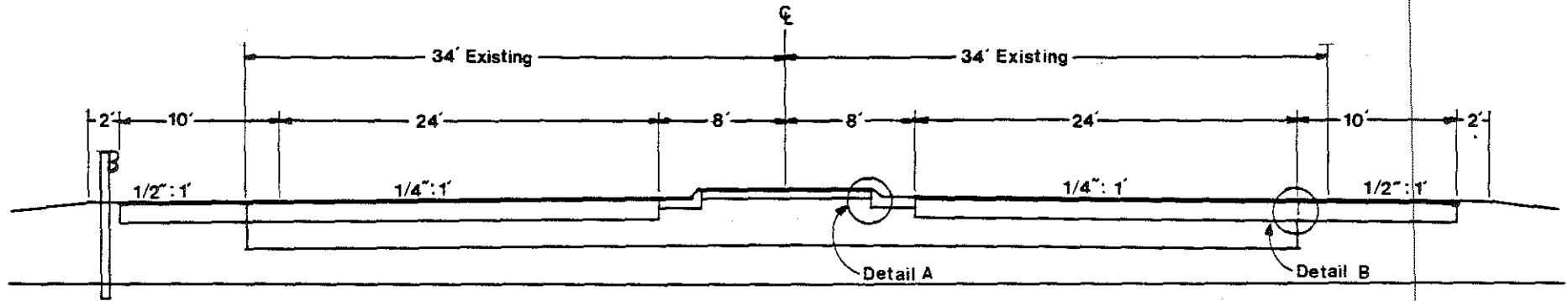
The first section extended northward from the southern end of the bypass at the junction with existing KY 15 (designated as STA 0+00). The total distance surveyed was 11,226 feet or about 2.1 miles. The 2.1 miles were divided into four survey sections for evaluation purposes and were maintained throughout the evaluation period. The survey sections were not equal in length however. Survey section lengths were determined using a rolling wheel distance measuring device. Condition survey data are contained in Table G2 and Table G3 for the Kentucky System and Asphalt Institute System, respectively. The initial survey generally revealed very poor performance for all four survey sections. Areas of both northbound and southbound shoulder lanes of the bypass exhibited high

degrees of rutting, corrugations, and cracking, especially near the southern and northern ends of the route. Overall appearance and riding quality were very poor within both survey section numbers 1 and 3. Additionally, the northbound median lane near the northern end (survey section number 3) exhibited significant distresses including alligator cracking, deep rutting, and shoving and pushing of the bituminous limestone pavement (see figures G2 through G4). Figure G2 was taken looking northbound at approximate station number 106+00. Rutting in this area was about 2.0 inches in the left wheel path. Figure G3 is a close up shot of the pavement surface same area. Note the severe distortion and cracking in the right wheel path. Figure G4 is a photograph taken of the northbound lanes near STA 106+00 looking back to the south up the grade. Rutting at STA 102+00 exceeded 2.5 inches. Figure G5 illustrates severe alligator cracking and rutting of the deteriorated southbound shoulder lane in section number 1. This photograph was taken within an area which ramps, or merges onto existing KY 15.

A large proportion of the pavement surface of survey section numbers 1 and 3 had received a maintenance overlay between the time of the 1985 and 1986 surveys. This is reflected in the pavement condition ratings obtained during 1986 and compared to those obtained in 1985. Cracking, and shoving and pushing, demerit points were reduced accordingly. Interestingly, however, demerit points for rutting did not decrease significantly.

Results of Road Rater deflection testing and modulus calculations are contained in table G4. Deflection data obtained for the northbound lane during the 1986 survey apparently were lost through the result of computer error when down-loading the data. The average back-calculated modulus values indicate an overall decrease in asphaltic concrete modulus values. This is consistent with the performance of the route and substantiated by the condition ratings that were performed. The southbound direction shows an increase in the asphaltic concrete modulus from the 1985 tests to the 1986 tests. However, this is impart due to the fact that a large proportion of the route received a one to two inch overlay during this time period and, also due to the lower subgrade modulus. The subgrade modulus remained fairly constant throughout the evaluation period. The estimated CBR of the rock subgrade ranged from about 25 down to about 19.

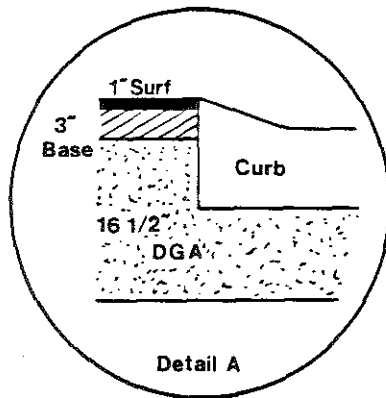
Pavement coring operations were performed during the summer of 1986. Table G5 contains results of the laboratory testing activities. The five bituminous limestone base had an average sonic modulus equal to 577,600 psi. The unit weight of the tested cores averaged 145.5 pcf. The unit weight of eight field cores (includes both base and surface courses) averaged 149.6 pcf.



NORMAL MAIN LINE SECTION

**NEW CONSTRUCTION GRADE, DRAIN, and SURFACING
-USING-**

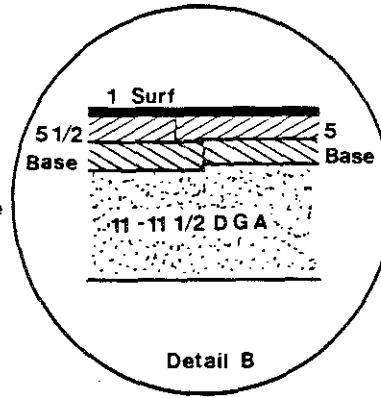
G.15



Detail A

MEDIAN

- 1" Compacted Depth Bituminous Concrete Surface
- 0.80 lb/sy Bituminous Tack Coat
- 3" +/- Compacted Depth Bituminous Concrete Base
- 16 1/2" +/- Compacted Depth Dense Graded Aggregate Base



Detail B

TRAVEL LANE

- 1" Compacted Depth Bituminous Concrete Surface
- 0.80 lb/sy Bituminous Tack Coat
- 5 1/2" +/- Compacted Depth Bituminous Concrete Base (2-2 3/4" Courses)
- 11" +/- Compacted Depth Dense Graded Aggregate Base

SHOULDER

- 20 lb/sy Crushed Limestone Aggregate Size No. 8
- 2.00 lb/sy Bituminous Seal Coat
- 1" Compacted Depth Bituminous Concrete Surface
- 0.80 lb/sy Bituminous Tack Coat
- 5" +/- Compacted Depth Bituminous Concrete Base (3-3 1/2" Courses)
- 11 1/2" Compacted Depth Dense Graded Aggregate Base

Figure G1. Typical Section and Detail for Main Line Section of Hazard Bypass.



Figure G2. Northbound Median Lane of Survey Section No. 3 Exhibited Severe Rutting and Cracking.



Figure G3. Northbound Median Lane of Survey Section No. 3 had Severe Shoving and Pushing.



Figure G4. Northbound Median Lane of Survey Section No. 3 had Raveling and Patched Potholes.



Figure G5. Southbound Shoulder Lane of Survey Section No. 1 showed Severe Alligator Cracking and Shoving and Pushing.

TABLE G1. 1985 RUTTING DATA -- KY 15, HAZARD BYPASS

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 1 -- STA 0+00 to STA 30+44								
8+00	0.3	0.1	0.8	0.8	0.6	0.3	0.4	0.5
16+00	0.4	0.1	0.6	0.8	0.1	0.1	0.4	0.3
24+00	0.3	0.1	0.8	0.8	0.1	0.3	0.5	0.3
29+00	0.4	0.1	0.8	0.3	0.4	0.4	0.3	0.3
Average	0.3	0.1	0.7	0.6	0.3	0.3	0.4	0.3
Std. Dev.	0.1	0.0	0.1	0.2	0.2	0.1	0.1	0.1
SURVEY SECTION 2 -- STA 30+44 to STA 72+00								
40+00	0.1	0.3	0.5	0.5	0.1	0.3	0.5	0.6
48+00	0.0	0.1	0.9	0.5	0.1	0.1	0.6	0.5
56+00	0.3	0.1	0.6	0.6	0.1	0.1	0.6	0.6
64+00	0.1	0.4	1.0	0.8	0.1	0.0	0.6	0.8
72+00	0.1	0.1	0.8	0.1	0.1	0.1	0.9	0.6
Average	0.1	0.2	0.8	0.5	0.1	0.1	0.7	0.6
Std. Dev.	0.1	0.1	0.2	0.2	0.0	0.1	0.1	0.1
SURVEY SECTION 3 -- STA 72+00 to STA 108+20								
80+00	0.4	0.1	0.5	0.3	0.1	0.1	0.6	0.5
88+00	0.4	0.1	0.9	0.4	0.0	0.1	0.8	0.9
96+00	0.8	0.4	0.4	0.3	0.0	0.0	1.0	0.8
102+00	2.6	1.0	0.1	0.4	0.1	0.1	0.6	0.5
103+00	1.8	1.5	0.1	0.3	0.1	0.1	1.3	0.6
106+00	2.0	1.8	0.1	0.3	0.1	0.0	0.5	0.4
Average	1.3	0.8	0.4	0.3	0.1	0.1	0.8	0.6
Std. Dev.	0.9	0.6	0.3	0.1	0.1	0.1	0.3	0.2

NOTES: Section No. 2 contains a bridge approximately 542 feet in length.
 Section No. 4 , STA 108+20 to STA 112+26, contains a bridge approximately 316 feet in length.
 Rutting measurements were not obtained in Section No. 4 due to traffic.

TABLE G1 (continued). 1986 RUTTING DATA -- KY 15, HAZARD BYPASS

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 1 -- STA 0+00 to STA 30+44								
8+00	0.1	0.2	0.3	0.2	0.3	0.1	0.5	0.6
16+00	0.2	0.2	0.6	0.3	0.1	0.1	0.5	0.3
24+00	0.1	0.2	0.6	0.8	0.3	0.1	0.4	0.3
29+00	0.2	0.3	0.7	0.3	0.4	0.1	0.4	0.3
Average	0.2	0.2	0.5	0.4	0.3	0.1	0.5	0.3
Std. Dev.	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.2
SURVEY SECTION 2 -- STA 30+44 to STA 72+00								
40+00	0.1	0.1	0.5	0.2	0.1	0.2	0.4	0.6
48+00	0.1	0.1	1.1	0.7	0.3	0.2	0.6	0.4
56+00	0.2	0.2	0.8	0.9	0.1	0.1	0.7	0.6
64+00	0.1	0.1	1.3	0.6	0.1	0.1	0.6	0.4
72+00	0.2	0.2	0.7	0.4	0.2	0.2	1.0	0.9
Average	0.1	0.1	0.9	0.5	0.2	0.1	0.7	0.6
Std. Dev.	0.1	0.1	0.3	0.2	0.1	0.1	0.2	0.2
SURVEY SECTION 3 -- STA 72+00 to STA 108+20								
80+00	0.3	0.3	0.5	0.3	0.1	0.2	0.6	0.4
88+00	0.3	0.2	0.8	0.5	0.0	0.3	0.3	0.3
96+00	0.8	0.4	0.4	0.3	0.0	0.1	1.1	0.6
102+00	0.4	0.3	0.3	0.1	0.1	0.1	0.6	0.3
103+00	0.4	0.4	0.3	0.0	0.0	0.1	1.4	0.8
106+00	0.2	0.4	0.6	0.2	0.1	0.1	0.4	0.3
Average	0.4	0.3	0.5	0.2	0.1	0.1	0.7	0.4
Std. Dev.	0.2	0.1	0.2	0.2	0.1	0.1	0.4	0.2

NOTES: Section No. 2 contains a bridge approximately 542 feet in length.
 Section No. 4, STA 108+20 to STA 112+26, contains a bridge approximately 316 feet in length.
 Rutting measurements were not obtained in Section No. 4 due to traffic.

TABLE G1 (continued). 1987 RUTTING DATA -- KY 15, HAZARD BYPASS

STATION	NORTHBOUND				SOUTHBOUND			
	Median Lane		Shoulder Lane		Median Lane		Shoulder Lane	
	LWP	RWP	LWP	RWP	LWP	RWP	LWP	RWP
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
SURVEY SECTION 1 -- STA 0+00 to STA 30+44								
8+00	0.2	0.2	0.3	0.1	0.3	0.1	0.5	0.4
16+00	0.3	0.3	0.6	0.3	0.2	0.1	0.4	0.3
24+00	0.1	0.3	0.6	0.7	0.1	0.3	0.5	0.2
29+00	0.3	0.3	0.6	0.3	0.4	0.4	0.4	0.1
Average	0.2	0.3	0.5	0.3	0.2	0.3	0.5	0.3
Std. Dev.	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.1
SURVEY SECTION 2 -- STA 30+44 to STA 72+00								
40+00	0.1	0.1	0.4	0.0	0.1	0.2	0.4	0.7
48+00	0.0	0.1	0.9	0.6	0.1	0.1	0.7	0.4
56+00	0.2	0.1	0.8	0.8	0.1	0.1	0.6	0.6
64+00	0.1	0.1	0.9	0.5	0.1	0.1	0.7	0.6
72+00	0.2	0.2	0.8	0.4	0.1	0.1	0.9	0.7
Average	0.1	0.1	0.8	0.4	0.1	0.1	0.7	0.6
Std. Dev.	0.1	0.0	0.2	0.3	0.0	0.0	0.2	0.1
SURVEY SECTION 3 -- STA 72+00 to STA 108+20								
80+00	0.3	0.3	0.4	0.3	0.1	0.1	0.6	0.5
88+00	0.3	0.2	0.3	0.4	0.0	0.0	0.3	0.3
96+00	0.8	0.5	0.4	0.3	0.0	0.1	1.2	0.8
102+00	0.5	0.4	0.1	0.0	0.2	0.1	0.6	0.3
103+00	0.4	0.5	0.3	0.0	0.0	0.0	1.4	0.6
106+00	0.2	0.4	0.1	0.0	0.1	0.0	0.5	0.4
Average	0.4	0.4	0.3	0.2	0.1	0.0	0.8	0.5
Std. Dev.	0.2	0.1	0.1	0.2	0.1	0.0	0.4	0.2

NOTES:

Section No. 2 contains a bridge approximately 542 feet in length.

Section No. 4, STA 108+20 to STA 112+26 contains a bridge approximately 316 feet in length.

Rutting measurements were not obtained in Section No. 4 due to traffic.

TABLE G2. PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 15; Hazard Bypass		COUNTY: Perry			WIDTH: 12-foot lanes			TYPE: Asphaltic Concrete					
Survey Section No. 1 From STA 0+00 to STA 30+44		DEFICIENCY POINTS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		8.0	4.5	3.5	3.0	3.5	3.5	8.0	3.5	3.5	2.5	2.5	3.5
Base Failures:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:		2.2	1.5	1.8	1.8	1.8	1.8	3.2	1.2	1.5	1.5	1.5	1.8
Edge Failures:		1.2	1.5	1.5	1.0	1.3	1.3	0.9	1.3	1.3	0.0	0.0	0.9
Out of Section:		2.5	3.0	3.0	2.5	3.0	3.0	4.5	3.5	3.5	2.0	2.0	2.5
Appearance:		5.0	3.0	2.0	3.0	3.0	3.0	4.0	2.0	3.0	4.0	2.0	2.0
Rideability:		11.2	6.9	n/a	11.2	6.9	n/a	14.2	15.7	n/a	14.2	15.7	n/a
Rutting:		5.0	6.1	6.0	4.1	3.1	4.0	9.1	6.9	7.0	3.0	2.8	4.0
Skid Resistance:		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume: AADT: 12,140													
Travel Speed: MPH: 40		13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
TOTALS:		48.1	39.5	30.8	39.6	35.6	29.6	42.7	47.1	32.8	40.2	39.5	27.7

NOTE: n/a indicates information for the description was unavailable.

TABLE G2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 15; Hazard Bypass		COUNTY: Perry			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 2 From STA 30+44 to STA 72+00		DEFICIENCY POINTS											
		SOUTHBOUND					NORTHBOUND						
		Shoulder Lane			Median Lane		Shoulder Lane			Median Lane			
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		2.5	4.5	5.0	2.0	2.0	2.0	2.0	2.5	3.5	3.0	3.0	4.0
Base Failures:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raveling:		1.2	1.2	1.5	1.2	0.0	1.2	0.0	0.0	1.2	0.0	1.2	1.5
Edge Failures:		0.0	1.3	1.5	0.0	1.2	1.3	1.0	1.0	1.0	1.4	1.4	1.4
Out of Section:		2.0	3.0	3.0	2.0	2.0	2.5	0.0	2.0	2.0	0.0	2.0	2.5
Appearance:		2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0
Rideability:		1.0	0.0	n/a	1.0	0.0	n/a	5.4	8.4	n/a	5.4	8.4	n/a
Rutting:		9.6	9.1	10.0	1.5	2.2	2.0	8.6	8.6	8.0	2.1	1.9	2.0
Skid Resistance:		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume: AADT: 14,392													
Travel Speed: MPH: 60		17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
TOTALS:		35.3	39.1	41.0	26.7	26.4	26.0	36.0	41.5	34.7	30.9	36.9	31.4

NOTES: n/a indicates information for the description was unavailable.
Section No. 2 contains a bridge approximately 542 feet in length.

TABLE G2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 15; Hazard Bypass		COUNTY: Perry			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 3 From STA 72+00 to STA 108+20		DEFICIENCY POINTS											
		SOUTHBOUND					NORTHBOUND						
		Shoulder Lane			Median Lane		Shoulder Lane			Median Lane			
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		5.5	5.0	6.0	3.5	3.5	4.0	3.5	4.0	4.0	9.0	3.5	3.5
Base Failures:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	5.0	0.0	0.0
Raveling:		1.5	1.2	2.2	0.0	1.5	1.8	1.2	1.2	1.5	2.9	1.2	1.8
Edge Failures:		2.1	1.7	1.7	0.0	1.3	1.3	0.0	1.3	1.3	2.4	1.5	1.5
Out of Section:		2.0	3.0	3.0	2.0	2.0	2.5	0.0	2.5	3.0	3.5	3.0	3.0
Appearance:		4.0	3.0	4.0	1.0	2.0	2.0	2.0	2.0	2.0	5.0	2.0	2.0
Rideability:		0.0	0.0	n/a	0.0	0.0	n/a	0.0	2.5	n/a	0.0	2.5	n/a
Rutting:		9.2	7.0	8.0	1.0	1.3	1.0	4.1	5.0	4.0	6.8	5.3	6.0
Skid Resistance:		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume: AADT: 12,583													
Travel Speed: MPH: 60		17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
TOTALS:		41.3	37.9	41.9	24.5	28.6	29.6	27.8	37.5	32.8	51.6	36.0	34.8

NOTE: n/a indicates information for the description was unavailable.

TABLE G2 (continued). PAVEMENT CONDITION RATING -- KENTUCKY SYSTEM

ROUTE: KY 15; Hazard Bypass		COUNTY: Perry			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 4 From STA 108+00 to STA 112+26		DEFICIENCY POINTS											
		SOUTHBOUND					NORTHBOUND						
		Shoulder Lane			Median Lane		Shoulder Lane			Median Lane			
DESCRIPTION:		1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Cracking:		5.0	0.0	0.0	2.0	0.0	0.0	3.0	0.0	2.0	4.0	0.0	0.0
Base Failures:		2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Raveling:		1.2	0.0	1.2	1.2	0.0	1.2	1.5	0.0	1.2	1.5	0.0	1.2
Edge Failures:		0.0	0.0	0.0	1.0	0.0	0.0	0.9	0.0	0.0	0.9	0.0	0.0
Out of Section:		0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0
Appearance:		3.0	1.0	2.0	3.0	1.0	2.0	3.0	1.0	2.0	3.0	1.0	2.0
Rideability:		0.0	0.0	n/a	0.0	0.0	n/a	2.5	5.4	n/a	2.5	5.4	n/a
Rutting:		9.2	3.0	3.0	1.0	3.0	3.0	4.1	3.0	3.0	6.8	3.0	3.0
Skid Resistance:		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Traffic Volume:	AADT: 9,884												
Travel Speed:	MPH: 40	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
TOTALS:		33.4	17.0	19.2	23.2	17.0	16.2	30.0	22.4	21.2	34.2	22.4	19.2

NOTES: n/a indicates information for the description was unavailable.
 Section No. 4 contains a bridge approximately 316 feet in length. Rutting measurements were not obtained in Section No. 4 due to traffic. Therefore, deficiency points for rut depths were estimated for the section.

TABLE G3. PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 15; Hazard Bypass		COUNTY: Perry			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 1 From STA 0+00 to STA 30+44		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	1	1	1	1	1	2	0	1	1	1	1
Longitudinal Cracks	0-5	2	2	2	1	1	1	1	1	2	1	1	1
Alligator Cracks	0-10	3	3	3	0	1	1	3	3	3	0	2	2
Shrinkage Cracks	0-5	1	1	1	1	0	1	0	1	1	0	0	1
Rutting	0-10	5	6	6	4	3	4	9	7	7	3	3	4
Corrugations	0-5	3	1	2	2	1	1	2	1	2	1	1	1
Raveling	0-5	1	1	2	0	0	2	1	1	2	0	1	1
Shoving or Pushing	0-10	2	1	2	0	0	1	1	2	2	1	1	1
Potholes	0-10	2	1	1	1	0	1	1	1	2	0	1	1
Excess Asphalt	0-10	2	2	2	1	1	1	1	2	2	1	2	1
Polished Aggregate	0-5	3	3	2	2	1	2	2	3	2	2	2	1
Overall Riding Quality	0-10	5	6	6	3	3	3	6	6	4	3	6	4
	Sum of Defects	30	28	30	16	12	19	29	28	30	13	21	19
	Condition Rating (= 90-Sum of Defects)	60	62	60	74	78	71	61	62	60	77	69	71

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE G3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 15; Hazard Bypass		COUNTY: Perry			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 2 From STA 30+44 to STA 72+00		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	0	0	1	0	0	0	0	0	1	0	0	0
Longitudinal Cracks	0-5	2	2	2	0	0	0	1	1	2	1	1	0
Alligator Cracks	0-10	5	3	3	0	0	0	0	0	3	0	1	0
Shrinkage Cracks	0-5	2	1	1	0	0	1	0	0	1	0	1	1
Rutting	0-10	10	9	9	2	2	2	9	9	8	2	2	2
Corrugations	0-5	3	1	1	2	1	1	1	1	1	1	1	1
Raveling	0-5	1	1	2	0	0	1	1	1	1	0	0	1
Shoving or Pushing	0-10	1	1	2	0	0	0	0	2	1	1	1	0
Potholes	0-10	1	1	2	0	1	1	2	1	1	2	1	0
Excess Asphalt	0-10	3	2	2	2	1	0	1	2	2	1	2	1
Polished Aggregate	0-5	3	3	2	2	1	1	2	3	2	2	2	1
Overall Riding Quality	0-10	5	5	6	4	5	5	5	4	5	3	3	3
	Sum of Defects	36	29	33	12	11	12	22	24	28	13	15	10
	Condition Rating (= 90-Sum of Defects)	54	61	76	78	79	78	68	66	62	77	75	80

NOTES: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.
Section No. 2 contains a bridge approximately 542 feet in length.

TABLE G3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 15; Hazard Bypass		COUNTY: Perry			WIDTH: 12-foot lane			TYPE: Asphaltic Concrete					
Survey Section No. 3 From STA 72+00 to STA 108+20		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	2	0	1	0	0	0	1	0	0	3	0	0
Longitudinal Cracks	0-5	3	2	3	1	1	0	1	2	1	3	1	1
Alligator Cracks	0-10	6	4	4	0	0	0	2	4	2	7	1	1
Shrinkage Cracks	0-5	2	1	1	1	0	1	1	1	1	1	0	1
Rutting	0-10	9	7	8	1	1	1	7	5	3	7	5	6
Corrugations	0-5	3	1	2	2	1	1	1	1	1	2	1	2
Raveling	0-5	0	2	2	0	0	1	1	1	1	2	0	1
Shoving or Pushing	0-10	2	2	2	0	0	0	1	2	1	7	0	2
Potholes	0-10	5	2	2	0	0	0	1	1	1	5	1	1
Excess Asphalt	0-10	2	2	2	1	1	0	1	2	1	3	2	2
Polished Aggregate	0-5	3	3	2	2	1	1	2	3	2	2	2	2
Overall Riding Quality	0-10	5	6	6	3	3	3	3	4	4	8	8	8
	Sum of Defects	42	32	35	10	8	8	22	26	18	50	21	27
	Condition Rating (= 90-Sum of Defects)	48	58	55	80	82	82	68	64	72	40	69	63

NOTE: A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.

TABLE G3 (continued). PAVEMENT CONDITION RATING -- ASPHALT INSTITUTE SYSTEM

ROUTE: KY 15; Hazard Bypass		COUNTY: Perry						WIDTH: 12-foot lane			TYPE: Asphaltic Concrete		
Survey Section No. 4 From STA 108+20 to STA 112+26		RATINGS											
		SOUTHBOUND						NORTHBOUND					
		Shoulder Lane			Median Lane			Shoulder Lane			Median Lane		
DEFECTS	POINT RANGE	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Transverse Cracks	0-5	1	0	0	0	0	0	0	0	1	2	0	0
Longitudinal Cracks	0-5	2	0	2	0	0	1	0	0	0	2	0	0
Alligator Cracks	0-10	4	0	3	0	0	0	2	2	0	5	0	0
Shrinkage Cracks	0-5	2	0	1	0	0	0	0	0	1	1	0	0
Rutting	0-10	2	3	8	2	3	1	2	3	3	5	3	6
Corrugations	0-5	2	2	1	1	1	1	1	1	1	2	1	2
Raveling	0-5	0	0	1	0	0	1	0	0	1	0	0	1
Shoving or Pushing	0-10	2	1	2	0	0	0	1	1	1	2	3	5
Potholes	0-10	0	0	0	0	0	0	0	0	0	0	0	0
Excess Asphalt	0-10	1	1	2	1	1	0	1	1	1	2	2	3
Polished Aggregate	0-5	3	1	2	2	1	1	2	2	2	2	1	2
Overall Riding Quality	0-10	5	6	6	3	4	4	3	3	4	6	7	7
	Sum of Defects	24	14	28	9	10	9	12	13	15	29	17	26
	Condition Rating (= 90-Sum of Defects)	66	76	62	81	80	81	78	77	75	61	73	64

NOTES:

A rating of "0" indicates defect does not occur; Deficient drainage not evaluated.
 Section No. 4 contains a bridge approximately 316 feet in length. Rutting measurements were not obtained in Section No. 4 due to traffic. Therefore, deficiency points for rut depths were estimated for the section.

TABLE G4. DEFLECTION ANALYSIS -- KY 15, HAZARD BYPASS

ROUTE: Hazard		COUNTY: Perry					
Bypass		NORTHBOUND			SOUTHBOUND		
	1985	1986	1987	1985	1986	1987	
Temperature (°F)	93		46	94	85	43	
5-Day Temp. (°F)	75.2		53.9	75.2	81.8	53.9	
Test Time (hr)	10.75		10.50	11.25	9.50	10.00	
Deflection No. 1 (mils)	0.378		0.311	0.391	0.348	0.280	
Deflection No. 2 (mils)	0.236		0.224	0.247	0.272	0.206	
Deflection No. 3 (mils)	0.117		0.142	0.127	0.163	0.142	
Deflection No. 4 (mils)	0.074		0.095	0.082	0.081	0.083	
Subgrade Modulus (psi)	37,000		33,000	34,000	29,000	35,000	
AC Modulus at Test Temperature (psi)	190,000		590,000	210,000	510,000	760,000	
AC Modulus at 70°F (psi)	340,000		90,000	450,000	800,000	110,000	

TABLE G5. SUMMARY OF SONIC MODULUS TEST DATA FOR BITUMINOUS LIMESTONE -- KY 15, HAZARD BYPASS

LOCATION (STA)	CORE SAMPLE CHARACTERISTICS				TEST SAMPLE CHARACTERISTICS				SONIC MODULUS (psi)
	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	SAMPLE HEIGHT (in.)	SAMPLE DIAMETER (in.)	SAMPLE WEIGHT (lb)	UNIT WEIGHT (pcf)	
13+50 CL SB	5.7	3.9	5.8	147.2	4.8	2.0	1.3	148.9	541,000
14+50 RWP SB	5.6	3.9	5.8	149.8	5.0	2.0	1.3	143.0	449,000
15+50 RWP SB	7.7	3.9	8.1	152.2					
16+00 RWP SB	7.0	3.9	7.2	148.8	6.4	2.0	1.7	146.1	777,000
16+50 CL SB	7.0	3.9	7.0	144.7	5.8	2.0	1.5	142.3	582,000
17+50 LWP SB	6.5	3.9	6.8	151.3					
18+50 CL SB	6.5	3.9	6.9	153.6	5.6	2.0	1.5	147.3	539,000
18+50 LWP SB	6.7	3.9	6.9	149.0					
Average for Site	6.6	3.9	6.8	149.6	5.5	2.0	11.4	145.5	577,600
Standard Deviation	0.7	0.0	0.7	2.8	0.6	0.0	0.2	2.8	121,600