

ROUTE STUDY  
KY 151 ALTON BYPASS  
FROM NORTH END OF LAWRENCEBURG BYPASS  
TO  
THE ANDERSON-FRANKLIN COUNTY LINE  
AND  
US 127 ALTON BYPASS

Prepared By:  
Kentucky Department of Highways  
Division of Planning  
September 1969

APPROVED:

OFFICE OF PLANNING & PROGRAMMING

  
J. R. Harbison

DATE: 11/2/69

COMMISSIONER OF HIGHWAYS

  
Eugene Goss

DATE: 11/24/69

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION -----	1
DESCRIPTION OF EXISTING FACILITY -----	2
TRAFFIC -----	3
CORRIDORS CONSIDERED -----	3
GEOLOGIC INFORMATION -----	5
COST ESTIMATES -----	6
RECOMMENDATION -----	7

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THE ANDERSON-FRANKLIN COUNTY LINE AND  
US 127 ALTON BYPASS

INTRODUCTION

This study was initiated in order to: (1) determine the most feasible corridor for the reconstruction of US 127 and KY 151 with the project beginning at the north limits of the Lawrenceburg Bypass and ending at the newly constructed section of KY 151 that extends from the I-64 Graefenburg Interchange to the Franklin-Anderson County Line; and (2) determine the best corridor for US 127 towards Frankfort that will bypass Alton to be constructed concurrently with the above project.

US 127 is a north-south route that enters the state at Static in Clinton County and continues north via Albany, Jamestown, Russell Springs, Danville, Harrodsburg, Lawrenceburg, Frankfort, Owenton, and Covington. US 127 is on the FAP System and is classified as State Primary on the State Responsibility System.

KY 151 is a much shorter route that begins at the junction of US 127 at Alton and ends at its junction with US 60 at Graefenburg. KY 151 is on the FAP System and is classified as State Primary on the State Responsibility System.

US 127 and KY 151 are major north-south routes that provide traffic service through central Kentucky as well as service to traffic between the Louisville Metropolitan Area and Southeastern Kentucky via I-64, KY 151, US 127, US 150, I-75 and US 25E.

## DESCRIPTION OF EXISTING FACILITY

The 1.23 mile section of US 127 from the north limits of the Lawrenceburg Bypass to its junction with KY 151 at Alton has a 22 foot bituminous surface and one foot shoulders. This section of roadway has one vertical and two horizontal alignment deficiencies and when combined with the pavement and shoulder widths, it has a sufficiency rating of 44 points out of 100. A rating lower than 50 points is considered to be very poor.

The 2.45 mile section of KY 151 from its junction with US 127 at Alton to the new section of KY 151 completed in 1968 has a 22 foot bituminous surface and three foot shoulders and was resurfaced in 1963. This section of roadway has two vertical and three horizontal alignment deficiencies but a much lower traffic volume than that on US 127 and, when combined with the above pavement and shoulder widths, it has a sufficiency rating of 73 points out of 100 which is considered to be good.

The six mile section of US 127 from the junction of KY 151 at Alton east to I-64 at Frankfort has an average pavement width of 21 feet with 2 to 3 foot shoulders. This section of road has a sufficiency rating of 60 points out of 100.

The 3.68 mile section of US 127 and KY 151 is the only remaining section that has not been improved in recent years or has not been scheduled for improvement between I-64 and Danville and along US 150 to Stanford, except for a several block section within Harrodsburg.

The accident record for a three year period, 1964 through 1966 shows a total of 48 accidents: 31 causing property damage, 14 causing personal injury and three fatalities. These accidents, adjusted to a 100 million vehicle mile

basis, are 24 percent below the state average of 309. For the approximate location of the accidents, refer to Exhibit 2.

### TRAFFIC

The 1969 traffic counts on the section of US 127 just north of the Lawrenceburg Bypass indicates 5,480 vehicles per day with 12 percent of the volume being trucks. This volume projected to 1992, is 11,100 vehicles per day with a DHV of 1,440 and calls for a Class 1, 4-lane facility based on the Department's design criteria.

The 1969 traffic counts on KY 151 indicates 3,460 vehicles per day with 18 percent of the volume being trucks. This traffic projected to 1992 is 5,740 vehicles per day with a DHV of 750 and calls for a Class 2 facility based on the Department's design criteria, which is consistent with the 2-lane recent construction south of I-64.

The 1969 traffic counts on US 127 just northeast of Alton indicates 2,630 vehicles per day with only 7 percent truck volume. This count projected to 1992 is 5,650 vehicles per day with a DHV of 730 and calls for a Class 2 facility. For a pictorial presentation of the traffic inventory refer to Exhibit 3.

### CORRIDORS CONSIDERED

The termini for the section of US 127 and KY 151 between the Lawrenceburg Bypass and the new section of KY 151 are well defined since reconstruction projects have recently been completed at each end of this study section; therefore, the question to be resolved is whether to reconstruct the existing facility or establish a new corridor between these termini. Consideration has been given to reconstruction along the existing alignment; however, due to numerous

residences and some business development on both sides of the existing roadway, adjustments to the horizontal or vertical alignment to obtain sufficient sight distance for the required design capacity plus safety requirements would result in extensive property damage. Therefore, no further consideration was given to this location. Two corridors as shown on Exhibit 4 are considered for this part of the study and are described as follows:

#### CORRIDOR A

Corridor A begins approximately 2,000 feet south of the north junction of US 127 and the US 127 Lawrenceburg Bypass and follows the existing alignment of US 127 for approximately 6,500 feet. It then leaves the existing alignment traversing rolling terrain, crosses US 127 north of Alton and continues to traverse rolling farm land northeast of the existing facility until it ites back into the new section of KY 151 near the Franklin-Anderson County line. Approximately 1,700 feet of recently constructed KY 151 probably would not be utilized because of the projected alignment proposed in the study.

Based on 1,500 feet, the line shown within Corridor A on Exhibit 4 has 63 per cent sight distance. For a Level of Service C, based on a design speed of 60 MPH, level terrain and 18 per cent trucks, Corridor A has a design capacity of 752 VPH which is above the design hour volume of 740.

Corridor A contains an estimated 40 right-of-way parcels. There are 12 residences and 7 farm buildings requiring relocation assistance at a total cost of \$50,000. Utility companies that may be affected by this corridor are as follows: Kentucky Utilities Company, South Central Bell Telephone & Telegraph Company, Alton Water District, Western Kentucky Gas and Fox Creek RECC.

## CORRIDOR B

Corridor B follows the existing alignment of US 127 for approximately 4,000 feet. It then leaves the existing route traversing rolling farm land on the southwest side of the existing facility until it crosses existing KY 151 and continues to traverse rolling terrain northeast of the present roadway until it ties back into the new section of KY 151 at the same point as Corridor A.

Based on 1,500 feet, the line shown within Corridor B on Exhibit 4 has 64 percent sight distance. For a Level of Service C based on a design speed of 60 MPH, level terrain and 18 percent trucks, Corridor B has a design capacity of 758 VPH which is above the design hour volume of 740.

Corridor B contains an estimated 30 right-of-way parcels. There are 6 residences and 2 farm buildings requiring relocation assistance at a total cost of \$23,000. Utility companies that may be affected by this corridor are the same as Corridor A.

## US 127 ALTON BYPASS CORRIDOR

An alignment within this Corridor is proposed to be constructed concurrently with the improvement of KY 151 from the Lawrenceburg Bypass to the new section of KY 151 near the Anderson-Franklin County Line. The proposed US 127 Alton Bypass as shown on Exhibit 4, begins at the junction of KY 512 and bypasses Alton to the east before tying back into existing US 127 just southeast of Alton. This corridor will be compatible with any future improvement to US 127 from Alton to I-64 at Frankfort.

## GEOLOGIC INFORMATION

A review of the surface geology along the Corridors considered was made by the Division of Materials. The entire route will be over the Cynthiana

Limestone Formation of Upper Ordovician Age. The Million Shale Formation, lower part of the Eden Formation, outcrops just north of the Anderson-Franklin County Line, but is outside the project limits. The Cynthiana Formation is made up of crystalline hard limestone and interbedded thin shale layers. There were no rock slide talus areas, sinks or solution channels observed within the limits of this project.

COST ESTIMATES

The earthwork quantities for this study were computed electronically. Structure sizes were determined by computing the sizes of the drainage areas from topo maps and the pavement design was determined from anticipated equivalent wheel loads. Right-of-way and utility cost estimates were furnished by the District office. Cost estimates for this study were based on a Class 1, 4-lane facility from the south terminus to the US 127 Alton Bypass, and a Class 2 facility for the remainder of the route including the US 127 Alton Bypass. The following cost estimates are based on estimated 1968 values and full safety criteria.

KY 151 ALTON BYPASS

	<u>Corridor "A"</u>	<u>Corridor "B"</u>	<u>US 127 Alton Bypass</u>
Length (miles)	4.32	4.30	1.751
Prel. Engr.	\$81,000	\$79,000	\$36,000
Utilities	40,000	28,000	5,000
Right of Way	400,000	249,000	168,300
Grade and Drain	831,000	811,000	262,700
Surfacing	520,000	510,000	176,000
Bridges	-----	-----	-----
10% Engr. & Contg.	<u>135,000</u>	<u>132,000</u>	<u>43,900</u>
TOTAL	\$2,007,000	\$1,809,000	\$691,900

## RECOMMENDATION

Construction of a new facility in Corridor B as shown on Exhibit 5, with concurrent construction of the US 127 Alton Bypass is recommended in this study. US 127 from the north end of the Lawrenceburg Bypass to the beginning of the proposed US 127 Alton Bypass will be constructed as a Class 1, four-lane facility. From the junction of the proposed US 127 Alton Bypass north to the new section of KY 151 will be a Class 2 facility. After the construction of this project as recommended, and the future widening of the Lawrenceburg Bypass to four lanes, the weighted design capacity would be 1,020 VPH and the level of service from the Bluegrass Parkway to I-64 at Graefenburg would be a high level "C". The existing low level of service of the new facility between the north end of the studied project and I-64, and the high design hour volume of 1,440 on the future four lanes of the Lawrenceburg Bypass, which has four at-grade intersections and insufficient operating speeds to function with expressway capacities keeps the overall level of service below "B".

Corridor B was chosen based on the following factors:

1. The alignment within Corridor B is estimated to cost approximately \$198,000 less to construct than the alignment shown within Corridor A.
2. Corridor B requires taking 6 fewer residences and 5 less farm buildings than Corridor A which is indicative of the cheaper right-of-way cost estimated for Corridor B.
3. The alignment within Corridor A would require about 4,000 feet of its length to be constructed under traffic while Corridor B would require only about 1,500 feet.

Other determinants for comparing alternates, as listed in Mr. E. H. Swick's memorandum, are considered to be insignificant in choosing either Corridor A or B. This project will have partial control of access.

It is recommended that the US 127 Alton Bypass be constructed within the indicated corridor concurrently with the KY 151 Alton Bypass. The alignment shown within this corridor was chosen as a practical and feasible location after studying US 127 from Alton to I-64 near Frankfort. Alignments were projected and grades were plotted considering the ultimate reconstruction of the entire route and it was determined that the indicated location of the US 127 Alton Bypass would be compatible with the probable future alignment of US 127 when it is completely reconstructed between Alton and I-64. This preliminary investigation also indicated that a level of service "B" can ultimately be obtained for US 127 between Alton and I-64 utilizing the alignment shown for the bypass.

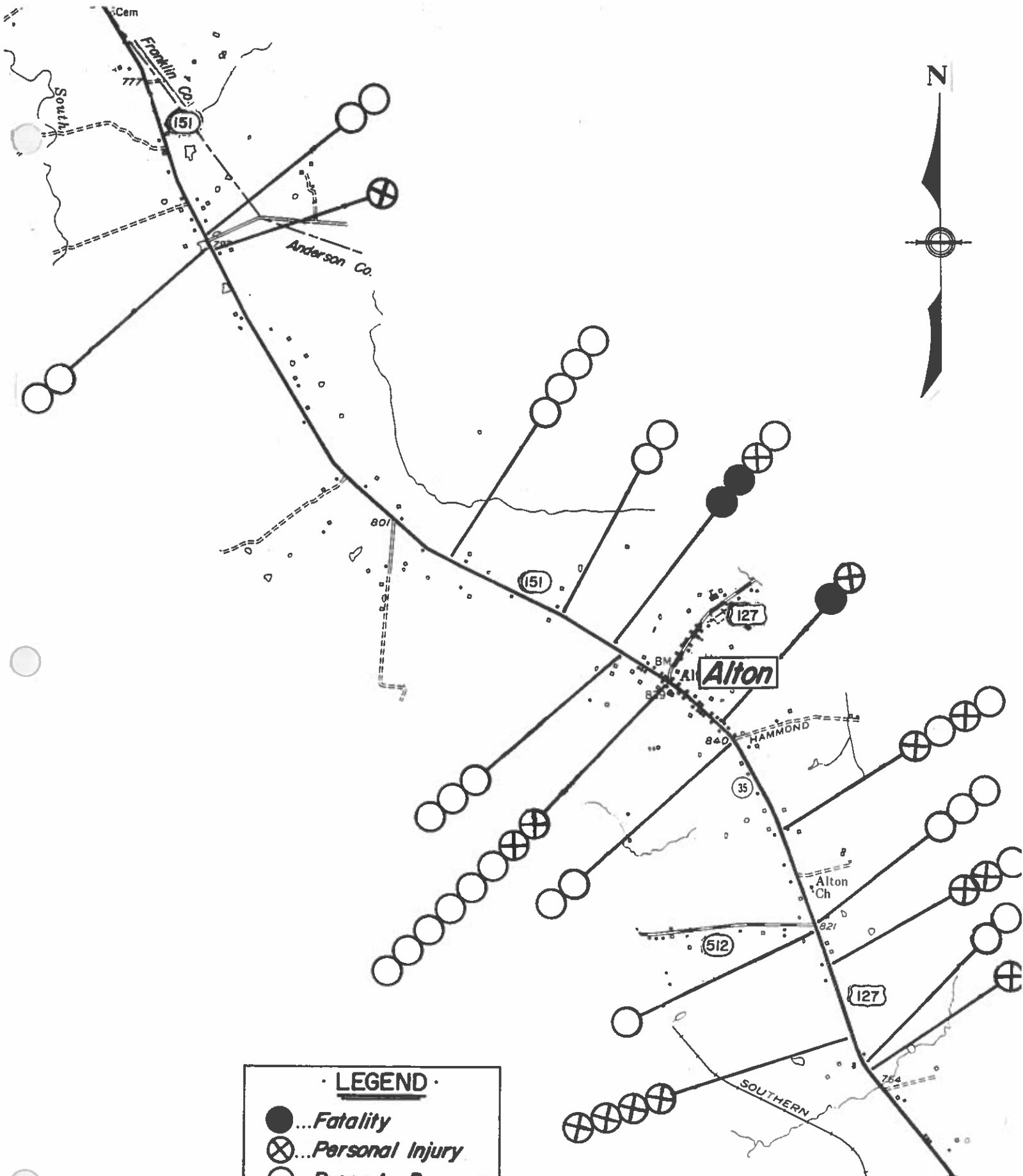
As both present and projected traffic turning movements slightly favor KY 151 towards Graefenburg over US 127 towards Frankfort, and because KY 151 traffic consist of a higher precentage of trucks and KY 151 has always been the through movement, it is recommended the KY 151-US 127 intersection be designed so as to give KY 151 the through movement.

It is recommended that the US 127 Alton Bypass have partial control of access as it is entirely on new location traversing farmland. This partial control of access agrees with the need to insure adequate future capacity in keeping with the routes' State Primary designation.

It is proposed that the existing highway facilities which will be replaced by new construction be deleted from State maintenance and become a maintenance responsibility of the county.



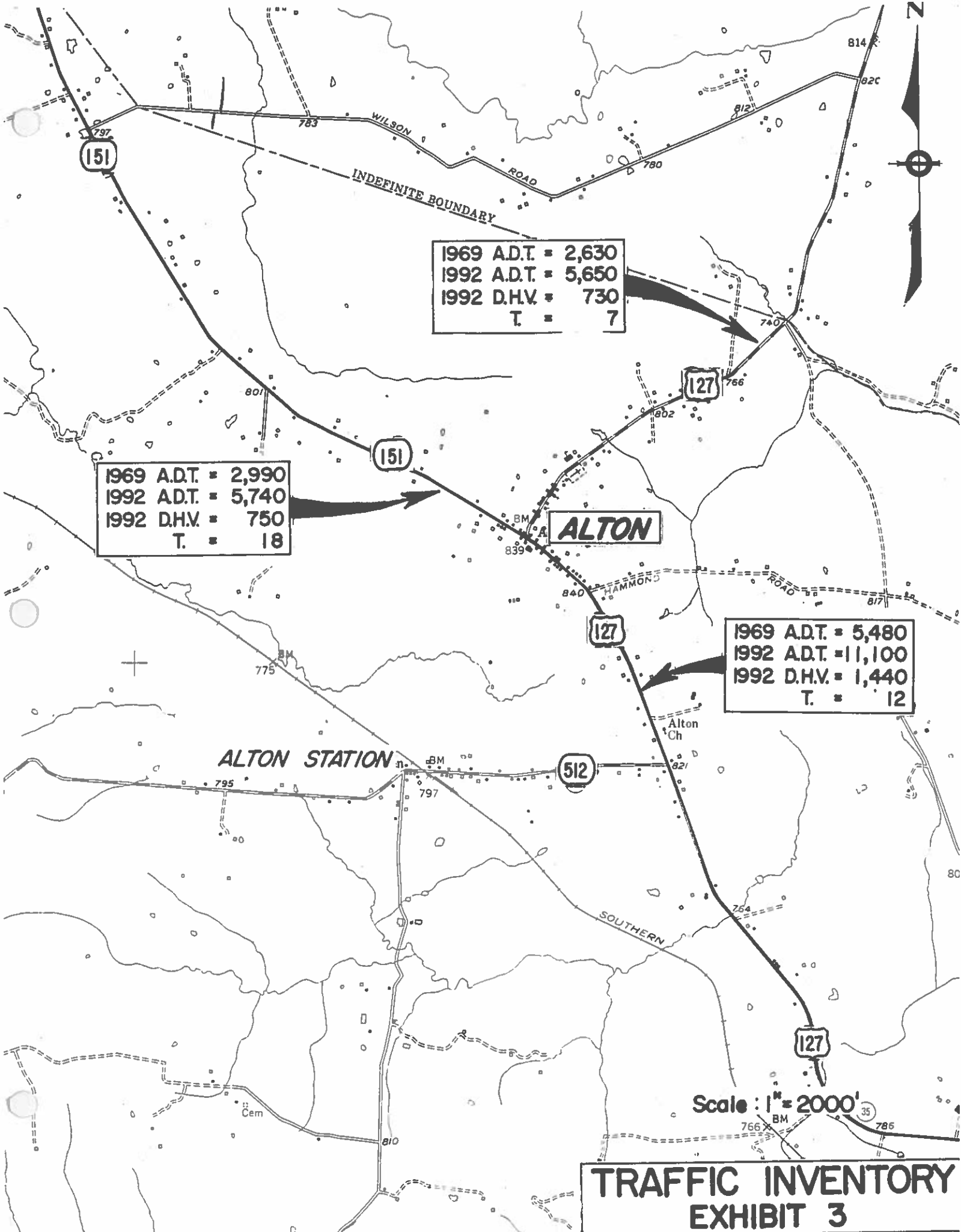
**VICINITY MAP**  
**EXHIBIT I**  
Scale: 1" = 12 Mi.



**· LEGEND ·**

- ...*Fatality*
- ⊗ ...*Personal Injury*
- ...*Property Damage*

**ACCIDENT INVENTORY**  
**1964 - 1966**  
**EXHIBIT 2**  
 Scale : 1" = 2000'



**TRAFFIC INVENTORY  
EXHIBIT 3**

KENTUCKY DEPARTMENT OF HIGHWAYS

DATE: 10/23/69

ROUTE STUDY PROGRAMMING DATA SUMMARY

BY: JHH

1. DISTRICT 7		2. COUNTY Anderson		3. ROUTE NUMBER US 127 and KY 151	
4. ROAD SYSTEM FAP		5. ROAD NAME Lawrenceburg - Graefenburg		6. PROBABLE FINANCING Federal-aid	
7. STUDY DESCRIPTION Approximately 2000' south of the north jct. of US 127 and the US 127 BEGINNING AT: Lawrenceburg Bypass.  ENDING AT: The juct. of KY 151 near the Franklin - Anderson County Line					
8. TYPE OF IMPROVEMENT New Construction			9. MAINTENANCE RESPONSIBILITY State		
10. PROJECT LENGTH 4.3		11. DESIGN CLASS 1 and 2		12. MEDIAN WIDTH 36' Depressed	
13. ACCESS CONTROL Partial Control		14. TRAFFIC PRESENT 2990 to 5480 PROJECTED 5740-11,106		15. LEVEL OF SERVICE C	
16. COST ESTIMATE					
DATE OF ESTIMATE _____			FISCAL YEAR		
			PROGRAMMED		SCHEDULED
P E _____		\$79,000			
RIGHT OF WAY _____		249,000			
UTILITIES (COST TO DEPT.) _____		28,000			
GRADE & DRAIN _____		811,000			
BRIDGES 1. _____					
2. _____					
3. _____					
4. _____					
SURFACING _____		510,000			
10% FOR CONST. ENGR. & CONTINGENCIES _____		132,000			
TOTAL _____		\$1,809,000			
17. INDIVIDUALS TO BE DISPLACED 18		18. FAMILIES TO BE DISPLACED 6		19. RESIDENCES TO BE DISPLACED 6	
20. BUSINESSES TO BE DISPLACED 0		21. NONPROFIT ORGANIZATIONS TO BE DISPLACED 0		22. FARM BUILDINGS TO BE DISPLACED 2	
23. APPROXIMATE NUMBER OF R/W PARCELS INVOLVED 30			24. RELOCATION ASSISTANCE COST \$23,000*		
25. UTILITY COMPANIES INVOLVED (1) Kentucky Utilities Company (2) South Central Bell Telephone & Telegraph Co. (3) Alton Water District (4) Western Kentucky Gas (5) Fox Creek RECC.					
26. REMARKS: * Included in R/W Estimate Two Real Estate firms, The Green Realty Company and the Birdwhistle Realty Co., has indicated that by the time this project is in the R/W stage there will be plenty of adequate replacement housing available within the financial means of the relocatees listed above.					

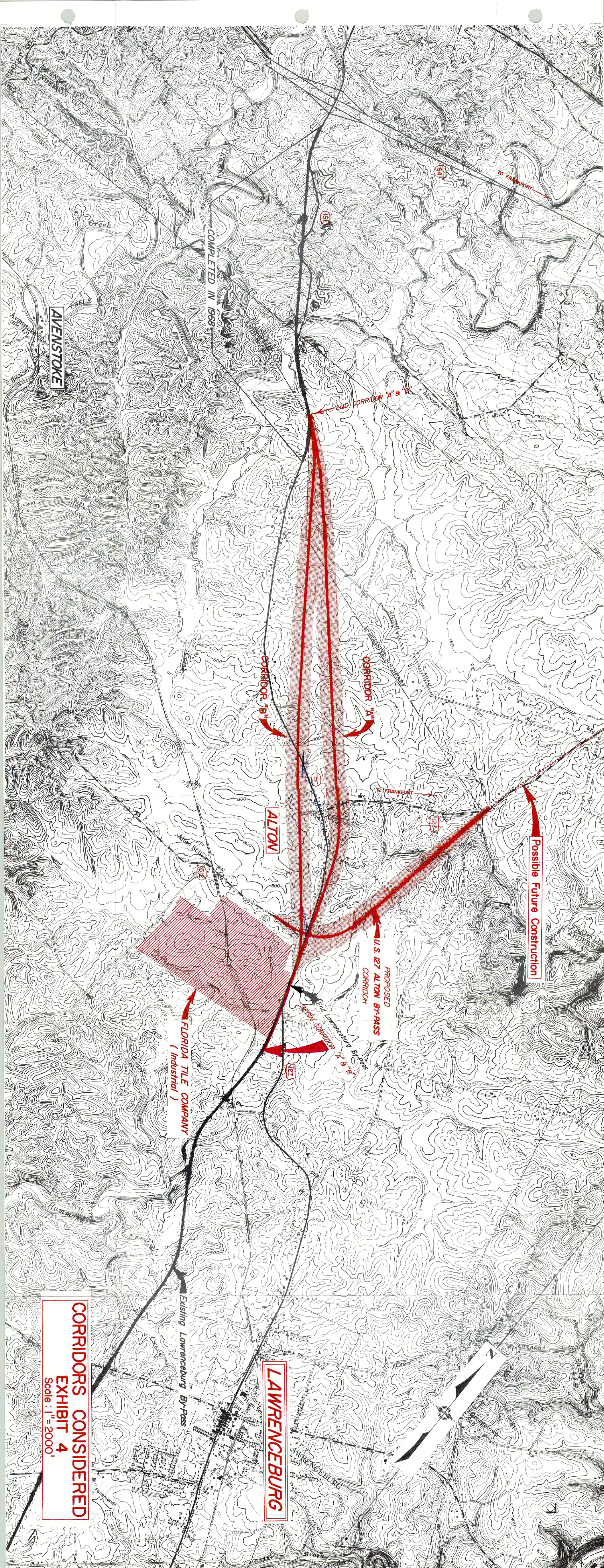
KENTUCKY DEPARTMENT OF HIGHWAYS

DATE: 10/23/69

ROUTE STUDY PROGRAMMING DATA SUMMARY

BY: JHH

1. DISTRICT 7		2. COUNTY Anderson		3. ROUTE NUMBER US 127	
4. ROAD SYSTEM FAP		5. ROAD NAME US 127 Alton Bypass		6. PROBABLE FINANCING Federal-aid	
7. STUDY DESCRIPTION  BEGINNING AT: Jct. KY 512 and US 127 south of Alton  ENDING AT: Jct. US 127 - Franklin-Anderson County Line					
8. TYPE OF IMPROVEMENT New Construction			9. MAINTENANCE RESPONSIBILITY State		
10. PROJECT LENGTH 1.75 mi.		11. DESIGN CLASS 2		12. MEDIAN WIDTH --	
13. ACCESS CONTROL Partial control		14. TRAFFIC PRESENT 2630 PROJECTED 5650 DHV 730		15. LEVEL OF SERVICE --	
16. COST ESTIMATE					
DATE OF ESTIMATE _____				FISCAL YEAR PROGRAMMED   SCHEDULED	
P E _____		\$36,000			
RIGHT OF WAY _____		168,300			
UTILITIES (COST TO DEPT.) _____		5,000			
GRADE & DRAIN _____		262,700			
BRIDGES 1. _____					
2. _____					
3. _____					
4. _____					
SURFACING _____		176,000			
10% FOR CONST. ENGR. & CONTINGENCIES _____		43,900			
TOTAL _____		\$691,900			
17. INDIVIDUALS TO BE DISPLACED 13		18. FAMILIES TO BE DISPLACED 3		19. RESIDENCES TO BE DISPLACED 3	
20. BUSINESSES TO BE DISPLACED 0		21. NONPROFIT ORGANIZATIONS TO BE DISPLACED 0		22. FARM BUILDINGS TO BE DISPLACED 1	
23. APPROXIMATE NUMBER OF R/W PARCELS INVOLVED			24. RELOCATION ASSISTANCE COST \$7,650*		
25. UTILITY COMPANIES INVOLVED (1) Alton Water District (2) Kentucky Utilities (3) South Central Bell Telephone & Telegraph Company					
26. REMARKS: * Included in R/W Estimate For information relative on availability of replacement housing see the preceding program Data Summary Sheet.					



Possible Future Construction

U.S. 27 ALTON BY-PASS  
PROPOSED CORRIDOR

CORRIDOR "A"

CORRIDOR "B"

ALTON

FLORIDA TILE COMPANY  
(Industrial)

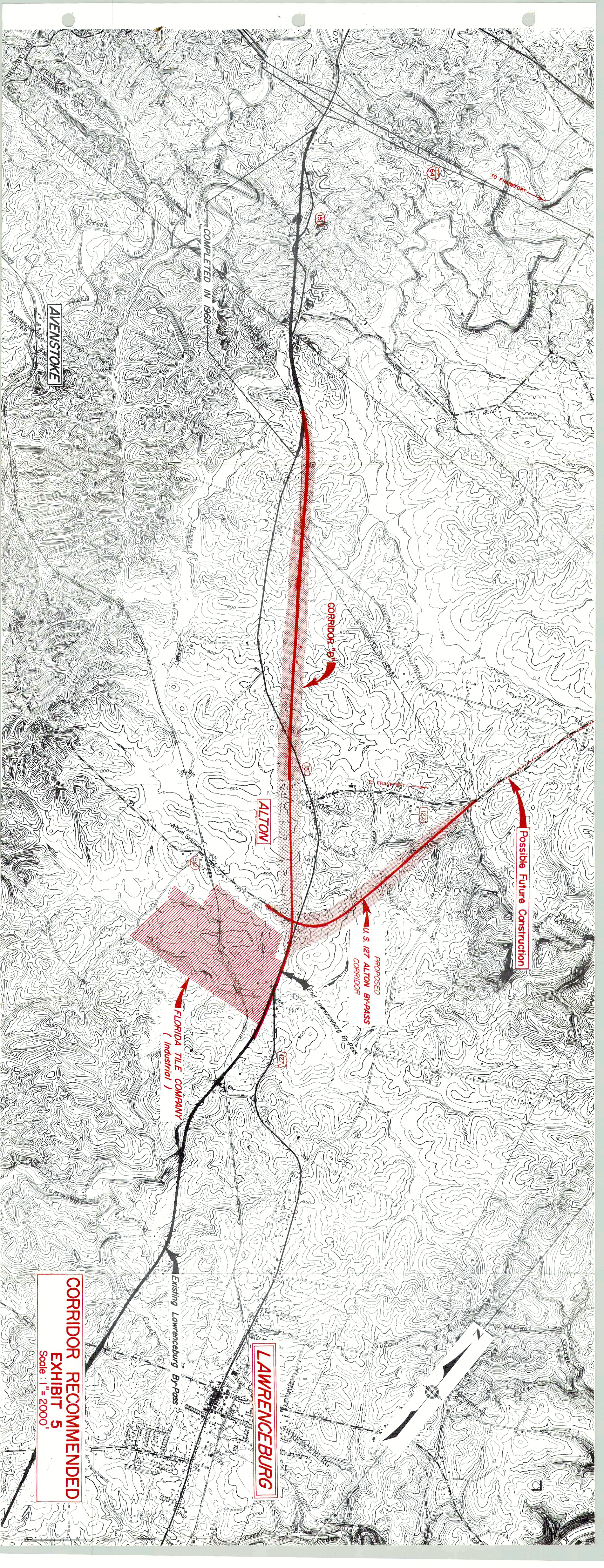
Existing Lawrenceburg By-Pass

LAWRENCEBURG

AVENSTOKE

COMPLETED IN 1968

CORRIDORS CONSIDERED  
EXHIBIT 4  
Scale : 1" = 2000'



AVENSTOKE

COMPLETED IN 1968

TO FRANKFORT

CORRIDOR 'B'

ALTON

Possible Future Construction

PROPOSED U.S. 127 ALTON BY-PASS CORRIDOR

FLORIDA TILE COMPANY (Industrial)

Existing Lawrenceburg By-Pass

LAWRENCEBURG

CORRIDOR RECOMMENDED

EXHIBIT 5

Scale : 1" = 2000'