PROJECT Nº
85-8-3-0

ADVANCED PLANNING PROJECT REPORT

PULASKI COUNTY
KY. 635
Southern Railway Crossing at Science Hill

KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
DIVISION OF PLANNING

COMMONWEALTH OF KENTUCKY
TRANSPORTATION CABINET
FRANKFORT, KENTUCKY 40622

C. LESLIE DAWSON
SECRETARY
AND
COMMISSIONER OF HIGHWAYS

MARTHA LAYNE COLLINS
GOVERNOR

MEMORANDUM

TO: Robert Capito
Glen Kelly
Bruce Siria
Leroy Brown
R. A. Johnson
Bill Hippe
Larry Blevins
Floyd Hughes
Jim Smith
David Smith
Tom Layman
Leon Walden

FROM: for Donald L. Ecton, Director
Division of Planning
C. Wayne Carroll

DATE: November 13, 1985

SUBJECT: Advanced Planning Project Report
KY 635 - Southern Railway Crossing
at Science Hill
Pulaski County

Attached is a copy of the Advanced Planning Report for the subject project. The Division of Planning has recently completed this report and it is being distributed for your information.

DLE:DMW:ch

Attachment

ADVANCED PLANNING REPORT

PULASKI COUNTY
KY. 635
Southern Railway Crossing at Science Hill

KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

PREPARED BY
DIVISION OF PLANNING

Project Engineer: DAVID WALDNER

November , 1985

Approval Recommended By:

DIVISION OF PLANNING

Donald L. Eaton Date 11/7/85

Donald L. Eaton, P.E., Director

Approved By:

KENTUCKY DEPARTMENT OF HIGHWAYS

Date: 11/11/85

R. K. Coate, P.E., State Highway Engineer

KENTUCKY TRANSPORTATION CABINET
DIVISION OF PLANNING
PROJECT PLANNING REPORT EXECUTIVE SUMMARY SHEET

PROJECT ID NUMBER_____ PROJECT ENGINEER David Waldner

FEDERAL PROJECT NUMBER_____ DATE November 1985

LOCATION INFORMATION

COUNTY	COUNTY NO.	DISTRICT HWY.	DISTRICT ADD	ROUTE NO.	ROUTE NAME
PULASKI	100	8	14	KY 635	

CITY: SCIENCE HILL

PROJECT DESCRIPTION: KY 635 crossing of the Southern Railway

HWY. SYSTEMS STATE	HWY. SYSTEMS FED.	FUNCT. CLASS	PROJECT LENGTH / MILEPOINT(S)
SS	FAS	Major Collector	0.37 (mi)

EXISTING CONDITIONS

AREA TYPE: RURAL OR URBAN	OPERATING SPEED	NO. OF LANES	PAVEMENT WIDTH	SHLDR. WIDTH	DITCH WIDTH	MEDIAN WIDTH AND TYPE
SUBURBAN	25-35	2	18-20	0-4		NA

ADEQUACY RATING	LEVEL OF SERVICE	ACCIDENT RATE/STATEWIDE AVG.	MAINT. RESPONSIBILITY	ACCESS CONTROL
59 (AVG)		460/262	STATE	PERMIT

TRAFFIC

EXISTING, YEAR 1985

ADT = 1820
%T = 5% (ADT) & 3% (DHV)

PROJECTED, DESIGN YEAR_____

ADT = 2920
DHV = 220
%T = 5% (ADT) 3% (DHV)
EAL's = 271,900/Lane

DESIGN CRITERIA

DESIGN SPEED	NO. OF LANES	PAVEMENT WIDTH	SHLDR. WIDTH	DITCH WIDTH AND SLOPE
30	2	22	8	6' @ 4:1

MEDIAN WIDTH AND TYPE	MIN. BRIDGE WIDTHS	DESIGN YR. LEVEL OF SERVICE	MAINT. RESPONSIBILITY	ACCESS CONTROL
NA	28'		STATE	PERMIT

ALTERNATIVES CONSIDERED

ALTERNATIVES CONSIDERED (SEE EXHIBIT IMMEDIATELY FOLLOWING THIS SHEET)

"Do-Nothing"

Alternate 1: Begins at the Stanford St. - Liberty Rd. Intersection, overpasses the Southern Railway, then terminates at grade with KY 1247.

Alternate 2: Begins at the Stanford St.-Liberty Rd. Intersection, overpasses the Southern Railway, intersects at grade with KY 1247, then terminates at the existing KY 635-US 27 Intersection.

Alternate 3: Begins at the Stanford St.-Liberty Rd. Intersection, overpasses the Southern Railway, intersects at grade with KY 1247, and continues westerly to intersect with US 27.

Alternate 4: Begins at US 27, intersects at grade with KY 1247, overpasses N. Stanford St. and the Southern Railway, then continues westerly to return to the existing roadway north of Science Hill.

PREFERRED ALTERNATIVE

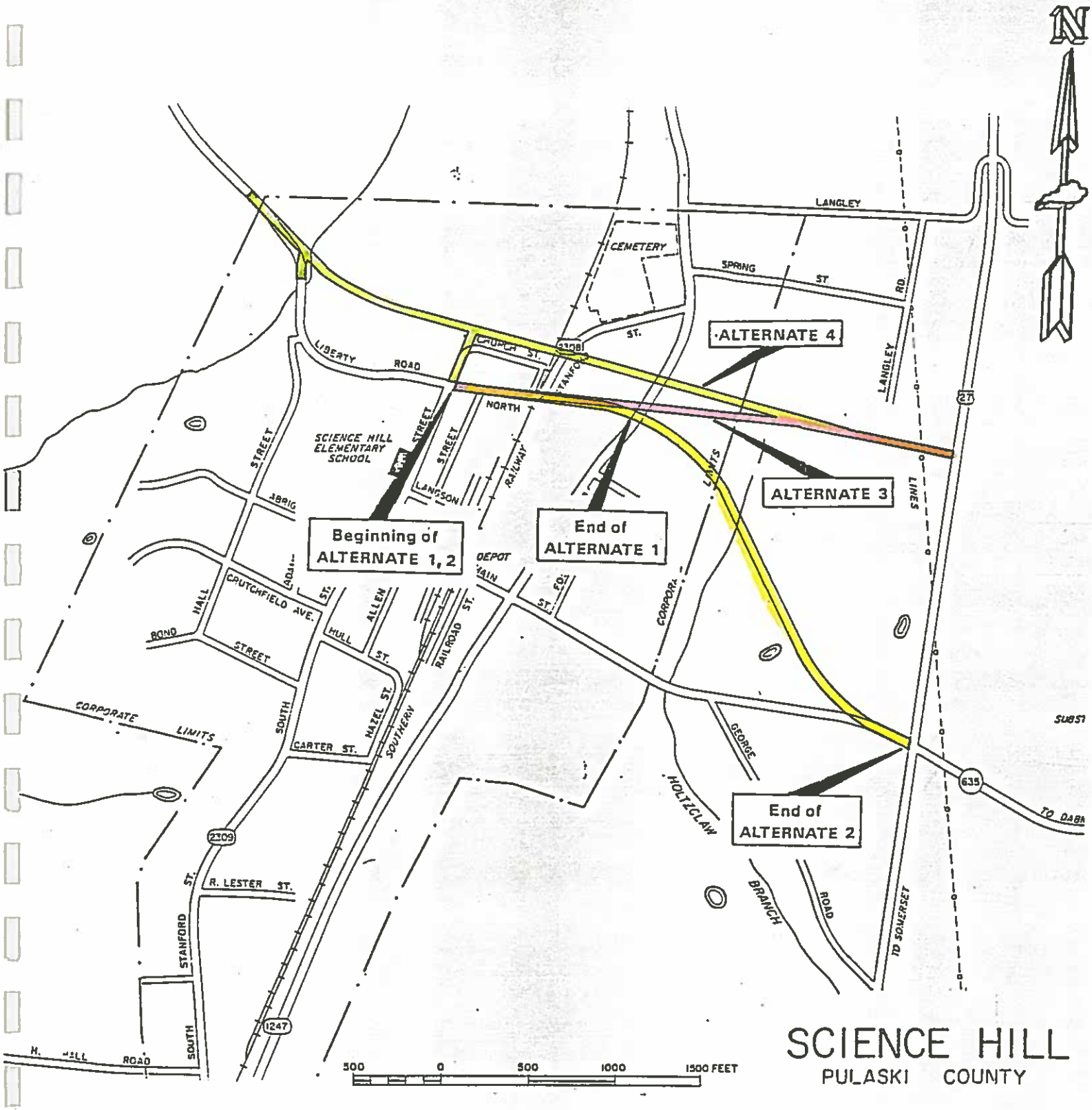
PREFERRED ALTERNATE: Alternate 1

COST ESTIMATES, BASE YEAR_____

LENGTH	0.37 mi.
P.E.	$ 24,000
R/W	48,000
UTIL.	50,000
CONST.	384,000
TOTAL	$651,000

ADDITIONAL REMARKS

ADDITIONAL REMARKS



SCIENCE HILL

PULASKI COUNTY

ALTERNATES 1,2,3 & 4

TABLE OF CONTENTS

Page

I. PURPOSE AND NEED 1

II. AFFECTED AREA 1
A. AREA DESCRIPTION AND NATURAL RESOURCES 1
B. PHYSIOGRAPHY AND GEOLOGY. 4
C. INVENTORY OF EXISTING HIGHWAY FACILITIES. 4
D. SYSTEMS 8
E. TRAFFIC 8

III. ALTERNATE EVALUATION 9
A. GEOMETRIC DESIGN CRITERIA 9
1. ELEVATE AT KY 1247 ONLY. 9
2. ELEVATE STANFORD ST. - LIBERTY ROAD INTERSECTION AND KY 1247 11
3. CONCLUSIONS. 11
B. ALTERNATIVES. 14
1. "DO-NOTHING" 14
2. ALTERNATE 1 14
3. ALTERNATE 2 17
4. ALTERNATE 3. 17
5. ALTERNATE 4. 19
C. COST ESTIMATES. 20
D. POTENTIAL PROBLEM AREAS 20
E. SYSTEMS CHANGES 20
F. POTENTIAL FUNDING SOURCES 22

IV. COMMENTS AND COORDINATION 22

V. CONCLUSIONS AND RECOMMENDATIONS 23

EXHIBITS

EXHIBIT 1 LOCATION MAP 2
EXHIBIT 2 VICINITY MAP 3
EXHIBIT 3 INVENTORY OF EXISTING HIGHWAY FACILITIES . . . 5
EXHIBIT 4 ACCIDENT INVENTORY 7
EXHIBIT 5 TYPICAL SECTIONS 10
EXHIBIT 6 ALTERNATE 1 AND 2. 14
EXHIBIT 7 ALTERNATE 3 AND 4. 16

I. PURPOSE AND NEED

The purpose of this document is to determine the need and extent of any needed improvements to the Southern Railroad crossing of KY 635 at Science Hill in Pulaski County. Currently, the residents of Science Hill are isolated several times daily by lengthy trains on the Southern Railway. This poses a hazardous situation for residents east of the tracks which are cut off from the local fire department. Residents west of the tracks are unable to travel south to Somerset to receive emergency medical attention.

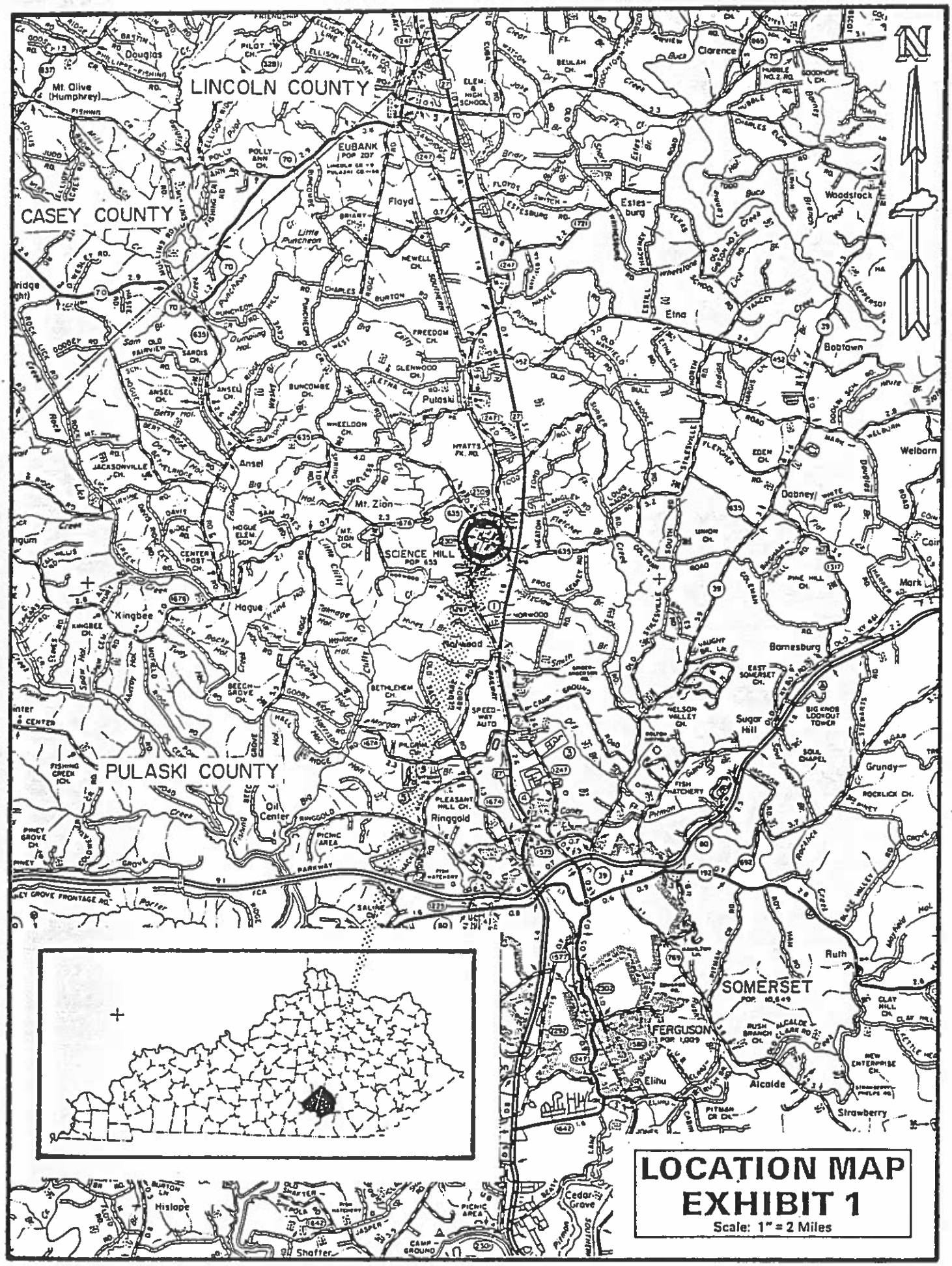
II. AFFECTED AREA

A. Area Description and Natural Resources

Pulaski County is located in the southern portion of the state in the Lake Cumberland Area Development District (see Exhibit 1). Pulaski County covers an area of 653 square miles and had a 1980 population of 45,803. It is bounded to the north by Lincoln County, to the west by Casey and Russell Counties, to the south by Wayne and McCreary Counties, and to the east by Laurel and Rockcastle Counties. The county seat of Pulaski County is Somerset which lies approximately five miles south of Science Hill (see Exhibit 2).

Pulaski County and its seven surrounding counties are identified as a labor market area for Somerset. The total number of residents in the labor market area employed in 1979 averaged approximately 67,400 with nonagricultural jobs accounting for more than 61,000 workers.

The mineral resources of the area include limestone, claystone, gravel, and groundwater. Limestone is available for crushed rock, while some high calcium limestones have been


LINCOLN COUNTY
CASEY COUNTY
PULASKI COUNTY
SOMERSET
N
Mt. Olive (Humphrey)
Douglas
EUBANK
POP 207
Floyd
Clarence
Woodstock
Estes-burg
Etna
Bobtown
Welborn
Pulaski
Ansel
Mt. Zion
SCENCE HILL
POP 633
Kingbee
Hague
Rolwood
Barnesburg
Sugar Hill
Grundy
Oil Center
Ringgold
Ruth
FERGUSON
POP 1,009
Elihu
Alcalde
Strawberry
Hislope
Cedar Grove
Shafter
LOCATION MAP
EXHIBIT 1
Scale: 1" = 2 Miles

SCIENCE HILL
PULASKI COUNTY

VICINITY MAP
EXHIBIT 2

discovered which are suitable for chemical uses. Clay shale is available and has been used further to the south for common brick, tile, and lightweight aggregate. Gravel can be found in large quantities in alluvial deposits of major streams in the area. The gravel is used extensively for fill and surface material on farm and secondary roads. Groundwater is available from shallow wells dug in alluvial deposits along creeks and from deeper wells which penetrate limestone formations on ridges.

B. Physiography and Geology

This project is located in the Mississippian Plateau Physiographic Region of Kentucky. The topography of the area is cut by streams and characterized by steep slopes and shale outcrops in the vicinity of major drainage lines. Extensive bottomlands have been carved by meandering rivers and streams. The project itself would be constructed upon the Saint Louis Limestone and the Salem and Warsaw Formations. The community of Science Hill was built upon the Saint Louis Limestone. This formation is 110-135 feet thick and consists primarily of a calcareous limestone with interbedded claystone and siltstone. As the project moves further from town, the Salem and Warsaw Formation would be encountered. This formation is 45-70 feet thick and is comprised of limestone, sandstone, siltstone, and shale.

C. Inventory of Existing Facility

KY 635 between US 27 and KY 1247 has a roadway width of 20 feet with unstabilized shoulders of two to three feet and a posted speed of 35 miles per hour (see Exhibit 3). This section contains two horizontal alignment deficiencies and three stopping sight distance restrictions. Between KY 1247 and Mill Street, a 20-foot pavement with 2-foot unstabilized shoulders and a 25 mile per hour posted speed

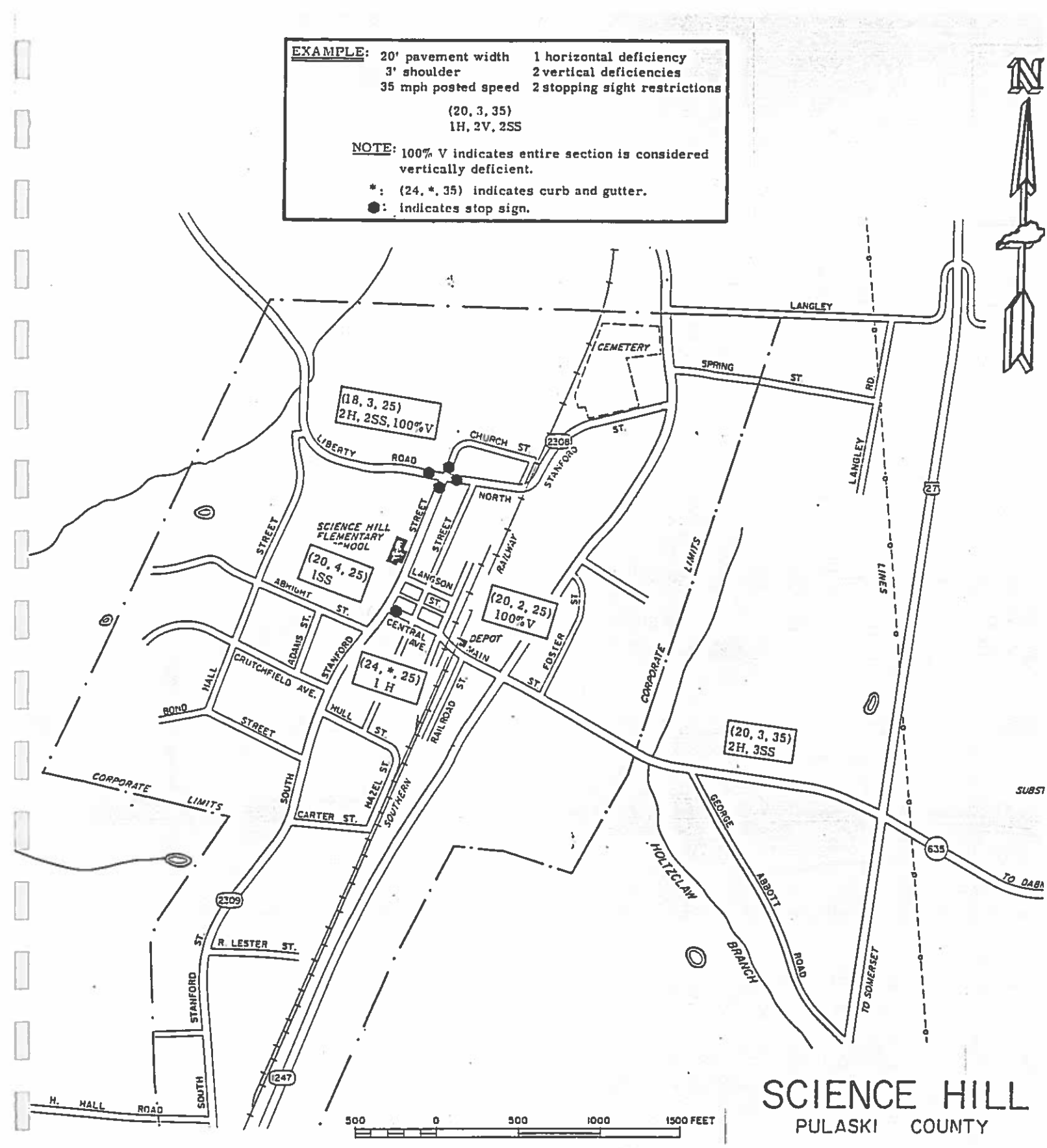
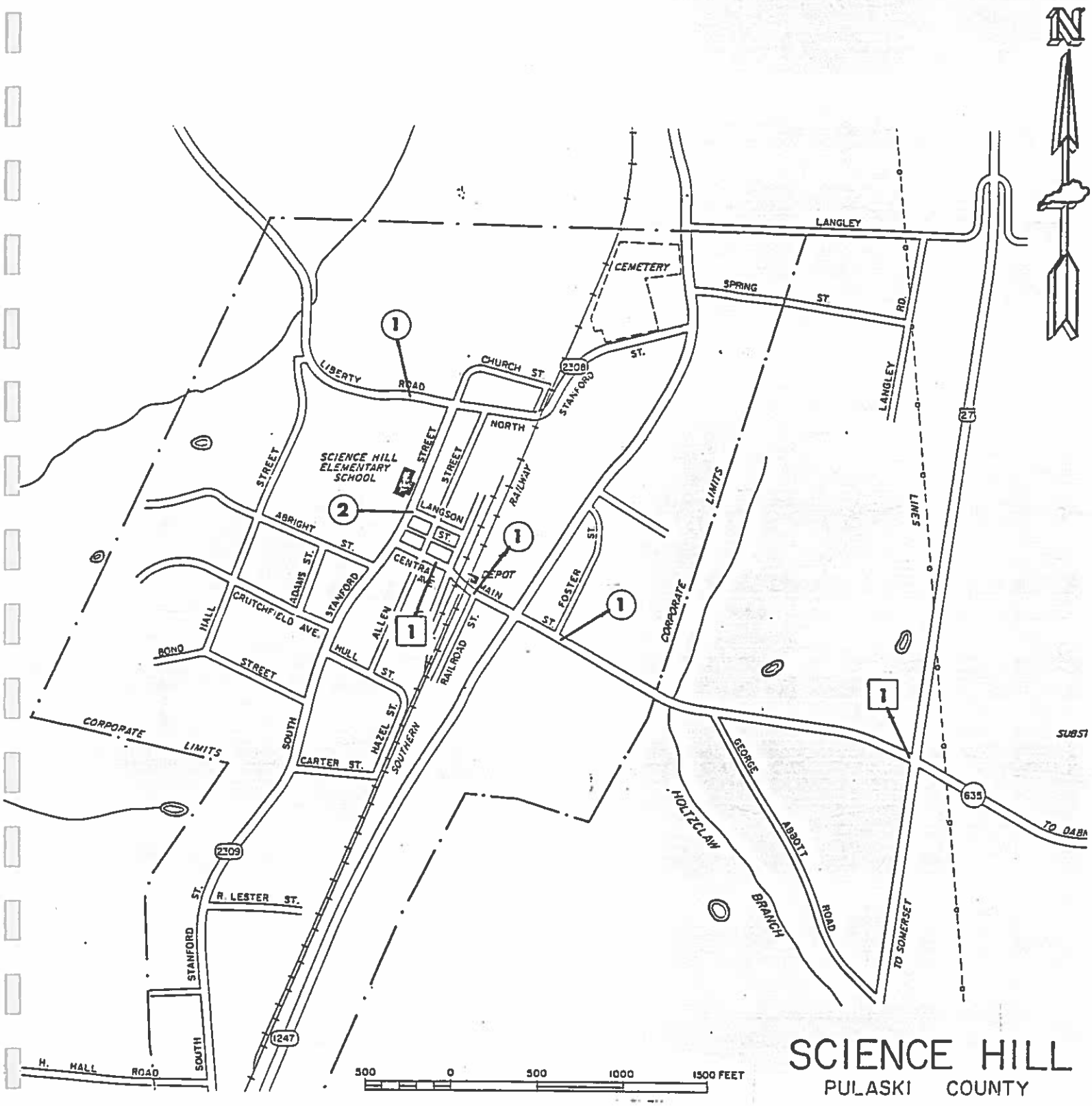


EXHIBIT 3
Inventory of Existing Facility

limit is encountered. This entire section is vertically deficient due to the steep grade associated with the at-grade railroad crossing. That portion which lies between Mill Street and Stanford Street is a curb and gutter section with a 24-foot pavement and a posted speed limit of 25 miles per hour. Traffic travelling west on Central Avenue is controlled by a stop sign at its intersection with North Stanford Street. One horizontal deficiency is located within this section. North Stanford Street is characterized by a 20-foot pavement with 4-foot unstabilized shoulders and a 25 mile per hour posted speed limit. A four-way stop sign controls traffic at the intersection of Church Street, North Stanford Street, South Stanford Street, and Liberty Road (KY 635). Liberty Road has an 18-foot pavement with 3-foot unstabilized shoulders and a posted speed limit of 25 miles per hour between North Stanford Street and the northwestern city limits of Science Hill. There are two horizontal deficiencies and two stopping sight restrictions in the section. The entire section is considered to be vertically deficient.

The Southern Railroad tracks (one mainline and one spur) carry an average of 35 trains per day travelling at a speed of approximately 30 miles per hour. Both the crossing at KY 635 and the crossing at North Stanford Street are protected by automatic gates.

An accident inventory from January 1, 1983, through January 1, 1985, indicates that there were only four accidents reported for the section of roadway between US 27 and Stanford Street of which two involved personal injury. Three property damage accidents were recorded for the 0.25 mile section of KY 635 which lies between the intersection with South Stanford Street and the northwest city limits. None of these accidents involved a personal injury. Accident types and locations can be seen on Exhibit 4. Based on this



SCIENCE HILL
PULASKI COUNTY

LEGEND

(2) NUMBER OF PROPERTY DAMAGE ONLY
[2] NUMBER OF PERSONAL INJURY
⟨6⟩ NUMBER OF FATALITY

EXHIBIT 4
ACCIDENT INVENTORY
1/1/83 – 1/1/85

accident information, the following accident rates per 100 million vehicle miles of travel were calculated:

1. From US 27 to Stanford Street - 460; and

2. From Stanford Street to the northwest city limits - 703.

The accident rates can be compared to the 1983 rate of 292 accidents per 100 million vehicle miles of travel on rural highways. Caution, however, should be used in drawing conclusions from this information since these sections of roadway are located near a community, a factor not accounted for in the 1983 accident rate. A higher than average accident rate in the vicinity of even a small community would be expected and indeed is the case with each of these sections.

D. Systems

KY 635 in the project area is on the Federal-aid and State Secondary Systems and is classified as a Rural Major Collector on the 1985 Functional Classification System.

E. Traffic

The 1985 average daily traffic (ADT) for this section of KY 635 is approximately 1,820 vehicles per day (vpd). The year 2005 projected traffic is 2,920 vpd with a design hour volume (DHV) of 220 vehicles. The truck traffic is projected to be five percent of the ADT and three percent of the DHV. Predicted equivalent axle loads (EAL's) for this portion of KY 635 are estimated to be 271,900/lane. Thirty-five trains per day averaging greater than one mile in length pass through Science Hill daily at an average speed of 30 miles per hour. Train traffic is so closely related to economic conditions that it is difficult to predict

increases or decreases in future traffic, however, it is anticipated that the number of trains should remain relatively constant in the foreseeable future.

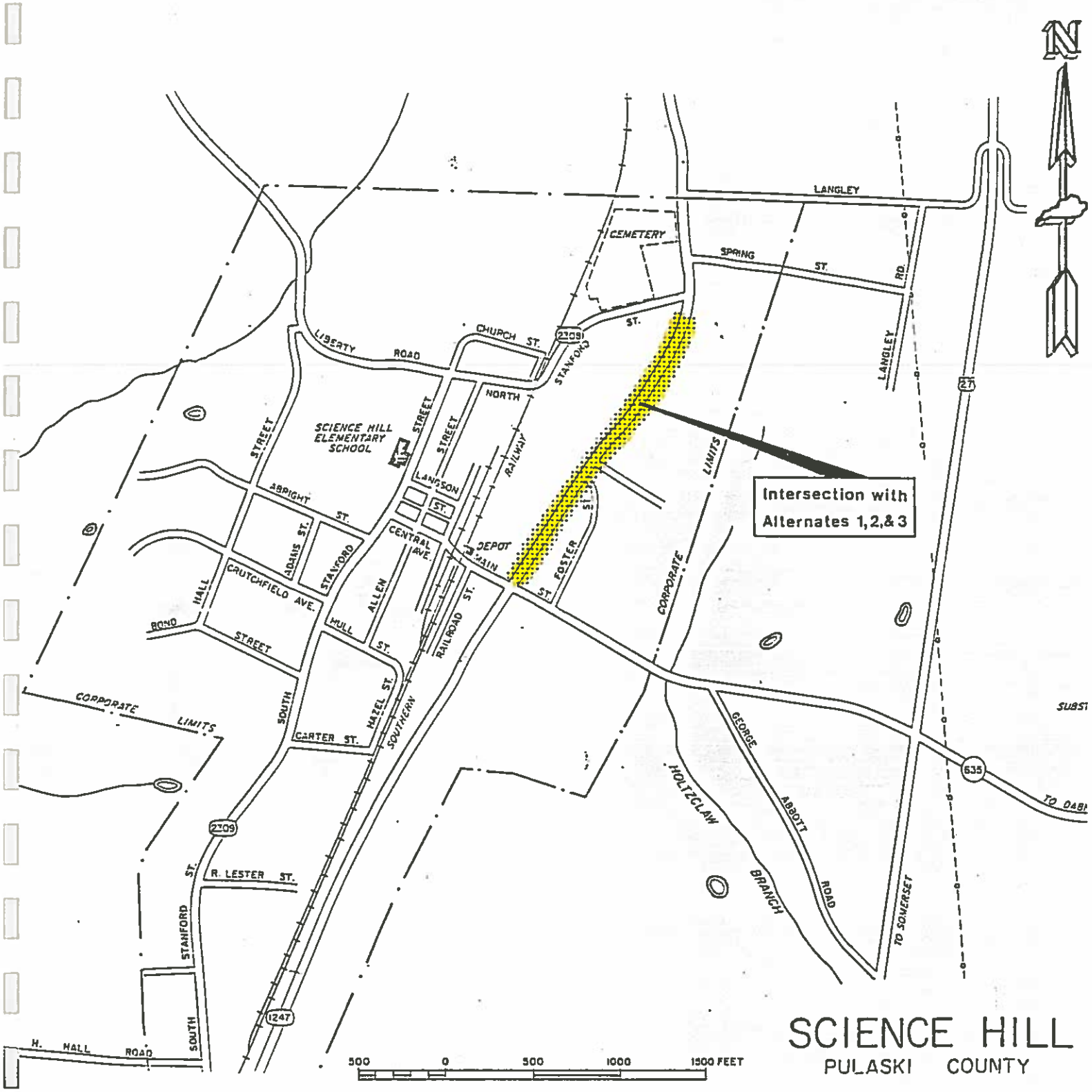
III. ALTERNATE EVALUATION

A. Geometric Design Criteria

Based upon A Policy on Geometric Design of Highways and Streets (Green Book) by the American Association of State Highway and Transportation Officials (AASHTO), a rural collector with the above described traffic and in rolling terrain requires a minimum design speed of 40 miles per hour. At-grade intersections with KY 1247 and Stanford Street - Liberty Road are proposed. In order for Alternates 1, 2, and 3 to intersect at grade at these locations and maintain the desired 26 feet of clearance utilizing a 40 mph design speed, reconstruction of one or both of the intersections to raise the elevations will be necessary. However, if a 30 mph design speed is used, the desired clearance can be achieved without major reconstruction at either of the intersections. A discussion of the additional costs and impacts associated with using the 40 mph design speed follows.

1. Elevate at KY 1247 Only

In order to avoid reconstruction of the Stanford Street - Liberty Road Intersection, it would be necessary to raise the elevation of KY 1247 by approximately 16 feet at the locations where Alternates 1, 2, and 3 intersect. This would require reconstruction of 1,900 feet of existing roadway and would involve the purchase of several pieces of expensive right of way. Cost estimates for this reconstruction can be found in Table 1 and the reconstruction limits can be seen on Exhibit 5.



SCIENCE HILL
PULASKI COUNTY

-LEGEND-
Reconstruction

EXHIBIT 5
Raise Ky. 1247 16 Feet

2. Elevate Stanford Street - Liberty Road Intersection and KY 1247

The desired track clearance can also be achieved by elevating the Stanford Street - Liberty Road Intersection and KY 1247 by approximately five feet each. This would require the reconstruction of 1,720 feet of KY 1247. Elevating the Stanford Street - Liberty Road Intersection poses an expensive problem. Due to the steep grades of Liberty Road east of the intersection (9.3 and 11%), a new segment of roadway would be required to rejoin the existing alignment. This new segment would be approximately 1,600 feet in length. In addition to this, reconstruction of 100 feet north on Cross Street and 100 feet south on Stanford Street would be required (see Exhibit 6). Cost estimates for this construction can also be found in Table 1.

3. Conclusions

Several factors must be considered when trying to justify a 30 mph design speed for this section. The entire length of Alternate 1 as well as the major portion of Alternates 2 and 3 is located within the Science Hill city limits where a 30-35 mile per hour speed limit would be desirable. Each of the alternates will require traffic to stop at the Stanford Street - Liberty Road Intersection while Alternate 1 will also require a stop at the intersection with KY 1247. Taking these factors into consideration as well as the short length of the project and the expensive additional costs of remaining within the design specifications, a 30 mph design speed is justifiable.

Based upon the AASTHO "Green Book" a rural collector with the previously described traffic and a 30 or 40 mph design speed would be characterized by 11-foot lanes and 8-foot shoulders. A 6-foot ditch with a 4:1 slope would

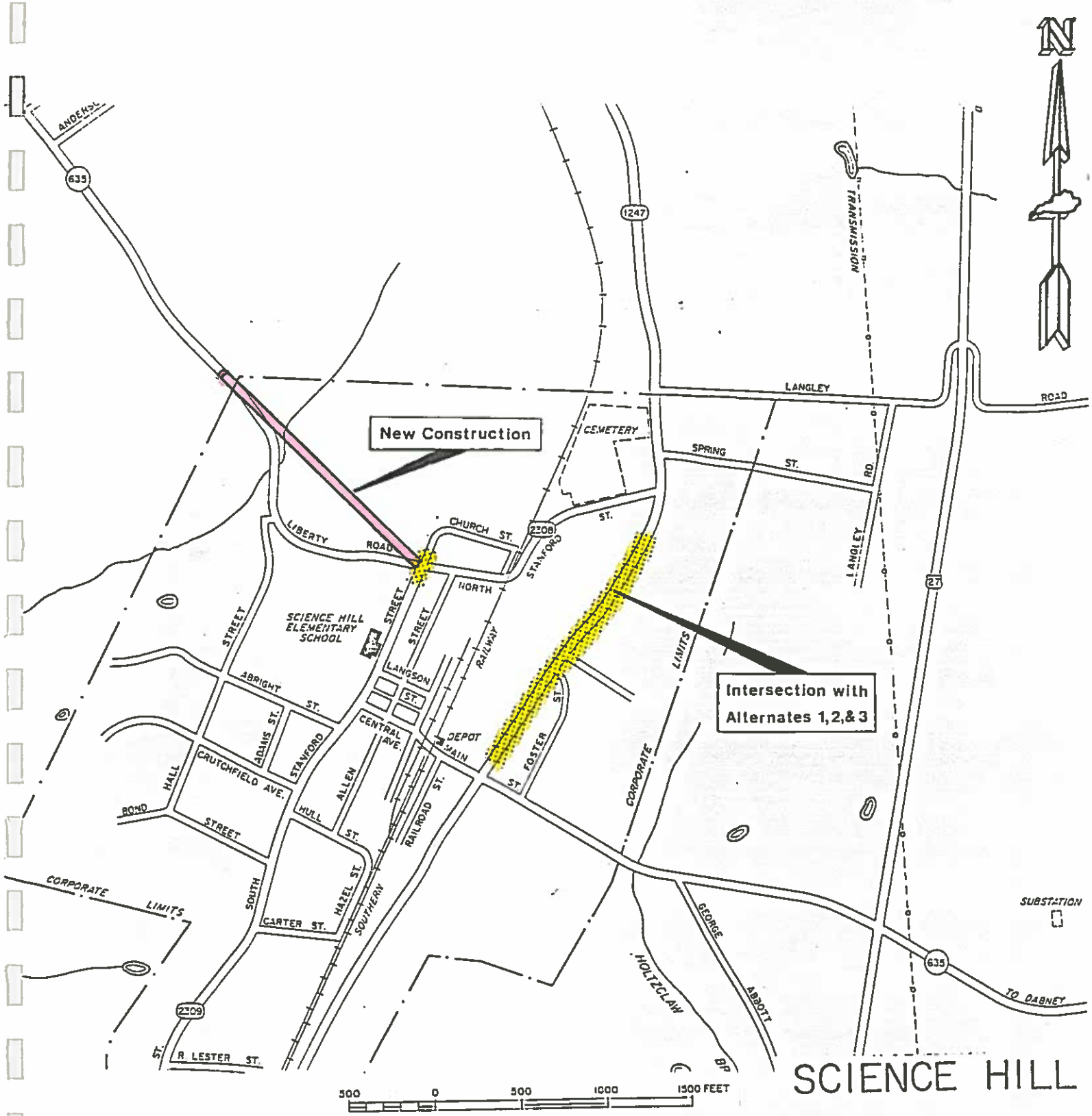
TABLE 1

COST ESTIMATES

REQUIRED RECONSTRUCTION IF USE A 40 MPH DESIGN SPEED

RECONSTRUCTION OPTION	RAISE KY 1247 16'	RAISE KY 1247 & STANFORD ST. - LIBERTY RD. INTERSECTION BY 5' EACH
Reconstructed Length	0.36	0.65
Preliminary Engineering	$ 17,000	$ 24,000
Right of Way	393,000	799,000
Utilities	16,000	10,000
Grade & Drain*	123,000	253,000
Surfacing*	119,000	216,000
TOTAL	$668,000	$1,302,000

*Includes 10% Construction Engineering and Contingencies.



-LEGEND-
Reconstruction

EXHIBIT 6
Raise Ky. 1247 and
Stanford Street Liberty Road
Intersection 5' each

provide the required "clear zone" as indicated in AASHTO's Guide for Selecting, Locating, and Designing Traffic Barriers. The bridge structure would utilize 11-foot lanes with 3-foot shoulder. Exhibit 7 shows the proposed typical sections.

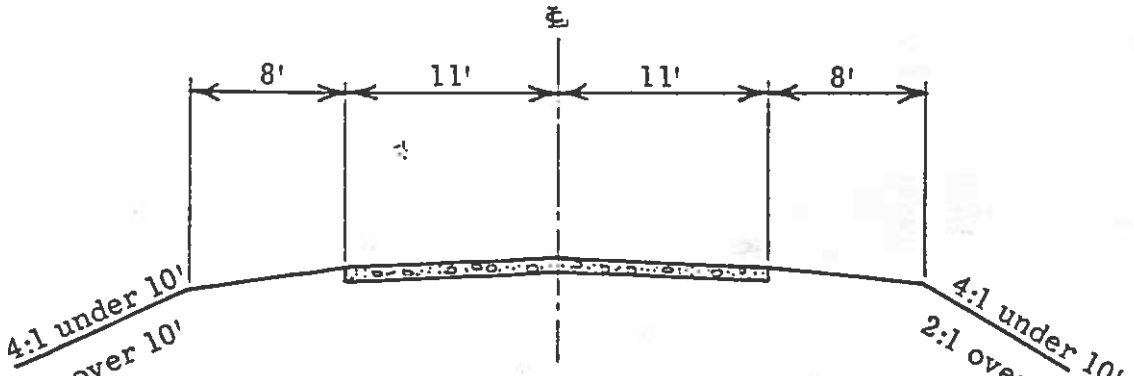
B. Alternatives

1. Do-Nothing

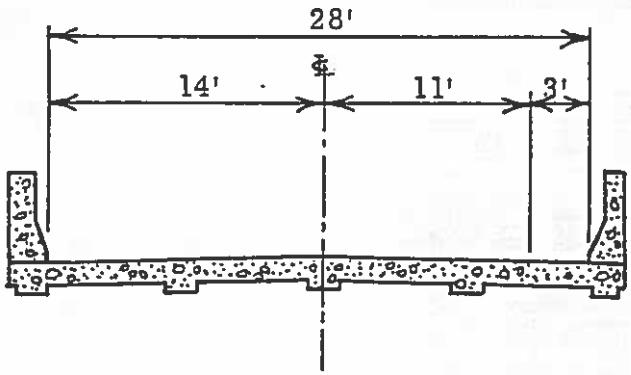
Four build alternatives are being considered, along with the "Do-Nothing" option for the railroad crossing of KY 635. The "Do-Nothing" option would leave the railroad crossing "as is" with routine maintenance provided as required. The disruption of traffic flow caused by the trains would continue to occur, and the horizontal and vertical deficiencies as well as the stopping sight distance restrictions would remain. As previously discussed, traffic increases (1,820 vpd in 1985 to 2,920 vpd in the year 2005) are anticipated, however, projected traffic volumes of the design year are still relatively low, therefore, the "Do-Nothing" option remains a viable alternative.

2. Alternate 1

Beginning with an at-grade intersection with KY 1247, Alternate 1 heads westerly, overpasses the Southern Railroad tracks, then intersects at grade at the Stanford Street - Liberty Road intersection (see Exhibit 8). Steep grades of approximately 8 and 9 percent are required to attain the desired 26-foot track clearance. Traffic on the proposed section would be required to stop at each end while traffic flow on KY 1247 would be uninterrupted. The major advantage of this alternate is that it is the shortest workable option and is, therefore, the least expensive.



Typical Roadway Section



Typical Bridge Section

TYPICAL SECTIONS

NOT TO SCALE

NOTE: *These cross-sections are subject to change during the design process.*

EXHIBIT 7

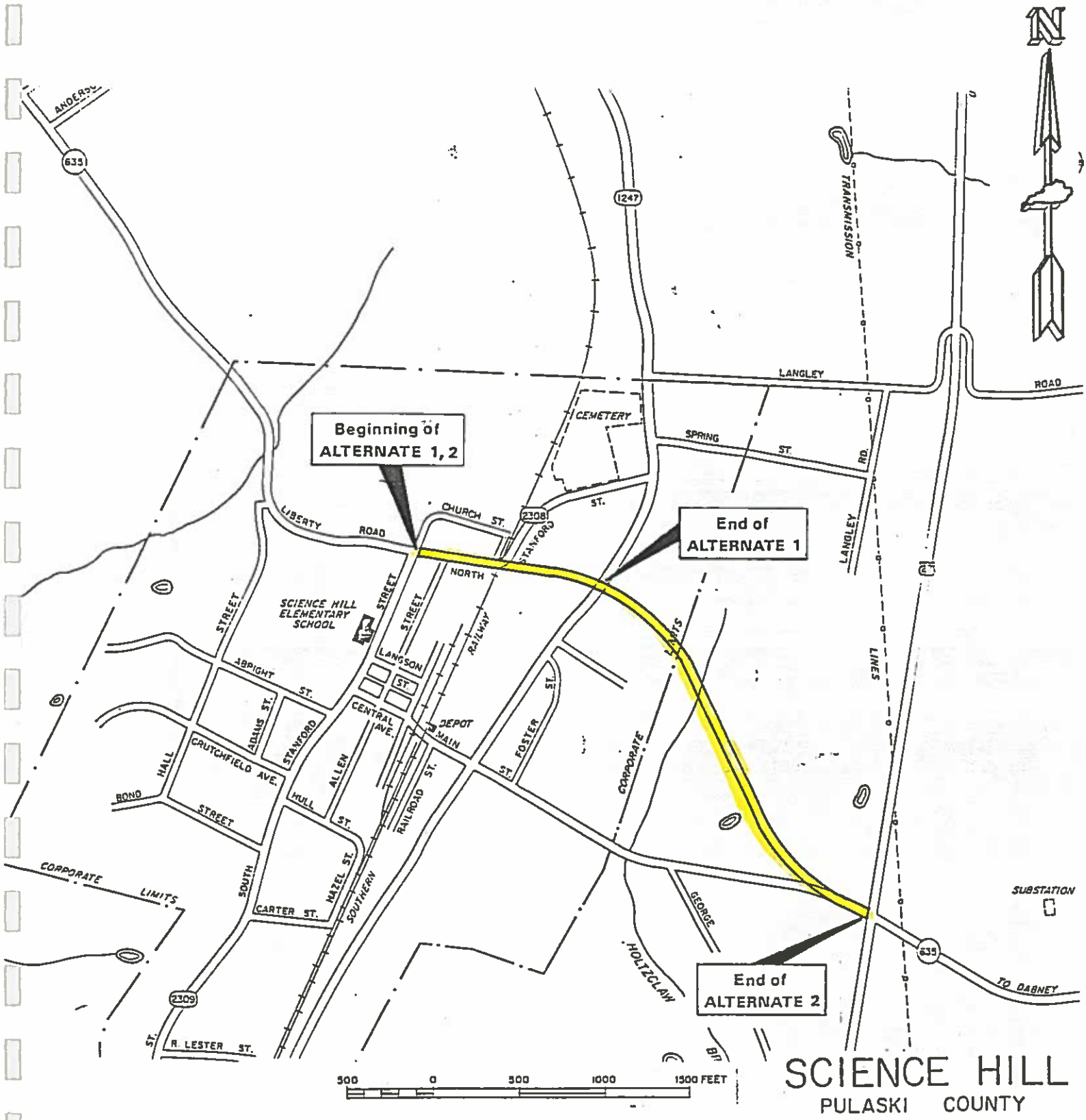


EXHIBIT 8
ALTERNATES 1 & 2

3. Alternate 2

Beginning at the existing intersection of KY 635 and US 27, Alternate 2 travels northwesterly to its at-grade intersection with KY 1247 , overpasses the Southern Railroad tracks, then intersects at grade at the Stanford Street - Liberty Road Intersection (see Exhibit 8). Between the intersection with KY 1247 and Stanford Street, Alternate 2 and Alternate 1 overlap, therefore, the steep grades associated with Alternate 1 also apply to Alternate 2. Traffic on KY 1247 would be required to stop at the KY 635 intersection while traffic on KY 635 would flow through the section uninterrupted. The major advantage to this Alternate is that through traffic on KY 635 would only be required to stop once when passing through Science Hill and once again at the US 27 intersection. This in itself, however, is not as advantageous as it may at first seem. Offsetting KY 635 at US 27 would not greatly affect traffic flow. Turning movements at the US 27 - KY 635 intersection indicate that the majority of traffic on KY 635 turns to the south toward Somerset or toward Stanford to the north. An unfavorable aspect of this alternate is that two intersections will be located within 400 feet where Alternate 2 and the existing alignment near US 27. A second disadvantage is that the line passes through a lowland area which frequently floods.

4. Alternate 3

Beginning at the intersection with US 27, Alternate 3 extends westerly intersecting at grade with KY 1247 then overpassing the Southern Railroad tracks and intersecting at the Stanford Street - Liberty Road Intersection (see Exhibit 9). Traffic on KY 1247 would be required to stop at the intersection with KY 635 while traffic flow on KY 635 would be uninterrupted. As previously discussed with Alternate 2, offsetting the intersection of KY 635 and US 27 should not

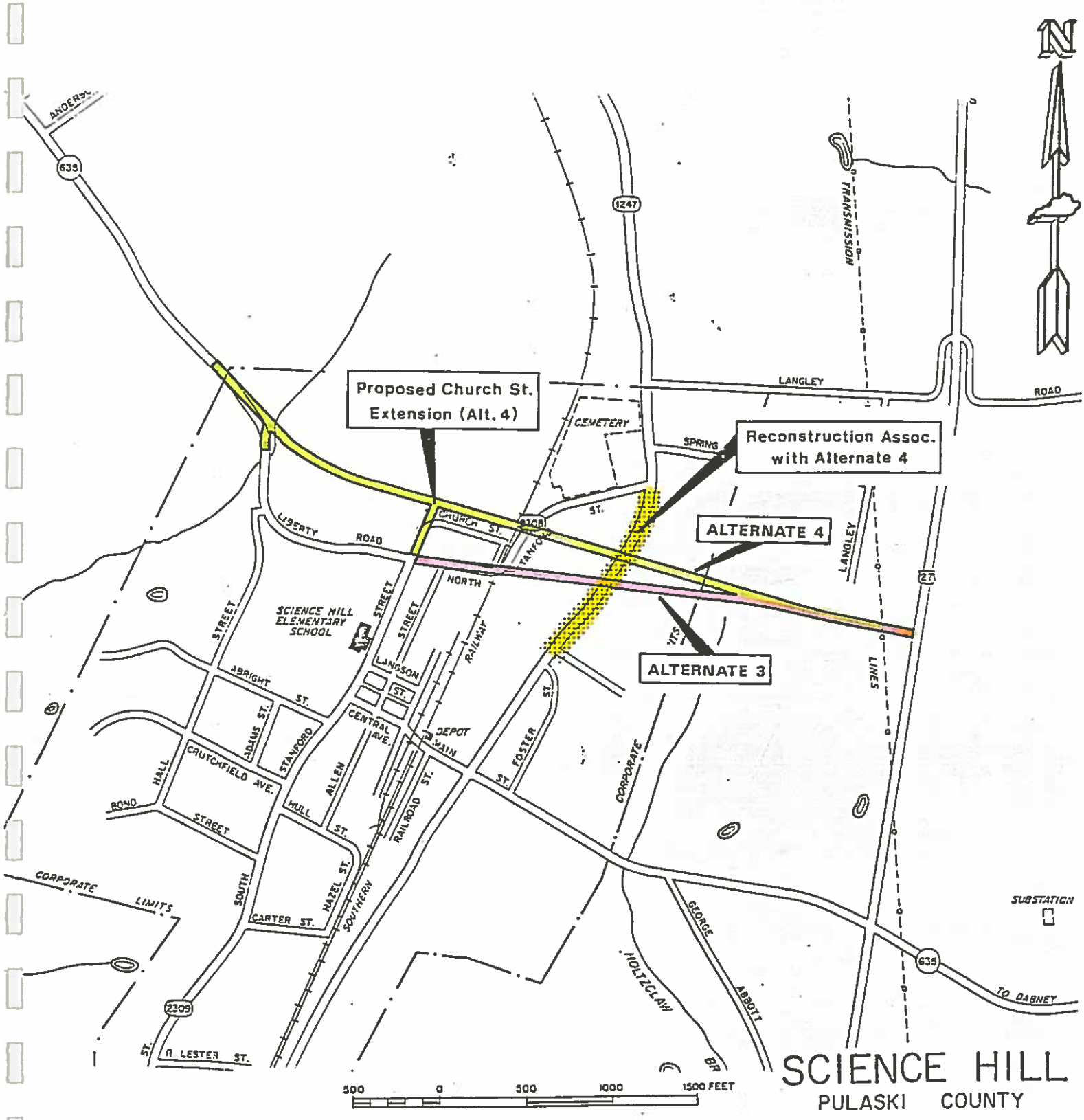


EXHIBIT 9
ALTERNATES 3 & 4

cause any great difficulty. Turning movements indicate that the vast majority of the traffic on KY 635 has a destination to the north or south and currently utilizes US 27. As with Alternates 1 and 2 steep grades (8 and 9 percent) are necessary to bridge the tracks and provide the desired 26-foot track clearance.

5. Alternate 4

Beginning at US 27, Alternate 4 diverges on a westerly course, intersects at grade with KY 1247, overpasses North Stanford Street and the Southern Railway, then rejoins the existing alignment near the northwestern city limits (see Exhibit 9). The bridge span necessary to overpass both North Stanford Street and the Southern Railway (245') contributes heavily to the higher cost of this alternate. In addition to this, a Cross Street extension is proposed in order to give the Science Hill residents easy access to the improvement, and reconstruction of approximately 1,050 feet of KY 1247 would be required to raise the elevation of the intersection by five feet. This is necessary when utilizing the maximum eight percent grade associated with a 40 mph design speed. A fourth factor contributing to the high cost is that Alternate 4 is the longest alternate (4,200 feet). A fifth and final factor is the required reconstruction of approximately 250 feet of KY 635 northwest of the town to create a T-intersection at the location where the existing alignment and Alternate 4 converge. This alternate would have much less of a negative impact in the area since it would involve the fewest relocations. It also will allow through traffic to bypass that section of KY 635 east of the Stanford Street - Liberty Road Intersection characterized by steep grades (9.3 and 11%) followed by an extremely sharp reverse curve (17 and 16 degree curvature).

C. Cost Estimates

Cost estimates for the project are based upon 1984 average unit bid costs. Any reference to specific design details, as opposed to major geometric features, is for preliminary cost estimating purposes only. Right of way and utility costs were furnished by KYDOH District #8 personnel. The estimated costs for the construction of each of the alternates can be found in Table 2.

D. Potential Problem Areas

An environmental overview was conducted by the Division of Environmental Analysis to identify any known or identifiable environmental impacts which may result from the construction of the proposed alignments. An overview of the potential impact on air quality indicates that the project corridor is essentially urban in nature. With current traffic volumes of 1,000 - 2,000 ADT, levels of transportation related pollutants should be insignificant when compared to the ambient air quality. There do not appear to be any ecological problems associated with this project. A biological assessment for endangered species will probably be required, however, no impact is expected since the project is primarily within an urban area.

Historic and archaeological files were examined to identify documented sites in the impact area. This included an examination of both Heritage Council and State Archaeologist files and no sites were identified. No potential environmental problems have at this time been identified.

E. Systems Changes

No systems changes are anticipated if the overpass is constructed along the corridor of Alternate 1. Should

TABLE 2

COST ESTIMATES

KY 635
PULASKI COUNTY
RAILROAD CROSSING AT SCIENCE HILL

ALTERNATIVES	ALTERNATE 1	ALTERNATE 2	ALTERNATE 3	ALTERNATE 4
Length (Miles)	0.37	0.70	0.46	0.81
Preliminary Engineering	$24,000	$36,000	$28,000	$49,000
Right of Way	98,000	773,000	75,000	305,000
Utilities	50,000	25,000	706,000	45,000
Grade & Drain*	95,000	244,000	152,000	357,000
Surfacing*	107,000	205,000	136,000	240,000
Structure*	277,000	277,000	262,000	377,000
Reconstruction of Existing Facilities	—	—	—	362,000
TOTAL	$651,000	$1,560,000	$1,359,000	$1,735,000

*Includes 10% Construction Engineering & Contingencies.

Alternate 2 or 3 be constructed, maintenance of that existing portion of KY 635 which lies between US 27 and Stanford Street would logically become the responsibility of Pulaski County. This would also be the case with Alternate 4 as well as the additional section of existing KY 635 which lies between the Stanford Street - Liberty Road Intersection, and the intersection which would be constructed northwest of Science Hill where the proposed alignment and existing alignment converge. The newly constructed route would remain on the State and Federal-aid Secondary Systems and would still be classified as a Rural Major Collector.

F. Potential Funding Sources

Funding sources available for this project could include the following:

1. State funds (0% Federal)
2. Federal-aid Secondary (FAS) funds (75% Federal)
3. Rail-Highway Safety funds (90% Federal)

IV. COMMENTS AND COORDINATION

Personnel from the Department of Highways District #8 Office were consulted throughout the development of this study. An interdisciplinary team meeting was held July 16, 1985, to solicit input from various disciplines within the Department of Highways. It was at this meeting that Alternates 3 and 4 were added to the study while Alternate 2 was eliminated from further consideration. Reasons for this included: (a) Two intersections would be located only four hundred feet apart where the alternate converges with the existing alignment and US 27; (b) The proposed alignment will pass through a lowland area which frequently floods; and (c) By aligning the alternates to head due east after crossing the

tracks and KY 1247, as do Alternates 3 and 4, the project length will be shortened and expensive right of way along KY 1247 would be avoided.

V. CONCLUSIONS AND RECOMMENDATIONS

As has been previously noted, isolation of the residents of Science Hill by frequent and lengthy trains on the Southern Railway is the chief concern which brought about the initiation of this study. Each of the alternates solves this problem by having a grade separated crossing of the railroad tracks. Traffic for the existing highway shows a projected ADT of 2,920 vehicles in the year 2005. When compared with the 1985 traffic counts, this reflects an increase of 60% over the next twenty years. This increase is significantly less than in other areas of the state and is an indication that this area is not expected to have considerable growth in the near future. Another consideration is the limited amount of Federal-aid Secondary (FAS) funds and Railway Safety (RS) funds which are available. Currently $13.2 million and $3 million are allotted annually for statewide use as FAS and RS funds, respectively.

It is generally agreed within the Department that improvement at Science Hill is highly desirable thus eliminating the "Do-Nothing" option. Alternate 2 was removed from consideration at the interdisciplinary team meeting for reasons previously discussed.

When considering the limited FAS and Rail Safety funds which are available while weighing the benefits of each alternate and keeping in mind the low traffic projections, Alternate 1 is the most practical selection. For the least amount of money it corrects the hazardous situation which brought about the initiation of the project. Should funding become available for a project of greater scope, Alternate 4

may be the most desirable option. It would significantly decrease the traffic on that section of KY 635 west of Science Hill which is both horizontally and vertically deficient. It would also involve the fewest relocations and would therefore have less of a negative impact on the community. However, under the current funding constraints, Alternate 1 is the preferred alternative.