

TRANSPORTATION PLANNING REPORT

**STATE ROUTE 111
FROM HASSLER LANE TO THE KENTUCKY STATE LINE
PICKETT COUNTY
TDOT PIN 110302.00**



**PREPARED BY
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FOR THE
TENNESSEE DEPARTMENT OF TRANSPORTATION
PROJECT PLANNING DIVISION**

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TABLE OF CONTENTS

SECTION	PAGE
HISTORY AND BACKGROUND INFORMATION.....	1
History.....	1
Background Information.....	1
Study Area.....	3
Existing Transportation Conditions.....	4
PURPOSE AND NEED	10
FIELD REVIEW.....	12
OPTIONS CONSIDERED.....	13
Option 1 – No-Build.....	13
Option 2 – Spot Improvements.....	13
Option 3 – 4-Lane Improvement, Existing Corridor.....	18
Option 4 – Realignment of Segment 3 (2-lane).....	21
Option 5 – Realignment of Segment 3 (2-lane) ; Spot Improvements to Segment 2	24
Option 6 – Realignment of Segment 3 (4-lane); 4-lane Improvement to Segment 1 & 2	25
ASSESSMENT OF CORRIDOR OPTIONS.....	27
Guiding Principle 1: Preserve & Manage the Existing Transportation System..	27
Guiding Principle 2: Move a Growing, Diverse, and Active Population.....	27
Guiding Principle 3: Support the State’s Economy.....	27
Guiding Principle 4: Maximize Safety & Security.....	27
Guiding Principle 5: Build Partnerships for Livable Communities.....	28
Guiding Principle 6: Promote Stewardship of the Environment.....	28
Guiding Principle 7: Promote Financial Responsibility.....	28

SUMMARY.....28

APPENDICES

VOLUME II (Separate Document)

LIST OF TABLES

TABLE		PAGE
1	Geometrics.....	4
2	Traffic History.....	6
3	Level of Service (LOS) Index.....	7
4	Existing Level of Service Analyses.....	7
5	Crash Summary – Roadway Segments.....	9
6	Cost Estimates – Option 2.....	18
7	Projected Levels of Service – Option 3.....	20
8	Cost Estimates – Option 3.....	21
9	Projected Level of Service – Option 4.....	24
10	Cost Estimates – Option 4.....	24
11	Cost Estimates – Option 5.....	25
12	Projected Level of Service – Option 6.....	26
13	Cost Estimates – Option 6.....	26
14	Known Environmental and Cultural Impacts	29
15	Cost Estimates – Summary.....	29

LIST OF FIGURES

FIGURE		PAGE
1	Location Map.....	2
2	Roadway Segments 1, 2, and 3	5
3	Traffic Projections for 2012 and 2032	8
4	Proposed Albany By-Pass (US 127 Improvements)	11
5	Segment 3 climbing lanes.....	15
6	Option 2, Segment 3 Cross-Section	16
7	Option 3 Cross-section.....	19
8	New Corridor for Segment 3.....	22
9	Traffic for New Segment 3 Corridor.....	23

History & Background Information

History

State Route 111 is a north-south route, which provides a connection between US 27 in Hamilton County and the Kentucky State line in Pickett County. The Dale Hollow Rural Planning Organization (RPO), which includes Macon, Clay, Pickett, Smith, Jackson, Overton, and Fentress Counties, submitted a Request for Study statement to Tennessee Department of Transportation's Long Range Planning Division. The Request for Study included a 22.1 mile section of State Route 111, extending north from State Route 294 in Overton County to the Kentucky State line in Pickett County. TDOT's Long Range Planning Division divided the 22.1 mile section into three Segments of Independent Utility. Based on an evaluation of congestion, safety, and system linkage, State Route 111 from Hassler Lane to the Kentucky State line was identified as the priority segment for study. This segment of State Route 111 is shown in Figure 1. The Preliminary Purpose and Needs Statement, prepared by TDOT's Long Range Planning Division is included in Appendix A.

Background Information

State Route 111 intersects US 127 in the town of Static, at the Kentucky State line. As part of the planned improvements to US 127 in Kentucky, this intersection will be relocated to the west, and the northbound approach (State Route 111) will be realigned north of Mullins Lane. According to TDOT's Right-of-Way division, the realigned portion of State Route 111 will include two travel lanes; however, right-of-way will be purchased to accommodate four travel lanes. Right-of-way plans for improvements to US 127 at State Route 111 are included in Volume II of this report.

This report evaluates six options for improving State Route 111 from Hassler Lane to the Kentucky State line. Specifically, this report identifies the purpose and need for improvements to this segment, as well as the potential impacts of the improvements. Scheduling and funding for improvements to State Route 111 have yet to be established.

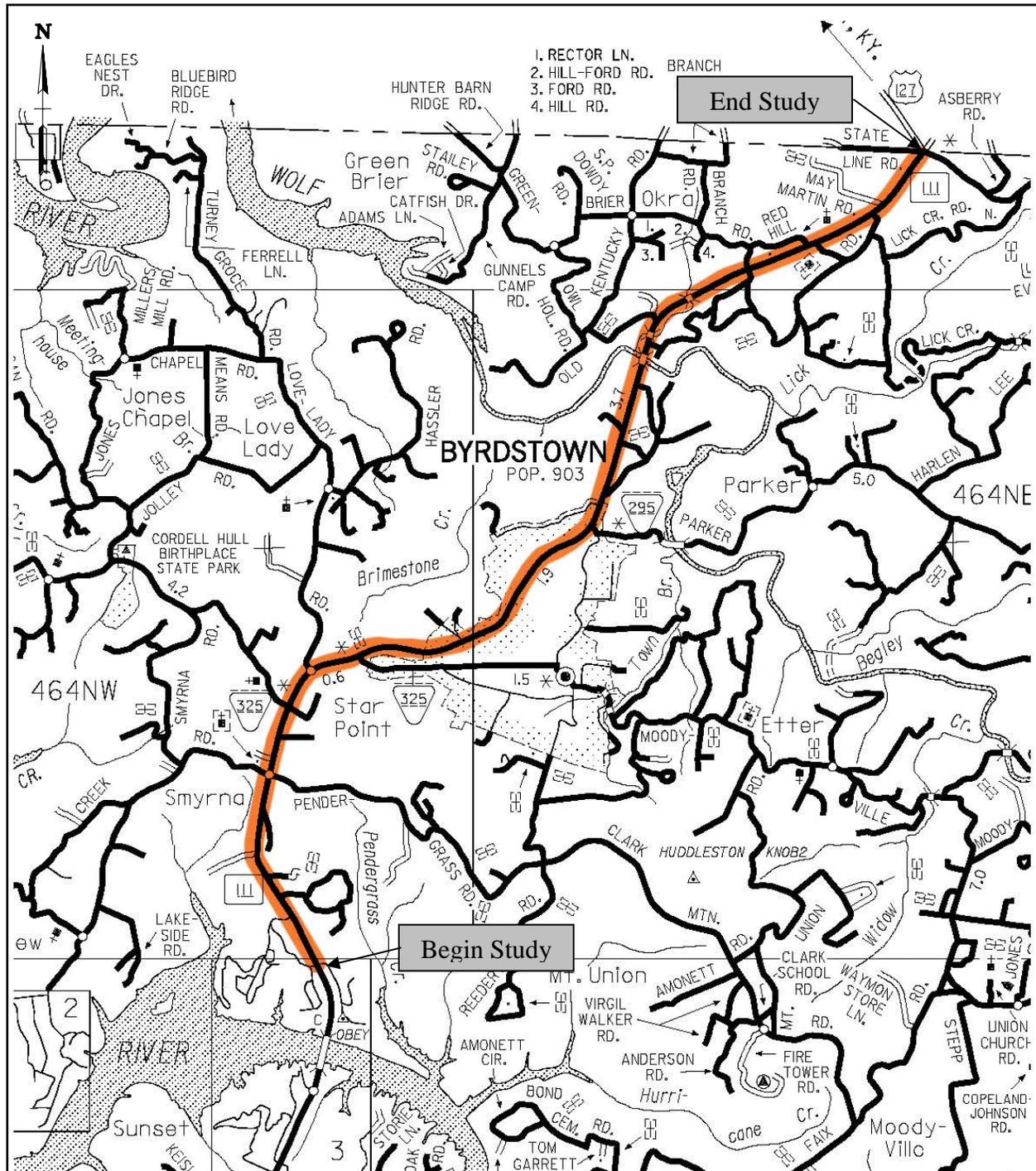


FIGURE 1 – LOCATION MAP

Study Area

Located entirely within Pickett County, the segment of State Route 111 under study begins just north of the Obey River at the intersection of State Route 111 and Hassler Lane and extends north through Byrdstown, to the intersection of State Route 111 and US 127 (Kentucky State line). This segment is part of a north-south corridor, which not only provides a connection to US 27 in Hamilton County, but also to Interstate 40 in Putnam County and State Route 52 in Overton County. State Route 52 is part of the Appalachian Development Highway Systems Corridor J.

Not only do these roadway connections serve a large volume of truck traffic, but they are also critical in supporting one of Pickett County's largest sources of income – tourism. Dale Hollow Lake, located in Pickett and Clay Counties, attracts over 1.06 million visitors per year. To accommodate these visitors, Pickett County offers four commercial resorts and marinas as well as numerous rental and hotel accommodations.

A new Visitor's Center is planned to be constructed on State Route 111 in Byrdstown. This Visitor's Center will house a museum of the Upper Cumberland Region's history. Visitors to Pickett County access Dale Hollow Lake and the numerous historic sites via State Route 111.

The county seat of Pickett County, Byrdstown, is located within the 8.09 mile segment of State Route 111 evaluated in this study. The study area, including Byrdstown is primarily a rural area, with some fringe urban development in Byrdstown and along State Route 111 from Pendergrass Road to State Route 295. Byrdstown is home to Pickett County's Elementary and High Schools, as well as the County's medical center and emergency facilities. To receive emergency and overnight treatment, residents of Pickett County are transported via State Route 111 to Livingston or Albany, Kentucky.

As of the 2000 census, Pickett County had a total population of 4,945 with Byrdstown containing 903 residents. Near Byrdstown, Pickett County employs over 250 people in industrial services. However, according to Pickett County's website, 34% of the County's workforce commutes to jobs outside the county. The average commute time in 2000 was 25 minutes. State Route 111 serves as the primary travel route for employment, as well as higher education in adjacent counties to the north and south.

Existing Transportation Conditions

Existing Geometry

Within the study area, State Route 111 is a rural principle arterial. Likewise, the adjacent land uses are primarily rural. Between Pendergrass Road and State Route 295, however, State Route 111 travels through a fringe urban area. For the purpose of this study, three segments are defined along State Route 111. The segments are listed below and portrayed in Figure 2.

- Segment 1: Hassler Lane to Pendergrass Rd (Rural)
- Segment 2: Pendergrass Rd to State Route 295 (Urban)
- Segment 3: State Route 295 to the Kentucky State line (Rural)

Table 1 shows the existing geometry along State Route 111, as recorded in TDOT's Tennessee Roadway Information Management System (TRIMS) database. State Route 111 between Hassler Lane and the Kentucky State line includes roadway widths ranging from 44 feet to 56 feet. Right-of-way widths vary from 120 feet to 180 feet. The shoulder width is ten feet throughout, except for one segment between Pendergrass Rd and State Route 325 where it is six feet. Northbound climbing lanes are provided on a portion of State Route 111 between Hassler Lane and Pendergrass Road.

**Table 1
Geometrics**

Segment	Distance (miles)	ROW (feet)	Number of Lanes	Lane Width (feet)	Shoulder (feet)
1: Hassler Lane to Pendergrass Rd	0.75	150	2+Climbing	12	10/10
	0.45	150	2	12	10/10
	0.17	150	2	12	10/10
2: Pendergrass Rd to SR 295	0.02	150	2	12	10/10
	0.46	120	2+Center Turn Lane	12	6/6
	2.58	120	2	12	10/10
3: SR 295 to the Kentucky State line	0.08	120	2	12	10/10
	3.45	180	2	12	10/10
	0.13	70*	2	12	10/10

**4-Lane ROW will be purchased as part of the improvements to US 127 at State Route 111*

Field observations and United States Geological Survey (USGS) mapping indicate that the topography along State Route 111 ranges from rolling to mountainous, with elevations varying from 680 to 1,050 feet above mean sea level.

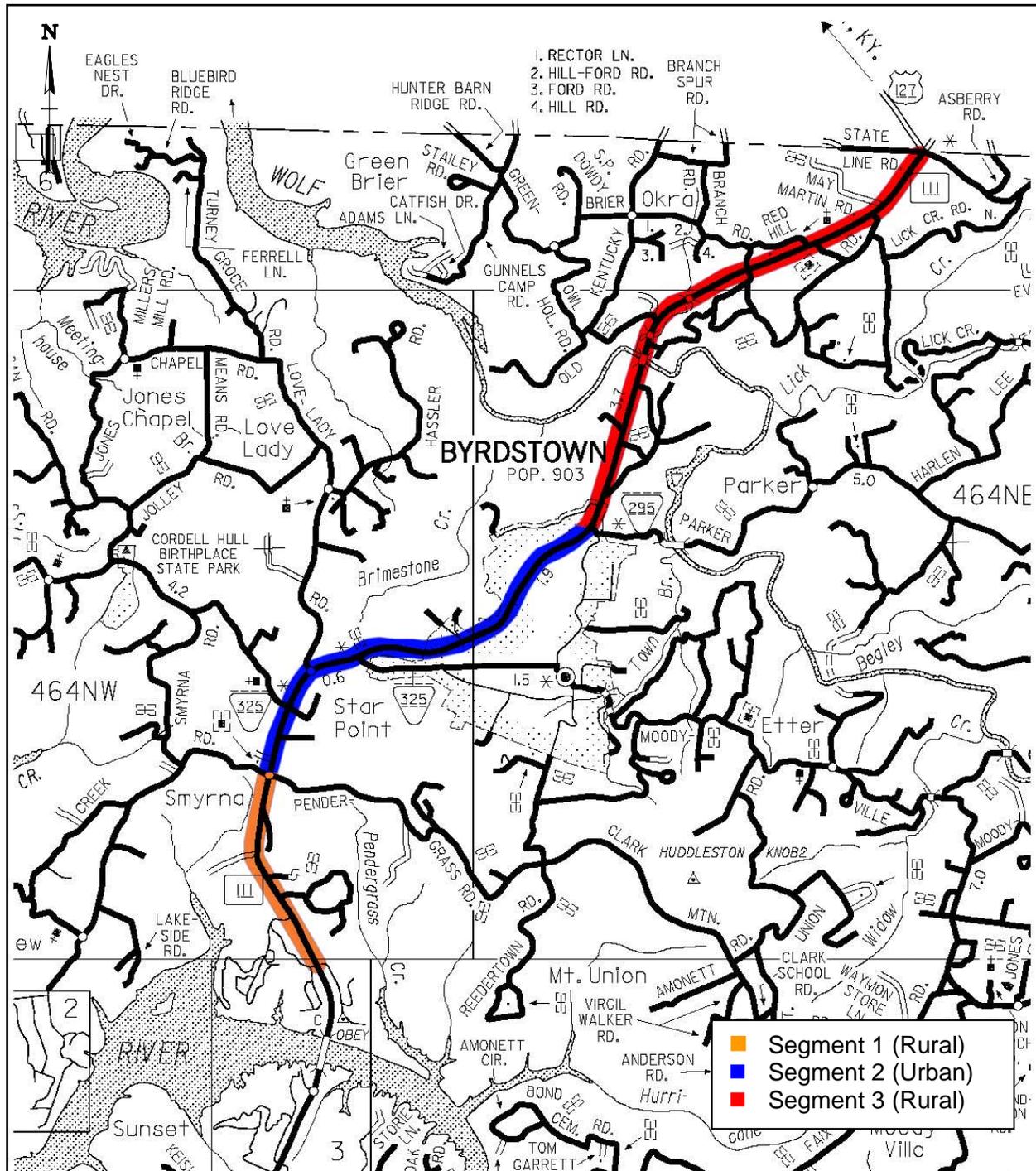


FIGURE 2 – ROADWAY SEGMENTS 1, 2, & 3

Existing Structures

State Route 111 crosses the Wolf River north of State Route 295 (Parker Road). The existing concrete girder bridge is approximately 450 feet long and provides one travel lane and a ten foot shoulder in each direction. The existing bridge replaced the original Wolf River bridge in the late 1980's. The original Wolf River bridge was located just to the east of the existing alignment.

Traffic History

According to yearly traffic counts conducted at TDOT count stations along State Route 111, traffic volumes along the majority of State Route 111 have remained constant over the past several years. Table 2 shows the annual average daily traffic (AADT) volumes recorded in 2000 and 2007 at each count station, as well as the AADT percentage of trucks.

As shown, traffic volumes at only two stations have grown since 2000. From Pendergrass Road to State Route 325 (West), traffic volumes grew by approximately 1.3% per year since 2000, and by 5.0% between 2006 and 2007. Traffic volumes on State Route 111 between State Route 325 (East) and State Route 295 grew by approximately 1.8% per year since 2000, and by 8.0% between 2006 and 2007.

**Table 2
Traffic History**

Station	Location	2000 AADT	2007 AADT	2007 Truck %
28	South of Hassler Lane	4,380	4,380	9
15	Pendergrass Rd to SR 325 (West)	5,810	6,350	7
26	SR 325 (West) to Love Lady	8,210	7,930	6
33	Love Lady to SR 325 (East)	5,330	5,180	5
9	SR 325 (East) to SR 295	4,450	5,010	8
3	SR 295 to KY State Line	4,400	3,860	9

Roadway Level of Service

Capacity analyses were performed using the existing 2007 traffic volumes, as well as projected 2012 and 2032 traffic volumes to determine the current and future levels of service along the State Route 111 corridor. A "Level of Service" (LOS) index was used to gauge the operational performance at each intersection. The LOS is a qualitative measure that describes traffic conditions related to speed and travel time, freedom to maneuver, traffic interruptions, etc. There are six levels ranging from "A" to "F" with "F" being the worst. Each level represents a range of operating conditions. Table 3 defines the traffic flow conditions and approximate driver comfort at each level of service. Figure 3 shows the projected 2012 and 2032 traffic volumes along State Route 111, as developed by TDOT's Project Planning Division.

**Table 3
Level of Service (LOS) Index**

LOS	Traffic Flow Conditions
A	Free flow operations. Vehicles are almost completely unimpeded in their ability to maneuver with the traffic stream. The general level of physical and psychological comfort provided to the driver is high.
B	Reasonable free flow operations. The ability to maneuver within the traffic stream is only slightly restricted and the general level of physical and psychological comfort provided to the driver is still high.
C	Flow with speeds at or near free flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted and lane changes require more vigilance on the part of the driver. The driver notices an increase in tension.
D	Speeds decline with increasing traffic. Freedom to maneuver within the traffic stream is more noticeably limited. The driver experiences reduced physical and psychological comfort levels.
E	At lower boundary, the facility is at capacity. Operations are volatile because there are virtually no gaps in the traffic stream. There is little room to maneuver. The driver experiences poor levels of physical and psychological comfort.
F	Breakdowns in traffic flow. The number of vehicles entering the highway section exceed the capacity or ability of the highway to accommodate that number of vehicles. There is little room to maneuver. The driver experiences poor levels of physical and psychological comfort.

The results of capacity analyses performed for State Route 111 using existing and projected traffic volumes are shown in Table 4. As shown, State Route 111 from Hassler Lane to the Kentucky State line currently operates at LOS D or better. State Route 111 is expected to maintain acceptable levels of service until 2032. In 2032, the portion from State Route 325 (West) to State Route 325 (East) will operate at LOS E. Capacity analysis reports are included in Volume II of this report.

**Table 4
Existing Level of Service Analyses**

Segment		2007	2012	2032
1	Hassler Lane to Pendergrass Rd	C	C	D
2	Pendergrass Rd to SR 325 (West)	C	D	D
	SR 325 (West) to Love Lady	D	D	E
	Love Lady to SR 325 (East)	D	D	E
	SR 325 (East) to SR 295 (Parker)	D	D	D
3	SR 295 (Parker) to Greenbriar	C	C	D
	Greenbriar to US 127	C	C	D

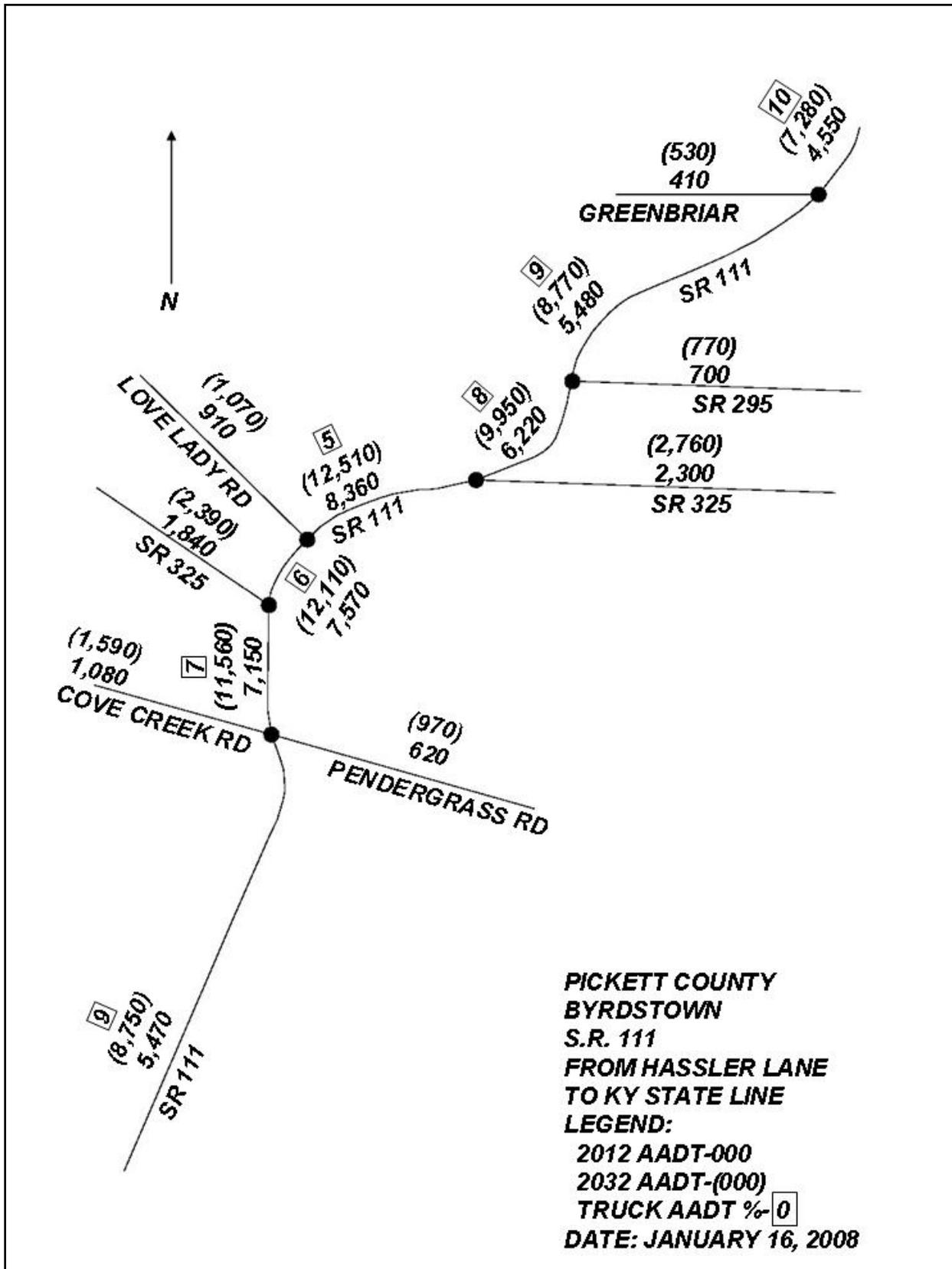


FIGURE 3 – TRAFFIC PROJECTIONS FOR 2012 AND 2032

Crash History

Crash rates were developed using TDOT crash data for six segments of State Route 111 between Hassler Lane and the Kentucky State line. A crash rate represents the number of crashes that occur annually along a segment of roadway, per million vehicle-miles traveled. As shown in Table 5, crash rates on State Route 111 do not exceed the statewide average crash rate for two lane rural roadways (1.701). Crash data, provided by TDOT, is included in Volume II of this report.

Table 5
Crash Summary – Roadway Segments

Segment		Crash Rate
1	Hassler to Pendergrass	0.86
2	Pendergrass to SR 325 (West)	1.26
	SR 325 (West) to SR 325 (East)	0.84
	SR 325 (East) to SR 295	0.80
3	SR 295 to Mullins	0.70
	Mullins to US 127	0.41

Alternative Modes of Transportation

Currently, sidewalks are not provided on any portion of State Route 111 between Hassler Lane and the Kentucky State line. State Route 111 is not currently designated as a bike route; however, existing shoulders range from six to ten feet, providing ample room for bicyclists. TDOT's Long Range Plan identifies this portion of State Route 111 as a proposed state bicycle route; therefore, any adopted option should maintain six to ten foot shoulders. Tennessee's existing and proposed bicycle facilities, as outlined in TDOT's Long Range Plan, are shown in Volume II of this report.

Purpose & Need

TDOT's Long Range Planning Division prepared a preliminary needs statement based on historic and projected traffic volumes, geometric configuration and crash data for the entire State Route 111 corridor, from Livingston to the Kentucky State line. The purpose of this Transportation Planning Report (TPR) is to analyze existing safety deficiencies for immediate consideration and provide guidance to options for future improvements along the identified portion of State Route 111.

State Route 111, from Cookeville to the Kentucky State line is a north-south route serving the surrounding counties and providing access to Interstate 40 and Chattanooga. This route carries a high percentage of truck traffic; however, existing and projected traffic volumes are relatively low. As indicated in the existing conditions section of this report, State Route 111 is expected to operate at acceptable levels of service until 2032, when a portion will become capacity deficient.

State Route 111 currently meets geometric design standards, and crash rates are below the statewide average for a two-lane rural facility. Local officials have, however, expressed concern over the safety at the intersection of State Route 111 and State Route 325 (West).

Shown in Figure 4 (page 11) and included in Kentucky's six-year plan is a new by-pass along US 127 in Albany, Kentucky. As part of this plan, US 127 from Albany to the Tennessee State line is to be improved to a four-lane facility. The improvements to the intersection of US 127 and State Route 111 are included in these plans. Upon completion of the US 127 improvements, the segment of State Route 111 from Hassler Lane to the Kentucky state line will be the only two-lane segment (without climbing lanes) on the north-south corridor from Albany, Kentucky to Interstate 40 in Tennessee.

As noted in the Field Review minutes in Appendix B, local officials anticipate that truck traffic volumes will increase upon completion of the Albany bypass. Pickett County is currently advertising to attract additional industry, and local officials recognize that improvements to State Route 111 would help persuade industry to relocate to the area.

Therefore, the primary purpose and need for improvement to this portion of State Route 111 is to provide system linkage, and in doing so, promote economic development in Pickett County. This study evaluates six options for addressing the purpose and need. Three of these options are included in a 1,000-foot wide corridor centered on the existing alignment of State Route 111. The other three propose a new alignment for the portion of State Route 111 from State Route 295 to Mullins Lane.

Clinton County Six Year Plan Projects

Legend

- ◆ Bridge Projects
- ▲ Weigh Station/Rest Area Projects
- Interchange Projects
- Other Projects

Project #	Route #	Description of Project Type Work	Projects in Six Year Plan
Project #	Route #	Description of Project Type Work	Award Date
Project #	Route #	Description of Project Type Work	Authorized Date

Last Updated: 7/31/07

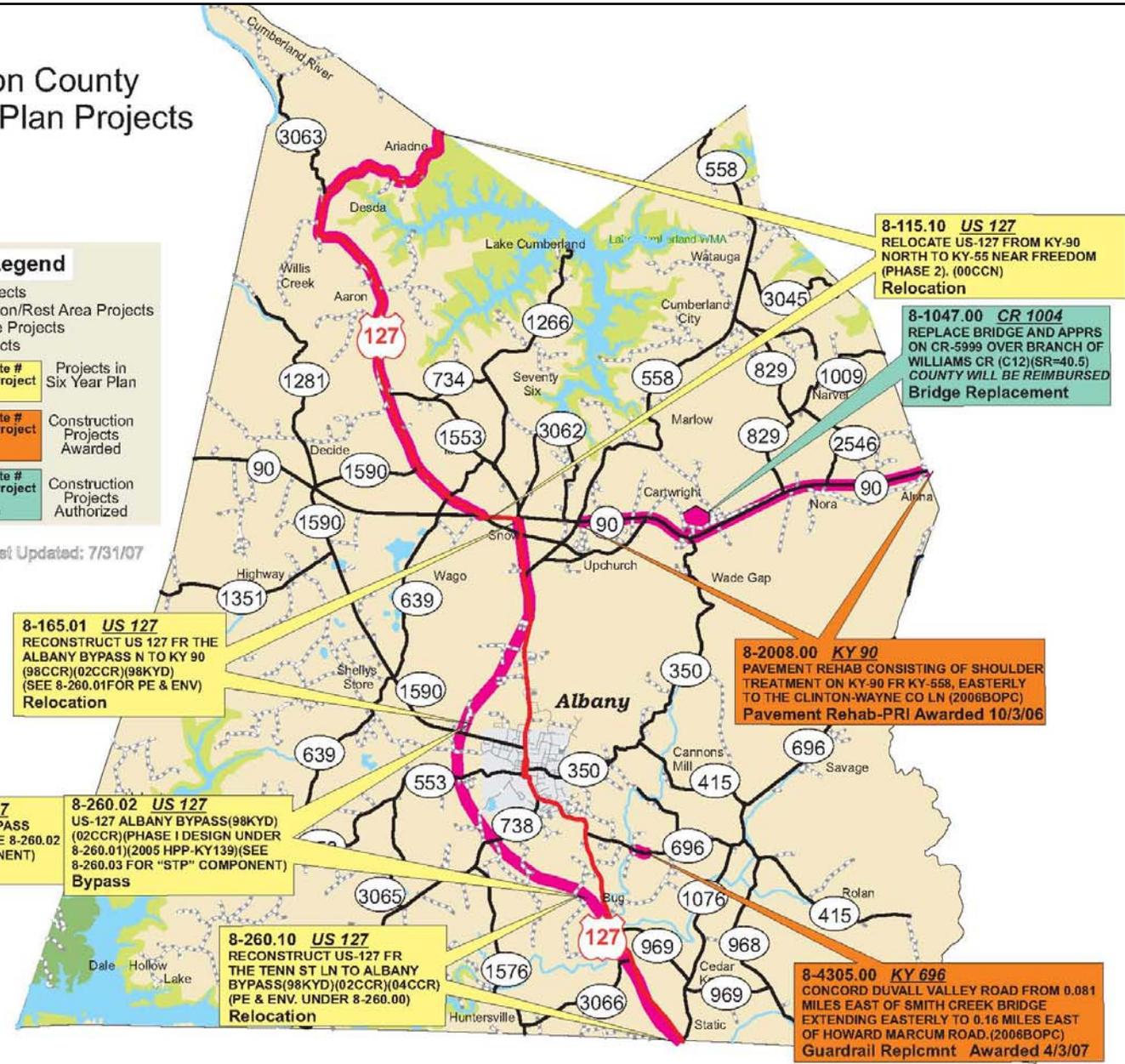


FIGURE 4 – PROPOSED ALBANY BY-PASS (US 127 IMPROVEMENTS)

Field Review

A Field Review was conducted on December 17, 2007 at the Pickett County Library to discuss possible improvements to State Route 111. Representatives of TDOT, the Dale Hollow RPO, the Pickett County Government, the Overton County Government, Federal Highway Administration (FHWA), and CTE attended the meeting. A list of attendees is included in Appendix B.

The Field Review provided representatives of each organization the opportunity to become familiar with the corridor, TDOT's Transportation Planning process, and the possible options for improvement. During the field review, attendees were also asked to verify possible environmental impacts included in the corridor, and to identify additional impacts along the corridor. Only improvements to the existing alignment were discussed at the Field Review.

During the Field Review, representatives of TDOT and the FHWA suggested that Hassler Lane is not a logical terminus for the environmental document. Instead, State Route 111/42 Bypass in Livingston should be considered. Representatives of the County governments also expressed concern that ending the improved segment at Hassler Lane would create a bottleneck at the Obey River bridge (over Dale Hollow Lake). From this discussion, TDOT and FHWA representatives concluded that the final termini of the study will be determined during the National Environmental Policy Act (NEPA) process.

Representatives of the County governments also expressed concern over impact to the Amonett House and Amonett-Dickson Cemetery, located on State Route 111, near the intersection with State Route 325 (East). The Amonett House and Amonett-Dickson Cemetery are not currently included on the National historic Register (NHR); however, the City of Byrdstown is pursuing the registration process. The new Visitor's Center, mentioned previously in this report will be housed on the Amonett property.

Representatives of the County governments spotlighted the intersection of State Route 111 and State Route 325 (West) as a dangerous intersection. Representatives indicated the high traffic volumes through this intersection, as well as the adjacent Shell access driveways have caused several crashes at this location.

While driving the corridor, CTE and TDOT representatives noted the grades on State Route 111 to the north and south of the Wolf River. The grades were long and steep; ideal for climbing lanes that might allow vehicles to pass slow moving trucks. Via an email prior to the Field Review, TDOT representatives recommended that if the Wolf River bridge is realigned, the new alignment should be located to the east, around the bend so that the fill remained outside the reservoir boundary. When this information was presented at the Field Review, County government representatives noted that a major water line crosses the Wolf River, east of State Route 111.

Detailed minutes from the Field Review on December 17, 2007 are included in Appendix B.

Corridor Options Considered

As mentioned previously, six options for improvement are evaluated in this report. Each corridor option maintains the alignment planned for State Route 111 north of Mullins Lane as part of the US 127 improvements. Two options evaluate widening this new segment to four lane.

The following addresses improvement options for State Route 111 from Hassler Lane to Kentucky State line.

OPTION 1 - No-Build

Option 1 represents the scenario in which no improvements will be made to State Route 111 from Hassler Lane to the Kentucky State line. Impacts to capacity, system linkage, and economic development resulting from this option will serve as a basis for comparison of five improvement options.

OPTION 2 – Spot Improvements

Option 2 considers the installation of traffic signals at the intersections of State Route 111 with State Route 325 (West) and State Route 325 (East). In addition, Option 2 considers the construction of climbing lanes on Segment 3, near the Wolf River. Field observations reveal that grades on State Route 111, both north and south of the Wolf River are long and steep. The speed limit is 55 miles per hour on this portion of State Route 111; however travel speeds are often slowed as trucks lose momentum on the upgrade.

Traffic Signal Warrants

As outlined in the Manual of Uniform Traffic Control Devices (MUTCD), a traffic signal should not be installed unless traffic volumes and intersection characteristics meet a set of warrants, or requirements. The MUTCD outlines eight warrants, which are listed below and described in detail in Volume II of this report.

Warrant 1:	Eight-Hour Vehicular Volume
Warrant 2:	Four-Hour Vehicular Volume
Warrant 3:	Peak Hour
Warrant 4:	Pedestrian Volume
Warrant 5:	School Crossing
Warrant 6:	Coordinated Signal System
Warrant 7:	Crash Experience
Warrant 8:	Roadway Network

Turning movement traffic counts were conducted the intersections of State Route 111 with State Route 325 (West) and State Route 325 (East) on January 10, 2007. The counts were collected from 7-10AM, 11-2PM and 3-6PM. From the counts, it was determined that the peak hours of traffic flow occurred from 7:15 to 8:15 AM and from 3:00 to 4:00 PM.

The count data collected for each intersection was evaluated against Signal Warrants 1 through 3, and 8. Results of this analysis indicated that none of the volume related signal warrants were met by the existing volumes. Detailed signal warrant analysis are included in volume II.

Field observations revealed little to no pedestrian traffic at each intersection. Therefore, Signal Warrant 4 is not met at either intersection. Likewise, neither intersection is located near a school; therefore Signal Warrant 5 is not met. Currently, no traffic signals are located on State Route 111 from Hassler Lane to the Kentucky State Line. Therefore, Signal Warrant 6 is not applicable at either location. Crash rates along State Route 111 are below the statewide average crash rate; therefore, Signal Warrant 7 is not met.

Based on current conditions, as of January 2008, traffic signals should not be installed at either location. However, traffic volumes may meet volume-related signal warrants during the summer and spring tourist seasons, or in the future as traffic volumes increase. If subsequent signal warrant analyses do not reveal the need for a traffic signal, alternative measures should be considered to address local safety alternate concerns.

Climbing Lanes

Figure 5 illustrates the possible location for climbing lanes, as evaluated in Option 2. It is anticipated that climbing lanes (including transitions) will span approximately 1.5 miles of Segment 3. Figure 6 shows an example of the cross-section that would be constructed on this portion of State Route 111.

Anticipated Traffic Impacts

To determine the existing level of service at the intersections of State Route 111 with State Route 325 (West) and State Route 325 (East), capacity analyses were conducted using the Highway Capacity Software (HCS), peak hour traffic counts, and the existing geometry of each intersection. Results of the capacity analyses, included in Volume II of this report, reveal that turning movements on each approach currently operate at LOS B or better during the peak hour.

Roadway segment analyses indicate that construction of climbing lanes on portions of Segment 3 will improve the projected 2032 level of service from a LOS D to LOS C.

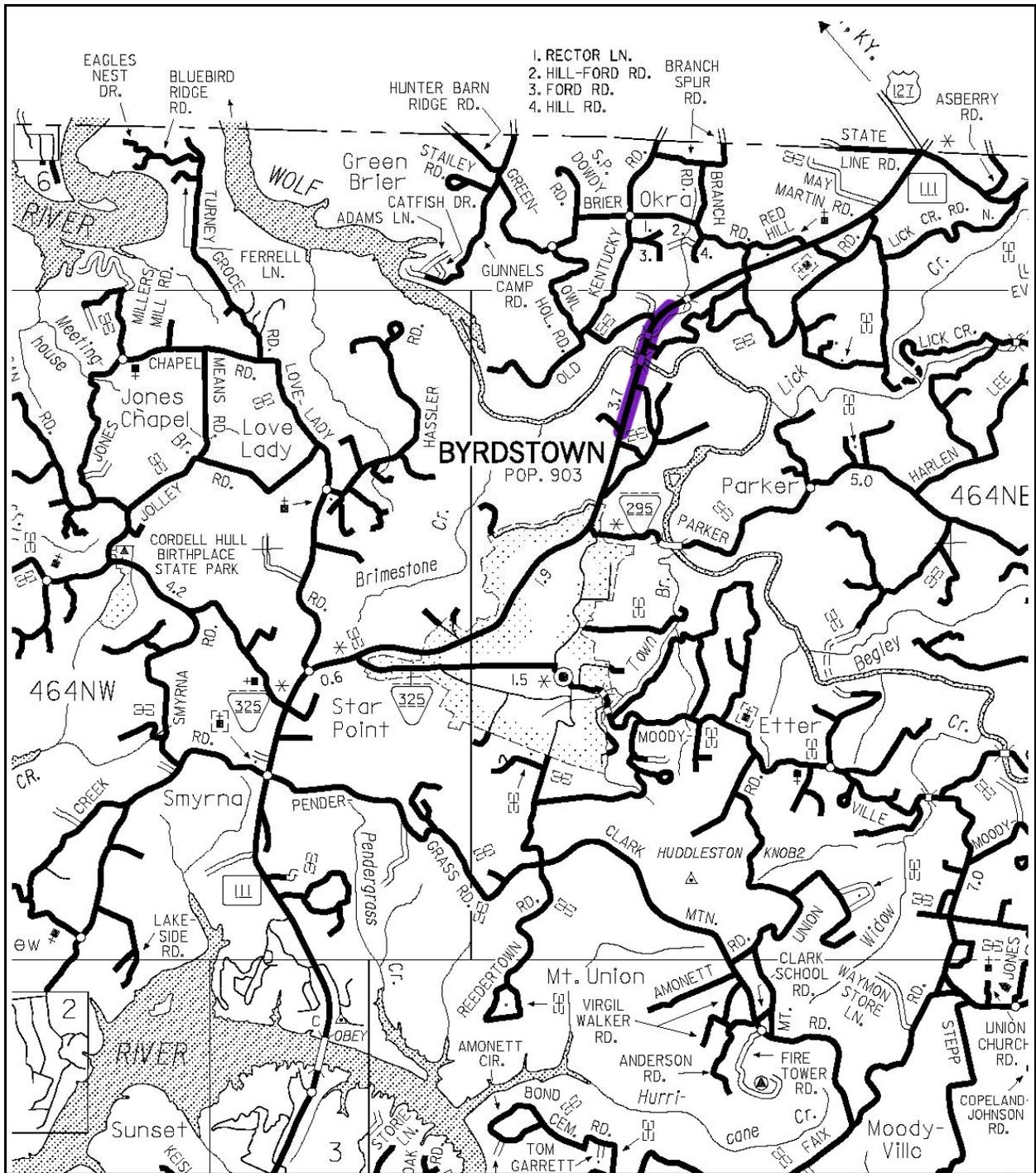


FIGURE 5 – SEGMENT 3 CLIMBING LANES

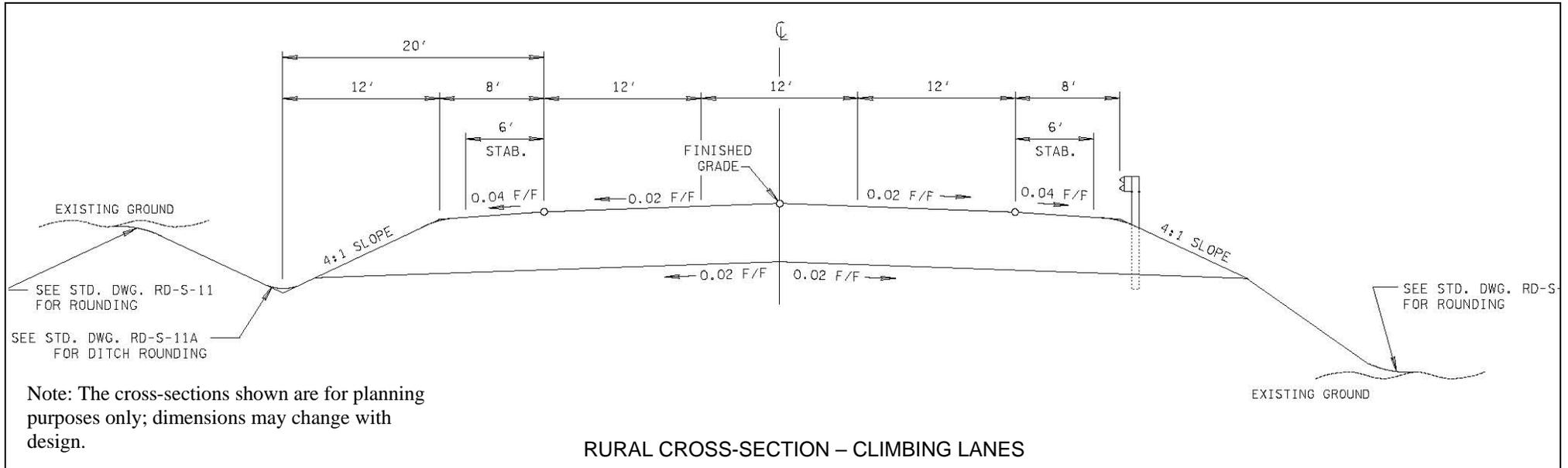


FIGURE 6 – OPTION 2, SEGMENT 3 CROSS-SECTION

Anticipated Structural Impacts

Sufficient ROW is currently available for the addition of a third travel lane on Segment 3. As shown in the photo to the right, north of the Wolf River Bridge, State Route 111 curves to the right and travels through a significant rock cut. If this portion of State Route 111 is realigned to include climbing lanes, rather than widened on the existing alignment, additional rock cut may be required.

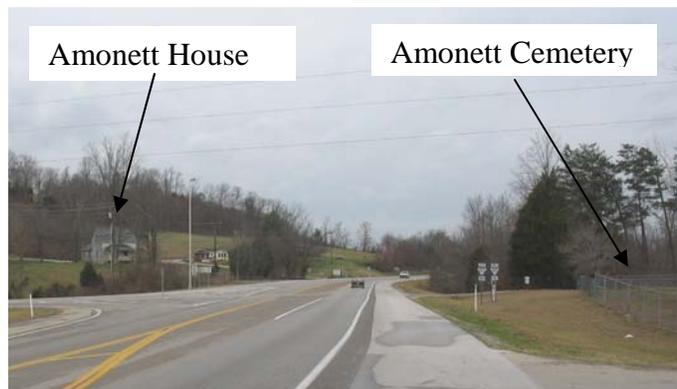


Northbound State Route 111, north of the Wolf River

To avoid impact to the Wolf River Bridge, transitions for climbing lanes should begin immediately north and south of the bridge tie-downs.

Anticipated Cultural Impacts

As shown in Figure 2A of Appendix D, the Amonett House and Amonett-Dickson Cemetery are located near the intersection of State Route 111 and State Route 325 (East). Currently, neither the House nor the Cemetery is listed on the National Historic Register; however, the City of Byrdstown is pursuing the registration process. Spot improvements to State Route 111 at State Route 325 (East) avoid impact to these properties. The photo to the right shows the Amonett House on the southeast corner and the Amonett-Dickson Cemetery to the west of the intersection.



Southbound State Route 111 at State Route 325 (East)

Environmental Impacts

Improvements to the intersection of State Route 111 and State Route 325 (East) should avoid impact to natural gas pipeline that crosses State Route 111, just south of State Route 325.

Construction of climbing lanes on Segment 3 of State Route 111 should not directly impact the Wolf River. However, appropriate measures should be employed to avoid indirect impacts during construction.

Cost Estimate

Cost estimates were developed for spot improvements to Segment 2 and improvements to Segment 3. Costs for improvements to Segment 3 were estimated using TDOT's 2007 Cost Estimate Spreadsheet. For Segment 2, the cost of a traffic signal was estimated at \$150,000 per signal. As shown in Table 6, improvements to Segment 2 are expected to cost a total of

\$330,000. Improvements to Segment 3 are expected to cost approximately \$8,966,000. Detailed cost estimates are included in Appendix C.

**Table 6
Cost Estimates – Option 2**

Item	Segment 2	Segment 3	Total
Construction	\$300,000	\$7,851,000	\$8,151,000
Preliminary Engineering (10%)	\$30,000	\$785,000	\$815,000
Right-of-Way Acquisition	\$0	\$0	\$0
Total	\$330,000	\$8,636,000	\$8,966,000
Total Cost/Mile	N/A	\$5,757,000	N/A

OPTION 3 – 4-Lane Improvement, Existing Corridor

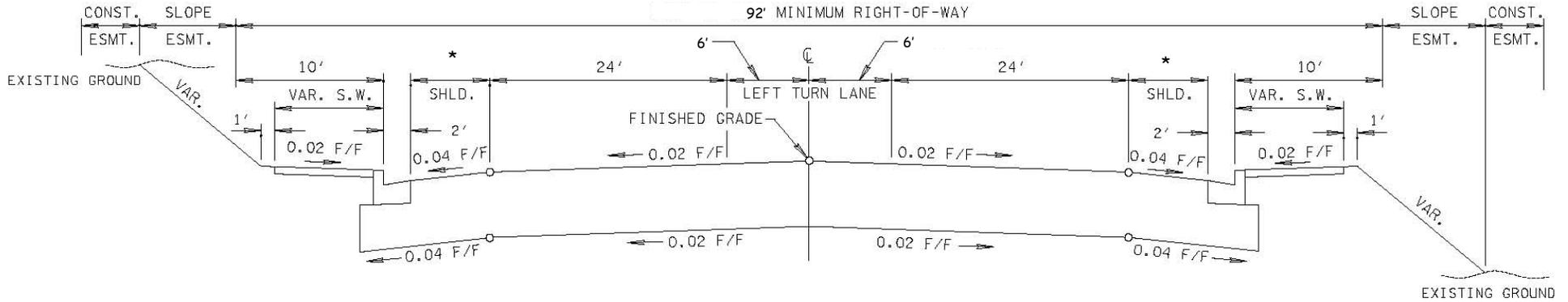
Option 3 evaluates the possibility of improving State Route 111 from Hassler Lane to the Kentucky State line to a four-lane highway. A rural four-lane cross section with a depressed median is evaluated for Segments 1 and 3. An urban four-lane cross-section is evaluated for Segment 2. Examples of an urban and rural cross-section are illustrated in Figure 7. Existing ROW should be available to accommodate a four-lane highway along the existing alignment of State Route 111. If portions of State Route 111 are realigned within the corridor, plans may require acquisition of additional ROW.

Anticipated Traffic Impacts

Capacity analyses were conducted using HCS to determine the projected levels of service if State Route 111 were improved to a four-lane highway. As shown in Table 7, each segment of State Route 111 would operate at LOS B or better during the peak hour. Capacity analysis reports are included in Volume II of this report.

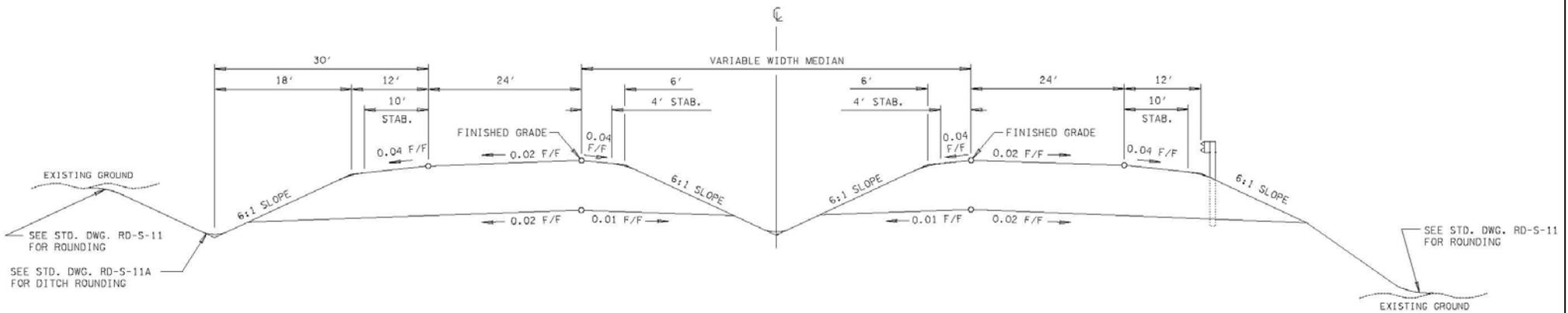
Anticipated Structural Impacts

Improving Segment 3 of State Route 111 to a four-lane highway will require widening the Wolf River bridge. If State Route 111 is widened along the existing alignment, no other structures should be impacted. Appendix D illustrates possible impacts, should State Route 111 be realigned within the 1,000 foot corridor for Option 3.



* 4-foot minimum shoulder for Segments 2

URBAN CROSS-SECTION



RURAL CROSS-SECTION - DEPRESSED MEDIAN

Note: The cross-sections shown are for planning purposes only; dimensions may change with design.

FIGURE 7 - OPTION 3 CROSS-SECTIONS

**Table 7
Projected Level of Service – Option 3**

Segment		LOS	
		2012	2032
1	Hassler Lane to Pendergrass Rd	A	A
2	Pendergrass Rd to SR 325 (West)	A	A
	SR 325 (West) to Love Lady	A	B
	Love Lady to SR 325 (East)	A	B
	SR 325 (East) to SR 295	A	A
3	SR 295 to Greenbriar	A	A
	Greenbriar to the KY State line	A	A

Anticipated Cultural Impacts

Several churches and cemeteries, as well as medical facilities are located within the 1,000 foot corridor along the existing alignment. Figures 1A thru 4B of Appendix D illustrate the location of possible cultural impacts.

Anticipated Environmental Impacts

To date, the Environmental Document for improvements to the intersection of State Route 111 at US 127 has been completed. No other known environmental assessments have been conducted along State Route 111 from Hassler Lane to the Kentucky State line. Prior to improvement of State Route 111, such a study should be conducted with emphasis on the impact to the Wolf River.

Field observations revealed two potential environmental impacts along the existing corridor. First, a protected habitat is located near Tulip Avenue in Segment 2 (see photo to right). Second, as shown in Figure 3B of Appendix D, the Wolf River is part of a reservoir. Improvements to State Route 111, including widening the Wolf River bridge should avoid impact within the reservoir boundary. However, as noted in the Field Review, a water line crosses the Wolf River, just east of the Wolf River bridge.



Cost Estimate

Total costs for each segment were estimated based on TDOT's 2007 Cost Data Spreadsheet. Since the existing ROW along State Route 111 ranges from 120 to 180 feet, no cost was estimated for ROW acquisition. As shown in Table 8, the total cost for improving State Route 111 to a four-lane highway, including the cost of widening the Wolf River bridge is estimated at \$78,812,000. Detailed cost estimates are included in Appendix C.

**Table 8
Cost Estimates – Option 3**

Item	Segment 1	Segment 2	Segment 3	Total
Construction	\$16,915,000	\$26,692,000	\$28,041,000	\$71,648,000
Preliminary Engineering (10%)	\$1,691,000	\$2,669,000	\$2,804,000	\$7,164,000
Right-of-Way Acquisition	\$0	\$0	\$0	\$0
Total	\$18,606,000	\$29,361,000	\$30,845,000	\$78,812,000
Total Cost/Mile	\$13,581,000	\$9,595,000	\$8,428,000	\$9,778,000

OPTION 4 – Realignment of Segment 3 (2-Lane)

Option 4 considers a new corridor that would realign Segment 3 between the intersections of State Route 111 at State Route 295 and State Route 111 at Mullins Lane. The 1,000 foot corridor evaluated is sketched in Figure 8 and detailed in Figures 3A and 4A of Appendix D. The new two-lane alignment would be approximately 2.8 miles long. For this option, no improvements to Segments 1 and 2 were evaluated.

Typical Cross-section

The realigned section of State Route 111 considered in Option 4 is evaluated as a two-lane highway with one, 12-foot travel lane and a 10-foot shoulder in each direction.

Anticipated Traffic Impacts

Assuming that the existing alignment of State Route 111 from State Route 295 to Mullins Lane is maintained after the improvements evaluated in Option 4, it is expected that approximately 85% of the traffic will utilize the new alignment. Approximately 15% will utilize the existing alignment to access residential areas and local roads such as Greenbriar Road. Figure 9 shows the anticipated traffic volumes for Option 4.

Capacity analyses were conducted using the HCS and the traffic volumes shown in Figure 9. Table 9 shows that if Option 4 is constructed, the new alignment will operate at the same levels of service at which the existing alignment is expected to operate under Option 1.

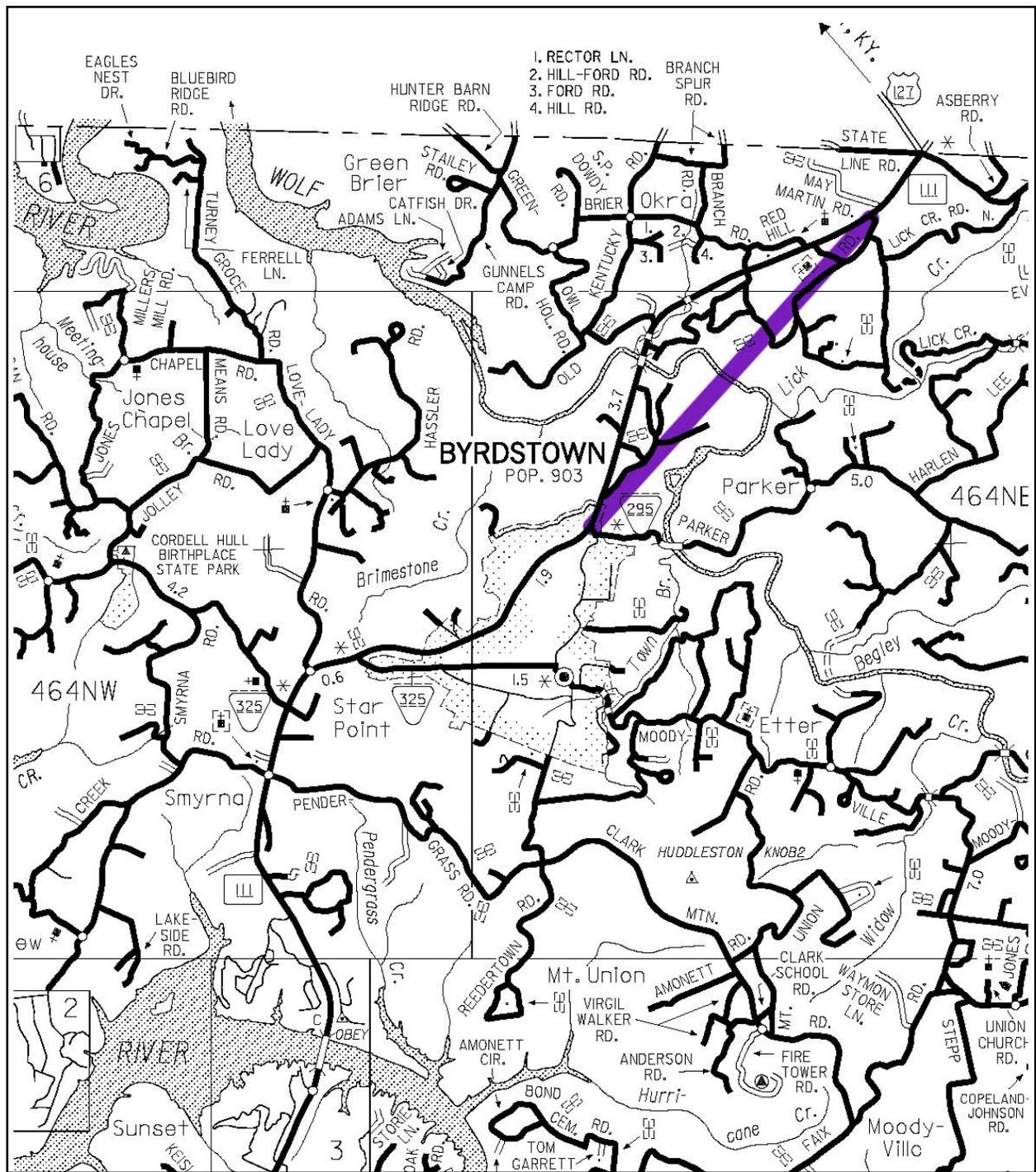


FIGURE 8 – NEW CORRIDOR FOR SEGMENT 3

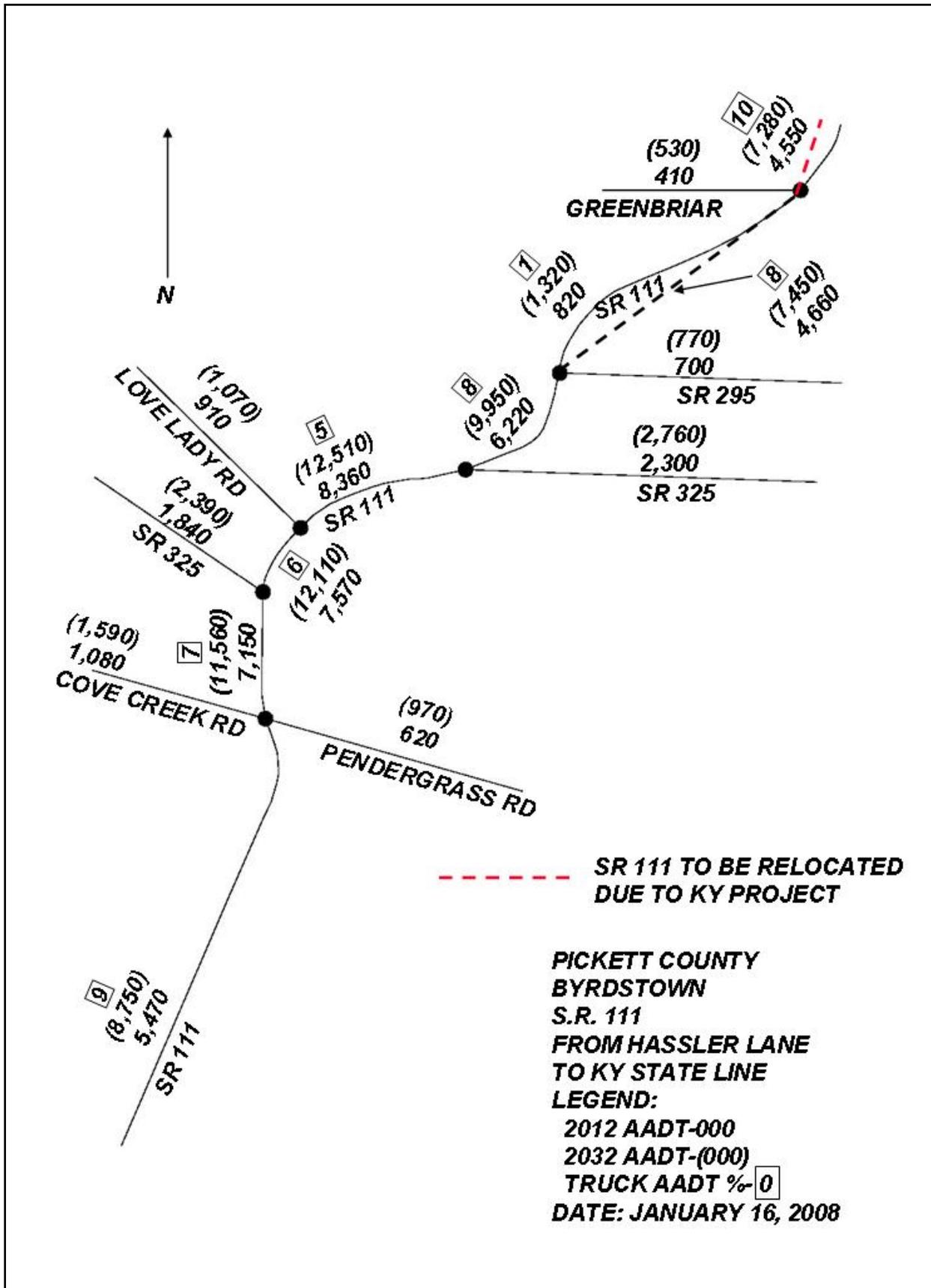


FIGURE 9 – TRAFFIC FOR NEW SEGMENT 3 CORRIDOR

**Table 9
Projected Level of Service – Option 4**

SR 111 Roadway Segment		LOS	
		2012	2032
3	SR 295 to Mullins (New)	C	D
	SR 295 to Greenbriar (Existing Alignment)	B	B
	Greenbriar to Mullins (Existing)	A	B

Cost Estimate

The cost estimated for Option 4 is shown in Table 10. As shown, the total cost for improvements included in Option 4 is approximately \$18,346,000.

**Table 10
Cost Estimates – Option 4**

Item	Segment 1	Segment 2	Segment 3	Total
Construction	\$0	\$0	\$12,874,000	\$12,874,000
Preliminary Engineering (10%)	\$0	\$0	\$1,287,000	\$1,287,000
Right-of-Way Acquisition	\$0	\$0	\$4,185,000	\$4,185,000
Total	\$0	\$0	\$18,346,000	\$18,346,000
Total Cost/Mile	\$0	\$	\$6,483,000	\$6,483,000

OPTION 5 – Realignment of Segment 3 (2-Lane); Spot Improvements to Segment 2

Option 5 is a combination of Option 2 and Option 4. As in Option 2, traffic signals are considered for the intersections of State Route 111 with State Route 325 (West) and State Route 325 (East). As in Option 4, a new corridor is evaluated for Segment 3.

Typical Cross-section

The realigned section of State Route 111 considered in Option 5 is also evaluated as a two-lane highway with one, 12-foot travel lane and a 10-foot shoulder in each direction.

Anticipated Traffic Impacts

As discussed in the analyses of Option 4, construction of a new two-lane roadway within the corridor proposed for Segment 3 is expected to improve the projected 2032 LOS on the existing Segment 3 from LOS D to LOS B. The new alignment is expected to operate at LOS C and LOS D in 2012 and 2032 respectively. Likewise, the traffic benefits of intersection improvements within Segment 2 are discussed in the analyses of Option 2.

Cost Estimate

The cost estimated for Option 5 is shown in Table 11. As shown, the cost for option 5 is estimated to be \$18,676,000.

**Table 11
Cost Estimates – Option 5**

Item	Segment 1	Segment 2	Segment 3	Total
Construction	\$0	\$300,000	\$12,874,000	\$13,174,000
Preliminary Engineering (10%)	\$0	\$30,000	\$1,287,000	\$1,317,000
Right-of-Way Acquisition	\$0	\$0	\$4,185,000	\$4,185,000
Total	\$0	\$330,000	\$18,346,000	\$18,676,000
Total Cost/Mile	\$0	\$	\$6,483,000	\$6,483,000

Option 6 – Realignment of Segment 3 (4-Lane); 4-Lane Improvement to Segments 1 and 2

Option 6 evaluates the improvement of Segments 1 and 2 to a four-lane highway, as well as a new four-lane facility within the proposed corridor described in Options 4 and 5 and shown in Figure 8 of this report. In this case, the segment of State Route 111 from Mullins Lane to US 127 in Kentucky would also be widened to four-lanes along the planned alignment.

Typical Cross-section

The same cross-sections recommended for Option 3 are also recommended for Option 6. Figure 7 of this report shows the urban cross-section recommended for Segment 2 and the rural cross-section recommended for Segments 1 and 3. ROW is currently available for widening Segments 1 and 2 to a four-lane facility. However, acquisition of ROW will be necessary for a new four-lane facility on Segment 3.

Anticipated Traffic Impacts

Assuming that the existing Segment 3 remains open to traffic, projected traffic volumes are expected to distribute as shown in Figure 9 of this report. For Segments 1 and 2, the expected levels of service are the same as for Segments 1 and 2 in Option 3. Capacity analyses were conducted using HCS to determine the 2012 and 2032 levels of service on Segment 3. As shown in Table 12, the realigned portion of State Route 111 from State Route 295 to Mullins Lane is expected to operate at LOS A in 2032. The existing portion of State Route 111 from State Route 295 to Mullins Lane will operate at LOS B in 2032.

Cost Estimate

The cost estimated for Option 6 is shown in Table 13. As shown, the total cost for Option 6 is approximately \$82,881,000.

Table 12
Projected Level of Service – Option 6

Segment		LOS	
		2012	2032
1	Hassler Lane to Pendergrass Rd	A	A
2	Pendergrass Rd to SR 325 (West)	A	A
	SR 325 (West) to Love Lady	A	B
	Love Lady to SR 325 (East)	A	B
	SR 325 (East) to SR 295	A	A
3	SR 295 to Greenbriar (Existing Segment)	B	B
	Greenbriar to Mullins (Existing Segment)	A	B
	SR 295 to Mullins (Proposed 4-Lane)	A	A
	Mullins to the Kentucky State line (4-Lane)	A	A

Table 13
Cost Estimates – Option 6

Item	Segment 1	Segment 2	Segment 3	Total
Construction	\$16,915,000	\$26,692,000	\$27,936,000	\$71,543,000
Preliminary Engineering (10%)	\$1,691,000	\$2,669,000	\$2,794,000	\$7,154,000
Right-of-Way Acquisition	\$0	\$0	\$4,185,000	\$4,185,000
Total	\$18,606,000	\$29,361,000	\$34,914,000	\$82,881,000
Total Cost/Mile	\$13,581,000	\$9,595,000	\$10,180,000	\$10,245,000

ASSESSMENT OF CORRIDOR OPTIONS

TDOT has developed a set of seven guiding principles by which all transportation projects are to be evaluated. These guiding principles include preservation and management of the existing transportation system, movement of a diverse and active population, support of the state's economy, maximization of safety and security, development of partnerships for livable communities, promotion of stewardship of the environment, and promotion of financial responsibility. The following paragraphs discuss the relationships between each corridor option evaluated in this report and the seven guiding principles.

Guiding Principle 1: Preserve and Manage the Existing Transportation System

As discussed in this report, the portion of State Route 111 under study is part of a major north-south connector in the East Tennessee region. State Route 111 is a prime route for truck traffic traveling from Chattanooga to Albany, Kentucky. Upon completion of the by-pass around Albany, Kentucky and improvements to US 127, traffic volumes on State Route 111 are expected to increase as the route becomes more attractive as a north-south connector. State Route 111, from Hassler Lane to the Kentucky State line is expected to maintain good levels of service until 2032. At that time, a portion of State Route 111 is expected to experience capacity deficiencies. Option 3 and Option 6 address the capacity deficiency while completing the improved (three to four-lane) State Route 111 corridor from Albany to Interstate 40. Option 2 and Option 4 offer less extensive improvements that focus on the local concerns and address the specific areas of need along the corridor.

Guiding Principle 2: Move a Growing, Diverse, and Active Population

State Route 111 serves a variety of motorists. On a regional scale, State Route 111 provides transportation for the trucking and tourist industry, as well as institutes of higher education. On a local scale, State Route 111 provides transportation for residents of Pickett County who travel within and outside the county for employment. In addition, State Route 111 serves as the primary route (and only route across Dale Hollow Lake in Pickett County) for emergency vehicles traveling to hospitals in Albany, Livingston, and Cookeville. Maintaining high levels of mobility along this route is critical to moving each of these populations.

Guiding Principle 3: Support the State's Economy

As discussed previously, State Route 111 plays an important role in the State of Tennessee's trucking and tourism industries. Improvements to State Route 111 from Hassler Lane to the Kentucky State line will help ensure the longevity of these industries in the region.

Guiding Principle 4: Maximize Safety & Security

The existing alignment for State Route 111 does not have any major geometric deficiencies, and crash rates are well below the statewide average. However, as mentioned previously in this report, representatives of the County's government have expressed concern over the safety on specific portions of State Route 111 – primarily its intersection with State Route 325 (West). The intersection of State Route 111 and State Route 325(West) may be improved in the process of widening Segment 2 to include four lanes; however, the concerns at this intersection may also be resolved with spot improvements outlined in Option 2.

Guiding Principle 5: Build Partnerships for Livable Communities

In 2004, TDOT adopted a new planning process, which encouraged public involvement in future transportation projects. Through this process, TDOT has received valuable insight into factors that might affect a project's design. TDOT has also been able to design new projects to reflect the priorities of the affected public.

The RPO program is an important vehicle for TDOT's public involvement program. The evaluation of State Route 111 included in this report is a direct result of action taken by the DHRPO, as well as the exchange of ideas between the DHRPO, Pickett County, Byrdstown, and TDOT. At the Field Review held on December 17, 2007, representatives of each organization met to officially discuss the State Route 111 corridor. Ideas and concerns brought forth during this meeting should direct the design of improvements to State Route 111 so that the needs of both the Pickett County community and the State of Tennessee are met.

Guiding Principle 6: Promote Stewardship of the Environment

Detailed environmental assessments are needed to fully address the impacts of the corridor option presented in this study. However, Table 14 shows some of the possible environmental and cultural impacts along State Route 111 as well as those that were identified during on-site field reviews. These impacts are also shown in Figures 1A through 4B of Appendix D.

Guiding Principle 7: Promote Financial Responsibility

As shown in Table 15, the options evaluated range in cost from \$8,966,000 (Option 2) to \$82,881,000 (Option 6). Segment improvements range in cost from \$330,000 to \$30,845,000. With exception to Options 1 and 4, each option evaluated in this report addresses the purpose and need for improvements to State Route 111. Thus a variety of opportunities are available for improving State Route 111 while promoting financial responsibility.

SUMMARY

The primary purpose and need for improvements to State Route 111 from Hassler Lane to the Kentucky State line is to provide system linkage, and in doing so, promote economic development in Pickett County.

With exception to Option 1 and Option 4, which offer no additional travel lanes, each of the options evaluated in this report meet the purpose and need for improvements to State Route 111. While Options 2 and 5 recommend only a two-lane cross-section, the spot improvements will assure that a high level of mobility is maintained for regional truck and tourism traffic.

The options evaluated range in cost from \$8,966,000 (Option 2) to \$82,881,000 (Option 6). Spot improvements range in cost from \$330,000 to \$30,845,000. Since multiple options meet the purpose and need of this report, a variety of opportunities are available for improving State Route 111 while promoting financial responsibility.

**Table 14
Known Environmental and Cultural Impacts**

Impacts	Hassler Lane to Pendergrass Rd	Pendergrass Rd to State Route 295	State Route 295 to Kentucky State Line (Options 1,2,3)	State Route 295 to Kentucky State Line (Options 4,5,6)
Blue Line Streams			X	X
Wetlands			X	X
Floodplains			X	X
Churches	X			X
Historic Site		X		
Cemeteries	X	X	X	X
Forested Land	X	X	X	X
Endangered Species				
Protected Habitat		X		

**Table 15
Cost Estimates – Summary**

Corridor Option	Segment 1	Segment 2	Segment 3	Total Cost
Option 1	\$0	\$0	\$0	\$0
Option 2	\$330,000	\$0	\$8,636,000	\$8,966,000
Option 3	\$18,606,000	\$29,361,000	\$30,845,000	\$78,812,000
Option 4	\$0	\$0	\$18,346,000	\$18,346,000
Option 5	\$0	\$330,000	\$18,346,000	\$18,676,000
Option 6	\$18,606,000	\$29,361,000	\$30,309,000	\$82,881,000

APPENDICES

APPENDIX A
PURPOSE AND NEEDS STATEMENT
(TDOT'S LONG RANGE PLANNING DIVISION)

PRELIMINARY PURPOSE AND NEEDS STATEMENT

DALE HOLLOW RPO

Prime Study Corridor as recommended by the RPO: SR-111 from SR-294 RT, Livingston, Overton Co. to Kentucky State line, Pickett Co. Total Miles: 22.1

Recommendation: TPR for SR-111 from Hassler Lane, Pickett Co. to the Kentucky State Line, a distance of 8.09 miles.

The Long Range Planning Division conducted a Needs Assessment for SR-111 from SR-294 RT in Livingston, Overton Co. to the Kentucky State line in Pickett Co., a distance of 22.1 miles. This study corridor is a designated County Seat Connector to Interstate 40, and provides employment access to other counties, to industrial areas and to the Cookeville – Livingston – Celina link to the Appalachian Development Highway System Corridor J. The route is the Prime Study priority for the Dale Hollow RPO.

The study corridor was divided into Segments of Independent Utility (SIU) based upon a logical terminus or a significant break in traffic conditions. This resulted in the identification of 3 SIU's for the 22.1 mile study corridor. The Needs Assessment evaluated each of the three SIU's based upon Congestion (Capacity), Safety (Crash and Geometrics), and Access (System Linkage/Corridor Connection /Social/Economic/Infrastructure Demands). The following table provides a description of each of the 3 SIU's:

<u>Segment</u>	<u>County</u>	<u>Route</u>	<u>Termini</u>
A	Overton	SR-111	SR-294 RT to SR294 LT, Livingston, Overton Co.
B	Overton	SR-111	SR-294 LT, Livingston, Overton Co. to Hassler Lane Rd., Pickett Co.
C	Pickett	SR-111	Hassler Lane Rd. to Kentucky State Line, Pickett Co.

Segment C is the segment within the primary study corridor that demonstrates the near term capacity deficiency in the year 2007. This segment has a forecasted capacity deficiency resulting from local and tourist traffic in and around the Byrdstown area. To become capacity deficient, a route must reach a Level of Service (LOS) D in rural areas, and LOS E in urban locations. Segment A from SR-294 RT to SR-294 LT in Overton Co. does not demonstrate any capacity deficiencies, although it shows a crash rate at the periphery of Livingston that is greater than the statewide average. Segment B does not demonstrate any capacity deficiencies for the next 25 years.

Congestion (Capacity)

An initial needs assessment of the 22.1 mile corridor, utilizing the Statewide Model (SWM) and the Roadway Efficiency Evaluation (EVE) programs, indicated Segments B and C becoming capacity deficient in 2006 and

Systems Planning and Policy Office

6/7/2007

2016, respectively, and Segment A not becoming deficient within a 25 year planning horizon. A subsequent analysis, utilizing updated EVE information, showed that neither Segment A nor Segment B showed a projected capacity deficiency within the 25 year planning horizon, while Segment C showed a current deficiency for 2007.

Traffic congestion is measured with Level of Service (LOS) A through F, with A being the best condition and F being the worst. EVE designates that a roadway capacity deficiency occurs at LOS D in rural areas, and at E in urban areas. The capacity factors for the individual segments are shown below.

Segment*	Mileage	Current ADT	Current LOS	Forecast ADT	Capacity Deficiency
A	3.63	7,640-12,110	C	13-287-21,062	>2032
B	10.38	4,510-7,640	B	7,844-13,287	>2032
C	8.09	4,330-6,430	D	7,171-11,563	2007

* Roadway segments are illustrated in the attached maps and needs assessment table.

Safety (Crash and Geometrics)

The Tennessee Roadway Information Management System (TRIMS) provides crash data for locations that exceed statewide critical rates, and for geometric deficiencies such as narrow lane and shoulder width, and excessive curves and grades, as defined by generally accepted design standards. No geometric deficiencies exist along the study corridor. Segment A indicates a crash rate that exceeds the statewide average. The roadway in Segment C, the corridor segment recommended for a TPR, typically consists of two 12' paved lanes, two 10' asphalt shoulders with a 12' truck climbing lane south of Byrdstown, and a 120' to 180' ROW.

Segment	Shoulder width deficiency	Lane width deficiency	Excessive Curves & Grades	Crash Rate > Statewide Average**
A				X
B				
C				

** All Crash Data is derived from TRIMS.

6/7/2007

Access (System Linkage/Corridor Connection/Social/Economic/Infrastructure Demand)

Location of existing social/economic/infrastructure facilities and amenities as provided by local RPO Coordinator:

- County Seat Connector
- Rural Principal Arterial
- North/South connector for I-40
- Connector to the Appalachian Development Highway Systems Corridor J
- Access to Livingston Regional and Cookeville Regional Hospitals
- Improve travel time to Regional Hospitals and Healthcare facilities in Livingston and Cookeville
- Main route for Emergency services for the County that is split by Dale Hollow Lake
- Proposed by-pass around Albany, KY will increase commercial traffic
- Route utilized by trucks traveling to landfill
- Direct feed to County's school system
- Access from north to Tennessee Technology Center in Livingston, Tennessee Technological University and Nashville Tech in Cookeville
- Access to Livingston Regional Airport
- Employment access to other counties and main route to industrial areas
- 1.06 Million visitors per year visiting Dale Hollow Lake
- Future home of Welcome Center on SR-111 in Tennessee which will house a museum of the Upper Cumberland Region's history
- Main route to Cordell Hull State Museum and Park

Recommendation

The Long Range Planning Division recommends that a TPR be undertaken for SR-111 from Hassler Lane, Pickett Co. to the Kentucky State line (Segment C) due to projected capacity deficiencies in this area.

6/7/2007

PRELIMINARY PURPOSE AND NEEDS STATEMENT

DALE HOLLOW RPO

STAKEHOLDERS:

Stephen Bilbrey
931-864-3798

Pickett County Executive
1 Courthouse Square, Suite 200
Byrdstown, TN 38549

Billy Robbins
931-864-6215

Byrdstown Mayor
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Byrdstown, TN 38549

Jimmy Cope
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Pickett Co. Highway Superintendent
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Debbie Garrett
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Kenneth Copeland
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John M Roberts
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Executive Director
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Livingston, TN 38570

Diane Dillon

Overton County Coordinator

Systems Planning and Policy Office

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6/7/2007

931-823-7323

Ken Mabery
Fran Davis
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106 West Henson Street
Livingston, TN 38570

RPO Coordinator
RPO Coordinator
Upper Cumberland Development District
225 South Willow Avenue
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APPENDIX B
FIELD REVIEW INFORMATION

CTE
220 Athens Way, Suite 200, Nashville, TN 37228-1352
T 615.244.8864 F 615.244.8760 www.cte.aecom.com

Meeting & Field Review Minutes

Subject: TPR – SR 111 from Hassler Lane to Kentucky State Line

Meeting Date: December 17, 2007

Location: Pickett County Library, Byrdstown

Transcription Date: January 2, 2008

Attendees: TDOT: Ron Baker, Mike Updike, Gary Chapman, Alan Wolfe, Barry McClendon, Robert Rodgers; Byrdstown: Mayor Robbins, Tom Gunter, Sue Gunter, Debbie Garrett; RPO: Fran Davis; Pickett County: Executive Stephen Bilbrey; Overton County: Executive Kenneth Copeland; FHWA: Leigh Ann Tribble; CTE: Jim Morinec, Kim King, Marshall Boyd

Copies: Attendees, Bill Hart, Terry Gladden, Steve Allen, Kenny Elrod

Purpose:

The purposes of this meeting were as follows: 1) To familiarize the stakeholders with the Transportation Planning Report (TPR) process, specifically regarding State Route 111; 2) To receive feedback from the stakeholders on the corridor option and possible impacts presented; and 3) To identify additional historical, environmental, or culturally significant impacts along the corridor. The following summarizes the information provided by the attendees:

Meeting:

CTE began the meeting with an explanation of the TPR process and background on the project. CTE explained that the original request from the Regional Planning Organization (RPO) was to evaluate improvements to the entire 22-mile segment of SR 111 from Livingston to the Kentucky State line. The TDOT Long Range Planning Division identified the segment from Hassler Lane to the Kentucky State line as the priority segment based on existing and projected capacity deficiencies.

CTE then explained the purpose and need, as identified at that time. Primary needs involved addressing capacity issues, as well as roadway network and corridor connectivity. CTE presented an aerial photograph, with the proposed corridor, traffic generators, and potential impacts displayed. CTE also provided each attendee with a copy of a quad map of the existing roadway segment, a Kentucky map showing planned improvements to US 127 (see attached map), and examples of possible urban and rural cross-section options. (The planned improvements to US 127 will realign SR 111 from the Kentucky state line to Mullins Lane. The realigned portion will provide two travel lanes; however enough right-of-way will be purchased to provide four travel lanes in the future.)

CTE then asked that the attendees review the aerial photograph presented and mark additional impacts/areas of concern. During this effort, the following additional impacts/concerns were identified:

- ✓ A new Visitor center is planned at the site (approx. 11 acres) of the Amonett House, located on the east side of SR 111, just south of SR 325. The Visitor center will become a Civil War museum and tourist attraction.
- ✓ The Amonett House and the Amonett-Dickson Cemetery are not currently on the National Historic Register (NHR), but are likely eligible. The City of Byrdstown is pursuing the registration process.
- ✓ A natural gas pipeline crosses SR 111 near the Amonett house

- ✓ According to TDOT and Federal Highway Administration (FHWA) representatives, Hassler Lane is not a logical terminus – the SR111/42 Bypass in Livingston is preferred. Local officials expressed concern that ending the improved segment at Hassler Lane would create a bottleneck at the Obey River bridge.
- ✓ Currently SR 111 serves as a shortcut for tractor trailers traveling from KY to I-40 and Chattanooga. Truck traffic will increase along SR 111 once the bypass opens around Albany, KY.
- ✓ Byrdstown has a medical center, but no hospital. All emergency and over night patients must be taken to Livingston or Albany, KY.
- ✓ TDOT recommended relocating the Wolf River Bridge to the east around the bend and keeping fill outside the reservoir boundary. In response to this, County officials noted that a water line crosses the Wolf River, east of SR 111.
- ✓ To attract industry, County officials noted that 4-lanes are needed.
- ✓ Appalachian Planning District (APD) funding was discussed; however, APD funding is not available for this particular corridor.
- ✓ Local officials noted that SR 111 was initially built with APD money, and that the rest of the funding was given to SR 52 in Celina
- ✓ The National Environmental Policy Act (NEPA) document for the bypass on the KY side is finished, and Right-of-Way (ROW) plans are complete.
- ✓ Many residents of Pickett County travel SR 111 for higher education and jobs in places such as Cookeville and Livingston.
- ✓ Occasionally, fog is a problem at the Wolf River bridge. Representatives of Pickett County also expressed concern about safety near the intersection at SR 325 and the Shell Station.

Field Review:

Attendees then drove the segment of SR 111 from Hassler Lane Road to the KY State Line in separate vehicles, stopping at locations: SR111/Hassler Lane, SR 111/Cove Creek Road (Smyrna Church), SR111/SR 325 (Cordell Memorial Road), SR111/SR 325 (Amonett House), SR111/Baker's Point Road (Wolf River), and SR111/Mullins Lane. During this time, attendees pointed out impacts/areas of concern listed above. In addition, TDOT representatives noted that the speed limit on SR 111 from Hassler Lane to KY state line is 50 or 55 mph, even through the urban areas. Near the Smyrna Church, ROW markers indicate existing ROW may be sufficient for improvements.

These minutes represent our understanding of the discussion and decisions reached during the meeting and field review.

Sincerely,

CTE



Kim King, E.I.
Transportation Planner

Clinton County Six Year Plan Projects

Legend

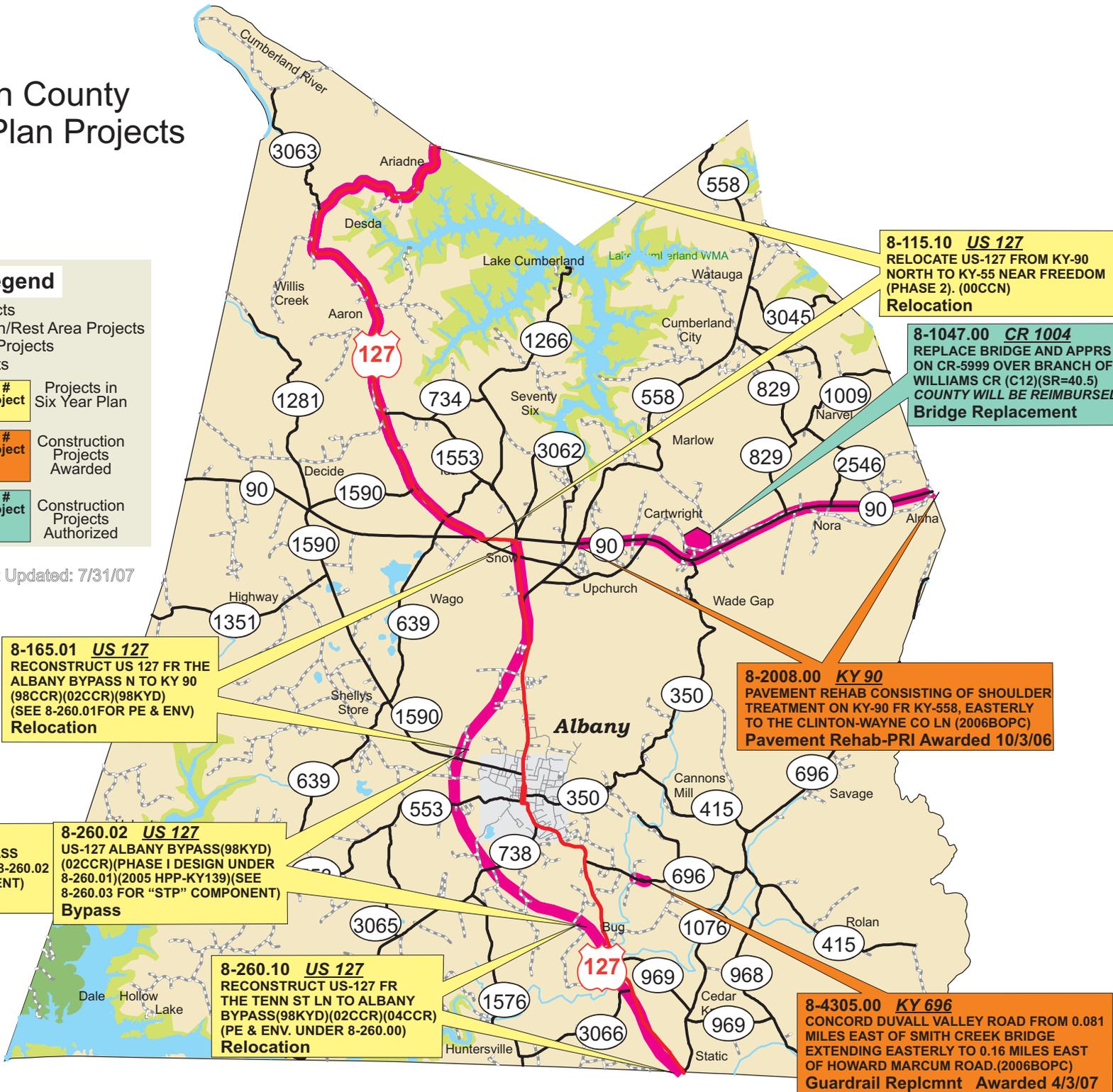
- ◆ Bridge Projects
- ▲ Weigh Station/Rest Area Projects
- Interchange Projects
- Other Projects

Project # **Route #** **Description of Project**
Type Work **Award Date** Projects in Six Year Plan

Project # **Route #** **Description of Project**
Type Work **Award Date** Construction Projects Awarded

Project # **Route #** **Description of Project**
Type Work **Authorized Date** Construction Projects Authorized

Last Updated: 7/31/07



8-115.10 US 127
RELOCATE US-127 FROM KY-90 NORTH TO KY-55 NEAR FREEDOM (PHASE 2). (00CCN)
Relocation

8-1047.00 CR 1004
REPLACE BRIDGE AND APPRS ON CR-5999 OVER BRANCH OF WILLIAMS CR (C12)(SR=40.5) COUNTY WILL BE REIMBURSED
Bridge Replacement

8-165.01 US 127
RECONSTRUCT US 127 FR THE ALBANY BYPASS N TO KY 90 (98CCR)(02CCR)(98KYD) (SEE 8-260.01 FOR PE & ENV)
Relocation

8-2008.00 KY 90
PAVEMENT REHAB CONSISTING OF SHOULDER TREATMENT ON KY-90 FR KY-558, EASTERLY TO THE CLINTON-WAYNE CO LN (2006BOPC)
Pavement Rehab-PRI Awarded 10/3/06

8-260.03 US 127
US-127 ALBANY BYPASS (02CCR)(04CCR)(SEE 8-260.02 FOR "HPP" COMPONENT)
Bypass

8-260.02 US 127
US-127 ALBANY BYPASS(98KYD) (02CCR)(PHASE I DESIGN UNDER 8-260.01)(2005 HPP-KY139)(SEE 8-260.03 FOR "STP" COMPONENT)
Bypass

8-260.10 US 127
RECONSTRUCT US-127 FR THE TENN ST LN TO ALBANY BYPASS(98KYD)(02CCR)(04CCR) (PE & ENV. UNDER 8-260.00)
Relocation

8-4305.00 KY 696
CONCORD DUVALL VALLEY ROAD FROM 0.081 MILES EAST OF SMITH CREEK BRIDGE EXTENDING EASTERLY TO 0.16 MILES EAST OF HOWARD MARCUM ROAD.(2006BOPC)
Guardrail Replcmnt Awarded 4/3/07

**SR 111 Field Review Attendance List
(December 17, 2007)
Pickett County Library**

NAME	EMAIL	Attendance
Bill Hart (TDOT)	bill.hart@state.tn.us	
Terry Gladden (TDOT)	Terry.Gladden@state.tn.us	
Ron Baker (TDOT)	Ron.baker@state.tn.us	YES
Mike Updike (TDOT)	Mike.updike@state.tn.us	YES
Leigh Ann Tribble (FHWA)	leighann.tribble@fhwa.dot.gov	YES
Jon Zirkle (TDOT)	jon.zirkle@state.tn.us	
Henry Pate (TDOT)	Henry.pate@state.tn.us	
Harold Jackson (TDOT)	Harold.jackson@state.tn.us	
Jim Johnston (TDOT)	jim.johnston@state.tn.us	
Gary Chapman (TDOT)	Gary.chapman@state.tn.us	YES
Mike Tugwell (TDOT)	mike.tugwell@state.tn.us	
Alan Wolfe (TDOT)	Alan.wolfe@state.tn.us	YES
Fran Davis (Dale Hollow RPO)	fdavis@udcdd.org	YES
Stephen Bilbrey (Pickett County)	pickettcogov@twlakes.net	YES
Billy Robbins (Byrdstown Mayor)	Byrdstown@twlakes.net	YES
Jimmy Cope (Pickett County)	pickettcohwy@twlakes.net	
Debbie Garrett (Pickett County)	clarkrdc@twlakes.net	YES
Kenneth Copeland (Overton County)	overtonexec@twlakes.net	YES
Curtis Hayes (Livingston Mayor)	livingstonmayor@comcast.net	
Charles Parrott (Overton County)	overtonexec@twlakes.net	
John Roberts (Livingston)	chamber@twlakes.net	
Diane Dillon (Overton County)	bdqdillon@yahoo.com	
Jim Morinec (CTE)	Jim.morinec@cte.aecom.com	YES
Marshall Boyd (CTE)	Marshall.boyd@cte.aecom.com	YES
Kim King(CTE)	Kim.king@cte.aecom.com	YES
Barry McClendon (TDOT)	Robert.mcclendon@state.tn.us	YES
Robert Rodgers (TDOT)	Robert.rodgers@state.tn.us	YES
Sue Gunter	-	YES
Tom Gunter	-	YES

APPENDIX C
DETAILED COST ESTIMATES

TDOT Factors for Cost Estimate - Cost for Each Option to Follow

2007 COST DATA SHEET (1)			
ROW Cost Per Mile x ROW Factor + Construction Cost Per Mile x Terrain Factor x Construction Factor			
+ PE Cost (10% of Construction Cost) x Distance			
Base Per Mile ROW Cost*		\$845,000	
Right Of Way (ROW) Factor**			
<u>Area</u>			<u>Factor</u>
CBD			3.25
CBD Urbanized			12.50
Heavy Commercial (High Rise, Large Building)			3.25
Strip Commercial			3.25
Fringe (Mixed, Residential/Commercial)			1.75
Industries (Factories, Warehouse)			1.75
Light Residential (1/4- Acres)			1.75
Medium Residential (Acres+)			1.75
Heavy Residential (Apartments)			1.75
Public Use (Parks, School)			1.75
Rural			1.00
Base Per Mile Construction Cost ***		\$2,684,000	
Terrain Factor **			
<u>Area</u>		<u>Factor</u>	
Flat		1.00	
Rolling		1.30	
Mountainous		2.30	
Heavy Mountainous		3.90	
Construction Factor**			
<u>Recommendation</u>	<u>Factor</u>	<u>Recommendation</u>	<u>Factor</u>
New 2 Lane	1.00	New 4 Lane	2.00
Reconstruct 2 Lane	1.00	Reconstruct 4 Lane	2.00
Reconstruct 3 Lane	1.50	Reconstruct 4 to 6 Lane	2.00
Reconstruct 2 to 4 Lane	2.00	Reconstruct 4 to 7 Lane	2.50
Reconstruct 2 to 5 Lane	2.50	New 4 Lane Interstate	3.60
Reconstruct 2 to 6 Lane	2.90	Add 2 Interstate Lanes	3.50
Reconstruct 2 to 7 Lane	3.30	Add 4 Interstate Lanes	3.60
Interstate Urbanized Area Factor **** = Construction Factor x 1.5			
Preliminary Engineering Cost		10% of construction cost	

TDOT Factors for Cost Estimate - Cost for Each Option to Follow

*	Cost based on a per mile ROW cost for a rural area from cost data supplied by the Programming Office for previous need studies.
**	Factor based on cost data supplied by the Programming Office for previous need studies.
***	Cost based on constructing a 2 lane road on level terrain from cost data supplied by the Programming Office for previous need studies.
****	Factor based on interchange / interchange modification cost in urbanized areas.

(1) Note: Data is derived from Tennessee Department of Transportation state-wide cost estimates used for planning purposes; Cost specifications for individual projects may vary significantly from state-wide averages.

2004 COST DATA SHEET

1. ROW CHART

Area	Factor	Cost Per Mile
CBD	3.25	\$2,746,250
CBD Urbanized	12.50	\$10,562,500
Heavy Commercial (High Rise, Large Building)	3.25	\$2,746,250
Strip Commercial	3.25	\$2,746,250
Fringe (Mixed, Residential/Commercial)	1.75	\$1,478,750
Industries (Factories, Warehouse)	1.75	\$1,478,750
Light Residential (1/4- Acres)	1.75	\$1,478,750
Medium Residential (Acres+)	1.75	\$1,478,750
Heavy Residential (Apartments)	1.75	\$1,478,750
Public Use (Parks, School)	1.75	\$1,478,750
Rural	1.00	\$845,000

2. CONSTRUCTION, TERRAIN, AND RECOMMENDATION CHART

Recommendation	Flat	Rolling	Mountainous	Heavy Mountainous
New 2 Lane	\$2,684,000	\$3,489,200	\$6,173,200	\$10,467,600
Reconstruct 2 Lane	\$2,684,000	\$3,489,200	\$6,173,200	\$10,467,600
Reconstruct 3 Lane	\$4,026,000	\$5,233,800	\$9,259,800	\$15,701,400
Reconstruct 2 to 4 Lane	\$5,368,000	\$6,978,400	\$12,346,400	\$20,935,200
Reconstruct 2 to 5 Lane	\$6,710,000	\$8,723,000	\$15,433,000	\$30,356,040
Reconstruct 2 to 6 Lane	\$7,783,600	\$10,118,680	\$17,902,280	\$30,356,040
Reconstruct 2 to 7 Lane	\$8,857,200	\$11,514,360	\$20,371,560	\$34,543,080
New 4 Lane	\$5,368,000	\$6,978,400	\$12,346,400	\$20,935,200
Reconstruct 4 Lane	\$5,368,000	\$6,978,400	\$12,346,400	\$20,935,200
Reconstruct 4 to 6 Lane	\$5,368,000	\$6,978,400	\$12,346,400	\$20,935,200
Reconstruct 4 to 7 Lane	\$6,710,000	\$8,723,000	\$15,433,000	\$26,169,000
New 4 Lane Interstate	\$9,662,400	\$12,561,120	\$22,223,520	\$37,683,360
Add 2 Interstate Lanes	\$9,394,000	\$12,212,200	\$21,606,200	\$36,636,600
Add 4 Interstate Lanes	\$9,662,400	\$12,561,120	\$22,223,520	\$37,683,360

2a. INTERSTATE URBANIZED AREA FACTOR

Construction Factor x 1.5

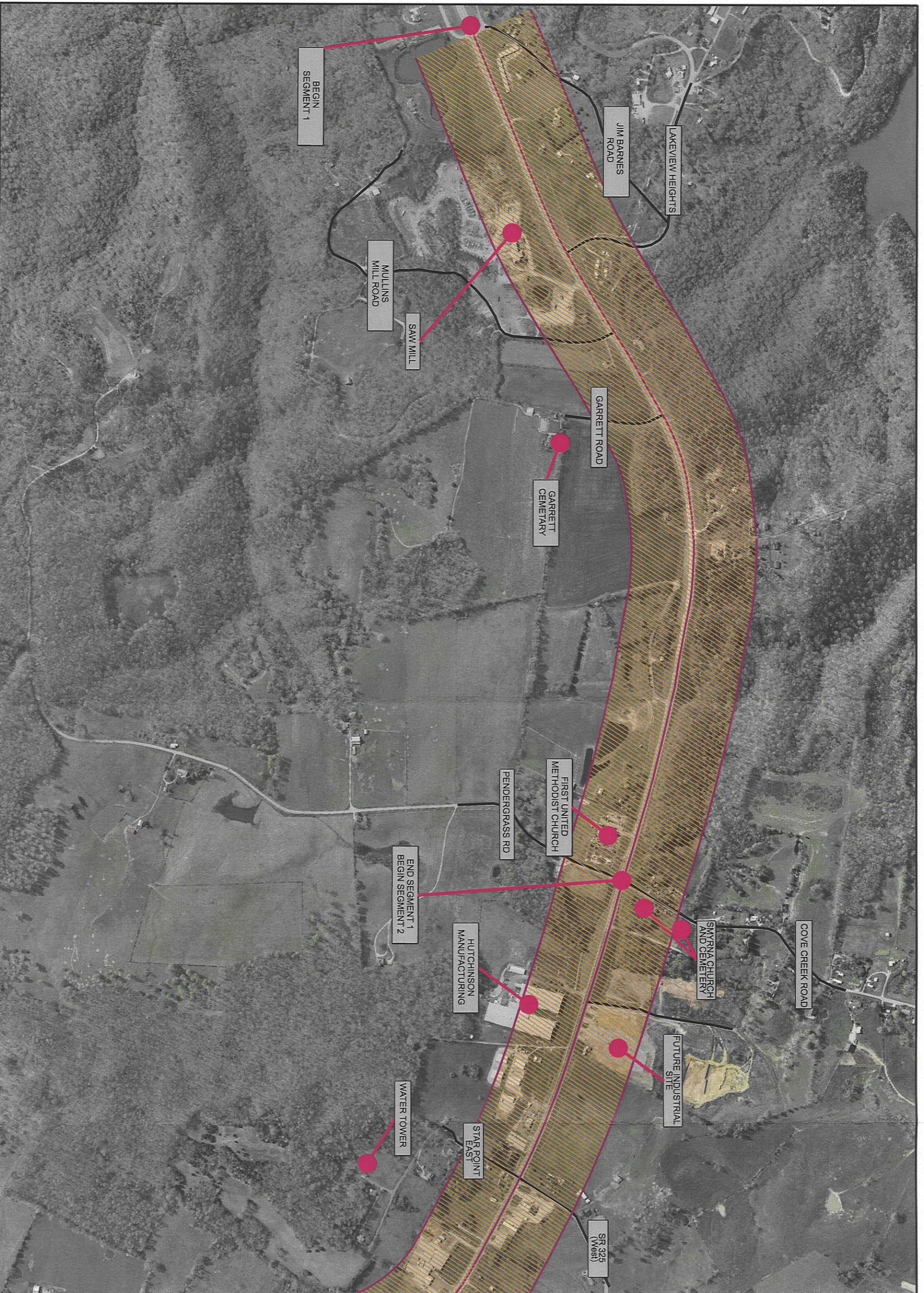
TDOT Factors for Cost Estimate - Cost for Each Option to Follow

3. PRELIMINARY ENGINEERING CHART					
10% of construction cost					
4. Add step 1 ROW Cost, step 2 Construction Cost, step 3 PE cost(10% of Construction cost) x distance					
PRELIMINARY ENGINEERING = \$150,000 PER MILE					
Nellie					
2003 Cost to 2004 = 4% increase					
RESURFACE ONLY = \$40,000 PER LANE MILE					
2004 cost to 2005 = 10% increase*					
2005 cost to 2006 = 10% increase*					
ANNUAL MAINTENANCE = \$7,300 PER RDWY MILE					
PE = \$300,000 per mile					
Welcome Center = \$750,000					
* due to concrete and steel cost increase					
Rest Area = \$550,000					
Sidewalks (72,000 - 1990) = 138,000 per mi					
Major River Crossing (2007 cost):					
Tennessee River: \$23 million					
Cumberland River: \$18 million					
General Per Mile Cost					
Interchange (rural) = \$10 to 15 Million					
2 to 4 lanes = 6 million					
Interchange (urban) = \$16 to 30 Million					
2 to 4 lanes (mountain terran) = 6 million					
PE= \$300,000 per mile					
I-69 estimated cost = 1.563 B (2005 dollars)					
ROW= \$200,000 per mile; \$4-5 thousand per acre (rural) (2007 cost)					
ROW= \$1.2 million per mile; \$25-30 thousand per acre (urban) (2007 cost)					
Region 2 limits the paving of shoulders to 4 ft. maximum. Normal route shoulder widths vary from 2 ft. to 4 ft. This allows for placement of shoulder mix in the same pass as the roadway. Placement in this manner will not result in any additional placement costs above the cost of the mix. On routes with 10 ft. shoulders, we still pave a maximum of 4 ft. (2 ft. regular roadway slope plus 2 ft. taper). On divided highways, we pave the 4 ft. inside shoulder and a maximum of 4 ft. (2 ft. regular roadway slope plus 2 ft. taper) on the outside shoulder.					
The average cost of surface "D" mix for 2005 was \$45.00 per ton. Also, the scoring price is \$450.00 per linear mile. The following is a breakdown of this year's shoulder costs for Region 2. All costs shown below are reflected in cost per lane mile.					

TDOT Factors for Cost Estimate - Cost for Each Option to Follow

2 ft.		4 ft.	2' + 2'taper		2' + 2'taper	4 ft.
					w/scoring	w/scoring
\$3,498.00		\$6,996.00	\$5,247.00		\$5,697.00	\$7,446.00
(1) Note: Data is derived from Tennessee Department of Transportation state-wide cost estimates used for planning purposes; Cost specifications for individual projects may vary significantly from state-wide averages.						
					12% cost increase from 2005 to 2006	

APPENDIX D
AERIAL & USGS MAPS ILLUSTRATING
CORRIDOR IMPACTS



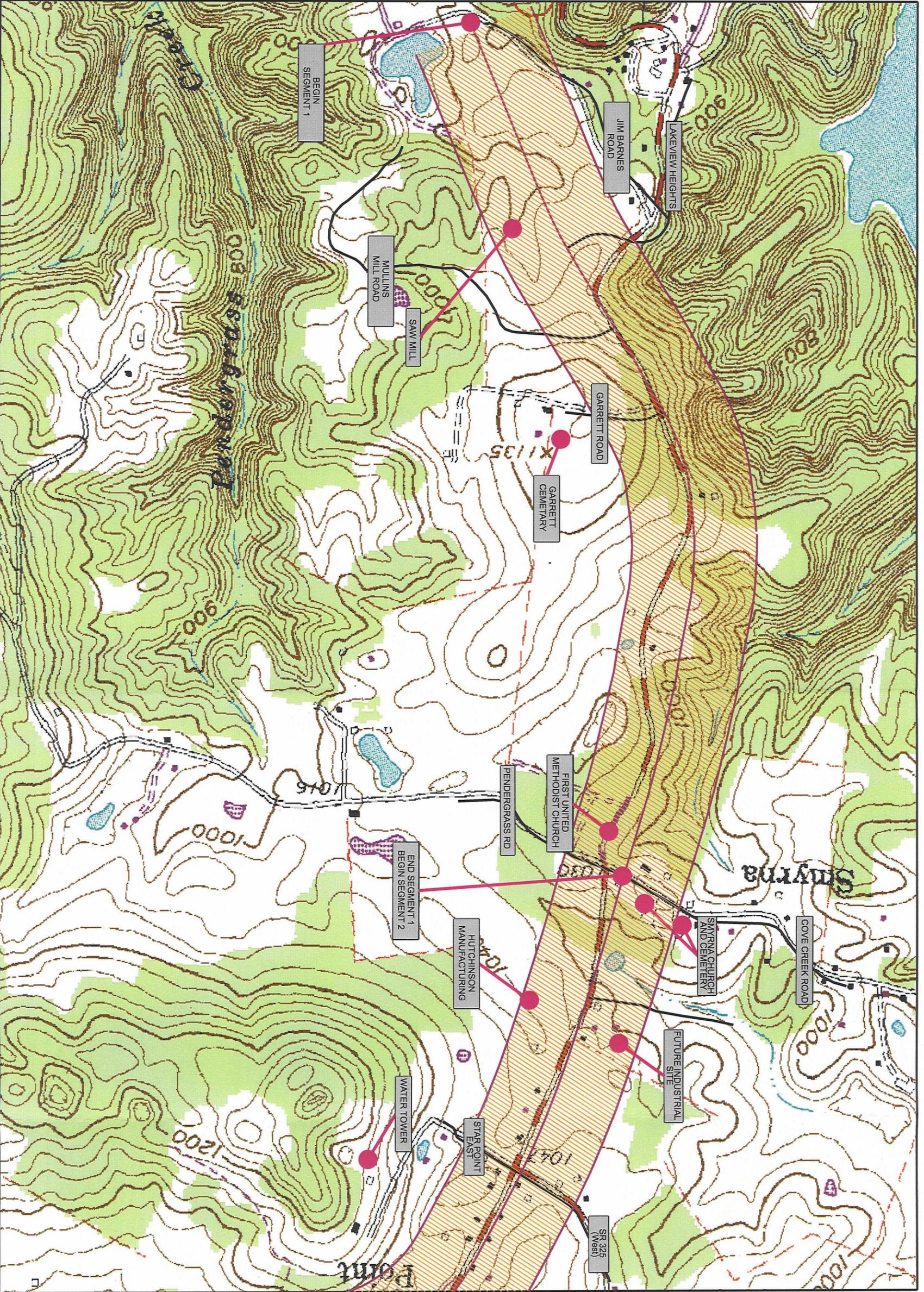
MATCH LINE - SEE FIGURE 2A

TYPE	YEAR	PROJECT NO.	SHEET NO.



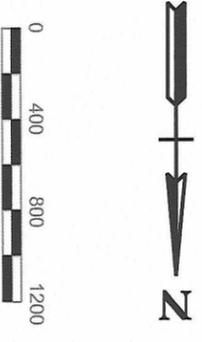
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

FIGURE 1A
AERIAL



MATCH LINE - SEE FIGURE 2B

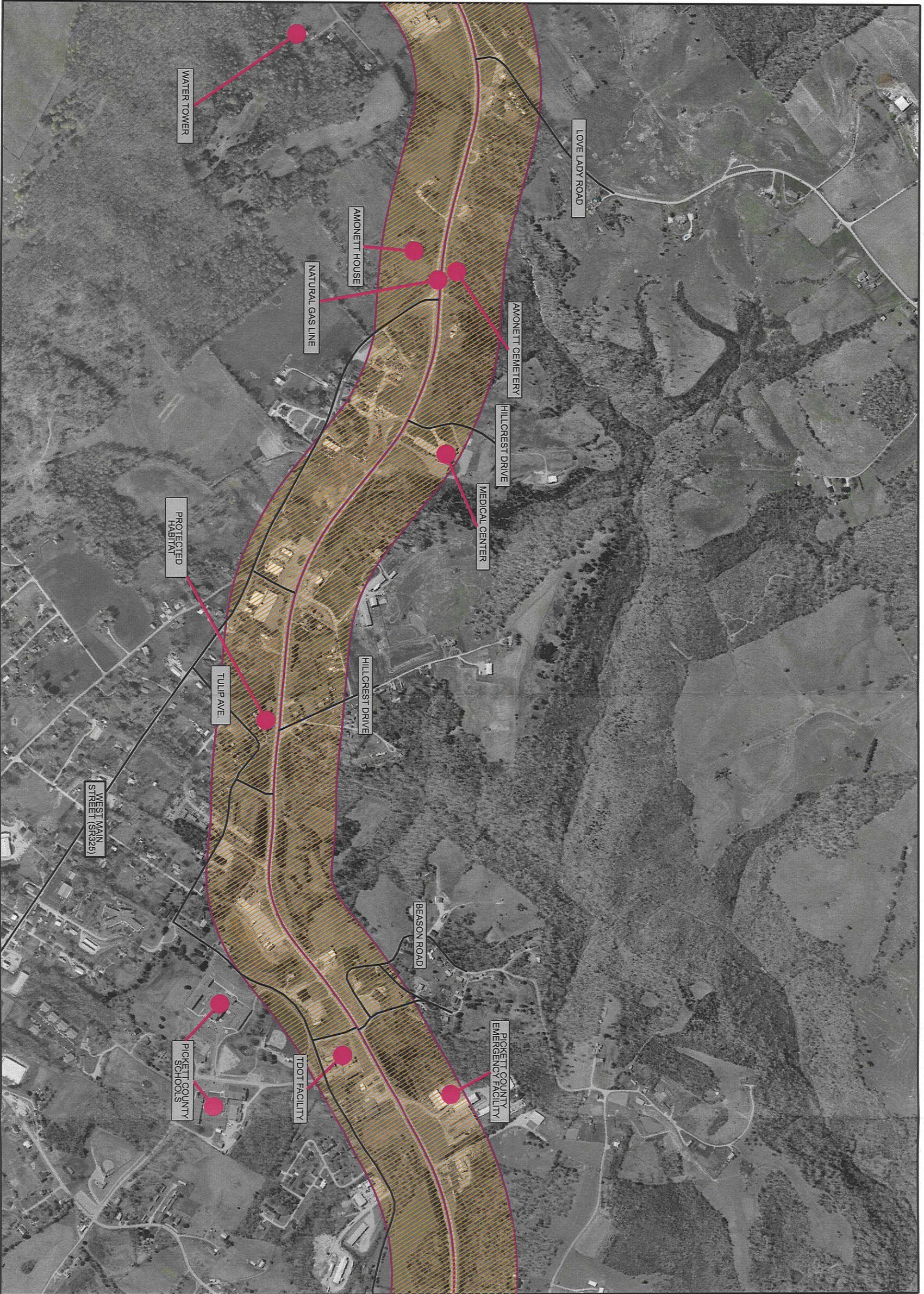
TYPE	YEAR	PROJECT NO.	SHEET NO.



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

FIGURE 1B
USGS

MATCH LINE - SEE FIGURE 1A



MATCH LINE - SEE FIGURE 3A

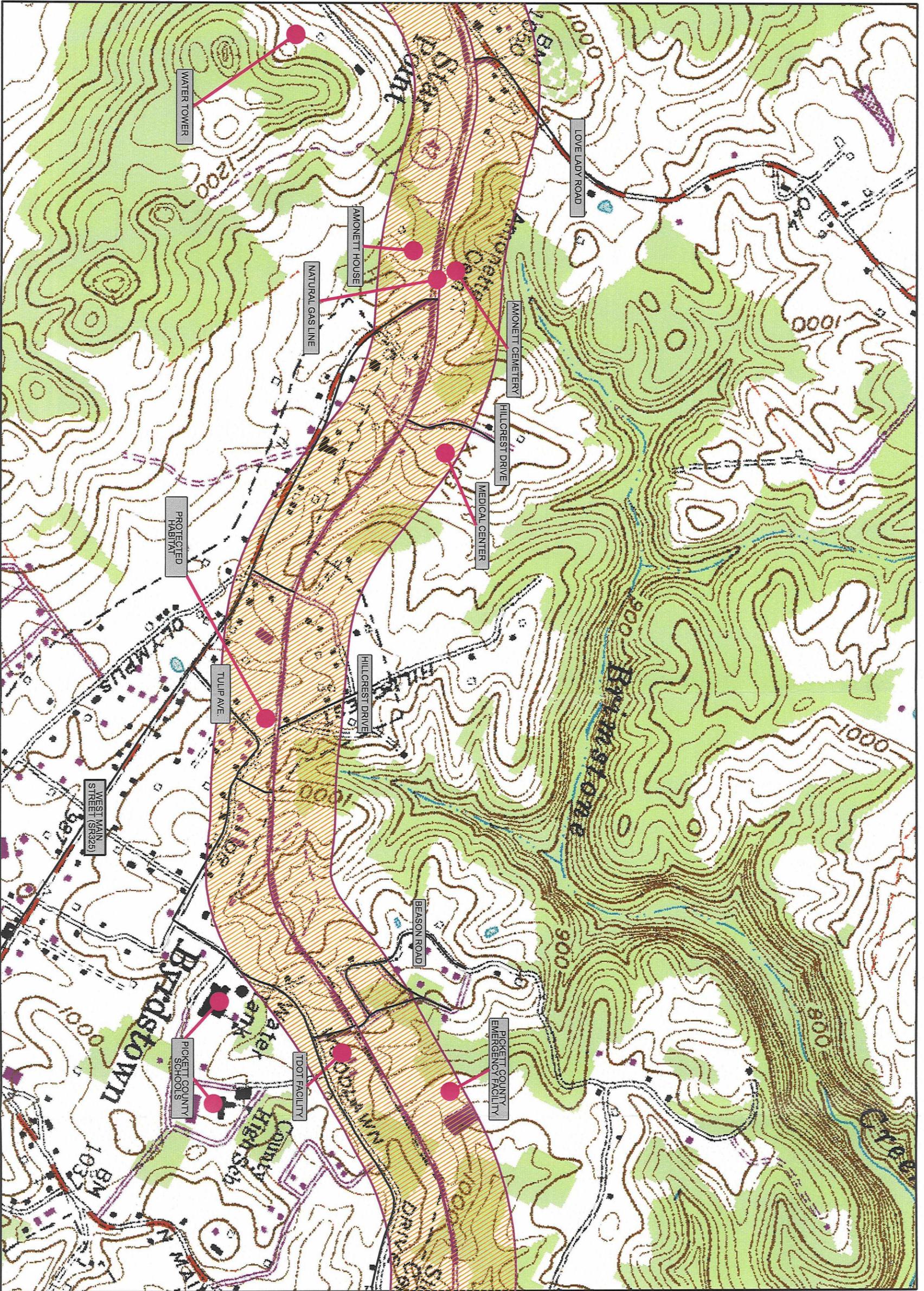
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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

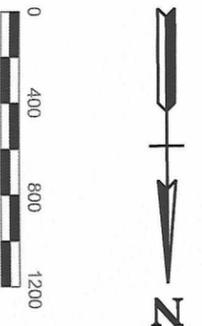
FIGURE 2A
AERIAL

MATCH LINE - SEE FIGURE 1B



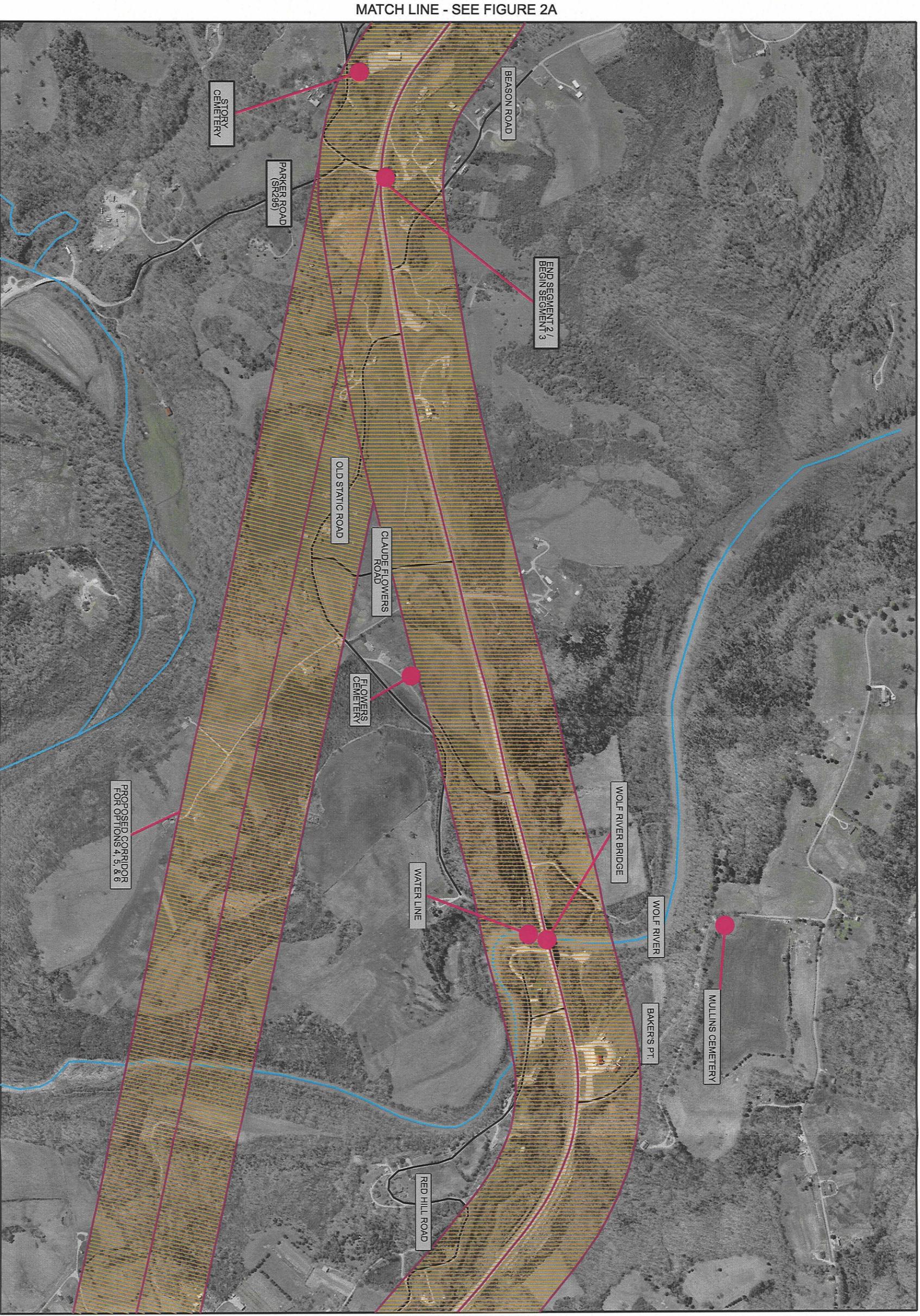
MATCH LINE - SEE FIGURE 3B

TYPE	YEAR	PROJECT NO.	SHEET NO.



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

FIGURE 2B
USGS



PROPOSED CORRIDOR FOR OPTIONS 4, 5, & 6

END SEGMENT 2 / BEGIN SEGMENT 3

STORY CEMETERY

PARKER ROAD (SR295)

BEASON ROAD

OLD STATIC ROAD

CLAUDE FLOWERS ROAD

FLOWERS CEMETERY

WATER LINE

WOLF RIVER BRIDGE

WOLF RIVER

MULLINS CEMETERY

BAKERS PT.

RED HILL ROAD

MATCH LINE - SEE FIGURE 4A

MATCH LINE - SEE FIGURE 2A

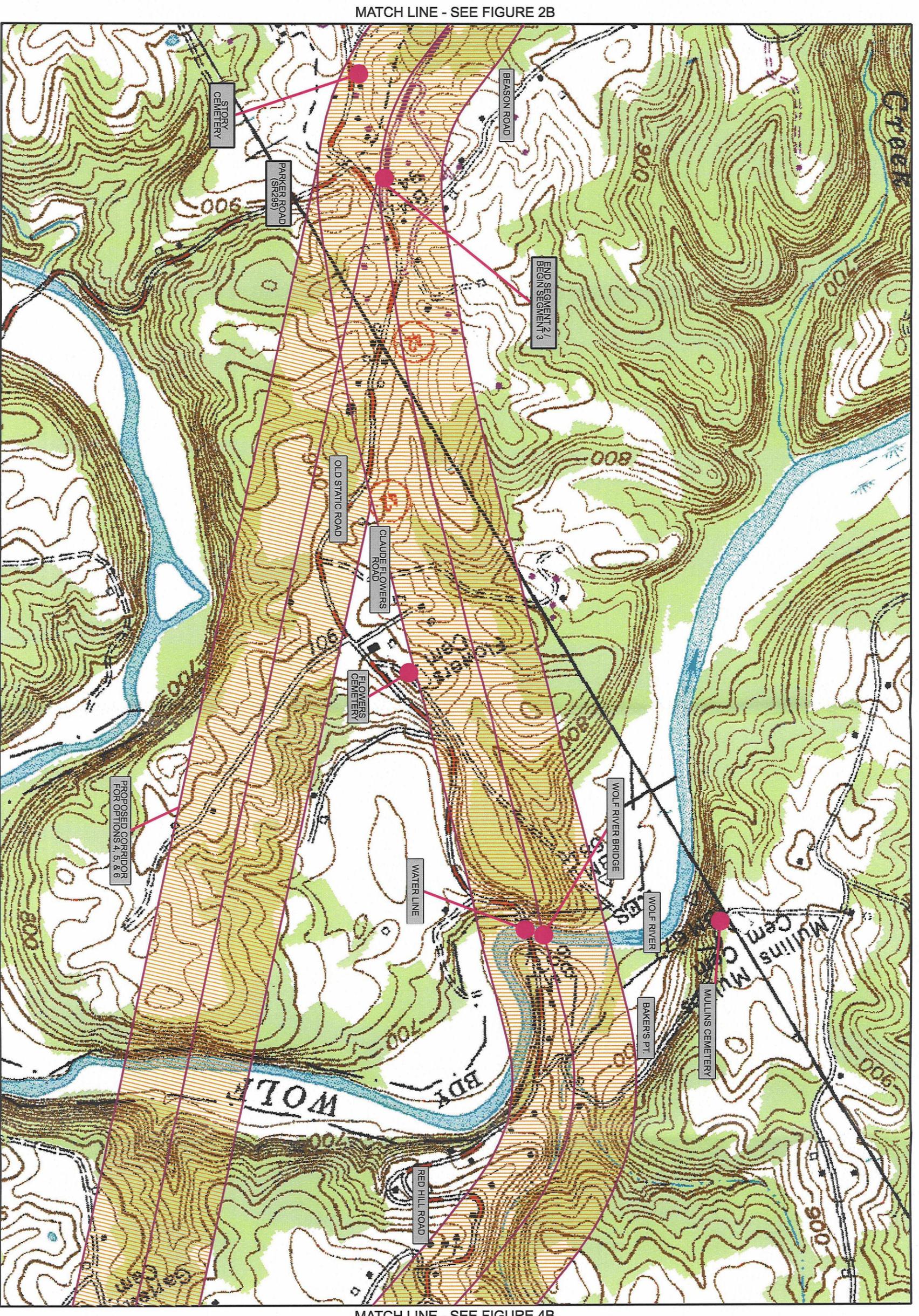
TYPE	YEAR	PROJECT NO.	SHEET NO.
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FIGURE 3A
 AERIAL

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION

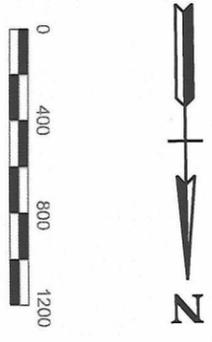
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MATCH LINE - SEE FIGURE 2B

MATCH LINE - SEE FIGURE 4B

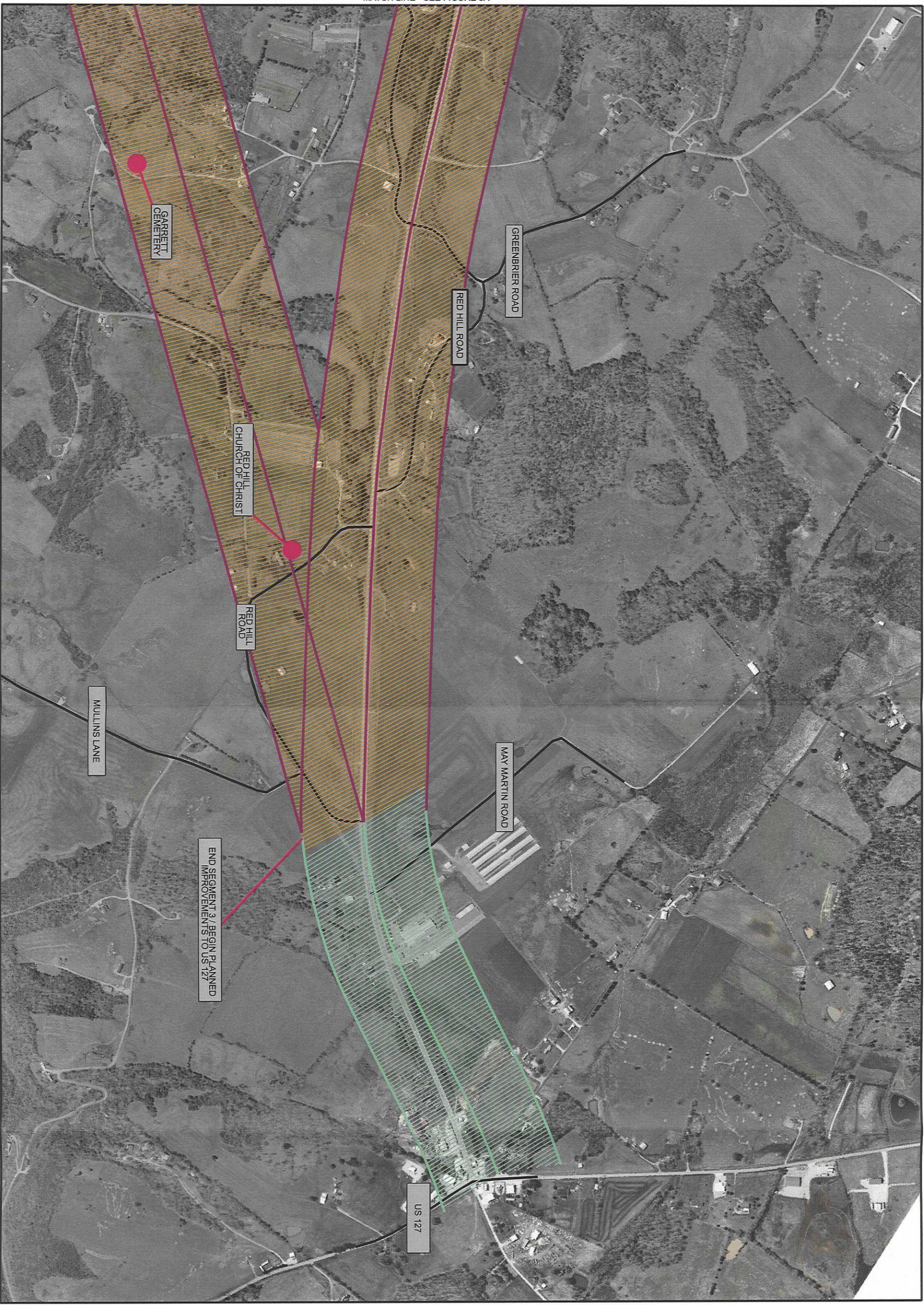
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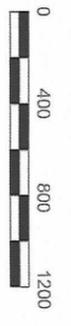
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

FIGURE 3B
USGS

MATCH LINE - SEE FIGURE 3A

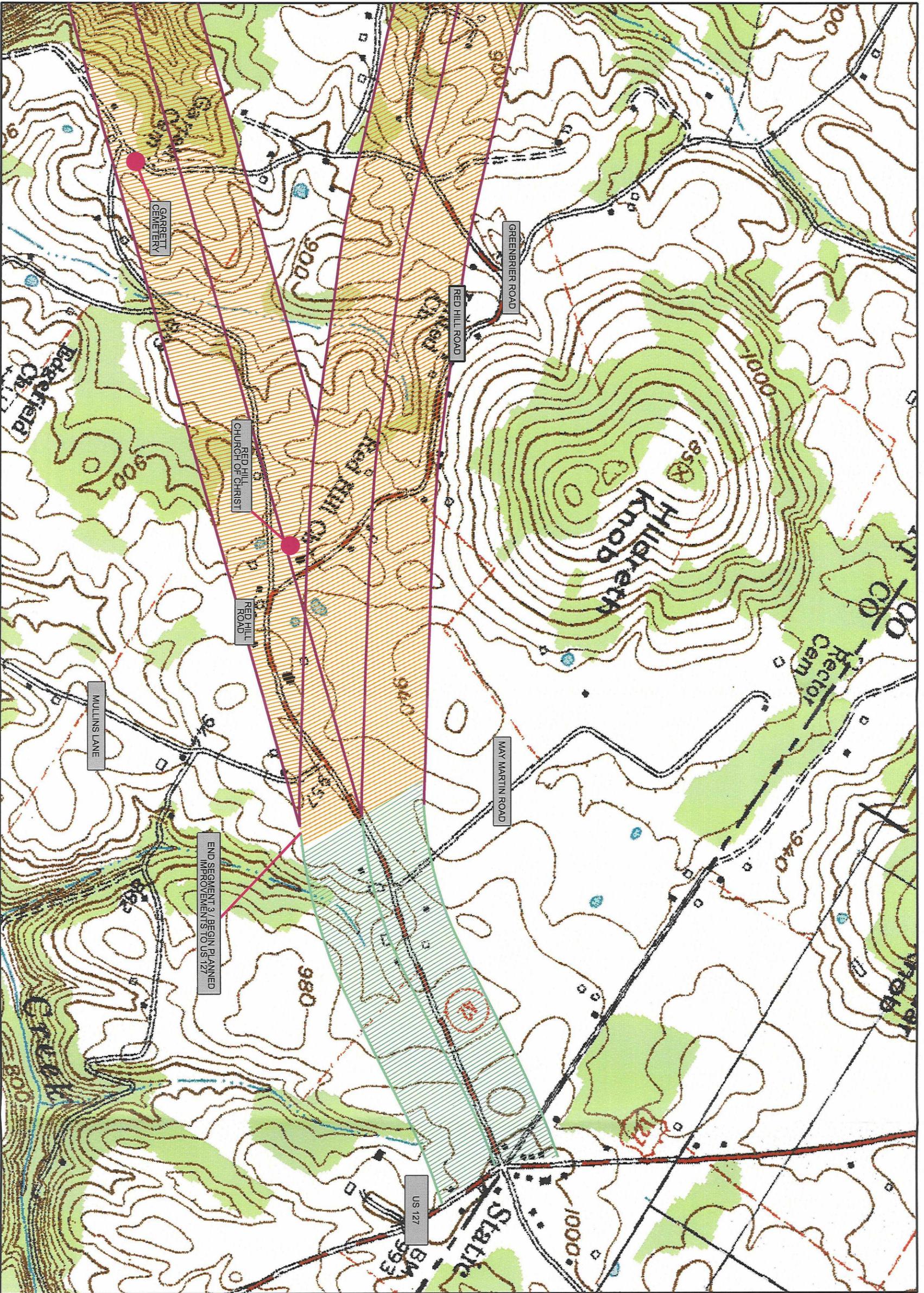


TYPE	YEAR	PROJECT NO.	SHEET NO.
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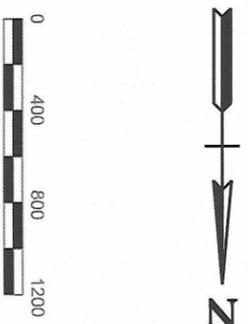


STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
FIGURE 4A
AERIAL

MATCH LINE - SEE FIGURE 3B



TYPE	YEAR	PROJECT NO.	SHEET NO.



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

FIGURE 4B
USGS