
L. John Fleckenstein*          David L. Allen†
Vincent P. Drnevich‡

*University of Kentucky, leo.fleckenstein@uky.edu
†University of Kentucky, dallen@engr.uky.edu
‡University of Kentucky

This paper is posted at UKnowledge.

https://uknowledge.uky.edu/ktc_researchreports/644
Research Report  
KTC-89-41

EARTHQUAKE HAZARD MITIGATION OF TRANSPORTATION FACILITIES  
IN NORTHERN TENNESSEE

by

L. John Fleckenstein  
Engineering Geologist

David L. Allen  
Chief Research Engineer

and

Vincent P. Drnevich  
Professor of Civil Engineering

Kentucky Transportation Center  
College of Engineering  
University of Kentucky  
Lexington, Kentucky

in cooperation with  
Transportation Cabinet  
Commonwealth of Kentucky

and

Federal Highway Administration  
U.S. Department of Transportation

The contents of this report reflect the views of the authors who are responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the University of Kentucky, the Kentucky Transportation Cabinet, nor the Federal Highway Administration. This report does not constitute a standard, specification, or regulation. The inclusion of manufacturer names and tradenames are for identification purposes and are not to be considered as endorsements.

July 1989
**Abstract**

Concern has grown in recent years over the seismic activity of the New Madrid seismic zone in Western Kentucky. Western Kentucky is located in this region. To permit emergency medical, supply, and equipment traffic into this area after an earthquake has occurred, the Kentucky Transportation Cabinet is interested in the possibility of keeping selected routes passable. This report lists the routes that have been investigated and recommended as being the routes in Northern Tennessee that should be maintained in a passable condition. The recommended routes, US 79, US 41A, The Trace and US 641 have been visually surveyed and all seismically significant features cataloged. These features are logged by their location on strip maps contained in Appendix A and a detailed listing of all the potentially critical features is given in Appendix B.
INTRODUCTION

An awareness of earthquakes and their possible effects upon the nation's infrastructure is critically important to the public, and in particular, to public officials. The nation's highway system is one of the most important components of the infrastructure. After the occurrence of an earthquake, the highway system is the primary mode of transporting emergency supplies and services into an affected area. Thus, it is important to catalog the important components of the highway system and attempt to anticipate the possible damage to these components from an earthquake.

Western Kentucky, in general, is in one of the highest risk earthquake zones in the country. In 1811-1812, three of the most severe earthquakes in American history shook the country. The location of these quakes was not on the infamous San Andreas fault nor anywhere along the well-known fault laden Pacific coast but was near a small town on the Mississippi River where the states of Kentucky and Missouri share a border (Figure 1). It is this river town, New Madrid, Missouri, that is the namesake of a region now regarded by seismologists and disaster response planners as the most hazardous earthquake zone east of the Rocky Mountains -- the New Madrid seismic zone.

In addition to these three great earthquakes, there are several other well documented factors demonstrating the susceptibility of the New Madrid region to the recurrence of major earthquakes. Through a decade of extensive research, an ancient crustal rift has been found to underlie the relatively shallow sediments comprising the region’s surface. This type of geologic structure is prone to seismic activity. The New Madrid rift has been identified as being of sufficient size to generate major earthquakes. Further evidence of the area's seismicity is the record of over 2,000 earthquakes detected in the zone since 1974. Though most have been of a magnitude below the threshold of human perception, their existence clearly indicates the high level of seismic activity occurring in the zone.

Seismologists have calculated the probabilities of recurrence of sizeable earthquakes in the New Madrid rift zone. The probability of a magnitude 6.3 earthquake (Richter scale) within 50 years is from 86 to 97 percent. The probability (1) of that same earthquake occurring within the next 15 years is from 40 to 63 percent. For comparison, the 1971 San Fernando earthquake (magnitude 6.6) killed 58 people and caused $480 million worth of damage. The 1988 Armenian earthquake of similar magnitude killed approximately 25,000 to 30,000 people.

The probability of a magnitude 7.6 earthquake occurring within 50 years is from 19 to 29 percent. The probability for this size earthquake occurring within 15 years drops to a range of 5.4 to 8.7 percent. On February 4, 1975, the Haicheng earthquake in China had a magnitude of 7.3 and destroyed or damaged about 90 percent of the structures in a city of 90,000 people.

When comparing historical earthquakes of similar magnitude, one must take into consideration that death totals and damage estimates will vary greatly due to the geology, population density, types of building, and quality of construction.
For a given earthquake, effects at a
given location are described by the
Modified Mercalli Intensity (MMI)
scale (2) which ranges from I (no
damage and detected only by
instruments) to XII (total destruction).
Details of the MMI scale are given in
Table 1. Values of MMI associated
with the 1811-1812 earthquakes are
shown in Figure 1. The potential for
damage and destruction from
earthquakes in the region is
significant.

In 1982, the Governor's Task Force on
Earthquake Hazards and Safety was
created to evaluate Kentucky's
earthquake risk and to make
recommendations for responding to
those risks. This task force
recommended increased public
awareness and education programs,
Improved emergency response
planning and training, improved
building codes and seismic restraint
designs, evaluation of other mitigation
measures, and participation in
national and regional earthquake
forums and funding programs.

In 1984, Governor Collins created the
Governor's Earthquake Hazards and
Safety Technical Advisory Panel
(GEHSTAP) to analyze scientific and
engineering data regarding seismic
risks in Kentucky and to make
specific recommendations on
mitigation, public awareness, response
planning, and policy development for
public health and safety. The States
are dependent on their highway
systems for the movement of goods
and services. Due to the possible
adverse effects a major earthquake
could have on this system, the
Earthquake Stability and
Transportation Subcommittee (ESTS)
of GEHSTAP was formed.

ESTS has encouraged the Kentucky
Transportation Cabinet to secure
funding for generating and
implementing an earthquake hazard
mitigation plan in an attempt to
safeguard the highway system against
catastrophic earthquake failure. As a
result, the Cabinet commissioned the
Kentucky Transportation Center at
the University of Kentucky to analyze
and assess the possible effects of an
earthquake on highway facilities. The
study area includes the 26 western-
most counties in Kentucky that are
adjacent to the New Madrid seismic
zone (Figure 1). To date, one of the
results of that study has been the
recommendation that over 1,000 miles
of highways in the study area be
utilized as emergency or "priority"
routes. These would be the primary
routes used for transporting
emergency supplies and personnel
after an earthquake. Also, it is
anticipated that these would be the
first routes repaired after an
earthquake.

The initial task in identifying these
priority routes was to decide where
they should begin; that is, in the
event of a major earthquake, the point
at which the transport of goods and
services would originate. Ideally, the
city chosen should possess the
following attributes:

1. Sufficient size to contain all
   necessary personnel, supplies,
   and facilities to respond
   quickly to a major emergency;

2. Proximity to the high hazard
   area to speed the relief effort
   but not so close as to suffer the
   same high risk potential;

3. Easy access from other major
   cities in the State; and

4. Sufficient routes to provide
relatively direct access to all 26 high-risk counties. The city best fitting these criteria is Bowling Green. Located at the eastern edge of the earthquake zone in Warren County, Bowling Green meets both the size criterion (population 40,450) and the accessibility criterion (Louisville and Nashville via I 65 and Lexington via the Bluegrass Parkway). Bowling Green provides access to the 26-county area via US 68/KY 80; this road was chosen as the main east-west artery because it crosses Lake Barkley and Kentucky Lake upstream from the dams impounding those bodies of water. An alternative route was driven and logged through northern Tennessee in case either or both of the bridges on US 68/KY 80 over Lake Barkley and Kentucky Lake fail during a major earthquake. This report describes the routes that were established through Northern Tennessee.

As a first step towards establishing an overall policy for earthquake hazard mitigation in the highway system, these priority routes have been visually surveyed and all natural and man-made features along these routes that are considered seismically significant were cataloged. With this information, a realistic and cost-effective plan for "hardening" these routes against earthquakes can be established. Such efforts are currently under way.

**PRIORITY ROUTE IN NORTHERN TENNESSEE**

US 79, US 641, US 41A and the Trace have been designated as the priority routes for an alternative route if a bridge fails on US 68/KY 80 over Lake Barkley and/or Kentucky Lake. US 79 starts at the Kentucky-Tennessee line and continues west through Tennessee for approximately 75 miles, ending at the junction of US 79 and US 641. US 41A starts at the Kentucky-Tennessee line and continues south through Tennessee for 7.4 miles, ending at the junction of US 41A and US 79. The Trace starts at the Kentucky-Tennessee line and continues south through Tennessee for 16.2 miles, ending at the junction of the Trace and US 79. US 641 starts at the Kentucky-Tennessee line and continues south through Tennessee for 11.75 miles, ending at the junction of US 641 and US 79.

The recommended priority routes are shown in Figure 3.

A number of features along the priority routes could potentially hamper rescue and relief efforts. These features included bridges, soil fills, gas pipelines, power lines, large trees, underground mines, and faults. These features are logged by their location on strip maps contained in Appendix A and a detailed listing of all potentially critical features is given in Appendix B.

**BRIDGES**

Bridges are the most significant and important features on the priority route. With few exceptions, existing highway bridges in the study area have not been designed to resist motions and forces that may be generated by earthquakes. Bridges located within the seismic zone could possibly be damaged, thus reducing their load-carrying ability. In some cases, damage could be sufficiently great to cause complete collapse. Several types of damage could occur:

1. A bridge could fail at the bearing which supports the main spans, causing the spans
to fall from the bearings and possibly from the piers or abutments.

2. Failure could occur in the columns, piers, or footings which would reduce the load-carrying capacity of the bridge, if the bridge was still in place.

3. An abutment could tilt allowing the entire span to fall.

4. Soil movement or slumping could affect the bridge approach fills, damaging the abutments or piers, or making the bridge inaccessible.

There are seven bridges on US 79 in Montgomery County, four bridges on US 79 in Stewart County, and eight bridges on US 79 in Henry County. There are also three bridges on US 41A in Montgomery County, five bridges on the Trace in Stewart County, and four bridges on US 641 in Henry County. The bridges are located at the following:

**US 79 Montgomery County**

1. Milepost 16.5 northbound and southbound,

2. Milepost 21.70 northbound and southbound,

3. Milepost 26.65,

4. Milepost 26.66, and


**US 79 Stewart County**

1. Milepost 13.55,

2. Milepost 14.20,

3. Milepost 16.40, and


**US 79 Henry County**

1. Milepost 15.45,

2. Milepost 15.65,

3. Milepost 19.75 northbound and southbound,

4. Milepost 22.10,

5. Milepost 27.05,

6. Milepost 28.90, and


**US 41A Montgomery County**

1. Milepost 20.70 northbound and southbound, and

2. Railroad bridge at milepost 22.28.

**The Trace Stewart County**

1. Milepost 0.05,

2. Milepost 3.30,

3. Milepost 5.65,

4. Milepost 7.30, and


**US 641 Henry County**

1. Milepost 11.7,

2. Milepost 11.82,

3. Milepost 16.44, and

4. Milepost 17.15.
Research is currently under way studying the effects that an earthquake could have on these bridges and their approach fills.

FILLS

Highway fills are particularly important because of their tendency to fail from seismically induced motions. Fills fail in one of two major modes. The first is a generalized circular or wedge-shaped failure resulting in one or both traffic lanes moving down and out. If both lanes failed, this would certainly render the route impassable and immediate repairs would be necessary. The second mode of failure is a general slumping or settling of the embankment. The roadway would probably remain passable if settlement or slumping were not severe but reduced speed limits would be required for safety.

Large fills on priority routes in Tennessee are located as follows:

**US 79 Montgomery County**

1. Approach fills for the bridge at milepost 16.5;
2. Approach fills for the bridges at milepost 21.70;
3. 0.80 mile north of the bridge at milepost 21.70;
4. 1.69, 2.54, 4.34, and 4.69 miles north of the junction of I-24 and US 79; and
5. Approach fills for the bridge at milepost 31.40.

**US 79 Stewart County**

1. Approach fills for the bridge over the Tennessee River;
2. 0.65, 1.20, 1.80, 2.70, 3.10, 3.30, 3.55, and 3.90 miles north of the bridge at milepost 0.30;
3. 1.55, 2.10, 2.90, 4.15 and 4.60 miles south of the junction of US 79 and the Trace;
4. 0.75, 0.85, 1.25, 1.50, and 2.02 miles north of the juction of US 79 and the Trace;
5. 0.65 and 0.25 mile south of the junction of US 79 and Tennessee 49 (heading south);
6. Approach fills for the bridge at milepost 13.55 over Lake Barkley;
7. Approach fills for the bridge at milepost 14.20 over Dyers Creek;
8. 0.50, 0.95, 1.10, 1.25, 1.70, and 1.90 miles north of the Dyers Creek bridge;
9. Approach fills for the bridge at milepost 16.40;
10. 0.47 and 0.50 mile north of the bridge at milepost 16.40;
11. Approach fills for the bridge at milepost 18.80; and
12. 0.60, 1.00, 1.30, and 1.80 miles south of the junction of US 79 and TN 120 (heading north).

**US 79 Henry County**

1. Approach fills for the bridge at milepost 15.45;
2. Approach fills for the bridge at milepost 15.65;
<table>
<thead>
<tr>
<th></th>
<th>Approach fills for the bridges at milepost 19.75;</th>
<th>milepost 7.30;</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>Approach fills for the bridge at milepost 22.10;</td>
<td>6.</td>
</tr>
<tr>
<td>5.</td>
<td>0.26, 0.78, 1.90, 2.05 and 2.35 miles north of the bridge at milepost 22.10;</td>
<td>7.</td>
</tr>
<tr>
<td>6.</td>
<td>Approach fills for the bridge at milepost 27.05;</td>
<td>8.</td>
</tr>
<tr>
<td>7.</td>
<td>Approach fills for the bridge at milepost 28.90;</td>
<td>9.</td>
</tr>
<tr>
<td>8.</td>
<td>0.15 and 1.15 miles south of the Henry County-Stewart County line; and</td>
<td><strong>US 641 Henry County</strong></td>
</tr>
<tr>
<td>9.</td>
<td>Approach fills for the bridge over the Tennessee River.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>US 41A Montgomery County</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>1.50 miles north of the junction of US 41A and US 79,</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Approach fills for the bridges at milepost 20.70, and</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>0.98 mile south of the rail road bridge at milepost 22.28.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>The Trace Stewart County</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Approach fills for the bridge at milepost 0.05;</td>
<td><strong>CUT SLOPES</strong></td>
</tr>
<tr>
<td>2.</td>
<td>1.05, 1.45, 2.40, and 2.85 miles north of the junction of the Trace and US 79;</td>
<td>Most cut slopes cataloged during surveys of priority routes in Tennessee were less than 20 feet in height. Should any of these slopes fail,</td>
</tr>
<tr>
<td>3.</td>
<td>Approach fills for the bridge at milepost 3.30 and 5.65;</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>0.75 mile north of the bridge at milepost 5.65;</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Approach fills for the bridge at</td>
<td></td>
</tr>
</tbody>
</table>
Should any of these slopes fail, both lanes of the roadway probably would not be closed, thus permitting passage around the slide. Cut slopes that have a history of failure and those that have steep slopes should be considered as problem areas. The most critical cut slopes appear to be one located on Trace at milepost 0.70, and two less critical on US 41A at milepost 21.20 and milepost 21.30.

**POWER LINES**

High voltage power lines also were cataloged during the route surveys. The heights of the lines above the roadway were estimated visually. Power company officials speculated that a number of breaks along each power line would occur during a major earthquake. In most cases, fallen lines would not be transmitting power because power would be automatically cut off within a few seconds in the event of a break.

Additionally, power line support towers could potentially fall across a priority route.

Power lines cross priority routes at the following locations:

**US 79 Montgomery County**

1. 0.70 and 0.57 mile south of the junction of US 79 and US 41A,
2. 0.35 and 0.36 mile south of the bridges at milepost 21.70,
3. 0.70 and 1.15 miles south of the junction of US 79 and TN 48,
4. 0.65 mile south of the junction of I-24 and US 79, and
5. 1.70 mile north of the junction of I-24 and US 79.

**US 79 Stewart County**

1. 1.35 miles south of the junction of TN 120 (north) and US 79.

**US 79 Henry County**

1. 0.05 mile south of the bridge at milepost 15.45, and
2. 0.90 and 1.68 miles south of the bridge at milepost 27.05.

**US 41A Montgomery County**

1. 0.42 mile north of the junction of US 79 and US 41A, and
2. Powerlines parallel the road from milepost 17.42 to milepost 19.70.

**US 641 Henry County**

1. 0.30 mile south of the junction of TN 140 (east) and US 641.

**GAS PIPELINES**

Three gas pipelines cross under US 79 in Montgomery County 3.60 miles south of the Kentucky-Tennessee line, and a line is marked at the south end of the bridge at milepost 16.5 also on US 79 in Montgomery County. Information obtained from a gas transmission map indicates that the Midvalley Pipeline Company has a 22-inch (crude oil) pipeline which crosses under at the junction of US 79 and 41A. The map also indicates that Amoco Pipeline Company has an 8-inch (petroleum products) pipeline under US 79 north of the junction of US 79 and I-24. It is possible that pipelines could fail under or near a priority route causing a temporary closure. If a pipeline failed, an explosion might destroy a section of the priority route. Repair could be
delayed by further gas leaks, fire, and/or additional explosions.

It appears that most of the pipelines in Tennessee were constructed with little or no seismic considerations.

MINES

There are several types of mining-related activities in Tennessee that could affect priority routes during a major earthquake. A large earthquake could collapse roofs in underground limestone mines and cause rapid subsidence at the surface. Other potential hazards exist from highwall failures within open pit mines.

Information from geologic quadrangle maps indicate that there are two limestone quarries in northern Clarksville adjacent to US 79. An iron mine is also shown adjacent to US 79 west of the junction of US 79 and TN 49 (north). The maps also indicate that there are several abandoned iron mines adjacent to the Trace.

TREES

The behavior of trees during an earthquake depends upon many factors including their condition, type, height, and size. Local soil conditions, geometry of the ground surface, and characteristics of the earthquake can also be important. Violent ground motions accompanied by surface rupture and perhaps permanent displacement of the soil surface produce sudden surface accelerations of the ground which can snap and uproot large trees (3).

Trees are so numerous that, if many of them fell, the priority routes in Tennessee could effectively be blocked for several hours or days before emergency crews could clear the debris. Groups of large trees are located near the road at the following sites:

**US 79 Montgomery County**

1. 1.1, 1.7, 2.4, 2.7, 3.0, 3.55, 5.8, 6.4, 7.6, 9.3, and 10.75 miles north of the Montgomery County-Stewart County line; and

2. 0.13 mile north of the bridge at milepost 21.70.

**US 79 Stewart County**

1. 0.50 mile south of the bridge at milepost 16.40,

2. 1.30 miles south of the bridge at milepost 18.80,

3. 3.10 miles south of the junction of TN 120 (north) and US 79,

4. 1.62 and 0.05 miles south of the junction of TN 46 and US 79,

5. 0.25 and 0.42 mile north of the junction of TN 46 and US 79, and

6. 0.55 and 0.34 mile south of the Stewart County-Montgomery County line.

**US 79 Henry County**

1. 1.80 miles south of the twin bridges at milepost 19.75;

2. 1.10 miles north of the junction of TN 218 (north) and US 79;

3. 0.74, 1.65, 1.79, and 2.44 miles north of the bridge at 22.10;

4. 1.75, 0.55, and 0.15 miles south
of the bridge at milepost 27.05;  

5. 0.75 mile north of the junction of TN 140 (west) and US 79; and

6. 0.45 mile south of the junction of TN 119 (north) and US 79.

**US 41A Montgomery County**

1. 0.48 mile south of the railroad bridge at milepost 22.28, and

2. 0.35 mile north of the junction of TN 236 (east) and US 41A.

**The Trace Stewart County**

1. 0.05, 0.66, 1.3, 2.5, 3.3, 3.65, 4.6, 5.9, 6.6, 7.4, 8.35, and 8.9 miles north of the junction of US 79 and the Trace; and

2. 2.20, 2.80, 3.40, 3.70, 4.40, 4.80, 5.00, 5.60, and 6.00 miles south of the Tennessee-Kentucky line.

**US 641 Henry County**

1. 0.20 mile south of the bridge at milepost 11.70;

2. 0.78 and 1.28 miles north of the bridge at milepost 11.82, and adjacent to the bridge;

3. 0.14, 0.61, 1.09, 1.74, and 2.54 miles south of the bridge at milepost 16.44;

4. 0.0, 0.26, and 0.56 mile north of the bridge at milepost 16.44;

5. 1.00, and 2.05 miles north of the bridge at milepost 17.15;

6. 0.18 and 0.95 mile south of the junction of TN 140 (east) and

7. 0.40, 1.90, and 3.55 miles north of the junction of TN 140 (east) and US 641.

**WATER IMPOUNDMENTS**

Large ponds or lakes which have large earthen dams that lie above the road surface could possibly collapse during an earthquake and wash out a section of a priority route. Ponds or lakes which lie below the road surface and are adjacent to the toe of the fill slope could cause failures in the fill during an earthquake due to the high moisture content. Ponds or lakes that were logged adjacent to a priority route are located at the following:

**US 79 Montgomery County**

1. 0.90 and 1.05 miles south of the Kentucky-Tennessee line.

**US 79 Stewart County**

1. 0.95 mile north of the Stewart County-Henry County line, and

2. 0.95 mile north of the Dyers Creek bridge at milepost 14.20.

**US 641 Henry County**

1. US 641 is built adjacent to a lake at milepost 14.15.

**SWAMPS**

US 641 is constructed adjacent to a swamp at the 13.55 milepost in Henry County. Priority routes that are constructed over or adjacent to swamps will probably be damaged due to failures within the soil structure during an earthquake. The high water tables penetrate the underlying road bed and weaken the soil structure.
During an earthquake, the structure will be further weakened and large vertical displacements in the road surface are likely to occur.

ALLUVIUM

Soil maps for Tennessee indicate that there are large amounts of alluvium present west of Kentucky Lake in Henry County and on the Trace in Stewart County. Alluvium is a loose, fine-grain soil which is deposited by flowing water such as creeks and rivers. Due to the nature of the alluvium, ground motions at the surface of the soil can be many times greater than those within the underlying bedrock and temporary liquefaction can occur (Figure 3). An

CONCLUSIONS

In 1984, ESTS developed a fivefold plan of action for formulating and implementing a seismic mitigation policy for the western Kentucky seismic zone. To date, the Kentucky Transportation Center has established priority routes for all 26 counties in the western Kentucky seismic zone and developed seismic risk maps of all natural and man-made features that are susceptible to earthquake damage that could jeopardize the priority routes.

Current work is being conducted to analyze these features and make recommendations for hardening them against earthquake damage.

Future work involves training key personnel in the Transportation Cabinet in hazard mitigation and seismic safety which includes bridge inspectors, district engineers, construction inspectors, designers, and maintenance personnel.

Following the education of key personnel, the mitigation plan proposed by the Kentucky Transportation Center will be reviewed by Kentucky Transportation Cabinet officials and a program will be established for implementation. The final step involves the use of relevant seismic codes for all new construction, repair, and maintenance.

REFERENCES


The Commonwealth of Kentucky has prepared a State Emergency Operations Procedures (State EOP) manual that is produced by the Division of Disaster and Emergency Services (DES), Department of Military Affairs, Frankfort, 40601. Annexes H. on Transportation and DD on Earthquakes give additional information on disaster preparedness and response.

A copy of the State EOP and information on local hazard mitigation activities and response preparedness are available from the AREA 1 and AREA 2 Offices of DES which are located in Mayfield and Hopkinsville. The phone numbers for the Area 1 office are (502) 564-8601 and (502) 247-9712, and the phone numbers for the Area 2 office are (502) 564-8602 and (502) 885-7100.

Additional information about the study discussed in this report should be directed to David L. Allen, Project Director, at the Kentucky Transportation Center, (606) 257-4513. Requests to be placed on the mailing list for updated information should be submitted on your company or agency letterhead to the Kentucky Transportation Center at the University of Kentucky, Lexington Kentucky 40506-0043.
Figure 1. The Twenty-six Counties In Kentucky, And The Three Counties In Tennessee Are Included In This Study Area
Table 1: MODIFIED MERCALLI INTENSITY SCALE
Modified Mercalli Intensity Scale, 1956 Version

The following comments by Dr. Richter precede the published statement of the intensity scale:

Each effect is named at the level of intensity at which it first appears frequently and characteristically. Each effect may be found less strongly, or in fewer instances, at the next lower grade of intensity; more strongly or more often at the next higher grade. A few effects are named at two successive levels to indicate a more gradual increase.

Masonry A, B, C, D. To avoid ambiguity of language, the quality of masonry, brick or otherwise, is specified by the following lettering.

- Masonry A. Good workmanship, mortar, and design; reinforced, especially laterally, and bound together by using steel, concrete, etc.; designed to resist lateral forces.
- Masonry B. Good workmanship and mortar, reinforced by not designed in detail to resist lateral forces.
- Masonry C. Ordinary workmanship and mortar; no extreme weakness like failing to tie corners, but neither reinforced nor designed against horizontal forces.
- Masonry D. Weak materials, such as adobe; poor mortar; low standards of workmanship; weak horizontally.

The following list represents the twelve grades of the scale.

I. Not felt. Marginal and long-period effects of large earthquakes.
II. Felt by persons at rest, on upper floors, or favorable placed.
V. Felt outdoors; direction estimated. Sleepers awakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing, close, open. Shutters, pictures move. Pendulum clocks stop, start, change rate.
VIII. Steering of motor cars affected. Damage to masonry C; partial collapse. Some damage to masonry B; none to masonry A. Fall of stucco and some masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on foundation if not bolted down; loose panel walls thrown out. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes.
IX. General panic. Masonry D destroyed; masonry C heavily damaged, sometimes with complete collapse; masonry B seriously damaged. Frame structures, if not bolted, shifted off foundations. Frames cracked. Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground. In alluviated areas sand and mud ejected, earthquake fountains, sand crater.
X. Most masonry and frame structures destroyed with their foundations. Some will-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large land slides. Water thrown on banks of canals, river, lakes, etc. Sand and mud shifted horizontally on beaches and flat lands. Rails bent slightly.
XI. Rails bent greatly. Underground pipelines completely out of service.
XII. Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown in the air.
AMPLIFICATION OF SHAKING AND DAMAGE DUE TO SHAKING

LOW --- HIGH

HARD, INTACT ROCK

SOFT, FRACTURED ROCK

ALLUVIUM

SILT, MUD

Figure 2: Amplification of shaking in softer rock & soil during an earthquake.
Figure 3. Recommended Priority Routes In Tennessee
APPENDIX A

STRIP MAP FOR PRIORITY ROUTES IN TENNESSEE

LEGEND OF FEATURES

BRIDGE  CUT SLOPE  BUILDING  FILL  OTHER
TREE  POWER LINE  SIGN  FAULT
PIPELINE  MINE  TANK  DAM

SEE REPORT FOR DESCRIPTIONS OF OTHER
APPENDIX B

SEISMICALLY SIGNIFICANT FEATURES
## Milepoint Feature Data

<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
</table>
| 0.00      | Other   | Stewart Co - Montgomery Co Border  
Road Surface Type - Flexible |
| 1.10      | Trees   | Number of Trees 15  Height 60 feet  
Diameter 15 in.  Ending Milepoint 1.00  
Distance from Road 15 feet  
Road Surface Type - Flexible |
| 1.70      | Trees   | Number of Trees 20  Height 60 feet  
Diameter 15 in.  Ending Milepoint 2.00  
Distance from Road 15 feet  
Road Surface Type - Flexible |
| 2.40      | Trees   | Number of Trees 10  Height 60 feet  
Diameter 15 in.  Ending Milepoint 2.38  
Distance from Road 15 feet  
Road Surface Type - Flexible |
| 2.70      | Trees   | Number of Trees 5  Height 60 feet  
Diameter 15 in.  Ending Milepoint 2.85  
Distance from Road 15 feet  
Road Surface Type - Flexible |
| 3.00      | Trees   | Number of Trees 5  Height 60 feet  
Diameter 15 in.  Ending Milepoint 3.00  
Distance from Road 15 feet  
Road Surface Type - Flexible |
| 3.44      | Other   | Oakwood City Limits  
Road Surface Type - Flexible |
| 3.55      | Trees   | Number of Trees 4  Height 40 feet  
Diameter 24 in.  Ending Milepoint 4.30  
Distance from Road 15 feet  
Road Surface Type - Flexible |
<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.55</td>
<td>Other</td>
<td>Junction TN 233 Heading South</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road Surface Type - Flexible</td>
</tr>
<tr>
<td>5.80</td>
<td>Trees</td>
<td>Number of Trees 20 Height 60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diameter 8 in. Ending Milepoint 5.85</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distance from Road 15 feet</td>
</tr>
<tr>
<td>6.44</td>
<td>Trees</td>
<td>Number of Trees 10 Height 40 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diameter 18 in. Ending Milepoint 6.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distance from Road 12 feet</td>
</tr>
<tr>
<td>7.65</td>
<td>Trees</td>
<td>Number of Trees 10 Height 60 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diameter 15 in. Ending Milepoint 7.63</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distance from Road 15 feet</td>
</tr>
<tr>
<td>9.30</td>
<td>Trees</td>
<td>Number of Trees 5 Height 50 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diameter 18 in. Ending Milepoint 9.30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distance from Road 15 feet</td>
</tr>
<tr>
<td>10.75</td>
<td>Trees</td>
<td>Number of Trees 20 Height 50 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diameter 12 in. Ending Milepoint 10.70</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distance from Road 25 feet</td>
</tr>
<tr>
<td>12.50</td>
<td>Power</td>
<td>Electrical Power Line 3 Lines Height 35 feet</td>
</tr>
<tr>
<td>Line</td>
<td></td>
<td>Wood Support Structure Unknown Volts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road Surface Type - Flexible</td>
</tr>
<tr>
<td>12.63</td>
<td>Power</td>
<td>Electrical Power Line 6 Lines Height 35 feet</td>
</tr>
<tr>
<td>Line</td>
<td></td>
<td>Wood Support Structure Unknown Volts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road Surface Type - Flexible</td>
</tr>
<tr>
<td>13.20</td>
<td>Other</td>
<td>Junction US 41A Heading North</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road Surface Type - Flexible</td>
</tr>
<tr>
<td>Milepoint</td>
<td>Feature</td>
<td>Data</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>16.50</td>
<td>Bridge</td>
<td>Southwest Bridge</td>
</tr>
<tr>
<td></td>
<td>Number of Spans</td>
<td>4 Over Stream</td>
</tr>
<tr>
<td></td>
<td>Steel Girder</td>
<td>I-Beam</td>
</tr>
<tr>
<td></td>
<td>End 1 Fixed</td>
<td>Pier 1 Fixed</td>
</tr>
<tr>
<td></td>
<td>Pier 2 Fixed</td>
<td>Pier 3 Fixed</td>
</tr>
<tr>
<td></td>
<td>End 2 Rocker</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Deck Type</td>
<td>Concrete</td>
</tr>
<tr>
<td></td>
<td>Length</td>
<td>355 feet</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>28 feet</td>
</tr>
<tr>
<td></td>
<td>Pier Type</td>
<td>Solid</td>
</tr>
<tr>
<td></td>
<td>SPC Rating</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Surface Type</td>
<td>Flexible</td>
</tr>
<tr>
<td></td>
<td>Expansion Type</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>End 1 Substructure</td>
<td>Stub</td>
</tr>
<tr>
<td></td>
<td>End 2 Substructure</td>
<td>Stub</td>
</tr>
<tr>
<td></td>
<td>Foundation Type</td>
<td>Unknown</td>
</tr>
<tr>
<td>16.50</td>
<td>Bridge</td>
<td>Northeast Bridge (Part One)</td>
</tr>
<tr>
<td></td>
<td>Number of Spans</td>
<td>1 Over Stream</td>
</tr>
<tr>
<td></td>
<td>Concrete Box Beam</td>
<td>End 1 Fixed</td>
</tr>
<tr>
<td></td>
<td>Pier 2 Fixed</td>
<td>End 2 Fixed</td>
</tr>
<tr>
<td></td>
<td>Deck Type</td>
<td>Concrete</td>
</tr>
<tr>
<td></td>
<td>Length</td>
<td>26 feet</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>22 feet</td>
</tr>
<tr>
<td></td>
<td>Pier Type</td>
<td>Unknown</td>
</tr>
<tr>
<td></td>
<td>SPC Rating</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Surface Type</td>
<td>Flexible</td>
</tr>
<tr>
<td></td>
<td>Expansion Type</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>End 1 Substructure</td>
<td>Stub</td>
</tr>
<tr>
<td></td>
<td>End 2 Substructure</td>
<td>Full</td>
</tr>
<tr>
<td></td>
<td>Foundation Type</td>
<td>Unknown</td>
</tr>
<tr>
<td>16.50</td>
<td>Bridge</td>
<td>Northeast Bridge (Part Two)</td>
</tr>
<tr>
<td></td>
<td>Number of Spans</td>
<td>1 Over Stream</td>
</tr>
<tr>
<td></td>
<td>Steel Truss</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Truss Type</td>
<td>Through, Type - Camel Back</td>
</tr>
<tr>
<td></td>
<td>End 1 Fixed</td>
<td>(Pier 1)</td>
</tr>
<tr>
<td></td>
<td>Pier 2 Fixed</td>
<td>(Pier 2)</td>
</tr>
<tr>
<td></td>
<td>Deck Type</td>
<td>Concrete</td>
</tr>
<tr>
<td></td>
<td>Length</td>
<td>182 feet</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>22 feet</td>
</tr>
<tr>
<td></td>
<td>Pier Type</td>
<td>Solid</td>
</tr>
<tr>
<td></td>
<td>SPC Rating</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Surface Type</td>
<td>Flexible</td>
</tr>
<tr>
<td></td>
<td>Expansion Type</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>End 1 Substructure</td>
<td>Full</td>
</tr>
<tr>
<td></td>
<td>End 2 Substructure</td>
<td>Full</td>
</tr>
<tr>
<td></td>
<td>Foundation Type</td>
<td>Unknown</td>
</tr>
<tr>
<td>Milepoint</td>
<td>Feature</td>
<td>Data</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 16.50     | Bridge    | Northeast Bridge (Part Three)  
Number of Spans 3 Over Stream Concrete Box Beam  
End 1 Fixed (Pier 2) Pier 3 Fixed  
Pier 4 Fixed End 2 Fixed (Pier 5)  
Deck Type - Concrete Length 133 feet  
Width 22 feet Pier Type - Open  
SPC Rating - B Surface Type - Flexible  
Expansion Type - Other  
End 1 Substructure - Full  
End 2 Substructure - Stub  
Foundation Type - Unknown |
| 16.50     | Other     | Gas line                                                                                                                          |
| 20.60     | Other     | Water Tower, 100 feet from road, 150 feet  
Road Surface Type - Flexible |
| 21.34     | Other     | US 79 Bypass  
Road Surface Type - Flexible |
| 21.34     | Power Line| Electrical Power Line 6 Lines Height 30 feet  
Wood Support Structure Unknown Volts |
| 21.35     | Power Line| Electrical Power Line 3 Lines Height 30 feet  
Steel Support Structure Unknown Volts |
| 21.55     | Fill      | Material Type - Soil Height 35 feet  
Side Slope 1:1 Length 1,000 feet  
Crest 80 feet Type Fill - Other  
Road Surface Type - Flexible |
| 21.70     | Bridge    | Southbound Bridge  
Number of Spans 3 Steel Girder I-Beam  
Overpass End 1 Rocker Pier 1 Penned  
Pier 2 Penned End 2 Fixed  
Deck Type - Concrete Length 450 feet  
Width 35 feet Pier Type - Open  
SPC Rating - B Surface Type - Flexible  
Expansion Type - Poured Compression  
End 1 and End 2 Substructure - Stub  
Foundation Type - Unknown |
<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
</table>
| 21.70     | Bridge  | Northbound Bridge (Part One)  
Number of Spans 4  Overpass  Concrete  Box Beam  
End 1 Fixed  Pier 1 Fixed  Pier 2 Fixed  
Pier 3 Fixed  End 2 Fixed (Pier 4)  
Deck Type - Concrete  Length 150 feet  
Width 35 feet  Pier Type 1, 2, 3 - Open  
Pier Type 4 - Solid  
SPC Rating - B  Surface Type - Flexible  
Expansion Type - Other  
End 1 Substructure - Stub  
End 2 Substructure - Full  
Foundation Type - Unknown |
| 21.70     | Bridge  | Northbound Bridge (Part Two)  
Number of Spans 1  Overpass  Steel Truss  
Truss Type - Through, Type - Camel Back  
End 1 Fixed (Pier 4)  End 2 Fixed (Pier 5)  
Deck Type - Concrete  Length 150 feet  
Width 35 feet  Pier Type - Solid  
SPC Rating - B  Surface Type - Flexible  
Expansion Type - Other  
End 1 Substructure - Full  
End 2 Substructure - Full  
Foundation Type - Unknown |
| 21.70     | Bridge  | Northbound Bridge (Part Three)  
Number of Spans 10  Overpass  Concrete  Box Beam  
End 1 Fixed (Pier 5)  All Piers Fixed  
End 2 Fixed  
Deck Type - Concrete  Length 330 feet  
Width 35 feet  Pier Type - Open  
SPC Rating - B  Surface Type - Flexible  
Expansion Type - Other  
End 1 Substructure - Full  
End 2 Substructure - Stub  
Foundation Type - Unknown |
<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
</table>
| 21.83     | Fill      | Material Type - Soil  Height 30 feet  
|           |           | Side Slope 1:1  Length 1,000 feet  
|           |           | Crest 80 feet  Type Fill - Side Hill  
|           |           | Road Surface Type - Flexible  |
| 21.83     | Trees     | Number of Trees 25  Height 45 feet  
|           |           | Diameter 18 in.  Ending Milepoint 21.75  
|           |           | Distance from Road 20 feet  
|           |           | Road Surface Type - Flexible  |
| 22.40     | Power Line| Electrical Power Line 3 Lines  Height 30 feet  
|           |           | Steel Support Structure Unknown Volts  
|           |           | Road Surface Type - Flexible  |
| 22.50     | Fill      | Material Type - Soil  Height 20 feet  
|           |           | Side Slope 2:1  Length 500 feet  
|           |           | Crest 80 feet  Type Fill - Other  
|           |           | Road Surface Type - Flexible  |
| 22.85     | Power Line| Electrical Power Line 6 Lines  Height 30 feet  
|           |           | Steel Support Structure Unknown Volts  
|           |           | Road Surface Type - Flexible  |
| 23.55     | Other     | Junction TN 48 Heading North  
|           |           | Road Surface Type - Flexible  |
| 24.35     | Other     | Junction TN 374 Heading South  
|           |           | Road Surface Type - Flexible  |
| 26.00     | Power Line| Electrical Power Line 12 Lines  Height 30 feet  
|           |           | Steel Support Structure Unknown Volts  
|           |           | Road Surface Type - Flexible  |
| 26.65     | Other     | Junction I 24 Heading North & South  
<p>|           |           | Road Surface Type - Flexible  |</p>
<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>26.65</td>
<td>Bridge</td>
<td>Number of Spans 2 Overpass Concrete Box Beam End 1 Fixed Pier 1 Fixed End 2 Fixed Deck Type - Concrete Length 207 feet Width 40 feet Pier Type - Open SPC Rating - B Surface Type - Flexible Expansion Type - Poured Compression End 1 Substructure - Stub End 2 Substructure - Stub Foundation Type - Unknown</td>
</tr>
<tr>
<td>26.66</td>
<td>Bridge</td>
<td>Number of Spans 2 Overpass Concrete Box Beam End 1 Fixed Pier 1 Fixed End 2 Fixed Deck Type - Concrete Length 207 feet Width 40 feet Pier Type - Open SPC Rating - B Surface Type - Flexible Expansion Type - Poured Compression End 1 Substructure - Stub End 2 Substructure - Stub Foundation Type - Unknown</td>
</tr>
<tr>
<td>27.00</td>
<td>Other</td>
<td>Clarksville City Limits Road Surface Type - Flexible</td>
</tr>
<tr>
<td>28.35</td>
<td>Power Line</td>
<td>Electrical Power Line 9 Lines Height 40 feet Steel Support Structure Unknown Volts Road Surface Type - Flexible</td>
</tr>
<tr>
<td>28.35</td>
<td>Fill</td>
<td>Material Type - Soil Height 15 feet Side Slope 1:1 Length 600 feet Crest 35 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>28.35</td>
<td>Pipeline</td>
<td>Pipeline Type - Natural Gas Road Surface Type - Flexible</td>
</tr>
<tr>
<td>29.20</td>
<td>Fill</td>
<td>Material Type - Soil Height 18 feet Side Slope 1:1 Length 600 feet Crest 35 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>Milepoint</td>
<td>Feature</td>
<td>Data</td>
</tr>
<tr>
<td>-----------</td>
<td>---------</td>
<td>------</td>
</tr>
</tbody>
</table>
| 30.90     | Other   | Pond 25 feet from Road, 300 x 400 feet  
            |         | Road Surface Type - Flexible |
| 31.00     | Fill    | Material Type - Soil  
            |         | Height 20 feet  
            |         | Side Slope 1:1  
            |         | Length 1,000 feet  
            |         | Crest 35 feet  
            |         | Type Fill - Other  
            |         | Road Surface Type - Flexible |
| 31.05     | Other   | Pond 25 feet from Road, 300 x 400 feet  
            |         | Road Surface Type - Flexible |
| 31.35     | Fill    | Material Type - Soil  
            |         | Height 18 feet  
            |         | Side Slope 3:2  
            |         | Length 350 feet  
            |         | Crest 34 feet  
            |         | Type Fill - Other  
            |         | Road Surface Type - Flexible |
| 31.40     | Bridge  | Number of Spans 3  
            |         | Overpass Concrete Box Beam  
            |         | End 1 Fixed  
            |         | Pier 1 Fixed  
            |         | Pier 2 Fixed  
            |         | End 2 Fixed  
            |         | Deck Type - Concrete  
            |         | Length 60 feet  
            |         | Width 30 feet  
            |         | Pier Type - Solid  
            |         | SPC Rating - B  
            |         | Surface Type - Flexible  
            |         | Expansion Type - Other  
            |         | End 1 Substructure - Full  
            |         | End 2 Substructure - Full  
            |         | Foundation Type - Unknown |
| 31.45     | Fill    | Material Type - Soil  
            |         | Height 14 feet  
            |         | Side Slope 3:2  
            |         | Length 400 feet  
            |         | Crest 35 feet  
            |         | Type Fill - Other  
            |         | Road Surface Type - Flexible |
| 31.95     | Other   | Tennessee - Kentucky (Todd Co) Border  
            |         | Road Surface Type - Flexible |
### Report by Road and Milepoint for Montgomery County - Tennessee US 41A

<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.00</td>
<td>Other</td>
<td>Junction US 79</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road Surface Type - Flexible</td>
</tr>
<tr>
<td>17.42</td>
<td>Power Line</td>
<td>Electrical Power Line 6 Lines Height 40 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wood Support Structure Unknown Volts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road Surface Type - Flexible</td>
</tr>
<tr>
<td>17.42</td>
<td>Other</td>
<td>Power Line Parallel to Road - 3 Lines</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road Surface Type - Flexible</td>
</tr>
<tr>
<td>18.50</td>
<td>Fill</td>
<td>Material Type - Soil Height 30 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Side Slope 1:1 Length 70 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Crest 80 feet Type Fill - Other</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road Surface Type - Flexible</td>
</tr>
<tr>
<td>19.70</td>
<td>Other</td>
<td>Three Electrical Towers, 5 feet from Road</td>
</tr>
<tr>
<td></td>
<td></td>
<td>65 feet High Road Surface Type - Flexible</td>
</tr>
<tr>
<td>20.65</td>
<td>Fill</td>
<td>Material Type - Soil Height 25 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Side Slope 1:1 Length 50 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Crest 80 feet Type Fill - Other</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road Surface Type - Flexible</td>
</tr>
<tr>
<td>20.70</td>
<td>Bridge</td>
<td>Southbound Bridge (Part One)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of Spans 4 Over Stream Concrete I-Beam</td>
</tr>
<tr>
<td></td>
<td></td>
<td>End 1 Fixed Pier 1 Fixed Pier 2 Fixed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pier 3 Fixed End 2 Roller (Pier 4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Deck Type - Concrete Length 75 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Width 40 feet Pier Type - Open</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SPC Rating - C Surface Type - Flexible</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expansion Type - Other</td>
</tr>
<tr>
<td></td>
<td></td>
<td>End 1 Substructure - Stub</td>
</tr>
<tr>
<td></td>
<td></td>
<td>End 2 Substructure - Full</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Foundation Type - Unknown</td>
</tr>
</tbody>
</table>
Milepoint | Feature | Data
---|---|---
20.70 | Bridge | Southbound Bridge (Part Two)
Number of Spans 3  Steel Girder I-Beam
Over Stream  End 1 Rocker
End 1 Rocker (Pier 4) Pier 5 Rocker
Pier 6 Rocker  End 2 Rocker (Pier 7)
Deck Type - Concrete  Length 263 feet
Width 40 feet  Pier Type - Open
SPC Rating - B  Surface Type - Flexible
Expansion Type - Other
End 1 and End 2 Substructure - Full
Foundation Type - Unknown

20.70 | Bridge | Southbound Bridge (Part Three)
Number of Spans 2  Over Stream Concrete I-Beam
End 1 Fixed (Pier 7) Pier 8 Fixed  End 2 Fixed
Deck Type - Concrete  Length 140 feet
Width 40 feet  Pier Type - Open
SPC Rating - B  Surface Type - Flexible
Expansion Type - Other
End 1 Substructure - Full
End 2 Substructure - Stub
Foundation Type - Unknown

20.70 | Bridge | Northbound Bridge
Number of Spans 6  Steel Girder I-Beam
Over Stream  End 1 Fixed
Pier 1 Fixed  Pier 2 Fixed  Pier 3 Fixed
Pier 4 Fixed  Pier 5 Fixed  End 2 Fixed
Deck Type - Concrete  Length 475 feet
Width 40 feet  Pier Type - Solid
SPC Rating - B  Surface Type - Flexible
Expansion Type - Other
End 1 and End 2 Substructure - Stub
Foundation Type - Unknown

21.20 | Cut Slope | Cut Slope Type - Soil  Height 17 feet
Length 100 feet  Back Slope 2:1
Road Surface Type - Flexible

21.30 | Fill | Material Type - Soil  Height 25 feet
Side Slope 1:1  Length 100 feet
Crest 80 feet  Type Fill - Other
Road Surface Type - Flexible
<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.30</td>
<td>Cut Slope</td>
<td>Cut Slope Type - Soil Height 18 feet</td>
</tr>
<tr>
<td></td>
<td>Slope</td>
<td>Length 100 feet Back Slope 1:1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road Surface Type - Flexible</td>
</tr>
<tr>
<td>21.80</td>
<td>Trees</td>
<td>Number of Trees 100 Height 60 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diameter 15 in. Ending Milepoint 21.85</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distance from Road 15 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road Surface Type - Flexible</td>
</tr>
<tr>
<td>22.28</td>
<td>Bridge</td>
<td>Railroad Bridge (Part One)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of Spans 1 Overpass</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Steel Girder I-Beam</td>
</tr>
<tr>
<td></td>
<td></td>
<td>End 1 Fixed End 2 Fixed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Deck Type - Concrete Length 28 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Width 10 feet Pier Type - Solid</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SPC Rating - B Surface Type - Flexible</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expansion Type - Other</td>
</tr>
<tr>
<td></td>
<td></td>
<td>End 1 and End 2 Substructure - Full</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Foundation Type - Unknown</td>
</tr>
<tr>
<td>22.28</td>
<td>Bridge</td>
<td>Railroad Bridge (Part Two)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of Spans 2 Overpass Wood Beam</td>
</tr>
<tr>
<td></td>
<td></td>
<td>End 1 Fixed (Pier 1) Pier 2 Fixed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>End 2 Fixed (Pier 3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Deck Type Unknown Length 15 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Width 10 feet Pier Type - Wood</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SPC Rating - B Surface Type - Flexible</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expansion Type - Other</td>
</tr>
<tr>
<td></td>
<td></td>
<td>End 1 and End 2 Substructure - Full</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Foundation Type - Unknown</td>
</tr>
<tr>
<td>22.28</td>
<td>Bridge</td>
<td>Railroad Bridge (Part Three)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of Spans 1 Steel Girder I-Beam</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Overpass End 1 Fixed (Pier 3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>End 2 Fixed (Pier 4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Deck Type Unknown Length 28 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Width 10 feet Pier Type - Steel Bent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SPC Rating - B Surface Type - Flexible</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expansion Type - Other</td>
</tr>
<tr>
<td></td>
<td></td>
<td>End 1 and End 2 Substructure - Full</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Foundation Type - Unknown</td>
</tr>
</tbody>
</table>
### Report by Road and Milepoint for Montgomery County - Tennessee

#### US 41A

<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
</table>
| 22.28     | Bridge | Railroad Bridge (Part Four)  
Number of Spans 2  
Overpass Concrete I-Beam  
End 1 Fixed (Pier 4)  
Pier 5 Fixed  
End 2 Fixed  
Deck Type - Concrete  
Length 20 feet  
Width 10 feet  
Pier Type - Wood Bent  
SPC Rating - B  
Surface Type - Flexible  
Expansion Type - Other  
End 1 Substructure - Full  
End 2 Substructure - Full  
Foundation Type - Unknown |
| 22.29     | Tank    | Propane Tank  
Number of Tanks 12  
Capacity Unknown  
Distance from Road 30 feet  
Road Surface Type - Flexible |
| 22.90     | Other   | Junction Tenn 236 East  
Road Surface Type - Flexible |
| 22.90     | Other   | Junction TN 236 Heading East-West  
Road Surface Type - Flexible |
| 23.25     | Trees   | Number of Trees 30  
Height 40 feet  
Diameter 12 in.  
Ending Milepoint 23.27  
Distance from Road 20 feet  
Road Surface Type - Flexible |
| 23.64     | Other   | Tennessee - Kentucky (Christian Co) Border  
Road Surface Type - Flexible |
<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
</table>
| 0.00      | Other   | Stewart Co - Henry Co Border  
Road Surface Type - Flexible |
| 0.95      | Fill    | Material Type - Soil  
Height 20 feet  
Side Slope 2:1  
Length 3,600 feet  
Crest 40 feet  
Type Fill - Other  
Road Surface Type - Composite |
| 0.95      | Other   | KenLake |
| 1.50      | Fill    | Material Type - Soil  
Height 50 feet  
Side Slope 3:2  
Length 700 feet  
Crest 60 feet  
Type Fill - Other  
Road Surface Type - Composite |
| 1.70      | Fill    | Material Type - Soil  
Height 30 feet  
Side Slope 3:2  
Length 300 feet  
Crest 60 feet  
Type Fill - Other  
Road Surface Type - Composite |
| 2.10      | Fill    | Material Type - Soil  
Height 45 feet  
Side Slope 3:2  
Length 800 feet  
Crest 45 feet  
Type Fill - Other  
Road Surface Type - Composite |
| 3.00      | Fill    | Material Type - Soil  
Height 40 feet  
Side Slope 3:2  
Length 800 feet  
Crest 45 feet  
Type Fill - Other  
Road Surface Type - Composite |
| 3.40      | Fill    | Material Type - Soil  
Height 40 feet  
Side Slope 3:2  
Length 700 feet  
Crest 45 feet  
Type Fill - Other  
Road Surface Type - Composite |
| 3.60      | Fill    | Material Type - Soil  
Height 50 feet  
Side Slope 3:2  
Length 800 feet  
Crest 45 feet  
Type Fill - Other  
Road Surface Type - Composite |
## Milepoint Feature Data

<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.85</td>
<td>Fill</td>
<td>Material Type - Soil Height 40 feet Side Slope 3:2 Length 700 feet Crest 45 feet Type Fill - Other Road Surface Type - Composite</td>
</tr>
<tr>
<td>4.20</td>
<td>Fill</td>
<td>Material Type - Soil Height 45 feet Side Slope 1:1 Length 700 feet Crest 50 feet Type Fill - Other Road Surface Type - Composite</td>
</tr>
<tr>
<td>4.40</td>
<td>Other</td>
<td>Junction TN 232 Heading South Road Surface Type - Composite</td>
</tr>
<tr>
<td>5.55</td>
<td>Fill</td>
<td>Material Type - Soil Height 50 feet Side Slope 3:2 Length 500 feet Crest 50 feet Type Fill - Other Road Surface Type - Composite</td>
</tr>
<tr>
<td>5.55</td>
<td>Other</td>
<td>Guardrails Sag Road Surface Type - Flexible</td>
</tr>
<tr>
<td>5.75</td>
<td>Fill</td>
<td>Material Type - Soil Height 35 feet Side Slope 2:1 Length 250 feet Crest 60 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>6.00</td>
<td>Fill</td>
<td>Material Type - Soil Height 35 feet Side Slope 2:1 Length 250 feet Crest 60 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>7.25</td>
<td>Fill</td>
<td>Material Type - Soil Height 50 feet Side Slope 1:1 Length 500 feet Crest 50 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>8.05</td>
<td>Fill</td>
<td>Material Type - Soil Height 40 feet Side Slope 1:1 Length 600 feet Crest 70 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>Milepoint</td>
<td>Feature</td>
<td>Data</td>
</tr>
<tr>
<td>-----------</td>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td>8.60</td>
<td>Fill</td>
<td>Material Type - Soil Height 40 feet Side Slope 3:2 Length 1,200 feet Crest 60 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>10.15</td>
<td>Other</td>
<td>Junction 'The Trace&quot; Heading North Road Surface Type - Flexible</td>
</tr>
<tr>
<td>10.50</td>
<td>Tank</td>
<td>Oil Tank Number of Tanks 3 Capacity Unknown Distance from Road 30 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>10.90</td>
<td>Fill</td>
<td>Material Type - Soil Height 30 feet Side Slope 3:2 Length 900 feet Crest 65 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>11.00</td>
<td>Fill</td>
<td>Material Type - Soil Height 20 feet Side Slope 3:2 Length 600 feet Crest 60 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>11.40</td>
<td>Fill</td>
<td>Material Type - Soil Height 45 feet Side Slope 3:2 Length 600 feet Crest 40 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>11.65</td>
<td>Fill</td>
<td>Material Type - Soil Height 40 feet Side Slope 3:2 Length 1,500 feet Crest 65 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>12.17</td>
<td>Fill</td>
<td>Material Type - Soil Height 30 feet Side Slope 3:2 Length 100 feet Crest 75 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>12.55</td>
<td>Fill</td>
<td>Material Type - Soil Height 25 feet Side Slope 3:2 Length 400 feet Crest 60 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
</tbody>
</table>
### Milepoint Feature Data

<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.95</td>
<td>Fill</td>
<td>Material Type - Soil  Height 25 feet  Side Slope 1:1  Length 400 feet  Crest 60 feet  Type Fill - Other  Road Surface Type - Flexible</td>
</tr>
<tr>
<td>13.20</td>
<td>Other</td>
<td>Junction TN 49 Heading South  Road Surface Type - Flexible</td>
</tr>
<tr>
<td>13.25</td>
<td>Other</td>
<td>City of Dover  Road Surface Type - Flexible</td>
</tr>
<tr>
<td>13.55</td>
<td>Bridge</td>
<td>(Part One - Bridge over Cumberland River)  Number of Spans 7  Overpass Concrete Box Beam  End 1 Fixed  Pier 1 Fixed  Pier 2 Fixed  Pier 3 Fixed  Pier 4 Fixed  Pier 5 Fixed  Pier 6 Fixed  End 2 Fixed (Pier 7)  Deck Type - Concrete  Length 730 feet  Width 60 feet  Pier Type - Open  SPC Rating - B  Surface Type - Rigid  Expansion Type - Other  End 1 Substructure - Stub  End 2 Substructure - Full  Foundation Type - Unknown</td>
</tr>
<tr>
<td>13.55</td>
<td>Bridge</td>
<td>(Part Two - Bridge over Cumberland River)  Number of Spans 3  Overpass Steel Girder I-Beam  End 1 Fixed (Pier 7)  Pier 8 Fixed  Pier 9 Fixed  End 2 Fixed  Deck Type - Concrete  Length 1,020 feet  Width 60 feet  Pier Type - Open  SPC Rating - B  Surface Type - Rigid  Expansion Type - Poured Compression  End 1 Substructure - Full  End 2 Substructure - Stub  Foundation Type - Unknown</td>
</tr>
<tr>
<td>Milepoint</td>
<td>Feature</td>
<td>Data</td>
</tr>
<tr>
<td>-----------</td>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td>13.65</td>
<td>Fill</td>
<td>Material Type - Soil  Height 25 feet Side Slope 1:1  Length 6,000 feet Crest 80 feet  Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>14.20</td>
<td>Bridge</td>
<td>Bridge over Dyers Creek Number of Spans 4  Overpass  Concrete Box Beam End 1 Fixed  Pier 1 Fixed  Pier 2 Fixed Pier 3 Fixed  End 2 Fixed Deck Type - Concrete  Length 445 feet Width 35 feet  Pier Type - Solid SPC Rating - B  Surface Type - Flexible Expansion Type - Poured Compression End 1 Substructure - Stub End 2 Substructure - Stub Foundation Type - Unknown</td>
</tr>
<tr>
<td>14.30</td>
<td>Fill</td>
<td>Material Type - Soil  Height 25 feet Side Slope 1:1  Length 750 feet Crest 80 feet  Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>14.70</td>
<td>Fill</td>
<td>Material Type - Soil  Height 30 feet Side Slope 3:2  Length 800 feet Crest 80 feet  Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>15.15</td>
<td>Other</td>
<td>Lake Road Surface Type - Flexible</td>
</tr>
<tr>
<td>15.15</td>
<td>Fill</td>
<td>Material Type - Soil  Height 30 feet Side Slope 3:2  Length 400 feet Crest 40 feet  Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>15.30</td>
<td>Fill</td>
<td>Material Type - Soil  Height 25 feet Side Slope 1:1  Length 700 feet Crest 40 feet  Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>Milepoint</td>
<td>Feature</td>
<td>Feature Data</td>
</tr>
<tr>
<td>-----------</td>
<td>---------</td>
<td>--------------</td>
</tr>
</tbody>
</table>
| 15.45     | Fill    | Material Type - Soil  Height 15 feet  
Side Slope 2:1  Length 2,000 feet  
Crest 40 feet  Type Fill - Other  
Road Surface Type - Flexible |
| 15.90     | Fill    | Material Type - Soil  Height 15 feet  
Side Slope 2:1  Length 250 feet  
Crest 40 feet  Type Fill - Other  
Road Surface Type - Flexible |
| 15.90     | Trees   | Number of Trees 15  Height 60 feet  
Diameter 18 in.  Ending Milepoint 16.00  
Distance from Road 30 feet  
Road Surface Type - Flexible |
| 16.10     | Fill    | Material Type - Soil  Height 15 feet  
Side Slope 2:1  Length 100 feet  
Crest 40 feet  Type Fill - Other  
Road Surface Type - Flexible |
| 16.35     | Fill    | Material Type - Soil  Height 8 feet  
Side Slope 2:1  Length 150 feet  
Crest 40 feet  Type Fill - Other  
Road Surface Type - Flexible |
| 16.40     | Bridge  | Number of Spans 4  Overpass  Concrete Box Beam  
End 1 Fixed  Pier 1 Fixed  Pier 2 Fixed  
Pier 3 Fixed  End 2 Fixed  
Deck Type - Concrete  Length 120 feet  
Width 30 feet  Pier Type - Open  
SPC Rating - B  Surface Type - Flexible  
Expansion Type - Other  
End 1 Substructure - Stub  
End 2 Substructure - Stub  
Foundation Type - Unknown |
| 16.45     | Fill    | Material Type - Soil  Height 8 feet  
Side Slope 2:1  Length 100 feet  
Crest 40 feet  Type Fill - Other  
Road Surface Type - Flexible |
### Report by Road and Milepoint for Stewart County - Tennessee

#### US 79

<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
</table>
| 16.87     | Fill    | Material Type - Soil  Height 25 feet  
           |         | Side Slope 3:2  Length 200 feet  
           |         | Crest 40 feet  Type Fill - Other  
           |         | Road Surface Type - Flexible |
| 16.90     | Fill    | Material Type - Soil  Height 18 feet  
           |         | Side Slope 3:2  Length 350 feet  
           |         | Crest 40 feet  Type Fill - Other  
           |         | Road Surface Type - Flexible |
| 17.50     | Trees   | Number of Trees 20  Height 60 feet  
           |         | Diameter 20 in.  Ending Milepoint 17.30  
           |         | Distance from Road 20 feet  
           |         | Road Surface Type - Flexible |
| 18.80     | Bridge  | Number of Spans 3  Overpass  Concrete Box Beam  
           |         | End 1 Fixed  Pier 1 Fixed  Pier 2 Fixed  
           |         | End 2 Fixed  
           |         | Deck Type - Concrete  Length 90 feet  
           |         | Width 35 feet  Pier Type - Open  
           |         | SPC Rating - B  Surface Type - Flexible  
           |         | Expansion Type - Other  
           |         | End 1 Substructure - Stub  
           |         | End 2 Substructure - Stub  
           |         | Foundation Type - Unknown |
| 18.85     | Fill    | Material Type - Soil  Height 10 feet  
           |         | Side Slope 2:1  Length 300 feet  
           |         | Crest 40 feet  Type Fill - Other  
           |         | Road Surface Type - Flexible |
| 19.10     | Trees   | Number of Trees 3  Height 45 feet  
           |         | Diameter 15 in.  Ending Milepoint 19.10  
           |         | Distance from Road 15 feet  
           |         | Road Surface Type - Flexible |
| 20.40     | Fill    | Material Type - Soil  Height 13 feet  
           |         | Side Slope 3:2  Length 2,000 feet  
           |         | Crest 40 feet  Type Fill - Other  
           |         | Road Surface Type - Flexible |
## Report by Road and Milepoint for Stewart County - Tennessee

**US 79**

<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>20.85</td>
<td>Power Line</td>
<td>Electrical Power Line 3 Lines Height 25 feet Wood Support Structure Unknown Volts Road Surface Type - Flexible</td>
</tr>
<tr>
<td>20.90</td>
<td>Fill</td>
<td>Material Type - Soil Height 25 feet Side Slope 3:2 Length 50 feet Crest 40 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>21.20</td>
<td>Fill</td>
<td>Material Type - Soil Height 15 feet Side Slope 2:1 Length 100 feet Crest 40 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>21.60</td>
<td>Fill</td>
<td>Material Type - Soil Height 30 feet Side Slope 3:2 Length 1,500 feet Crest 35 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>22.20</td>
<td>Other</td>
<td>Junction TN 120 Heading North Road Surface Type - Flexible</td>
</tr>
<tr>
<td>24.08</td>
<td>Trees</td>
<td>Number of Trees 6 Height 40 feet Diameter 20 in. Ending Milepoint 24.10 Distance from Road 12 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>25.65</td>
<td>Trees</td>
<td>Number of Trees 15 Height 40 feet Diameter 18 in. Ending Milepoint 25.84 Distance from Road 12 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>25.70</td>
<td>Other</td>
<td>Junction TN 46 Heading South Road Surface Type - Flexible</td>
</tr>
<tr>
<td>25.95</td>
<td>Trees</td>
<td>Number of Trees 3 Height 50 feet Diameter 18 in. Ending Milepoint 25.95 Distance from Road 10 feet Road Surface Type - Flexible</td>
</tr>
</tbody>
</table>
### Report by Road and Milepoint
for Stewart County - Tennessee

**US 79**

<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
</table>
| 26.12     | Trees   | Number of Trees 60  Height 35 feet  
                        Diameter 16 in.  Ending Milepoint 27.20  
                        Distance from Road 12 feet  
                        Road Surface Type - Flexible |
| 27.35     | Trees   | Number of Trees 3  Height 55 feet  
                        Diameter 24 in.  Ending Milepoint 27.35  
                        Distance from Road 20 feet  
                        Road Surface Type - Flexible |
| 27.56     | Trees   | Number of Trees 50  Height 35 feet  
                        Diameter 12 in.  Ending Milepoint 27.80  
                        Distance from Road 10 feet  
                        Road Surface Type - Flexible |
| 27.90     | Other   | Stewart Co - Montgomery Co Border  
                        Road Surface Type - Flexible |
<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
</table>
| 0.00      | Other   | Junction US 79  
            |         | Surface Type - Flexible |
| 0.05      | Bridge  | Number of Spans 2  
            |         | Overpass Concrete Box Beam  
            |         | End 1 Fixed Pier 1 Fixed End 2 Fixed  
            |         | Deck Type - Concrete Length 122 feet  
            |         | Width 32 feet Pier Type - Solid  
            |         | SPC Rating - C Surface Type - Flexible  
            |         | Expansion Type - Sliding Plate  
            |         | End 1 Substructure - Stub  
            |         | End 2 Substructure - Stub  
            |         | Foundation Type - Unknown |
| 0.05      | Trees   | Number of Trees 30  
            |         | Height 35 feet  
            |         | Diameter 18 in. Ending Milepoint 0.21  
            |         | Distance from Road 15 feet  
            |         | Road Surface Type - Flexible |
| 0.66      | Trees   | Number of Trees 50  
            |         | Height 65 feet  
            |         | Diameter 18 in. Ending Milepoint 1.00  
            |         | Distance from Road 20 feet  
            |         | Road Surface Type - Flexible |
| 0.70      | Cut     | Cut Slope Type - Soil Height 20 feet  
            |         | Length 350 feet Back Slope 1:1  
            |         | Road Surface Type - Flexible |
| 0.70      | Other   | Very Unstable Cut Slope  
            |         | Road Surface Type - Flexible |
| 1.05      | Fill    | Material Type - Soil Height 20 feet  
            |         | Side Slope 3:2 Length 300 feet  
            |         | Crest 35 feet Type Fill - Other  
            |         | Road Surface Type - Flexible |
| 1.30      | Trees   | Number of Trees 20  
            |         | Height 65 feet  
            |         | Diameter 18 in. Ending Milepoint 1.50  
            |         | Distance from Road 20 feet  
            |         | Road Surface Type - Flexible |
Report by Road and Milepoint
for Stewart County - Tennessee
The Trace

<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
</table>
| 1.45      | Fill    | Material Type - Soil  Height 35 feet  
                        |        | Side Slope 1:1 Length 250 feet  
                        |        | Crest 30 feet Type Fill - Other  
                        |        | Road Surface Type - Flexible |
| 2.40      | Fill    | Material Type - Soil  Height 35 feet  
                        |        | Side Slope 1:1 Length 450 feet  
                        |        | Crest 30 feet Type Fill - Other  
                        |        | Road Surface Type - Flexible |
| 2.50      | Trees   | Number of Trees 20 Height 55 feet  
                        |        | Diameter 15 in. Ending Milepoint 2.90  
                        |        | Distance from Road 20 feet  
                        |        | Road Surface Type - Flexible |
| 2.85      | Fill    | Material Type - Soil  Height 30 feet  
                        |        | Side Slope 1:0 Length 600 feet  
                        |        | Crest 30 feet Type Fill - Other  
                        |        | Road Surface Type - Flexible |
| 3.30      | Bridge  | Number of Spans 2 Overpass Concrete Box Beam  
                        |        | End 1 Fixed Pier 1 Fixed End 2 Fixed  
                        |        | Deck Type - Concrete Length 110 feet  
                        |        | Width 35 feet Pier Type - Solid  
                        |        | SPC Rating - C Surface Type - Flexible  
                        |        | Expansion Type - Poured Compression  
                        |        | End 1 Substructure - Stub  
                        |        | End 2 Substructure - Stub  
                        |        | Foundation Type - Unknown |
| 3.30      | Trees   | Number of Trees 30 Height 50 feet  
                        |        | Diameter 18 in. Ending Milepoint 3.50  
                        |        | Distance from Road 20 feet  
                        |        | Road Surface Type - Flexible |
| 3.65      | Trees   | Number of Trees 100 Height 45 feet  
                        |        | Diameter 18 in. Ending Milepoint 4.40  
                        |        | Distance from Road 15 feet  
<pre><code>                    |        | Road Surface Type - Flexible |
</code></pre>
<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.60</td>
<td>Trees</td>
<td>Number of Trees 50  Height 50 feet  Diameter 18 in.  Ending Milepoint 5.00  Distance from Road 15 feet  Road Surface Type - Flexible</td>
</tr>
<tr>
<td>5.65</td>
<td>Bridge</td>
<td>Number of Spans 1  Overpass  Concrete I-Beam  End 1 Fixed  End 2 Fixed  Deck Type - Concrete  Length 84 feet  Width 31 feet  Pier Type - Unknown  SPC Rating - C  Surface Type - Flexible  Expansion Type - Other  End 1 Substructure - Full  End 2 Substructure - Full  Foundation Type - Unknown</td>
</tr>
<tr>
<td>5.90</td>
<td>Trees</td>
<td>Number of Trees 35  Height 40 feet  Diameter 12 in.  Ending Milepoint 6.10  Distance from Road 20 feet  Road Surface Type - Flexible</td>
</tr>
<tr>
<td>6.40</td>
<td>Fill</td>
<td>Material Type - Soil  Height 15 feet  Side Slope 2:1  Length 250 feet  Crest 35 feet  Type Fill - Other  Road Surface Type - Flexible</td>
</tr>
<tr>
<td>6.60</td>
<td>Trees</td>
<td>Number of Trees 5  Height 30 feet  Diameter 12 in.  Ending Milepoint 6.63  Distance from Road 20 feet  Road Surface Type - Flexible</td>
</tr>
<tr>
<td>7.30</td>
<td>Bridge</td>
<td>Number of Spans 1  Overpass  Concrete I-Beam  End 1 Fixed  End 2 Fixed  Deck Type - Concrete  Length 84 feet  Width 32 feet  Pier Type - Unknown  SPC Rating - C  Surface Type - Flexible  Expansion Type - Other  End 1 Substructure - Full  End 2 Substructure - Full  Foundation Type - Unknown</td>
</tr>
<tr>
<td>Milepoint</td>
<td>Feature</td>
<td>Data</td>
</tr>
<tr>
<td>-----------</td>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td>7.40</td>
<td>Trees</td>
<td>Number of Trees 1  Height 50 feet Diameter 24 in. Ending Milepoint 7.40 Distance from Road 20 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>7.80</td>
<td>Fill</td>
<td>Material Type - Soil  Height 25 feet Side Slope 2:1  Length 150 feet Crest 30 feet  Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>8.00</td>
<td>Fill</td>
<td>Material Type - Soil  Height 25 feet Side Slope 2:1  Length 150 feet Crest 30 feet  Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>8.10</td>
<td>Fill</td>
<td>Material Type - Soil  Height 30 feet Side Slope 2:1  Length 150 feet Crest 30 feet  Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>8.30</td>
<td>Fill</td>
<td>Material Type - Soil  Height 40 feet Side Slope 3:2  Length 150 feet Crest 35 feet  Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>8.35</td>
<td>Trees</td>
<td>Number of Trees 30  Height 40 feet Diameter 12 in. Ending Milepoint 8.40 Distance from Road 20 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>8.90</td>
<td>Trees</td>
<td>Number of Trees 50  Height 45 feet Diameter 12 in. Ending Milepoint 9.20 Distance from Road 25 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>9.60</td>
<td>Trees</td>
<td>Number of Trees 50  Height 45 feet Diameter 12 in. Ending Milepoint 10.10 Distance from Road 20 feet Road Surface Type - Flexible</td>
</tr>
</tbody>
</table>
## Report by Road and Milepoint for Stewart County - Tennessee

### The Trace

<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.40</td>
<td>Trees</td>
<td>Number of Trees 20  Height 45 feet Diameter 12 in.  Ending Milepoint 10.50 Distance from Road 20 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>10.60</td>
<td>Trees</td>
<td>Number of Trees 60  Height 45 feet Diameter 12 in.  Ending Milepoint 11.10 Distance from Road 20 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>11.30</td>
<td>Trees</td>
<td>Number of Trees 30  Height 45 feet Diameter 12 in.  Ending Milepoint 11.50 Distance from Road 20 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>11.70</td>
<td>Trees</td>
<td>Number of Trees 30  Height 45 feet Diameter 12 in.  Ending Milepoint 11.90 Distance from Road 20 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>11.90</td>
<td>Fill</td>
<td>Material Type - Soil  Height 30 feet Side Slope 3:2  Length 200 feet Crest 35 feet  Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>12.20</td>
<td>Trees</td>
<td>Number of Trees 20  Height 45 feet Diameter 12 in.  Ending Milepoint 12.40 Distance from Road 20 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>12.70</td>
<td>Trees</td>
<td>Number of Trees 4   Height 45 feet Diameter 12 in.  Ending Milepoint 12.70 Distance from Road 20 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>13.00</td>
<td>Other</td>
<td>Iron Furnace Road Surface Type - Flexible</td>
</tr>
<tr>
<td>Milepoint</td>
<td>Feature</td>
<td>Data</td>
</tr>
<tr>
<td>-----------</td>
<td>---------</td>
<td>------</td>
</tr>
</tbody>
</table>
| 13.10     | Trees   | Number of Trees 10  Height 45 feet  
Distance from Road 20 feet  
Road Surface Type - Flexible |
| 13.55     | Bridge  | Number of Spans 1  Overpass  Concrete I-Beam  
End 1 Neoprene Pad  End 2 Neoprene Pad  
Deck Type - Concrete  Length 46 feet  
Width 32 feet  Pier Type - Unknown  
SPC Rating - C  Surface Type - Flexible  
Expansion Type - Other  
End 1 Substructure - Full  
End 2 Substructure - Full  
Foundation Type - Unknown |
| 13.60     | Trees   | Number of Trees 35  Height 40 feet  
Distance from Road 20 feet  
Road Surface Type - Flexible |
| 14.40     | Fill    | Material Type - Soil  Height 25 feet  
Side Slope 3:2  Length 300 feet  
Crest 35 feet  Type Fill - Other  
Road Surface Type - Flexible |
| 14.70     | Fill    | Material Type - Soil  Height 30 feet  
Side Slope 2:1  Length 200 feet  
Crest 30 feet  Type Fill - Other  
Road Surface Type - Flexible |
| 14.80     | Fill    | Material Type - Soil  Height 35 feet  
Side Slope 3:2  Length 250 feet  
Crest 30 feet  Type Fill - Other  
Road Surface Type - Flexible |
| 14.90     | Fill    | Material Type - Soil  Height 30 feet  
Side Slope 2:1  Length 200 feet  
Crest 30 feet  Type Fill - Other  
Road Surface Type - Flexible |
## The Trace

<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.10</td>
<td>Fill</td>
<td>Material Type - Soil Height 30 feet Side Slope 2:1 Length 150 feet Crest 30 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>15.10</td>
<td>Trees</td>
<td>Number of Trees 50 Height 45 feet Diameter 12 in. Ending Milepoint 16.10 Distance from Road 20 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>16.10</td>
<td>Other</td>
<td>Tennessee - Kentucky (Trigg Co) Border Road Surface Type - Flexible</td>
</tr>
<tr>
<td>Milepoint</td>
<td>Feature</td>
<td>Data</td>
</tr>
<tr>
<td>-----------</td>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td>14.15</td>
<td>Other</td>
<td>Begin US 79 in Henry Co at Junction TN 356 Road Surface Type - Flexible</td>
</tr>
<tr>
<td>15.35</td>
<td>Other</td>
<td>City of Paris Road Surface Type - Flexible</td>
</tr>
<tr>
<td>15.40</td>
<td>Fill</td>
<td>Material Type - Soil Height 25 feet Side Slope 2:1 Length 400 feet Crest 85 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>15.40</td>
<td>Power</td>
<td>Electrical Power Line 3 Lines Height 20 feet Wood Support Structure Unknown Volts Road Surface Type - Flexible</td>
</tr>
<tr>
<td>15.45</td>
<td>Bridge</td>
<td>Number of Spans 3 Over Stream Concrete Box Beam End 1 Fixed Pier 1 Fixed Pier 2 Fixed End 2 Fixed Deck Type - Concrete Length 150 feet Width 85 feet Pier Type - Open SPC Rating - C Surface Type - Flexible Expansion Type - Other End 1 Substructure - Stub End 2 Substructure - Stub Foundation Type - Unknown</td>
</tr>
<tr>
<td>15.50</td>
<td>Fill</td>
<td>Material Type - Soil Height 30 feet Side Slope 3:2 Length 300 feet Crest 85 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>15.60</td>
<td>Fill</td>
<td>Material Type - Soil Height 8 feet Side Slope 3:1 Length 200 feet Crest 85 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
</tbody>
</table>
### Milepoint Data

<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.65</td>
<td>Bridge</td>
<td>Number of Spans 4 Over Stream Concrete Box Beam End 1 Fixed Pier 1 Fixed Pier 2 Fixed Pier 3 Fixed End 2 Fixed Deck Type - Concrete Length 147 feet Width 83 feet Pier Type - Open SPC Rating - C Surface Type - Flexible Expansion Type - Other End 1 Substructure - Stub End 2 Substructure - Stub Foundation Type - Unknown</td>
</tr>
<tr>
<td>15.75</td>
<td>Fill</td>
<td>Material Type - Soil Height 12 feet Side Slope 5:2 Length 450 feet Crest 85 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>17.95</td>
<td>Trees</td>
<td>Number of Trees 7 Height 65 feet Diameter 24 in. Ending Milepoint 17.93 Distance from Road 20 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>19.75</td>
<td>Bridge</td>
<td>Twin Bridges - North and Southbound Number of Spans 4 Over Stream Concrete I-Beam End 1 Fixed Pier 1 Fixed Pier 2 Fixed Pier 3 Fixed End 2 Fixed Deck Type - Concrete Length 306 feet Width 40 feet Pier Type - Solid SPC Rating - C Surface Type - Flexible Expansion Type - Other End 1 Substructure - Stub End 2 Substructure - Stub Foundation Type - Unknown</td>
</tr>
<tr>
<td>20.40</td>
<td>Other</td>
<td>Junction TN 218 Heading North Road Surface Type - Flexible</td>
</tr>
<tr>
<td>21.50</td>
<td>Trees</td>
<td>Number of Trees 50 Height 100 feet Diameter 18 in. Ending Milepoint 22.73 Distance from Road 12 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>Milepoint</td>
<td>Feature</td>
<td>Data</td>
</tr>
<tr>
<td>-----------</td>
<td>---------</td>
<td>------</td>
</tr>
</tbody>
</table>
| 22.05     | Fill    | Material Type - Soil  Height 10 feet  
               Side Slope 3:2  Length 100 feet  
               Crest 30 feet  Type Fill - Other  
               Road Surface Type - Flexible |
| 22.10     | Bridge  | Number of Spans 3  Over Stream  Concrete Box Beam  
               End 1 Fixed Pier 1 Fixed Pier 2 Fixed End 2 Fixed  
               Deck Type - Concrete Length 85 feet Width 27 feet Pier Type - Open  
               SPC Rating - C Surface Type - Flexible  
               Expansion Type - Other  
               End 1 Substructure - Stub  
               End 2 Substructure - Stub  
               Foundation Type - Unknown |
| 22.36     | Fill    | Material Type - Soil  Height 15 feet  
               Side Slope 3:2  Length 150 feet  
               Crest 30 feet  Type Fill - Other  
               Road Surface Type - Flexible |
| 22.73     | Trees   | Number of Trees 100  Height 50 feet  
               Diameter 18 in. Ending Milepoint 21.50  
               Distance from Road 15 feet  
               Road Surface Type - Flexible |
| 22.84     | Trees   | Number of Trees 15  Height 45 feet  
               Diameter 18 in. Ending Milepoint 22.90  
               Distance from Road 15 feet  
               Road Surface Type - Flexible |
| 22.88     | Fill    | Material Type - Soil  Height 20 feet  
               Side Slope 3:2  Length 150 feet  
               Crest 30 feet  Type Fill - Other  
               Road Surface Type - Flexible |
| 23.75     | Trees   | Number of Trees 5  Height 40 feet  
               Diameter 18 in. Ending Milepoint 23.75  
               Distance from Road 20 feet  
               Road Surface Type - Flexible |
<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.89</td>
<td>Trees</td>
<td>Number of Trees 20  Height 45 feet  Diameter 24 in.  Ending Milepoint 23.95  Distance from Road 25 feet  Road Surface Type - Flexible</td>
</tr>
<tr>
<td>24.00</td>
<td>Fill</td>
<td>Material Type - Soil  Height 20 feet  Side Slope 3:2  Length 200 feet  Crest 30 feet  Type Fill - Other  Road Surface Type - Flexible</td>
</tr>
<tr>
<td>24.15</td>
<td>Fill</td>
<td>Material Type - Soil  Height 20 feet  Side Slope 1:1  Length 500 feet  Crest 35 feet  Type Fill - Other  Road Surface Type - Flexible</td>
</tr>
<tr>
<td>24.45</td>
<td>Fill</td>
<td>Material Type - Soil  Height 30 feet  Side Slope 3:2  Length 400 feet  Crest 30 feet  Type Fill - Other  Road Surface Type - Flexible</td>
</tr>
<tr>
<td>24.45</td>
<td>Other</td>
<td>Gravel Pit  Road Surface Type - Flexible</td>
</tr>
<tr>
<td>24.54</td>
<td>Trees</td>
<td>Number of Trees 12  Height 55 feet  Diameter 18 in.  Ending Milepoint 24.85  Distance from Road 25 feet  Road Surface Type - Flexible</td>
</tr>
<tr>
<td>25.30</td>
<td>Trees</td>
<td>Number of Trees 20  Height 50 feet  Diameter 12 in.  Ending Milepoint 25.10  Distance from Road 15 feet  Road Surface Type - Flexible</td>
</tr>
<tr>
<td>25.37</td>
<td>Power Line</td>
<td>Electrical Power Line  3 Lines  Height 30 feet  Wood Support Structure Unknown Volts  Road Surface Type - Flexible</td>
</tr>
</tbody>
</table>
## Report by Road and Milepoint for Henry County - Tennessee

### US 79

<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>26.15</td>
<td>Power Line</td>
<td>Electrical Power Line 9 Lines Height 35 feet Wood Support Structure Unknown Volts Road Surface Type - Flexible</td>
</tr>
<tr>
<td>26.50</td>
<td>Trees</td>
<td>Number of Trees 20 Height 45 feet Diameter 12 in. Ending Milepoint 26.30 Distance from Road 20 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>26.90</td>
<td>Trees</td>
<td>Number of Trees 20 Height 50 feet Diameter 12 in. Ending Milepoint 26.70 Distance from Road 20 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>27.00</td>
<td>Fill</td>
<td>Material Type - Soil Height 20 feet Side Slope 2:1 Length 400 feet Crest 30 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>27.05</td>
<td>Bridge</td>
<td>Number of Spans 5 Over Stream Concrete T-Beam End 1 Fixed Pier 1 Roller Pier 2 Roller Pier 3 Roller Roller 4 Fixed End 2 Fixed Deck Type - Concrete Length 169 feet Width 26 feet Pier Type - Open SPC Rating - C Surface Type - Flexible Expansion Type - Other End 1 Substructure - Stub End 2 Substructure - Stub Foundation Type - Unknown</td>
</tr>
<tr>
<td>27.10</td>
<td>Fill</td>
<td>Material Type - Soil Height 10 feet Side Slope 2:1 Length 600 feet Crest 35 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>27.45</td>
<td>Other</td>
<td>Junction TN 140 Heading West Road Surface Type - Flexible</td>
</tr>
<tr>
<td>Milepoint</td>
<td>Feature</td>
<td>Data</td>
</tr>
<tr>
<td>-----------</td>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td>28.20</td>
<td>Trees</td>
<td>Number of Trees 20 Height 50 feet Diameter 12 in. Ending Milepoint 28.00 Distance from Road 20 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>28.85</td>
<td>Fill</td>
<td>Material Type - Soil Height 20 feet Side Slope 2:1 Length 300 feet Crest 30 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>28.90</td>
<td>Bridge</td>
<td>Number of Spans 5 Overpass Concrete Box Beam End 1 Fixed Pier 1 Fixed Pier 2 Fixed Pier 3 Fixed Pier 4 Fixed End 2 Fixed Deck Type - Concrete Length 171 feet Width 25 feet Pier Type - Open SPC Rating - C Surface Type - Flexible Expansion Type - Other End 1 Substructure - Stub End 2 Substructure - Stub Foundation Type - Unknown</td>
</tr>
<tr>
<td>28.95</td>
<td>Fill</td>
<td>Material Type - Soil Height 20 feet Side Slope 2:1 Length 400 feet Crest 30 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>29.60</td>
<td>Trees</td>
<td>Number of Trees 20 Height 50 feet Diameter 12 in. Ending Milepoint 29.40 Distance from Road 20 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>30.00</td>
<td>Fill</td>
<td>Material Type - Soil Height 20 feet Side Slope 3:2 Length 150 feet Crest 35 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>30.05</td>
<td>Other</td>
<td>Junction TN 119 Heading North Road Surface Type - Flexible</td>
</tr>
<tr>
<td>Milepoint</td>
<td>Feature</td>
<td>Data</td>
</tr>
<tr>
<td>-----------</td>
<td>----------</td>
<td>------</td>
</tr>
</tbody>
</table>
| 31.00     | Fill     | Material Type - Soil  Height 20 feet  
|           |          | Side Slope 2:1  Length 4,000 feet  
|           |          | Crest 35 feet  Type Fill - Other  
|           |          | Road Surface Type - Flexible  |
| 31.17     | Other    | Henry Co - Stewart Co Border  
|           |          | Road Surface Type - Flexible  |
| 31.17     | Bridge   | Number of Spans 17 Over Tennessee River  
|           |          | Spans 1 - 7 Prestressed Concrete Bulb - Tee  
|           |          | 7 Spans at 130 feet - 6 inches  
|           |          | Spans 8 - 12 Steel Welded Plate Girder  
|           |          | Span Lengths: Span 8-300 feet Span 9-425 feet  
|           |          | Span 10-525 feet Span 11-425 feet Span 12-200 feet  
|           |          | Spans 13 - 17 Prestressed Concrete Bulb-Tee  
|           |          | 5 Spans at 139 feet - 8.5 inches  
|           |          | Abutment 1 Integral  Bents 1 - 6 Fixed  
|           |          | Pier 1 Expansion  Pier 2 - 5 Fixed  Pier 6 Expansion  
|           |          | Bent 7 - 10 Fixed  Abutment 2 Integral  
|           |          | Expansion Type - Modular Joints at Piers 1 - 6  
|           |          | Deck Type - Concrete  Length 3,590 feet long  
|           |          | Width - 86 feet  
|           |          | Substructure - Abutments 1 and 2 Stub on Piles  
|           |          | Bents 1 - 10 Hammerhead on Piles  
|           |          | Bents 1, 5, 6 on Piles  Piers 2 - 4 Spread Footings  
|           |          | SPC Rating - B  |
# Report by Road and Milepoint
for Henry County - Tennessee

**US 641**

<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
</table>
| 11.50     | Other   | Begin US 641 in Henry Co  
Road Surface Type - Flexible |
| 11.50     | Trees   | Number of Trees 50  
Height 45 feet  
Diameter 12 in.  
Ending Milepoint 11.85  
Distance from Road 15 feet  
Road Surface Type - Flexible |
| 11.68     | Fill    | Material Type - Soil  
Height 30 feet  
Side Slope 3:2  
Length 150 feet  
Crest 49 feet  
Type Fill - Other  
Road Surface Type - Flexible |
| 11.70     | Bridge  | Number of Spans 3  
Over Stream  
Concrete Box Beam  
End 1 Fixed  
Pier 1 Roller  
Pier 2 Roller  
End 2 Fixed  
Deck Type - Concrete  
Length 118 feet  
Width 49 feet  
Pier Type - Open  
SPC Rating - C  
Surface Type - Flexible  
Expansion Type - Other  
End 1 Substructure - Stub  
End 2 Substructure - Stub  
Foundation Type - Unknown |
| 11.80     | Fill    | Material Type - Soil  
Height 30 feet  
Side Slope 3:2  
Length 150 feet  
Crest 49 feet  
Type Fill - Other  
Road Surface Type - Flexible |
| 11.82     | Bridge  | Number of Spans 4  
Over Stream  
Concrete Box Beam  
End 1 Fixed  
Pier 1 Fixed  
Pier 2 Fixed  
Pier 3 Fixed  
End 2 Fixed  
Deck Type - Concrete  
Length 116 feet  
Width 49 feet  
Pier Type - Open  
SPC Rating - C  
Surface Type - Flexible  
Expansion Type - Other  
End 1 Substructure - Stub  
End 2 Substructure - Stub  
Foundation Type - Unknown |
<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.85</td>
<td>Fill</td>
<td>Material Type - Soil Height 30 feet Side Slope 3:2 Length 150 feet Crest 49 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>12.60</td>
<td>Trees</td>
<td>Number of Trees 20 Height 40 feet Diameter 24 in. Ending Milepoint 12.30 Distance from Road 15 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>12.70</td>
<td>Other</td>
<td>City of Paris Road Surface Type - Flexible</td>
</tr>
<tr>
<td>13.10</td>
<td>Trees</td>
<td>Number of Trees 15 Height 40 feet Diameter 15 in. Ending Milepoint 13.14 Distance from Road 12 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>13.10</td>
<td>Fill</td>
<td>Material Type - Soil Height 30 feet Side Slope 1:1 Length 300 feet Crest 35 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>13.35</td>
<td>Fill</td>
<td>Material Type - Soil Height 30 feet Side Slope 1:1 Length 300 feet Crest 35 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>13.55</td>
<td>Fill</td>
<td>Material Type - Soil Height 20 feet Side Slope 1:1 Length 400 feet Crest 35 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>13.55</td>
<td>Other</td>
<td>Swamp or Drained Lake Road Surface Type - Flexible</td>
</tr>
<tr>
<td>13.70</td>
<td>Fill</td>
<td>Material Type - Soil Height 20 feet Side Slope 1:1 Length 400 feet Crest 35 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
</tbody>
</table>
### Milepoint 13.90
- Feature: Trees
- Data:
  - Number of Trees: 6
  - Height: 35 feet
  - Diameter: 18 in.
  - Ending Milepoint: 13.93
  - Distance from Road: 12 feet
  - Road Surface Type: Flexible

### Milepoint 14.15
- Feature: Other
- Data:
  - Lake
  - Road Surface Type: Flexible

### Milepoint 14.40
- Feature: Trees
- Data:
  - Number of Trees: 50
  - Height: 40 feet
  - Diameter: 18 in.
  - Ending Milepoint: 14.70
  - Distance from Road: 12 feet
  - Road Surface Type: Flexible

### Milepoint 14.55
- Feature: Fill
- Data:
  - Material Type: Soil
  - Height: 25 feet
  - Side Slope: 1:1
  - Length: 700 feet
  - Crest: 35 feet
  - Type Fill: Other
  - Road Surface Type: Flexible

### Milepoint 15.35
- Feature: Trees
- Data:
  - Number of Trees: 2
  - Height: 40 feet
  - Diameter: 20 in.
  - Ending Milepoint: 15.35
  - Distance from Road: 1 foot
  - Road Surface Type: Flexible

### Milepoint 15.60
- Feature: Trees
- Data:
  - Number of Trees: 15
  - Height: 40 feet
  - Diameter: 18 in.
  - Ending Milepoint: 15.83
  - Distance from Road: 12 feet
  - Road Surface Type: Flexible

### Milepoint 16.30
- Feature: Trees
- Data:
  - Number of Trees: 20
  - Height: 50 feet
  - Diameter: 26 in.
  - Ending Milepoint: 16.34
  - Distance from Road: 10 feet
  - Road Surface Type: Flexible

### Milepoint 16.42
- Feature: Fill
- Data:
  - Material Type: Soil
  - Height: 10 feet
  - Side Slope: 3:2
  - Length: 75 feet
  - Crest: 35 feet
  - Type: Other
  - Road Surface Type: Flexible
<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.44</td>
<td>Bridge</td>
<td>Number of Spans 3 Over Stream Concrete Box Beam End 1 Fixed, Pier 1 Fixed, Pier 2 Fixed End 2 Fixed Deck Type - Concrete Length 86 feet Width 22 feet Pier Type - Open SPC Rating - C Surface Type - Flexible Expansion Type - Other End 1 Substructure - Stub End 2 Substructure - Stub Foundation Type - Unknown</td>
</tr>
<tr>
<td>16.44</td>
<td>Trees</td>
<td>Number of Trees 30 Height 40 feet Diameter 12 in. Ending Milepoint 16.64 Distance from Road 18 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>16.47</td>
<td>Fill</td>
<td>Material Type - Soil Height 8 feet Side Slope 3:1 Length 200 feet Crest 35 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>16.70</td>
<td>Fill</td>
<td>Material Type - Soil Height 25 feet Side Slope 1:1 Length 200 feet Crest 35 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
<tr>
<td>16.70</td>
<td>Trees</td>
<td>Number of Trees 20 Height 50 feet Diameter 18 in. Ending Milepoint 16.75 Distance from Road 20 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>17.00</td>
<td>Trees</td>
<td>Number of Trees 10 Height 40 feet Diameter 12 in. Ending Milepoint 17.04 Distance from Road 18 feet Road Surface Type - Flexible</td>
</tr>
<tr>
<td>17.10</td>
<td>Fill</td>
<td>Material Type - Soil Height 10 feet Side Slope 3:2 Length 80 feet Crest 35 feet Type Fill - Other Road Surface Type - Flexible</td>
</tr>
</tbody>
</table>
### Report by Road and Milepoint for Henry County - Tennessee

**US 641**

<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
</table>
| 17.15     | Bridge  | Number of Spans 3  
Over Stream  
Concrete Box Beam  
End 1 Fixed  
Pier 1 Fixed  
Pier 2 Fixed  
End 2 Fixed  
Deck Type - Concrete  
Length 84 feet  
Width 24 feet  
Pier Type - Open  
SPC Rating - C  
Surface Type - Flexible  
Expansion Type - Other  
End 1 Substructure - Stub  
End 2 Substructure - Stub  
Foundation Type - Unknown |
| 17.20     | Fill    | Material Type - Soil  
Height 10 feet  
Side Slope 5:2  
Length 150 feet  
Crest 35 feet  
Type Fill - Other  
Road Surface Type - Flexible |
| 17.55     | Fill    | Material Type - Soil  
Height 30 feet  
Side Slope 3:2  
Length 300 feet  
Crest 30 feet  
Type Fill - Other  
Road Surface Type - Flexible |
| 17.92     | Fill    | Material Type - Soil  
Height 30 feet  
Side Slope 3:2  
Length 300 feet  
Crest 30 feet  
Type Fill - Other  
Road Surface Type - Flexible |
| 18.15     | Trees   | Number of Trees 3  
Height 60 feet  
Diameter 24 in.  
Ending Milepoint 18.15  
Distance from Road 15 feet  
Road Surface Type - Flexible |
| 19.05     | Fill    | Material Type - Soil  
Height 25 feet  
Side Slope 3:2  
Length 300 feet  
Crest 30 feet  
Type Fill - Other  
Road Surface Type - Flexible |
| 19.20     | Trees   | Number of Trees 10  
Height 45 feet  
Diameter 18 in.  
Ending Milepoint 19.30  
Distance from Road 15 feet  
Road Surface Type - Flexible |
### Report by Road and Milepoint
**for Henry County - Tennessee**

**US 641**

<table>
<thead>
<tr>
<th>Milepoint</th>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>20.05</td>
<td>Trees</td>
<td>Number of Trees 2 Height 65 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diameter 24 in. Ending Milepoint 20.05</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distance from Road 20 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road Surface Type - Flexible</td>
</tr>
<tr>
<td>20.25</td>
<td>Other</td>
<td>City of Puryear in Tennessee</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road Surface Type - Flexible</td>
</tr>
<tr>
<td>20.70</td>
<td>Power Line</td>
<td>Electrical Power Line 3 Lines Height 25 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wood Support Structure Unknown Volts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road Surface Type - Flexible</td>
</tr>
<tr>
<td>20.70</td>
<td>Trees</td>
<td>Number of Trees 15 Height 55 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diameter 18 in. Ending Milepoint 20.82</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distance from Road 15 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road Surface Type - Flexible</td>
</tr>
<tr>
<td>21.00</td>
<td>Other</td>
<td>Junction TN 140 heading East</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road Surface Type - Flexible</td>
</tr>
<tr>
<td>21.10</td>
<td>Other</td>
<td>Junction TN 140 heading West</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road Surface Type - Flexible</td>
</tr>
<tr>
<td>21.40</td>
<td>Trees</td>
<td>Number of Trees 10 Height 40 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diameter 18 in. Ending Milepoint 21.60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distance from Road 15 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road Surface Type - Flexible</td>
</tr>
<tr>
<td>22.40</td>
<td>Fill</td>
<td>Material Type - Soil Height 15 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Side Slope 3:2 Length 200 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Crest 30 feet Type Fill - Other</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road Surface Type - Flexible</td>
</tr>
<tr>
<td>22.90</td>
<td>Trees</td>
<td>Number of Trees 15 Height 40 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diameter 12 in. Ending Milepoint 23.40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distance from Road 15 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road Surface Type - Flexible</td>
</tr>
<tr>
<td>Milepoint</td>
<td>Feature</td>
<td>Data</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>23.90</td>
<td>Trees</td>
<td>Number of Trees 35  Height 45 feet  Diameter 15 in.  Ending Milepoint 24.03  Distance from Road 18 feet  Road Surface Type - Flexible</td>
</tr>
<tr>
<td>24.55</td>
<td>Trees</td>
<td>Number of Trees 20  Height 50 feet  Diameter 20 in.  Ending Milepoint 24.85  Distance from Road 18 feet  Road Surface Type - Flexible</td>
</tr>
<tr>
<td>24.85</td>
<td>Other</td>
<td>Tennessee - Kentucky (Calloway Co) Border  Road Surface Type - Flexible</td>
</tr>
</tbody>
</table>
Figure 3. Recommended Priority Routes In Tennessee