

TRANSPORTATION PLANNING REPORT

*Proposed Roadway Improvements
Old Brownsville Road
FROM SR 14 (AUSTIN PEAY HIGHWAY) TO
PROPOSED KIRBY WHITTEN PARKWAY
SHELBY COUNTY
PIN# 010619.00*



**PREPARED BY
HMB PROFESSIONAL ENGINEERS, INC.
FOR
TENNESSEE DEPARTMENT OF TRANSPORTATION
PROJECT PLANNING DIVISION**

Recommended by:	Signature	DATE
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TRANSPORTATION DIRECTOR PROJECT PLANNING DIVISION	<i>Steve [unclear]</i>	<i>10-1-07</i>
TRANSPORTATION MANAGER 2 PROJECT PLANNING DIVISION	<i>Biel Hart</i>	<i>10/1/07</i>

This document is covered by 23 USC § 409 and its production pursuant to fulfilling public planning requirements does not waive the provisions of § 409.

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DATA TABLE OLD BROWNSVILLE ROAD SHELBY COUNTY

<u>ITEM</u>	<u>EXISTING</u>
Functional Class	Rural Major Collector
System Class	STP
Length (miles)	2.22
Present AADT (2012)	11,060
Future AADT (2032)	18,800
DHV (2032)	1,692
% Trucks	4% (ADT) 3% (DHV)



Existing Old Brownsville Road, looking west.

**DATA TABLE
 OLD BROWNSVILLE ROAD
 SHELBY COUNTY**

<u>ITEM</u>	<u>PHASE 1 - Interim</u>
Functional Class	Urban Major Arterial
System Class	STP
Length (miles)	2.22
Present AADT (2012)	11,060
Future AADT (2032)	18,800
DHV (2032)	1,692
% Trucks	4% (ADT) 3% (DHV)
Estimated Right-of-Way Acquisition (acres)	
w/Option 1	15.2
w/Option 2	15.7
Estimated Right-of-Way Tracts Affected	
w/Option 1	28
w/Option 2	30
Estimated Family Displacements	1
Estimated Business Displacements	N/A
Estimated Right-of-Way Costs	
w/Option 1	\$881,500
w/Option 2	\$900,500
Estimated Utility Cost Reimbursable	
w/Option 1	\$75,000
w/Option 2	\$75,000
Estimated Utility Cost Non-reimbursable	
w/Option 1	\$756,000
w/Option 2	\$756,000
Estimated Construction Cost	
w/Option 1	\$8,115,300
w/Option 2	\$8,283,500
Estimated Engineering Cost (5% Construction Cost)	
w/Option 1	\$406,000
w/Option 2	\$414,000
Total Estimated Project Cost	
w/Option 1	\$10,233,800
w/Option 2	\$10,429,000

DATA TABLE
OLD BROWNSVILLE ROAD
SHELBY COUNTY

<u>ITEM</u>	<u>PHASE II - Ultimate</u>
Functional Class	Urban Major Arterial
System Class	STP
Length (miles)	2.22
Present AADT (2012)	11,060
Future AADT (2032)	18,800
DHV (2032)	1,692
% Trucks	4% (ADT) 3% (DHV)
Estimated Right-of-Way Acquisition (acres)	N/A
Estimated Right-of-Way Tracts Affected	N/A
Estimated Family Displacements	N/A
Estimated Business Displacements	N/A
Estimated Right-of-Way Costs	N/A
Estimated Utility Cost Reimbursable	N/A
Estimated Utility Cost Non-reimbursable	N/A
Estimated Construction Cost	\$2,769,000
Estimated Engineering Cost (3% Construction Cost)	\$83,000
Total Estimated Project Cost	\$2,852,000

PROJECT BACKGROUND

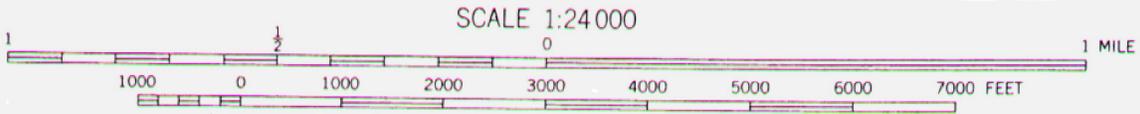
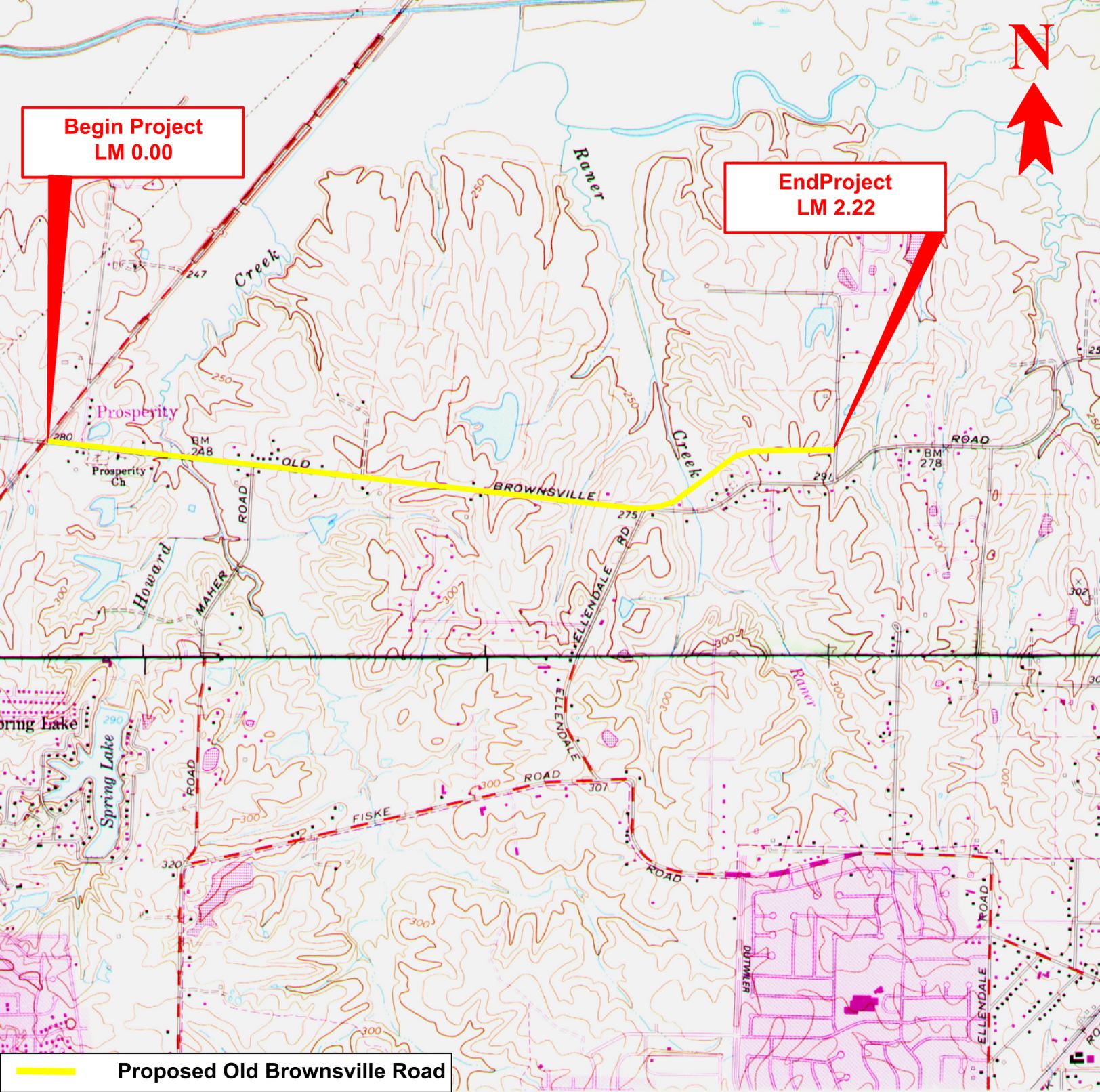
This project is the result of a local programs project requested by the Memphis Municipal Planning Organization (MPO). Old Brownsville Road, located in Shelby County, Tennessee, has been identified in the Memphis MPO's long range plan for improvements. The widening of Old Brownsville Road is a priority for local officials and is reflected in both the City of Bartlett Master Plan and the Memphis MPO Road Improvement Plan. The study area includes an area of rapid residential growth and high traffic volumes, leading to a need for higher capacity on this section of the route. In addition, safety is a concern on this route since existing geometry does not meet the criteria to accommodate higher design speeds or increased traffic volumes. A vicinity and location map of the area are shown in **Figure 1-1** and **Figure 1-2**, respectively, for reference. A public involvement plan has been previously developed and the City is ready for presenting this project to local citizens for comment.

EXISTING CONDITIONS

Old Brownsville Road in Shelby County extends from Austin Peay Highway (State Route 14) to Evergreen Road in Lakeland. The section of Old Brownsville Road that is the focus of this study begins at Austin Peay Highway and ends at the future Kirby Whitten Parkway. It is 2.22 miles long and is located in the northeastern part of Bartlett, Tennessee. It is a rural road consisting of two lanes ranging from ten feet wide to twelve feet wide per lane with little or no shoulders. The existing right-of-way varies from forty (40) feet to one hundred fourteen (114) feet.

The sections of roadway contained within the one hundred fourteen (114) foot rights-of-way are in an area of relatively new residential development. In these areas, the city of Bartlett required the developers to construct the proposed section of Old Brownsville Road adjacent to their respective developments to ultimate widths (eighty-four foot, seven-lane roadway section with curb and gutter and sidewalks) in preparation for this project.

The land use along the existing corridor is primarily residential or soon to be developed residential. However, the beginning of the study area is mostly open rural with the end of the study area being a historically African-American community. In addition to the numerous residential developments blanketing the rolling terrain, this section of Old Brownsville Road includes the City of Bartlett Fire Station #4, Rivercrest Elementary School, Prosperity Missionary Baptist Church, Solid Rock Baptist Church, and Rivercrest Baptist Church.

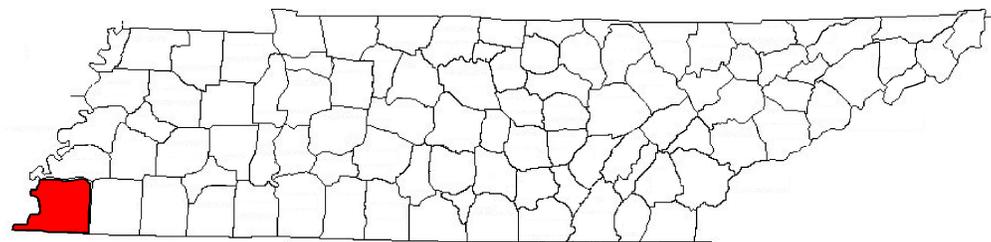
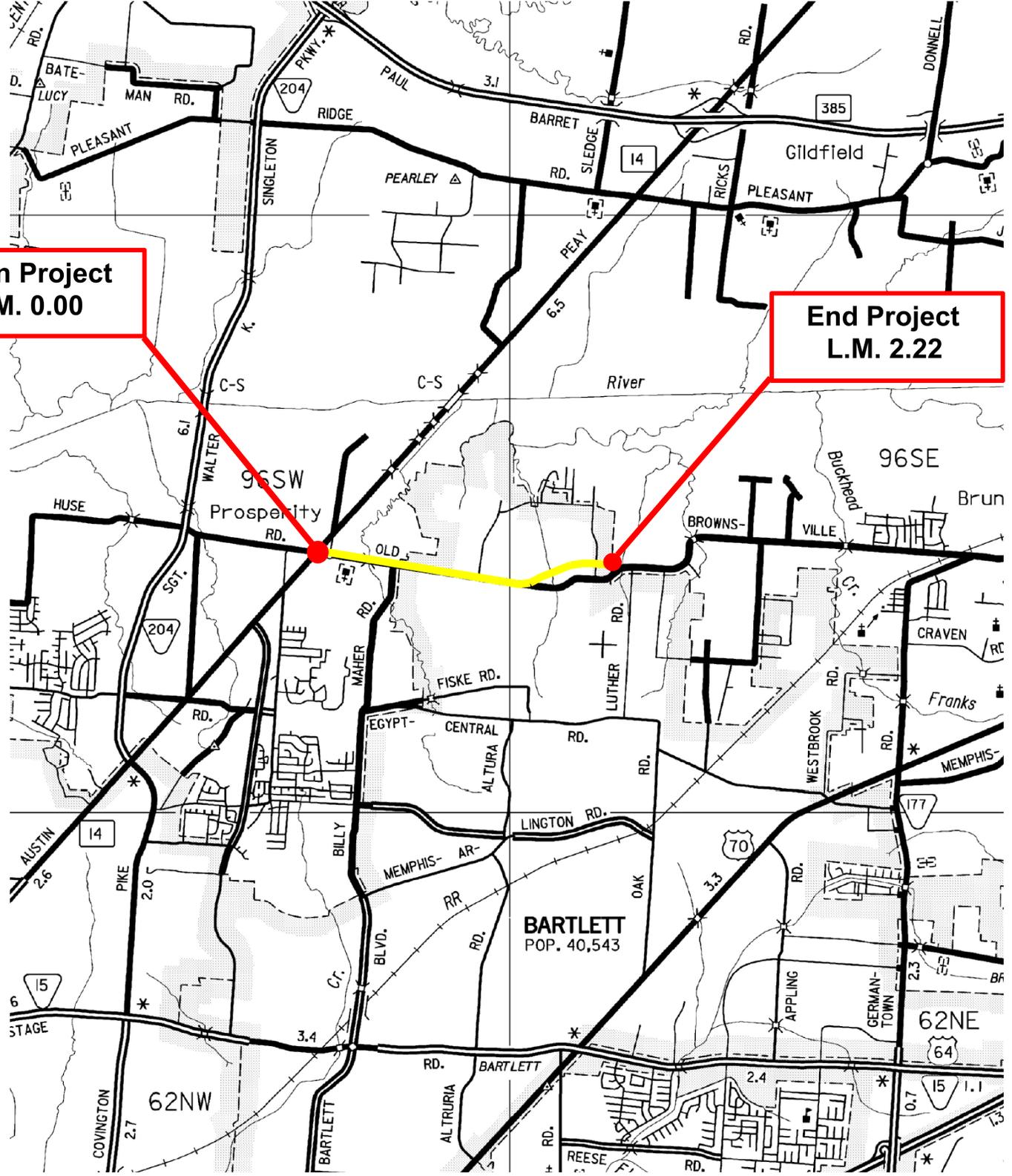


**Project Vicinity Map
Roadway Improvements
Old Brownsville Road
Bartlett, TN (Shelby County)
USGS Brunswick and Ellendale Quads
Figure 1-1**



**Begin Project
L.M. 0.00**

**End Project
L.M. 2.22**



**Project Location Map
Roadway Improvements
Old Brownsville Road
Bartlett, TN (Shelby County)
Figure 1-2**

(Not To Scale)

The crash data for the years of 2003 through 2005 show a crash rate of 1.43 compared to the statewide average during those years of 0.91. There were a total of twenty-seven (27) reported crashes during this time period with six (6) injuries and zero fatalities.

The section of study along Old Brownsville Road includes two stream crossings. The first is at Howard Creek (L.M. 0.39) and the second is at Raner Creek (L.M. 1.80). Along the eastern end of this study area the existing alignment contains a number of sharp curves with little or no shoulders which limit sight distance and overall safety.

COMMUNITY PROFILE

Bartlett, Tennessee, once known as Union Depot because of the prevalence of stagecoach and rail transportation, was originally settled in 1829, and was incorporated as Bartlett in 1866. The city of Bartlett borders Memphis on Memphis' northeast side. As part of the Memphis metropolitan area, the city of Bartlett is Shelby County's second largest city and Tennessee's tenth largest city.

The City of Bartlett has seen extensive growth, particularly in the past two decades. Year 2000 census figures obtained from the State of Tennessee's Department of Economic and Community Development indicate a population of 40,543. The City's Master Plan dated 1997, projects the population to be approximately 63,000 by year 2015.

As the population has increased land use in and around Bartlett has changed from mainly agriculture to mostly business and industry. Stage Road (Highway 64), Bartlett Road, Kirby-Whitten Parkway, Summer Avenue (Highway 70), and Germantown Parkway, all just south of Old Brownsville Road, are laden with retail and service businesses. The Bartlett Corporate Park was formed in 1983 where over 60 industries are now operating.

PURPOSE AND NEED

The purpose of this study is to analyze the existing conditions to determine the need and feasibility of improving Old Brownsville Road in Shelby County, Tennessee, from Austin Peay Highway (State Route 14) to future Kirby Whitten Parkway. This study was initiated because of increased traffic volumes due to the rapid residential growth along Old Brownsville Road as well as the surrounding community. Future traffic volumes indicate a need for increased capacity along Old Brownsville Road. In addition to capacity improvements, the increase in traffic presents a need for improving horizontal and vertical geometric conditions to address safety

issues for both pedestrian and vehicular traffic. In certain locations within the study area, the need for geometric and capacity improvements is affected by existing conditions and environmental constraints.

The widening of Old Brownsville road is a priority for local officials and is reflected in the City of Bartlett Master Plan and the Memphis MPO's Road Improvement Plan (see **Figure 2**). In addition, **Figure 3** shows that the City of Bartlett has future plans to extend a separate section of Old Brownsville Road, east of future Kirby Whitten Parkway, to increase connectivity for motorists traveling along the entire east-west corridor. Traffic volumes have grown increasingly higher causing very large queues during peak hours. Widening Old Brownsville Road from a two-lane rural facility to a pre-determined seven-lane roadway section will provide a vital link connecting the east-west corridor to two major north-south corridors and the existing roadway system. A seven-lane section is consistent with the City of Bartlett's roadway plan.

On the west end of the project, Austin Peay Highway, is currently scheduled to be improved and widened by the Tennessee Department of Transportation (TDOT) from a two-lane roadway to a five-lane roadway. Right-of-way plans for this project have been submitted. Construction plans are currently under development and is scheduled for a letting date of December, 2008. On the east end of the project, the City of Bartlett intends to extend Kirby Whitten Parkway north to intersect with Old Brownsville Road. The new Kirby Whitten Parkway will be a seven-lane roadway section with sidewalks and a bike lane. An Environmental Assessment (EA) has been completed and the Finding of No Significant Impacts (FONSI) has been submitted to the Federal Highway Administration (FHWA) and awaiting their approval. Construction is scheduled to begin in late 2008.

The proposed roadway will serve a growing community with many new neighborhoods, a fire station, and municipal facilities, including an elementary school. The proposed roadway will provide for a multi-use path that will accommodate pedestrians and bicycles and an improved horizontal and vertical alignment to improve vehicular safety. This project will increase connectivity and connects already-widened roadway segments of Old Brownsville Road.

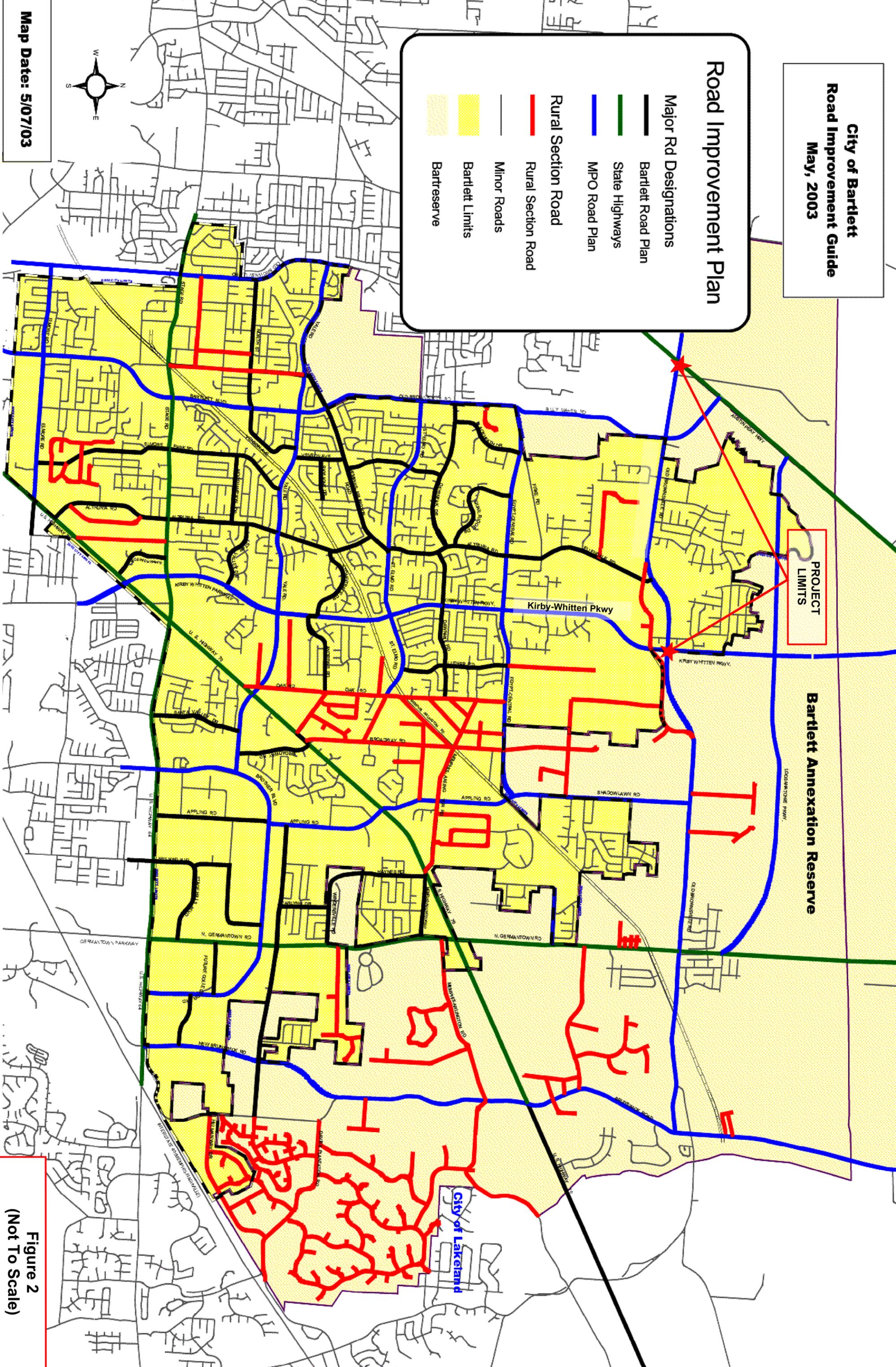
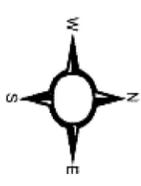
**City of Bartlett
Road Improvement Guide
May, 2003**

Road Improvement Plan

Major Rd Designations

- Bartlett Road Plan
- State Highways
- MPO Road Plan
- Rural Section Road
- Rural Section Road
- Minor Roads
- Bartlett Limits
- Barreserve

Map Date: 5/07/03



PROJECT LIMITS

Bartlett Annexation Reserve

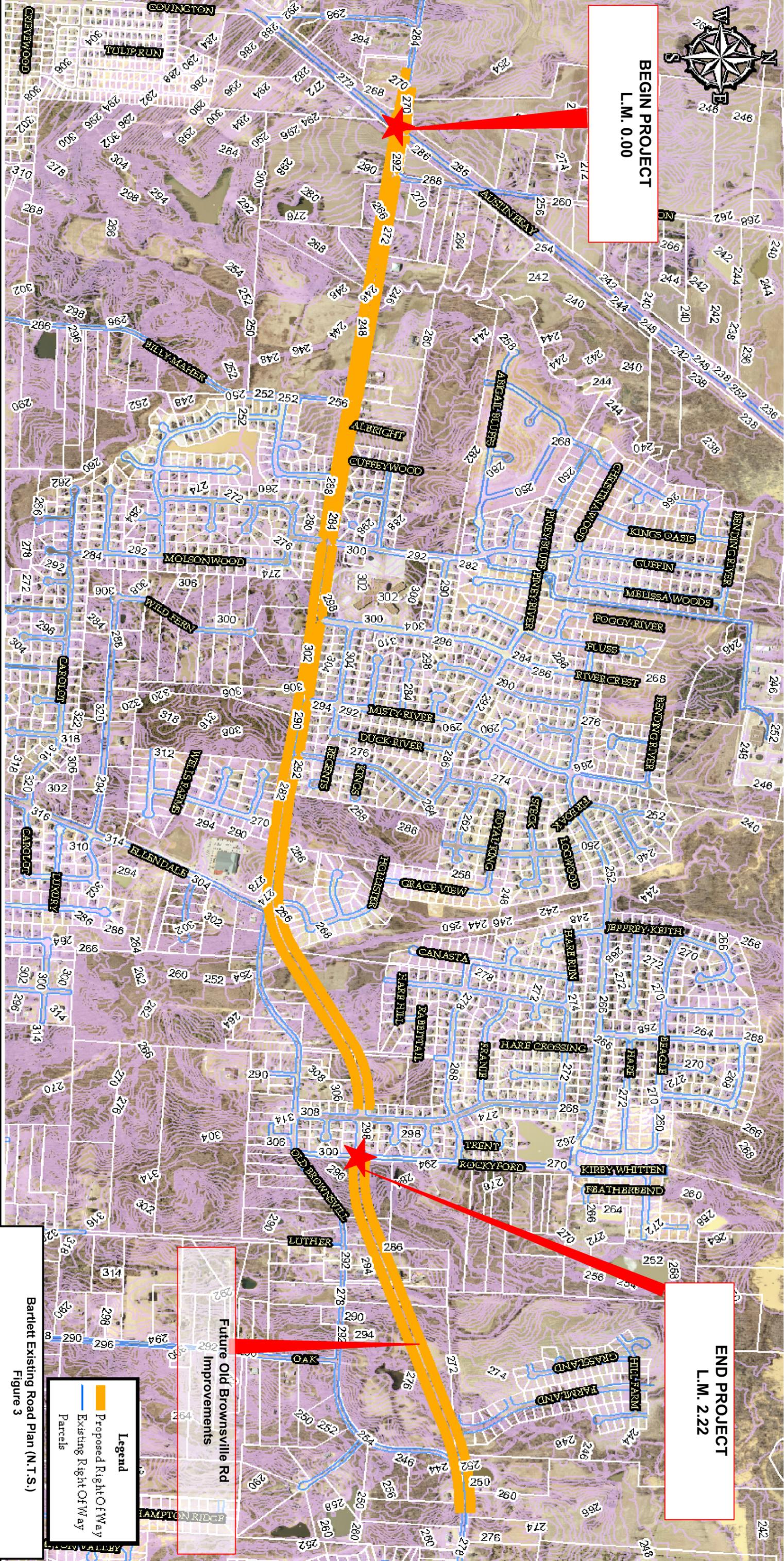
City of Lakeland

**Figure 2
(Not To Scale)**



BEGIN PROJECT
L.M. 0.00

END PROJECT
L.M. 2.22



Legend

- Proposed Right Of Way
- Existing Right Of Way
- Parcels

Future Old Brownsville Rd
Improvements

Bartlett Existing Road Plan (N.T.S.)
Figure 3

PROPOSED IMPROVEMENTS

Traffic modeling performed by the City of Bartlett has determined a need for an ultimate six lane section based on future traffic volume projections for design year 2032. This section meets the requirements and needs for Bartlett's roadway plan. Current traffic counts warrant a roadway section consisting of four travel lanes. Therefore, proposed improvements for Old Brownsville Road should be accomplished in two phases. Phase 1, or the interim phase, will involve widening the existing roadway to create a four-lane divided median section. Because this median will either be flat or at the same cross-slope as the roadway, it is recommended that low growth plantings (flowers, shrubs, etc.) be placed to hinder and/or eliminate the potential for vehicles to utilize the median as a turn around. Eight (8) foot multi-use paths (sidewalks) on both sides of the roadway will address pedestrian and bicycling needs. By the design year of 2032, traffic volumes will warrant the addition of two travel lanes. Phase 2, or the ultimate section, will add two travel lanes to the inside while maintaining the divided median section. This will tie to some of the areas containing already completed sections, matching the City's typical roadway width. Typical sections illustrating these scenarios are shown in **Figure 4-2**.

The proposed improvements outlined in this report begin at the intersection of Old Brownsville Road at Austin Peay Highway providing for dual left turns from Old Brownsville Road to southbound Austin Peay Highway. There will only be one through lane for vehicles traveling west across Austin Peay Highway to Bolen Huse Road as the other west bound travel lane on Old Brownsville Road becomes a right turn only lane at Austin Peay Highway. Though not officially included in this report or cost estimates, suggested improvements to Bolen Huse Road may be seen on **Figure 4-3**. As mentioned above, there are two sections of existing Old Brownsville Road, approximately 1500 feet in length and 700 feet in length, already constructed to the ultimate eighty-four (84) foot roadway width. These existing sections are located adjacent to Rivercrest Elementary School (**Photo 1**) and approximately 2000 feet east of Rivercrest Elementary (**Photo 2**), respectively.



Photo 1: View looking east along Old Brownsville Road near Rivercrest Elementary School



Photo 2: View looking east along Old Brownsville Road east of Rivercrest Elementary School

The eastern most part of the project is projected to be new alignment, more specifically, the last three thousand four hundred (3400) feet, or nearly six and a half tenths (0.65) of a mile. This deviation from the existing roadway was chosen for two reasons:

1. The existing roadway is substandard for the high traffic volumes.
2. To bring the alignment up to standards would require straightening of the curves which would negatively impact land and homes in an area which is a historically African-American community (**Photo 3**).



Photo 3: Existing Old Brownsville Road looking east toward a historically African-American community

This new alignment will tie into an existing five-lane, curb and gutter section aptly named New Brownsville Road (**Photo 4**) which in turn intersects the future Kirby Whitten Parkway (**Photo 5**) approximately six hundred fifty (650) feet north of the existing Old Brownsville Road. It may be necessary to acquire the house and property in the northwest quadrant of this intersection. If not acquired, there would be significant access difficulties with this property due to its proximity to the future intersection.



Photo 4: Existing New Brownsville Road looking east towards intersection with future Kirby Whitten Parkway



Photo 5: New Brownsville Road at future Kirby Whitten Parkway intersection looking south towards existing Old Brownsville Road

Where the new Old Brownsville Road alignment begins to transition away from existing at Ellendale Road, two options exist for the existing Old Brownsville Road. These options have been shown in the plan layout **Figure 4-7**.

Option 1: The existing Old Brownsville Road, just east of Ellendale Road, will be terminated and a cul-de-sac constructed.

Option 2: Construct a connector to tie the existing Old Brownsville Road into the new alignment. To keep the connector road out of the area of influence of the proposed signalized intersection of New/Old Brownsville Road and Ellendale Road or negatively impacting homes, it will need to be located approximately 800 feet east of this intersection. At this location, the connector road would be approximately 430 feet long with two twelve (12) foot travel lanes and four (4) foot shoulders. A cul-de-sac will also be necessary to terminate a portion of the existing Old Brownsville Road under this option.

There are two stream crossings encountered within the study area. One is at Howard Creek and the other traverses Raner Creek. The structure crossing Howard Creek is in good condition and is not scheduled for replacement in the near future. Therefore, a new span bridge adjacent to the existing one will be necessary to accommodate the additional laneage. The crossing of Raner Creek along existing Old Brownsville Road is a box bridge. To match this existing structure, the crossing at Raner Creek along the new alignment will require a box bridge as well.

LEVEL OF SERVICE

Operating conditions within a transportation route are distinguished by a “Level of Service” (LOS) analysis. This analysis reflects the ability of the roads to accommodate motor vehicle traffic and subsequent physical and psychological comfort levels of drivers. A LOS analysis considers several factors including traffic volumes, number of travel lanes, terrain, truck traffic, and turning movements. Projected traffic volumes and turning movements for this study are included in **Appendix A** of this report. Projected volumes are for the design year (2032). Schematic diagrams of each intersection are also included with their respective traffic volume.

LOS is a qualitative measure that describes the state of traffic conditions related to speed and travel time, vehicle maneuverability, congestion, and perceived driver comfort/discomfort. There are six levels of operation ranging from “A” to “F”, with “A” symbolizing the best conditions and “F” the worst. A description of the operating conditions for each level is provided in the following:

<u>LOS</u>	<u>Traffic Flow Condition</u>
A	Free flow operations. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream. The general level of physical and psychological comfort provided to the driver is the highest.
B	Reasonably free flow operation. The ability to maneuver within the traffic stream is only slightly restricted and the general level of physical and psychological comfort experienced by the driver is still high.

- C Flow speeds at or near free flow. Freedom to maneuver within the traffic stream is noticeably restricted and lane changes require more vigilance on the part of the driver. The driver notices an increase in tension because of the additional vigilance required for safe operation.
- D Speeds decline with increasing traffic. Freedom to maneuver within the traffic stream is increasingly limited. The driver experiences reduced physical and psychological comfort levels.
- E At lower boundary, the facility is at or near capacity. Disruptions are not readily dissipated because there are no gaps in the traffic stream. There is little room to maneuver. The driver experiences poor physical and psychological comfort levels.
- F Forced or breakdown traffic flow. The number of vehicles entering the highway section exceeds the capacity or ability of the highway to accommodate the number of vehicles. There is little to no room to maneuver. The driver experiences poor physical and psychological comfort levels.

Based on 2032 annual average daily traffic (AADT), the intersection at New/Old Brownsville Road and future Kirby Whitten Parkway will ultimately require signalization for acceptable operation. In the interim, however, an all-way stop sign condition will be sufficient. When Kirby Whitten Parkway is constructed and turning movements are established, a comprehensive traffic signal analysis will be required to determine warrants and level of service. In the table below are the levels of service and average intersection delays for the listed intersections and Old Brownsville Road with the proposed improvements. The intersections at Billy Maher Road and Ellendale Road fail under stop sign conditions which are how they exist today, but they are functional under signalized conditions. The intersection at Austin Peay Highway is currently signalized but fails in the design year (2032) with four through lanes (two lanes in each direction) and is functional with six through lanes (three lanes in each direction).

Table 1 – INTERSECTION LEVEL OF SERVICE				
INTERSECTION	2032 AM		2032 PM	
	LOS	AVERAGE DELAY (SEC/VEH)	LOS	AVERAGE DELAY (SEC/VEH)
AUSTIN PEAY (4 LANES)	F	131	F	170
AUSTIN PEAY (6 LANES)	D	50	D	47
BILLY MAHER (STOP SIGN)	F	4149	F	1276
BILLY MAHER (SIGNALIZED)	C	21	C	24
ELLENDALE (STOP SIGN)	F	239	F	126
ELLENDALE (SIGNALIZED)	C	21	C	26

ASSESSMENT OF OPTIONS

The Tennessee Department of Transportation has adopted seven guiding principles against which all transportation projects are to be evaluated. These guiding principles address concerns for system management, mobility, economic growth, safety, community, environmental stewardship, and fiscal responsibility. The guiding principles are discussed in the following paragraphs as they relate to the options for improving Old Brownsville Road.

Guiding Principle 1: Preserve and Manage the Existing Transportation System

The existing two-lane Old Brownsville Road was an adequate facility while this area was rural and mostly undeveloped. But, as Bartlett has expanded to meet its increasing population over the past two decades, the two-lane thoroughfare has become undersized.

The proposed improvements of Old Brownsville Road are a natural progression in order to accommodate the expanded population that continues to grow. The addition of lanes and sidewalks will aid in traffic flow and safety for this highly residential area.

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

Residential development along Old Brownsville Road has increased tremendously over the past two decades. This trend in growth continues today with projections indicating this stretch of Old Brownsville Road will be fully developed in the near future. Further commercial and industrial development within the area is anticipated which will also affect the existing transportation network. The improvements are necessary to address this undersized roadway

while accommodating ever increasing commuter transit. The improvements will also provide an important leg in a system of multilane corridors that serve the northern part of Bartlett.

Guiding Principle 3: Support the State's Economy

Being a major corridor for commuters, this east-west route is vital to the populace living in the northern part of Bartlett who work in Bartlett or commute to Memphis. With the median age of 37 and a median household income of just over \$66,000 (2000 census), it is important to provide improved traveling conditions and infrastructure that will encourage people to live, work, and commerce in this area and subsequently the state of Tennessee.

Guiding Principle 4: Maximize Safety and Security

A crash rate of 1.43 was calculated for the period January 1, 2003 to December 31, 2005. In comparison, the statewide average crash rate was 0.910 for these years. A total of 27 crashes were reported with six injuries and zero fatalities. The ability to accommodate higher volumes with improved geometrics will improve safety.

Guiding Principle 5: Build Partnerships for Livable Communities

In keeping with the goals of TDOT's Public Involvement Process, the Memphis MPO has conducted meetings with local officials and the public to coordinate the vision and needs of the community. There have already been public meetings to gauge public opinion on this matter. Local officials and the Memphis MPO will continue this public involvement as this process continues as mandated by provisions outlined in the National Environmental Policy Act (NEPA).

Guiding Principle 6: Promote Stewardship of the Environment

Formal environmental studies have not been performed for the proposed improvements discussed in this report. An in-depth environmental study will be necessary to address the impacts within the Area of Potential Effects (APE). The APE is the geographic area in which an activity may directly or indirectly impact the environment. A more detailed review and analysis of the impacts will be completed at a later date to comply with requirements and guidelines established in the National Environmental Policy Act (NEPA). An Environmental Assessment (EA) has been recently completed for the Kirby-Whitten Parkway project and is awaiting final approval.

Guiding Principle 7: Promote Financial Responsibilities

Preliminary construction cost estimates have been prepared for Phase 1 and Phase 2, interim and ultimate construction, respectively, along with Option 1 and Option 2 which addresses how the existing Old Brownsville Road ties to the new alignment. **Table 2** summarizes the estimated construction and utility costs for the various scenarios. Detailed estimates have been included in **Appendix B** of this report.

Table 2 – SUMMARY OF CONSTRUCTION COSTS				
PHASE	NUMBER OF NEW LANES	CONSTRUCTION & UTILITY COST	LENGTH	COST PER MILE
PHASE 1 (Interim) w/Option 1	4	\$8,946,300	2.22 mile	\$4,029,900
PHASE 1 (Interim) w/Option 2	4	\$9,114,500	2.30 mile	\$3,962,800
PHASE 2 (Ultimate)	2	\$2,769,000	2.22 mile	\$1,247,300

ENVIRONMENTAL CONSIDERATIONS

A cursory review by the Tennessee State Historic Preservation Office (TSHPO) shows some surveyed properties (properties fifty years or older) but no properties listed on the National Register of Historic Places. **Figure C-2** shows the flood plain for the Loosahatchie River of which Howard Creek and Raner Creek are tributaries. The flood plain reaches a small area of Old Brownsville Road around the existing bridge at Howard Creek. However, it does not reach the existing or proposed crossings at Raner Creek. The Preliminary Environmental Evaluation checklist, floodplain map, and Environmental Considerations Layout Sheet can be found in **Appendix C** of this report. Possible areas of interest are listed as follows:

1. Howard Creek (Log Mile 0.39) (not on 2006 303(d) list for sensitive streams)
2. Raner Creek (Log Mile 1.80) (not on 2006 303(d) list for sensitive streams)
3. Cemetery (Prosperity Missionary Baptist Church), at the western terminus.
4. Area of environmental justice, located within the latter third of the project study area.

FIELD INVESTIGATION

A stakeholder meeting was conducted on site on April 16, 2007. A copy of the field review report has been provided in **Appendix D** of this report.

SUMMARY

This section of Old Brownsville Road is a heavily traveled rural roadway attempting to function as an urban roadway due to the booming residential growth adjacent to Old Brownsville Road and the surrounding area. Officials with the city of Bartlett estimate that over the next ten years nearly all of the land along the project corridor will be a fully developed residential area.

With the rapid residential growth in this area, pedestrian and bicycle traffic will inevitably increase. This project provides for eight (8) foot multi-use pathways to accommodate this pedestrian and bicycle traffic.

In addition, the new alignment section will enhance overall vehicular safety by improving horizontal and vertical geometry. It also serves to avoid any adverse impacts to a historically African-American community that would occur if those geometric improvements were applied to the existing Old Brownsville Road in that area.

The termini for this project are Austin Peay Highway to the west and future Kirby Whitten Parkway to the east. The former has been designed and is set to be widened to a five lane section. The Environmental Assessment has been completed for the latter and is awaiting the approval of the FONSI from FHWA before the purchase of right-of-way can begin. The northern terminus of the future Kirby Whitten Parkway is New/Old Brownsville Road in anticipation of the proposed improvements to New/Old Brownsville Road outlined in this report.

Total costs for the proposed improvements, right-of-way, and utility relocation are summarized in **Table 3** on the following page.

In conclusion, the improvements proposed in this report are necessary for the growth of this community. They will increase the level of service and overall driver comfort along this section of Old Brownsville Road. They address the immediate need for additional laneage under present conditions as well as future traffic needs by providing for an ultimate roadway section of three travel lanes in each direction for a total of six travel lanes.

Table 3 – SUMMARY OF TOTAL COSTS					
PHASE	RIGHT-OF-WAY COST	UTILITY RELOCATION COST	CONSTRUCTION COST	ENGINEERING	ESTIMATED TOTAL COST
PHASE 1 (Interim) w/Option 1	\$881,500	\$831,000	\$8,115,300	\$406,000	\$10,233,800
PHASE 1 (Interim) w/Option 2	\$900,500	\$831,000	\$8,283,500	\$414,000	\$10,429,000
PHASE 2 (Ultimate)	N/A	N/A	\$2,769,000	\$83,000	\$2,852,000

Index Of Sheets

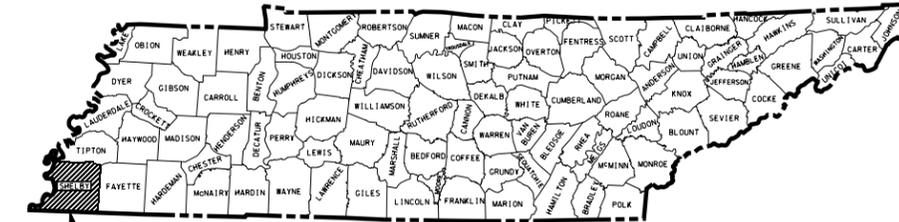
SHEET NO.	DESCRIPTION
1 TITLE SHEET
2 TYPICAL SECTIONS
3-8 PROPOSED LAYOUT SHEETS

STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION BUREAU OF ENGINEERING

SHELBY COUNTY

TENN.	YEAR	SHEET NO.
	2008	1
FED. AID PROJ. NO.		
STATE PROJ. NO.	79952-1555-54	

OLD BROWNSVILLE ROAD FROM AUSTIN PEAY HIGHWAY TO FUTURE KIRBY WHITTEN PARKWAY



PROJECT LOCATION



SCALE: 1" = 1 MILE

SPECIAL NOTES

PROPOSALS MAY BE REJECTED BY THE COMMISSIONER IF ANY OF THE UNIT PRICES CONTAINED THEREIN ARE OBVIOUSLY UNBALANCED, EITHER EXCESSIVE OR BELOW THE REASONABLE COST ANALYSIS VALUE.

THIS PROJECT TO BE CONSTRUCTED UNDER THE STANDARD SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION DATED MARCH 1, 2006 AND ADDITIONAL SPECIFICATIONS AND SPECIAL PROVISIONS CONTAINED IN THE PLANS AND IN THE PROPOSAL CONTRACT.

TDOT C.E. MANAGER 1 OR
TDOT TRANSPORTATION MANAGER 1 _____
TDOT ROAD SP. SV. 2 _____
DESIGNED BY _____
DESIGNER HMB PROFESSIONAL ENG CHECKED BY _____

P.E. NO. _____

PIN NO. _____

APPROVED: _____
CHIEF ENGINEER

DATE: _____

APPROVED: _____
COMMISSIONER

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: _____
DIVISION ADMINISTRATOR DATE

TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR		79952-1555-54	2

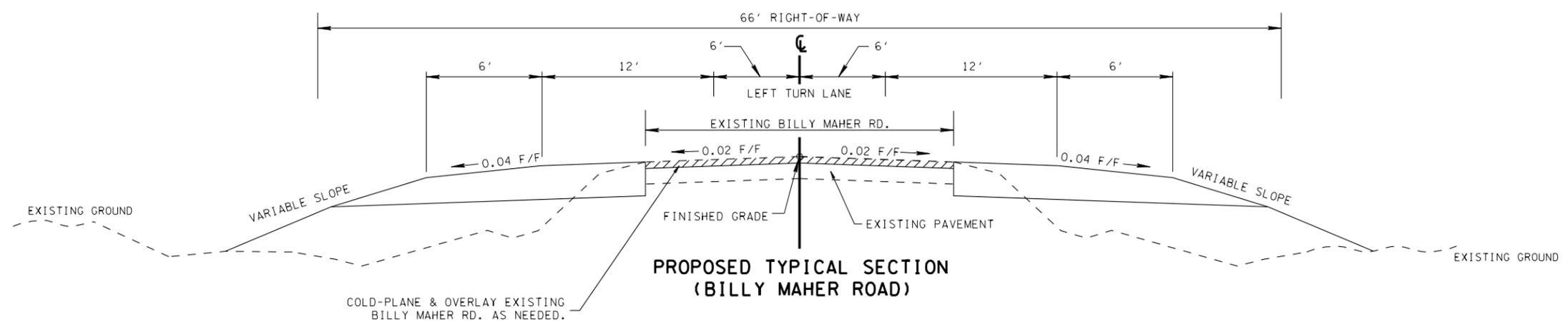
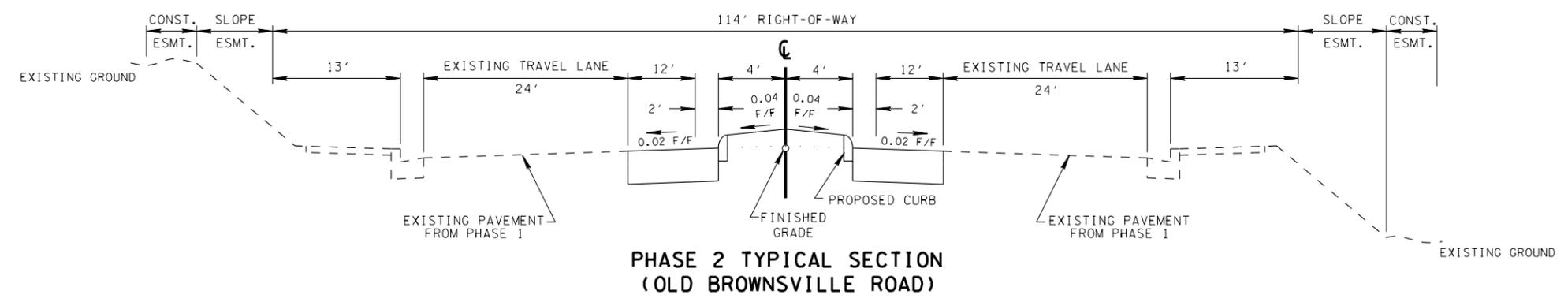
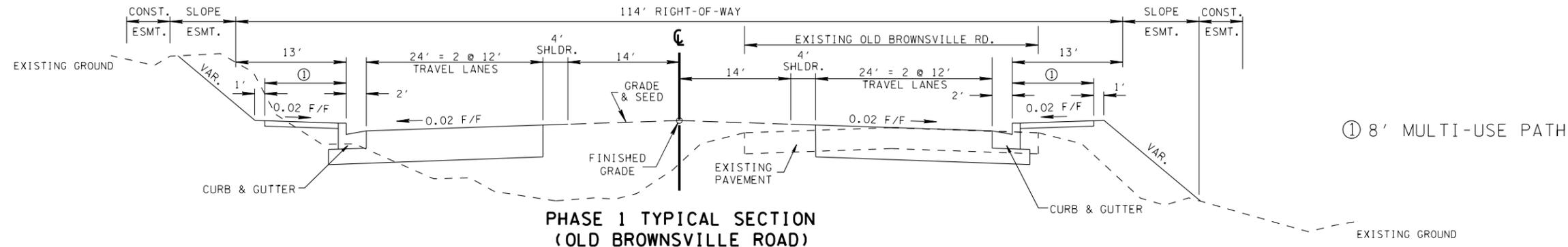
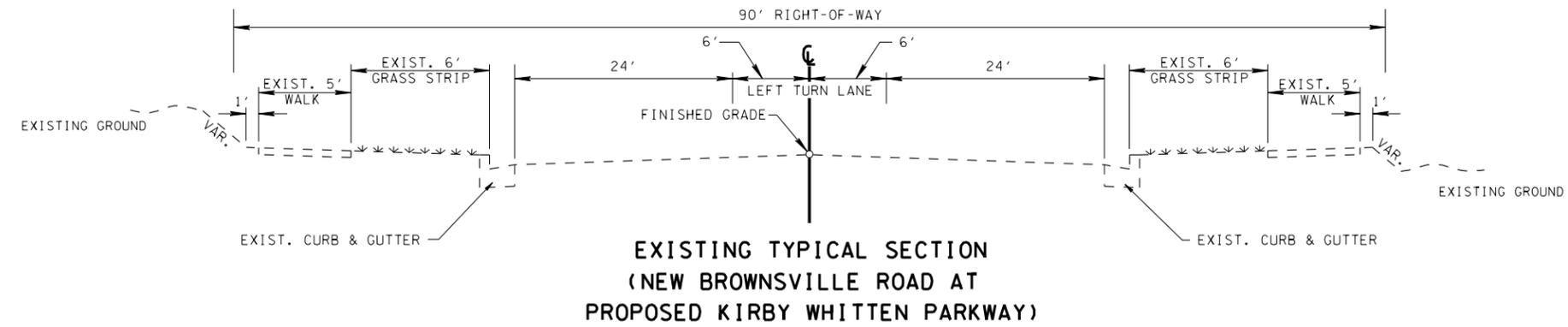
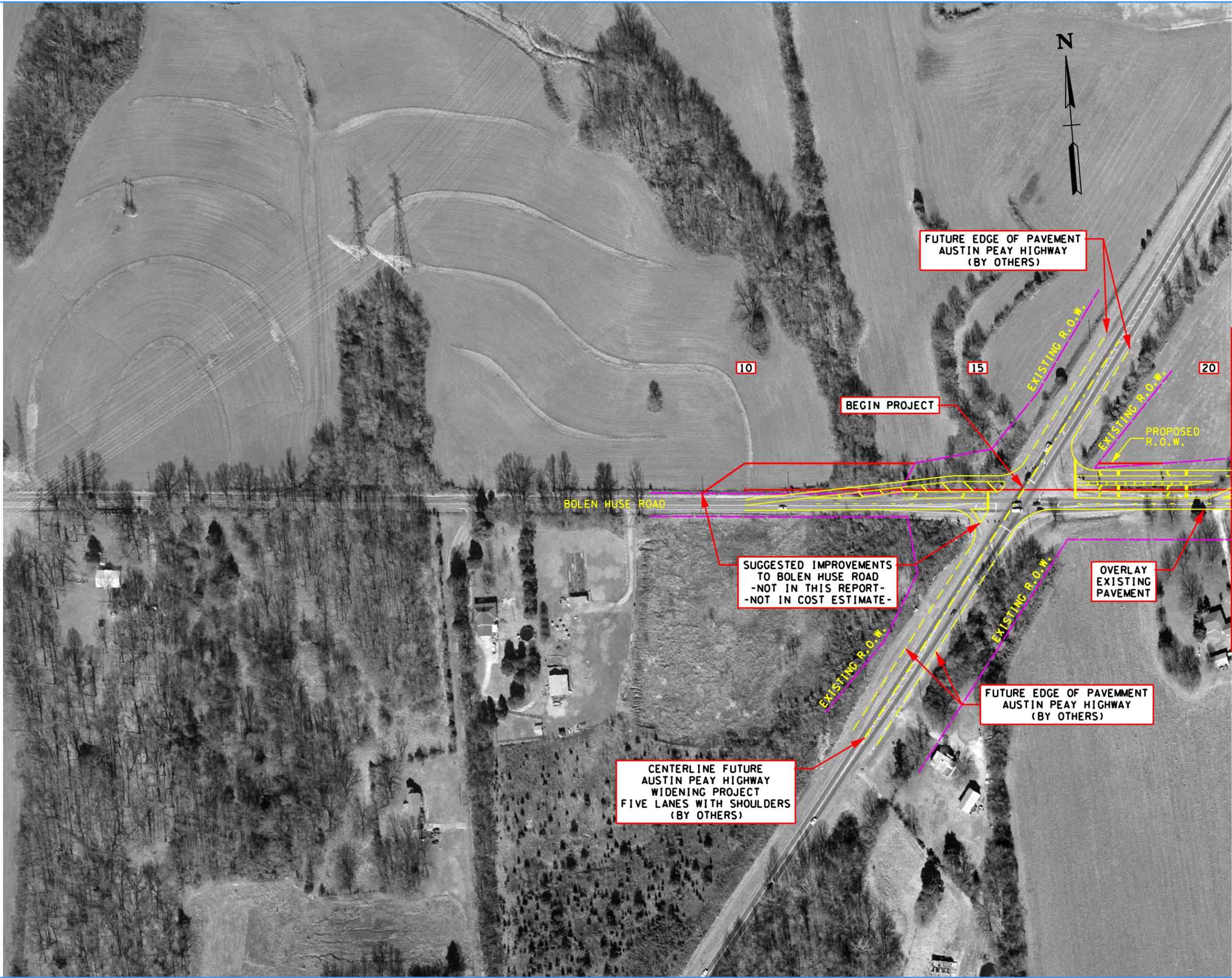


FIGURE 4-2

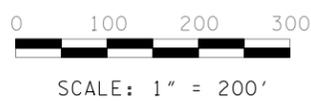
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TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR		79952-1555-54	3



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FIGURE 4-3



STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION

SHELBY COUNTY
 OLD BROWNSVILLE
 ROAD

TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR		79952-1555-54	4



**FUTURE EDGE OF PAVEMENT
 OLD COVINGTON PIKE
 AUSTIN PEAY HWY.
 WIDENING PROJECT
 (BY OTHERS)**

NEW CONSTRUCTION

**OVERLAY
 EXISTING
 PAVEMENT**

RIVERCREST
 BAPTIST
 CHURCH

PROSPERITY
 MISSIONARY
 BAPTIST
 CHURCH

SOLID ROCK
 BAPTIST
 CHURCH

PROPOSED
 BRIDGE

EXISTING
 BRIDGE

HOWARD CREEK

CEMETERY

25

30

35

40

45



SCALE: 1" = 200'

FIGURE 4-4

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION

SHELBY COUNTY
 OLD BROWNSVILLE
 ROAD

MATCH LINE STA. 20+50 SEE SHT. NO.

MATCH LINE STA. 47+00 SEE SHT. NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR		79952-1555-54	5



8/7/2007 8:42:45 AM
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FIGURE 4-5



STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION

SHELBY COUNTY
 OLD BROWNSVILLE
 ROAD

TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR		79952-1555-54	6

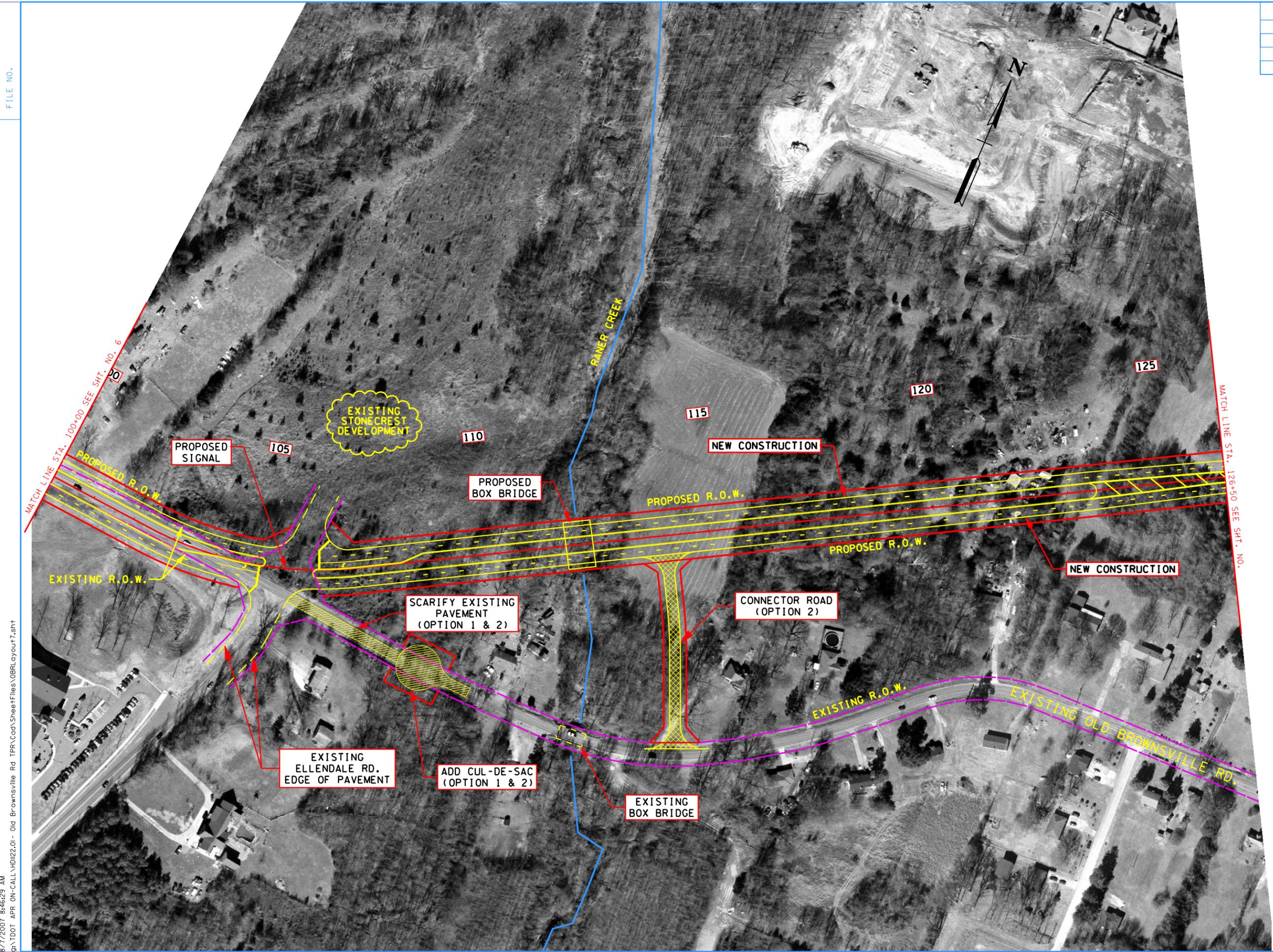


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FIGURE 4-6

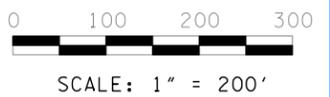


TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR		79952-1555-54	7



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FIGURE 4-7



STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION

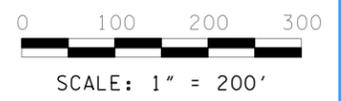
SHELBY COUNTY
 OLD BROWNSVILLE
 ROAD

TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR		79952-1555-54	8

8/7/2007 8:48:07 AM
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FIGURE 4-8



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SHELBY COUNTY
OLD BROWNSVILLE
ROAD

APPENDIX A
TRAFFIC REPORT

**TENNESSEE DEPARTMENT OF TRANSPORTATION
PROJECT PLANNING DIVISION**

PROJECT NO.: _____ ROUTE: OLD BROWNSVILLE RD. (02178)
 COUNTY: SHELBY CITY: MEMPHIS
 PROJECT PIN NUMBER: 010619.00
 PROJECT DESCRIPTION: FROM AUSTIN PEAY HWY. (SR-14) TO PROPOSED KIRBY-WHITTEN
RD. (LM 0.00 TO LM 2.22)

DIVISION REQUESTING:

MAINTENANCE	<input type="checkbox"/>	PAVEMENT DESIGN	<input type="checkbox"/>
PLANNING	<input checked="" type="checkbox"/>	STRUCTURES	<input type="checkbox"/>
PROG. DEVELOPMENT & ADM.	<input type="checkbox"/>	SURVEY & DESIGN	<input type="checkbox"/>
PUBLIC TRANS. & AERO.	<input type="checkbox"/>	TRAFFIC SIGNAL DESIGN	<input type="checkbox"/>
YEAR PROJECT PROGRAMMED FOR CONSTRUCTION:	_____	OTHER _____	<input type="checkbox"/>
PROJECTED LETTING DATE:	_____		

TRAFFIC ASSIGNMENT:

BASE YEAR		DESIGN YEAR					DESIGN ROADWAY % TRUCKS		DESIGN AVERAGE DAILY LOADS	
AA DT	YEAR	AA DT	DHV	%	YEAR	DIR.DIST.	DHV	AA DT	FLEX	RIGID
11,060	2012	18,800	1692	9	2032	65-35	3	4		

REQUESTED BY: NAME CHRIS ARMSTRONG DATE 1-18-07
 DIVISION PLANNING
 ADDRESS SUITE 900 J.K. POLK BLDG.

REVIEWED BY: TONY ARMSTRONG *Tony Armstrong* DATE 5-4-07
 TRANSPORTATION MANAGER 1
 SUITE 1000, JAMES K. POLK BUILDING

APPROVED BY: BILL HART *Bill Hart* DATE 5-4-07
 TRANSPORTATION MANAGER 2
 SUITE 900, JAMES K. POLK BUILDING

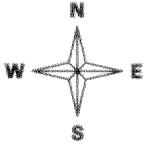
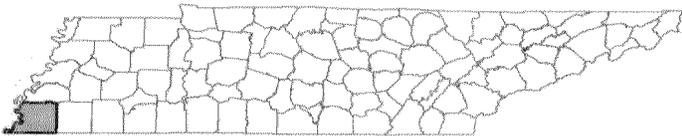
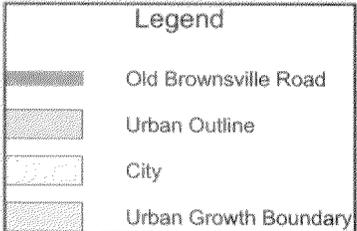
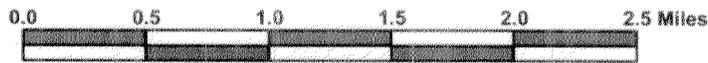
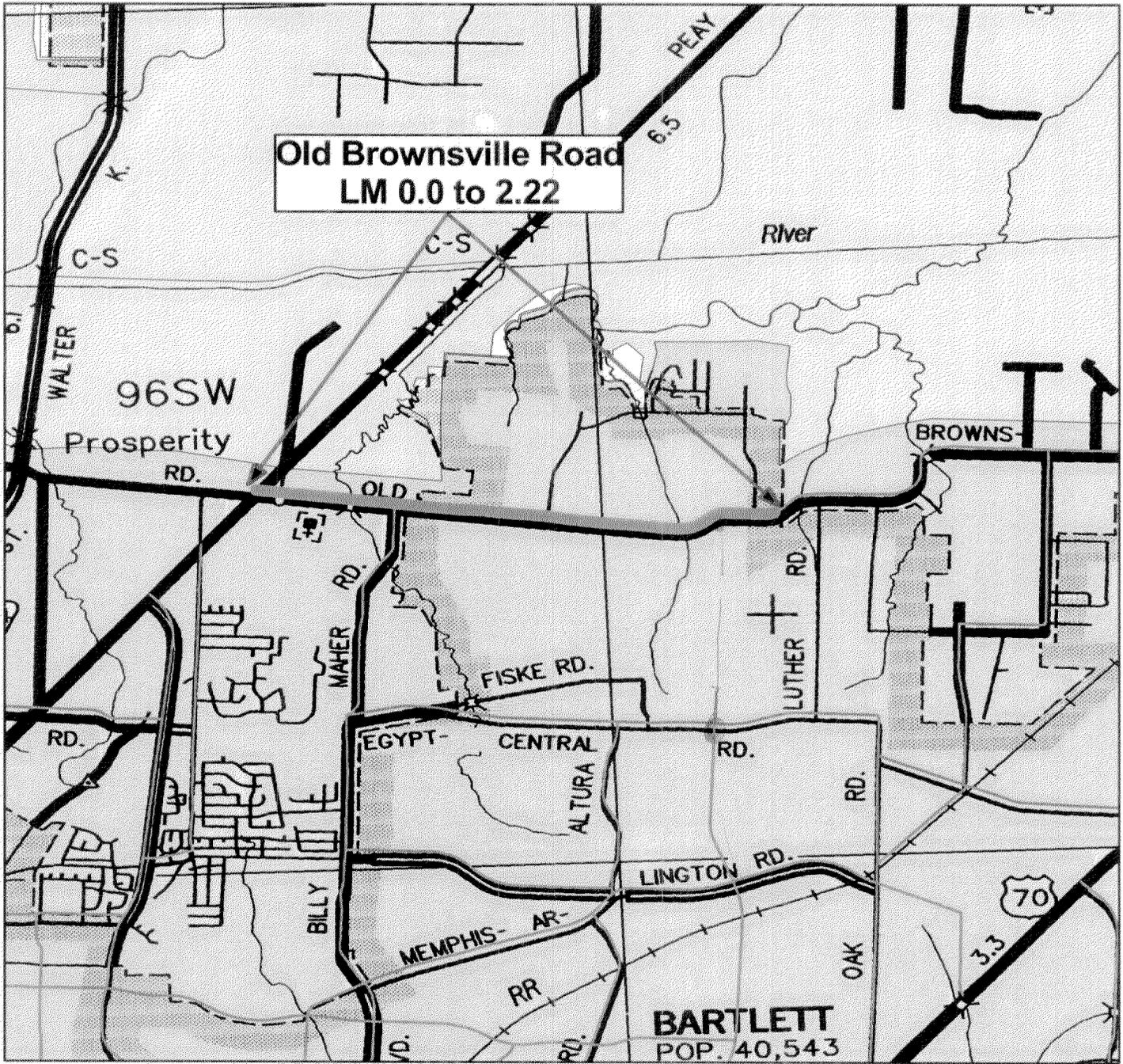
COMMENTS:

THIS TRAFFIC BASED ON 2-12 HOUR TURNING MOVEMENT COUNTS DATED 4-10-07. GROWTH TRENDS BASED ON 2006 CYCLE COUNT #585 WITH COMPARISON TO THE MEMPHIS MPO MODEL. MPO MODEL WAS NOT USED DUE TO TRAFFIC GROWTH TRENDS IN RELATION TO UPDATED COUNTS & TURNING MOVEMENT COUNTS.

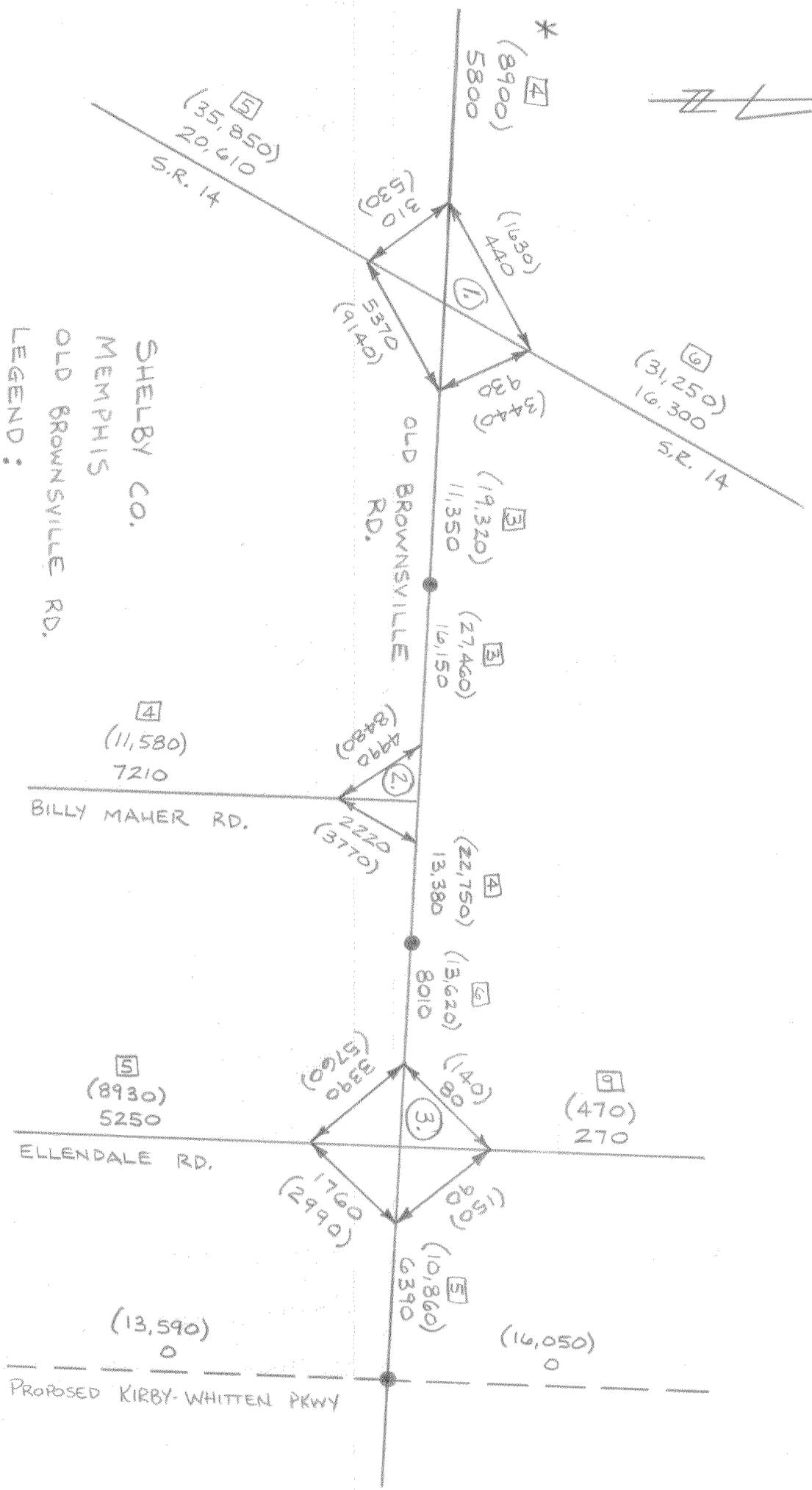
DHV'S ARE NOT REQUIRED FOR SIDE ROADS LESS THAN 1000 AADT.

NOTE: FOR BRIDGE REPLACEMENT PROJECTS, ADLs ARE NOT REQUIRED FOR AADT's OF 1000 OR LESS AND PERCENTAGE OF TRUCKS OF 7% OR LESS.

Old Brownsville Road (02178) from Austin Pea Highway (SR-14) to Proposed Kirby-Whitten Road



Shelby County



SHELBY CO.
MEMPHIS
OLD BROWNSVILLE RD.
LEGEND:

* NOT INCLUDED
IN AADT
AVERAGE.

2012 AADT 000
2032 AADT (000)
AADT TRUCK %

DATE: MAY 3, 2007

R.L.B.

DATE: APR. 18, 2007
 E.L.B.

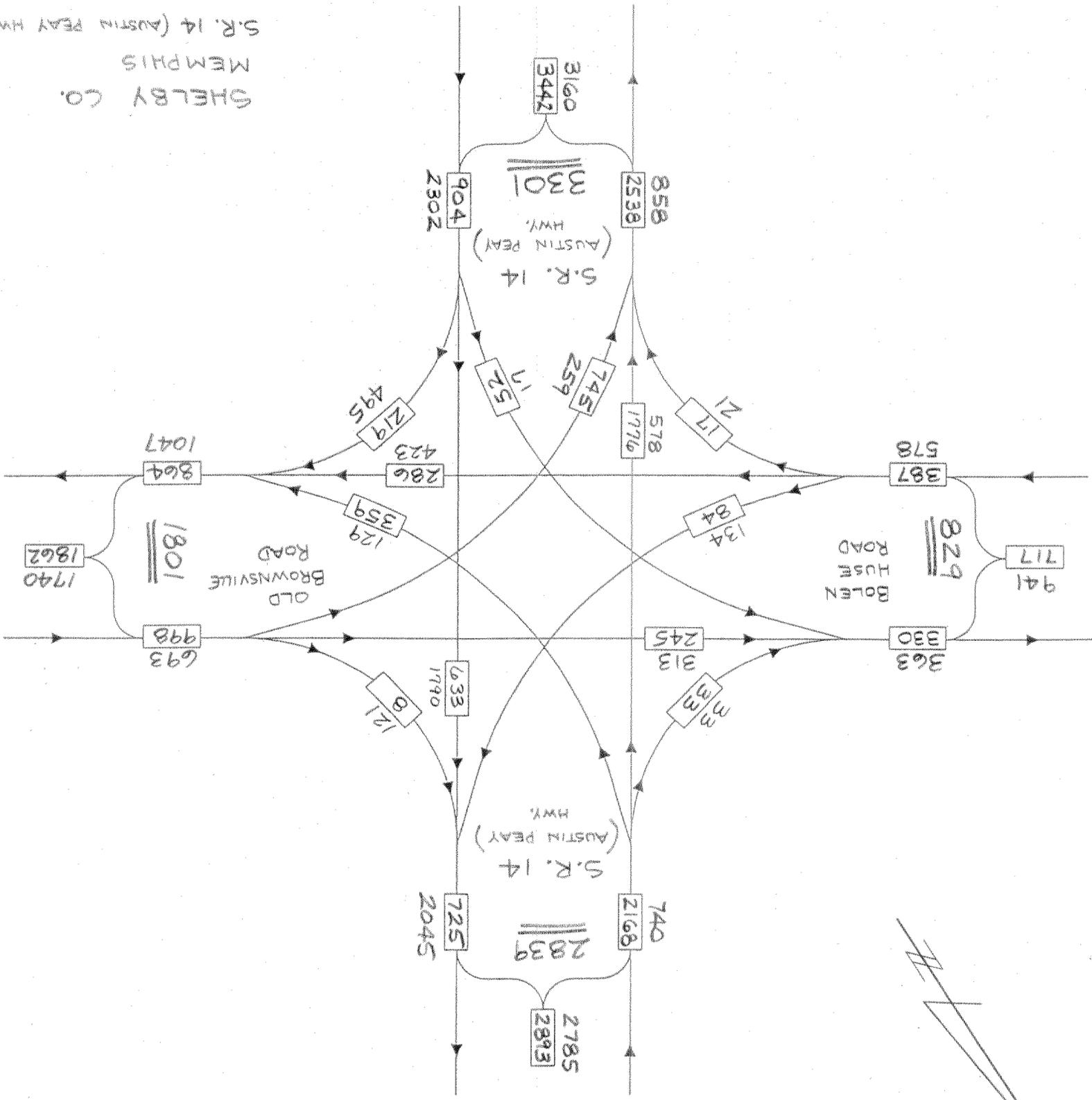
AM

PM

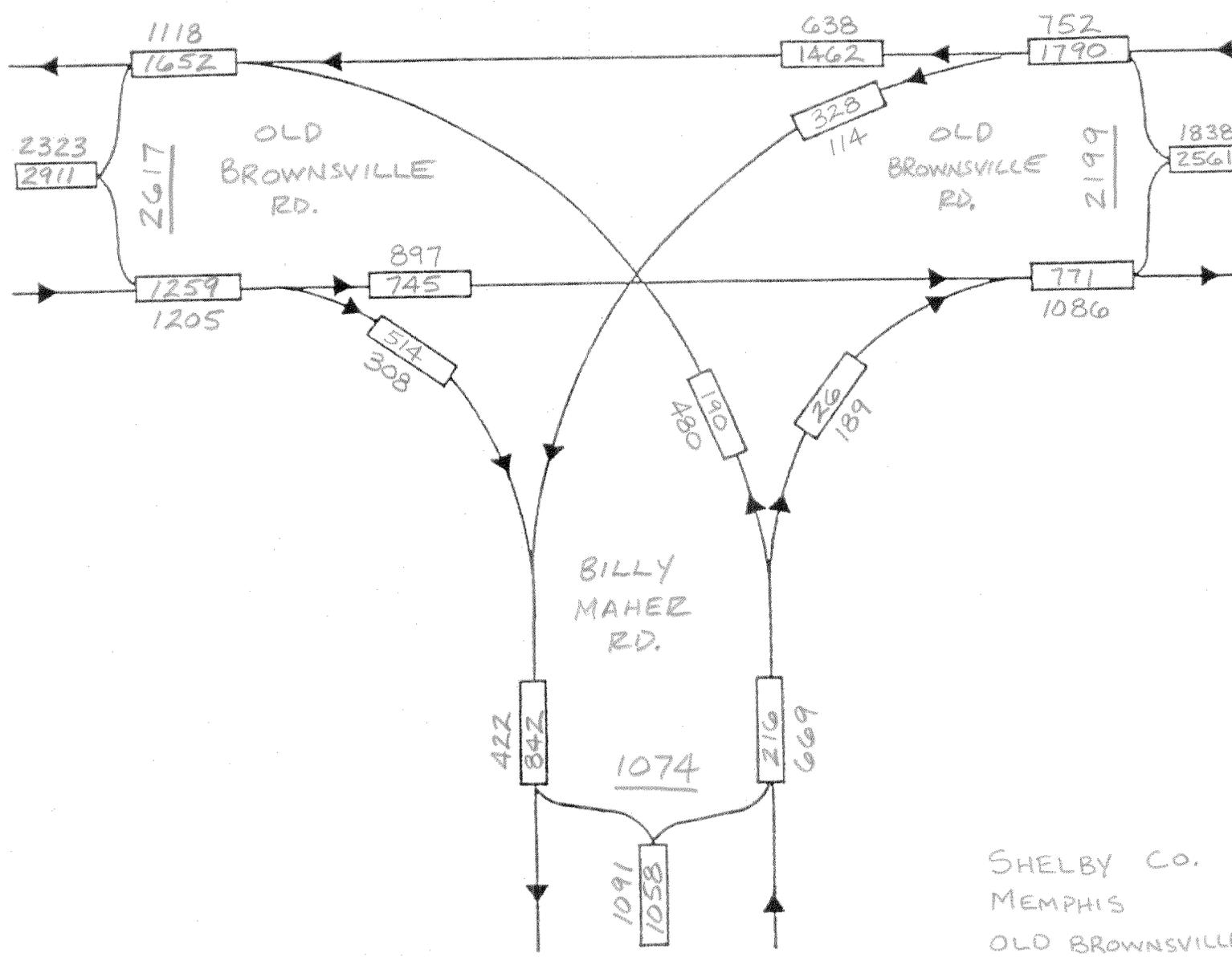
2032 DHV

S.R. 14 (AUSTIN PEAY HWY.)

SHELBY CO. MEMPHIS



1.



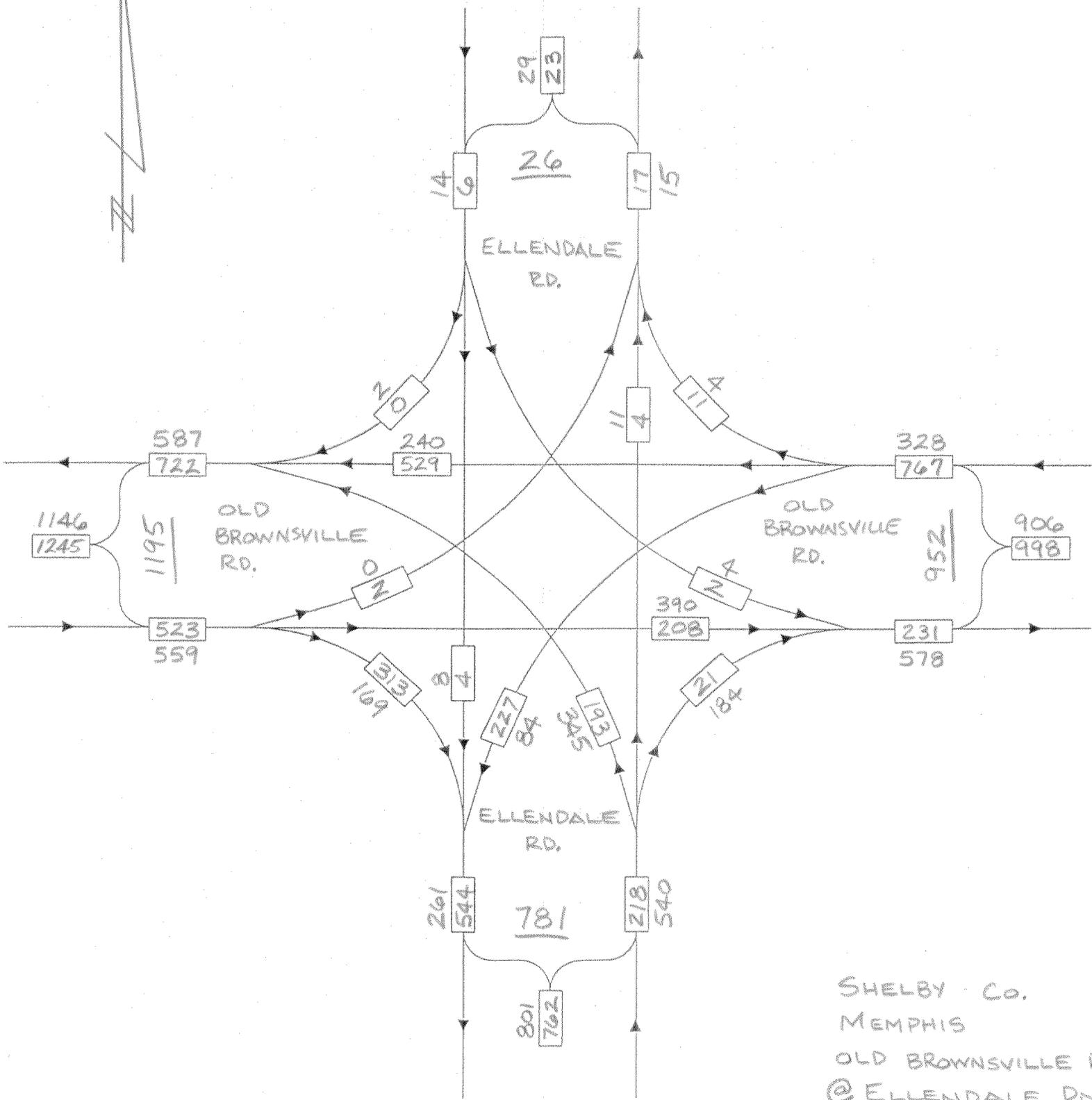
SHELBY CO.
 MEMPHIS
 OLD BROWNSVILLE
 RD @ BILLY MAHER

2032 OHV

PM
 AM

DATE: MAY 3, 2007

R.L.B.



SHELBY Co.
 MEMPHIS
 OLD BROWNSVILLE RD
 @ ELLENDALE RD.

2032 DHV

PM
 AM

DATE: MAY 3, 2007

R.L.B.

APPENDIX B

DETAILED COST ESTIMATES

**CONSTRUCTION ESTIMATE
OLD BROWNSVILLE RD. TPR**

MAINLINE - Interim

Item No.	Item	Unit	Unit Price	Quantity	Total Cost
105-01	CONSTRUCTION STAKES, LINES AND GRADES	LS	\$50,000.00	1	\$50,000.00
201-01	CLEARING AND GRUBBING	LS	\$20,000.00	1	\$20,000.00
202-02.01	REMOVAL OF PIPE	LF	\$29.00	500	\$14,500.00
203-01	ROAD AND DRAINAGE EXCAVATION (UNCLASSIFIED)	CY	\$12.00	56,050	\$672,600.00
209-08.03	TEMPORARY SILT FENCE (W/O BACKING)	LF	\$3.00	20,000	\$60,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	\$21.00	26,600	\$558,600.00
307-01.01	ASPHALT CONCRETE MIX (PG64-22) (BPMB-HM) GRADE A	TON	\$75.00	7,300	\$547,500.00
307-01.02	ASPHALT CEMENT (PG64-22) (BPMB-HM) GRADE A-S	TON	\$622.00	186	\$115,692.00
307-01.03	AGGREGATE (BPMB-HM) GRADING A-S MIX	TON	\$75.00	5,530	\$414,750.00
307-01.08	ASPHALT CONCRETE MIX (PG64-22) (BPMB-HM) GRADE B-M2	TON	\$76.00	4,790	\$364,040.00
411-01.10	ACS MIX (PG64-22) GRADING D	TON	\$74.00	4,750	\$351,500.00
415-01.02	COLD PLANING OF BITUMINOUS PAVEMENT (2")	SY	\$6.00	3,850	\$23,100.00
604-02.01	CL. A CONCRETE (BOX BRIDGES)	CY	\$584.00	345	\$201,480.00
604-02.02	STEEL BAR REINFORCEMENT (BOX BRIDGES)	LB	\$1.00	84,500	\$84,500.00
607-05.02	24" CONC. PIPE CULVERT (CLASS III)	LF	\$58.00	19,500	\$1,131,000.00
611-07.01	CL. A CONCRETE (PIPE ENDWALLS)	CY	\$749.00	18	\$13,482.00
611-07.02	STEEL BAR REINFORCEMENT (PIPE ENDWALLS)	LB	\$2.00	2,288	\$4,576.00
611-07.03	STRUCTURAL STEEL (PIPE ENDWALLS)	LB	\$4.00	1,096	\$4,384.00
611-12.02	CATCH BASIN, TYPE 12, >4'-8' DEPTH	EA	\$3,225.00	50	\$161,250.00
702-03	CONCRETE COMBINED CURB AND GUTTER	CY	\$453.00	1,300	\$588,900.00
709-05.08	MACHINED RIP-RAP (CLASS B)	TON	\$35.00	111	\$3,885.00
712-01	TRAFFIC CONTROL	LS	\$161,540.48	1	\$161,500.00
712-02.02	INTERCONNECTED PORTABLE BARRIER RAIL	LF	\$24.00	4,000	\$96,000.00
713-16.20	SIGNS	EA	\$400.00	30	\$12,000.00
716-02.01	PLASTIC PAVEMENT MARKING (4" LINE)	LM	\$3,260.00	18	\$58,680.00
716-08.01	REMOVAL OF PAVEMENT MARKING (LINE)	LF	\$1.30	35,500	\$46,150.00
717-01	MOBILIZATION	LS	\$50,000.00	1	\$50,000.00
801-01	SEEDING (WITH MULCH)	UNIT	\$50.00	805	\$40,250.00
	BRIDGE	SF	\$90.00	4,920	\$442,800.00
	TRAFFIC SIGNALS	EA	\$150,000.00	3	\$450,000.00
TOTAL:					\$6,743,119.00
10% Contingency					\$674,311.90
Est. Cost					\$7,418,000.00

CONSTRUCTION ESTIMATE (cont.)

MAINLINE - Ultimate

Item No.	Item	Unit	Unit Price	Quantity	Total Cost
105-01	CONSTRUCTION STAKES, LINES AND GRADES	LS	\$25,000.00	1	\$25,000.00
201-01	CLEARING AND GRUBBING	LS	\$5,000.00	1	\$5,000.00
203-01	ROAD AND DRAINAGE EXCAVATION	CY	\$12.00	17750	\$213,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	\$21.00	15000	\$315,000.00
307-01.01	ASPHALT CONCRETE MIX (PG64-22) (BPMB-HM) GRADE A	TON	\$75.00	4590	\$344,250.00
307-01.02	ASPHALT CEMENT (PG64-22) (BPMB-HM) GRADE A-S	TON	\$622.00	117	\$72,774.00
307-01.03	AGGREGATE (BPMB-HM) GRADING A-S MIX	TON	\$75.00	3,474	\$260,550.00
307-01.08	ASPHALT CONCRETE MIX (PG64-22) (BPMB-HM) GRADE B-M2	TON	\$76.00	3006	\$228,456.00
411-01.10	ACS MIX (PG64-22) GRADING D	TON	\$74.00	1800	\$133,200.00
702-01	DETACHED CONCRETE CURB	CY	\$828.00	500	\$414,000.00
712-01	TRAFFIC CONTROL	LS	\$92,078.50	1	\$92,080.00
712-02.02	INTERCONNECTED PORTABLE BARRIER RAIL	LF	\$24.00	6000	\$144,000.00
716-02.01	PLASTIC PAVEMENT MARKING (4" LINE)	LM	\$3,260.00	9	\$29,340.00
716-08.01	REMOVAL OF PAVEMENT MARKING (LINE)	LF	\$1.30	20,000	\$26,000.00
717-01	MOBILIZATION	LS	\$25,000.00	1	\$25,000.00
	REWORK SIGNALS???	EA	\$25,000.00	3	\$75,000.00
				TOTAL:	\$2,402,650.00
				10% Contingency	\$240,265.00
				Est. Cost	\$2,643,000.00

CONSTRUCTION ESTIMATE (cont.)

OPTION 1 - Cul-De-Sac and Pavement Removal

Item No.	Item	Unit	Unit Price	Quantity	Total Cost
105-01	CONSTRUCTION STAKES, LINES AND GRADES	LS	\$5,000.00	1	\$5,000.00
202-03.01	REMOVAL OF ASPHALT PAVEMENT	SY	\$14.00	1100	\$15,400.00
203-01	ROAD AND DRAINAGE EXCAVATION	CY	\$12.00	700	\$8,400.00
209-08.03	TEMPORARY SILT FENCE (W/O BACKING)	LF	\$3.00	300	\$900.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	\$21.00	490	\$10,290.00
307-01.01	ASPHALT CONCRETE MIX (PG64-22) (BPMB-HM) GRADE A	TON	\$75.00	190	\$14,250.00
307-01.08	ASPHALT CONCRETE MIX (PG64-22) (BPMB-HM) GRADE B-M2	TON	\$76.00	125	\$9,500.00
411-01.10	ACS MIX (PG64-22) GRADING D	TON	\$74.00	75	\$5,550.00
713-16.20	SIGNS	EA	\$400.00	2	\$800.00
717-01	MOBILIZATION	LS	\$4,000.00	1	\$4,000.00
801-01	SEEDING (WITH MULCH)	UNIT	\$50.00	7	\$350.00
				TOTAL:	\$74,440.00
				10% Contingency	\$7,444.00
				Est. Cost	\$82,000.00

CONSTRUCTION ESTIMATE (cont.)

OPTION 2 - Connector Road

Item No.	Item	Unit	Unit Price	Quantity	Total Cost
105-01	CONSTRUCTION STAKES, LINES AND GRADES	LS	\$10,000.00	1	\$10,000.00
201-01	CLEARING AND GRUBBING	LS	\$4,000.00	1	\$4,000.00
202-03.01	REMOVAL OF ASPHALT PAVEMENT	SY	\$14.00	1100	\$15,400.00
203-01	ROAD AND DRAINAGE EXCAVATION	CY	\$12.00	3100	\$37,200.00
209-08.03	TEMPORARY SILT FENCE (W/O BACKING)	LF	\$3.00	1,200	\$3,600.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	\$21.00	1020	\$21,420.00
307-01.01	ASPHALT CONCRETE MIX (PG64-22) (BPMB-HM) GRADE A	TON	\$75.00	395	\$29,625.00
307-01.08	ASPHALT CONCRETE MIX (PG64-22) (BPMB-HM) GRADE B-M2	TON	\$76.00	260	\$19,760.00
411-01.10	ACS MIX (PG64-22) GRADING D	TON	\$74.00	153	\$11,322.00
607-05.02	24" CONC. PIPE CULVERT (CLASS III)	LF	\$58.00	48	\$2,784.00
712-02.02	INTERCONNECTED PORTABLE BARRIER RAIL	LF	\$24.00	200	\$4,800.00
713-16.20	SIGNS	EA	\$400.00	6	\$2,400.00
716-02.01	PLASTIC PAVEMENT MARKING (4" LINE)	LM	\$3,260.00	0.35	\$1,141.00
717-01	MOBILIZATION	LS	\$3,000.00	1	\$3,000.00
801-01	SEEDING (WITH MULCH)	UNIT	\$42.00	25	\$1,050.00
				TOTAL:	\$167,502.00
				10% Contingency	\$16,750.20
				Est. Cost	\$185,000.00

COST DATA SHEET (PHASE 1 - (INTERIM) WITH OPTIONS)

PROJECT OLD BROWNSVILLE ROAD
 LOCATION SHELBY COUNTY
 LENGTH 2.22 MILES

	<u>PHASE 1 - INTERIM</u>		<u>OPTION 1</u>		<u>OPTION 2</u>	
RIGHT-OF-WAY						
Land, Improvements, & Damages	(# Acres = 15)	\$ 459,000	(# Acres = 0.2)	\$ 6,000	(# Acres = 0.7)	\$ 21,000
Incidentals	(# Tracts = 26)	\$ 115,000	(# Tracts = 2)	\$ 1,500	(# Tracts = 4)	\$ 5,500
Relocation	(Residences = 1)	\$ 300,000	(Residences =)	\$ -	(Residences =)	\$ -
	(Businesses =)	\$ -	(Businesses =)	\$ -	(Businesses =)	\$ -
TOTAL RIGHT-OF-WAY COST		\$ 874,000		\$ 7,500		\$ 26,500

UTILITY RELOCATION						
Reimbursable		\$ 75,000		\$ -		\$ -
Non-Reimbursable		\$ 756,000		\$ -		\$ -
TOTAL UTILITY COST		\$ 831,000		\$ -		\$ -

<u>CONSTRUCTION ITEMS</u>						
Staking Line & Grade	\$	50,000.00	\$	5,000.00	\$	10,000.00
Mobilization	\$	50,000	\$	2,000	\$	4,000
Clearing & Grubbing	\$	20,000	\$	-	\$	2,000
Removal of Pipe	\$	15,000	\$	-	\$	-
Removal of Pavement	\$	-	\$	16,000	\$	16,000
Earthwork	\$	672,600	\$	8,400	\$	37,200
Drainage	\$	1,314,700	\$	-	\$	3,000
Structures	\$	728,800	\$	-	\$	-
Concrete Curb & Gutter	\$	588,900	\$	-	\$	-
Paving	\$	2,375,200	\$	39,600	\$	121,700
Maintenance of Traffic	\$	161,500	\$	1,000	\$	2,000
Concrete Barrier Rail	\$	96,000	\$	-	\$	5,000
Seeding	\$	40,300	\$	300	\$	1,400
Signing/Pavement Marking	\$	117,000	\$	1,000	\$	3,600
Signalization	\$	450,000	\$	-	\$	-
Silt Fence	\$	60,000	\$	1,000	\$	4,500
Rip-rap or Slope Protection	\$	4,000	\$	-	\$	5,000
Erosion Control (assume 5%)	\$	323,000	\$	-	\$	10,800
Other Items (assume 5%)	\$	323,000	\$	4,000	\$	10,800
10% Contingency	\$	645,000	\$	7,000	\$	21,500
ESTIMATED CONSTRUCTION COST	\$	8,035,000	\$	80,300	\$	248,500
SUBTOTAL COST W/PHASE 1			\$	8,115,300	\$	8,283,500
Engineering Cost (5% of Constr.)			\$	406,000	\$	414,000
Estimated Total Cost			\$	10,233,800	\$	10,429,000

COST DATA SHEET (PHASE 2 - ULTIMATE)

PROJECT OLD BROWNSVILLE ROAD
LOCATION SHELBY COUNTY
LENGTH 2.22 MILES
CROSS SECTION

RIGHT-OF-WAY

Land, Improvements, & Damages	(# Acres =)	\$	-
Incidentals	(# Tracts =)	\$	-
Relocation	(Residences =)	\$	-
	(Businesses =)	\$	-
TOTAL RIGHT-OF-WAY COST			\$ -

UTILITY RELOCATION

Reimbursable	\$	-	
Non-Reimbursable	\$	-	
TOTAL UTILITY COST			\$ -

CONSTRUCTION ITEMS

Mobilization	\$	25,000
Clearing & Grubbing	\$	10,000
Removal of Pavement	\$	-
Earthwork	\$	213,000
Drainage	\$	-
Structures	\$	-
Concrete Curb & Gutter	\$	414,000
Paving	\$	1,355,000
Maintenance of Traffic	\$	25,000
Concrete Barrier Rail	\$	144,000
Seeding	\$	-
Signing/Pavement Marking	\$	56,000
Signalization	\$	75,000
Silt Fence	\$	-
Rip-rap or Slope Protection	\$	-
Erosion Control (assume 5%)	\$	113,000
Other Items (assume 5%)	\$	113,000
10% Contingency	\$	226,000

TOTAL CONSTRUCTION COST	\$ 2,769,000
--------------------------------	---------------------

Engineering Cost (3% of Constr.)	\$ 83,000
----------------------------------	-----------

Estimated Cost (Phase 2)	\$ 2,852,000
---------------------------------	---------------------

COST DATA SHEET (OPTION 1)

PROJECT OLD BROWNSVILLE ROAD
LOCATION SHELBY COUNTY
LENGTH 2.22 MILES
CROSS SECTION

RIGHT-OF-WAY

Land, Improvements, & Damages	(# Acres = 0.2)	\$	6,000.00
Incidentals	(# Tracts = 2)	\$	1,500.00
Relocation	(Residences =)	\$	-
	(Businesses =)	\$	-
<u>TOTAL RIGHT-OF-WAY COST</u>			\$ 7,500.00

UTILITY RELOCATION

Reimbursable	\$	-	
Non-Reimbursable	\$	-	
<u>TOTAL UTILITY COST</u>			\$ -

CONSTRUCTION ITEMS

Mobilization	\$	4,000	
Clearing & Grubbing	\$	-	
Removal of Pavement	\$	16,000	
Earthwork	\$	9,000	
Drainage	\$	-	
Structures	\$	-	
Concrete Curb & Gutter	\$	-	
Paving	\$	40,000	
Maintenance of Traffic	\$	1,000	
Seeding	\$	300	
Signing/Pavement Marking	\$	1,000	
Removal of Pavement Marking	\$	-	
Signalization	\$	-	
Silt Fence	\$	1,000	
Rip-rap or Slope Protection	\$	-	
Erosion Control (assume 5%)	\$	4,000	
Other Items (assume 5%)	\$	4,000	
10% Contingency	\$	7,000	
<u>TOTAL CONSTRUCTION COST</u>			\$ 87,300

Estimated Cost (OPTION 1) \$ 95,000

COST DATA SHEET (OPTION 2)

PROJECT OLD BROWNSVILLE ROAD
LOCATION SHELBY COUNTY
LENGTH 2.22 MILES
CROSS SECTION

RIGHT-OF-WAY

Land, Improvements, & Damages	(# Acres = 0.7)	\$	21,000
Incidentals	(# Tracts = 4)	\$	5,500
Relocation	(Residences =)	\$	-
	(Businesses =)	\$	-
TOTAL RIGHT-OF-WAY COST			\$ 26,500

UTILITY RELOCATION

Reimbursable	\$	-	
Non-Reimbursable	\$	-	
TOTAL UTILITY COST			\$ -

CONSTRUCTION ITEMS

Mobilization	\$	3,000	
Clearing & Grubbing	\$	2,000	
Removal of Pavement	\$	16,000	
Earthwork	\$	38,000	
Drainage	\$	3,000	
Structures	\$	-	
Concrete Curb & Gutter	\$	-	
Paving	\$	83,000	
Maintenance of Traffic	\$	4,000	
Concrete Barrier Rail	\$	5,000	
Seeding	\$	1,100	
Signing/Pavement Marking	\$	3,600	
Silt Fence	\$	3,600	
Rip-rap or Slope Protection	\$	-	
Erosion Control	\$	-	
Other Items (assume 5%)	\$	12,000	
10% Contingency	\$	15,000	
TOTAL CONSTRUCTION COST			\$ 189,300

Estimated Cost (OPTION 2) \$ 216,000

APPENDIX C

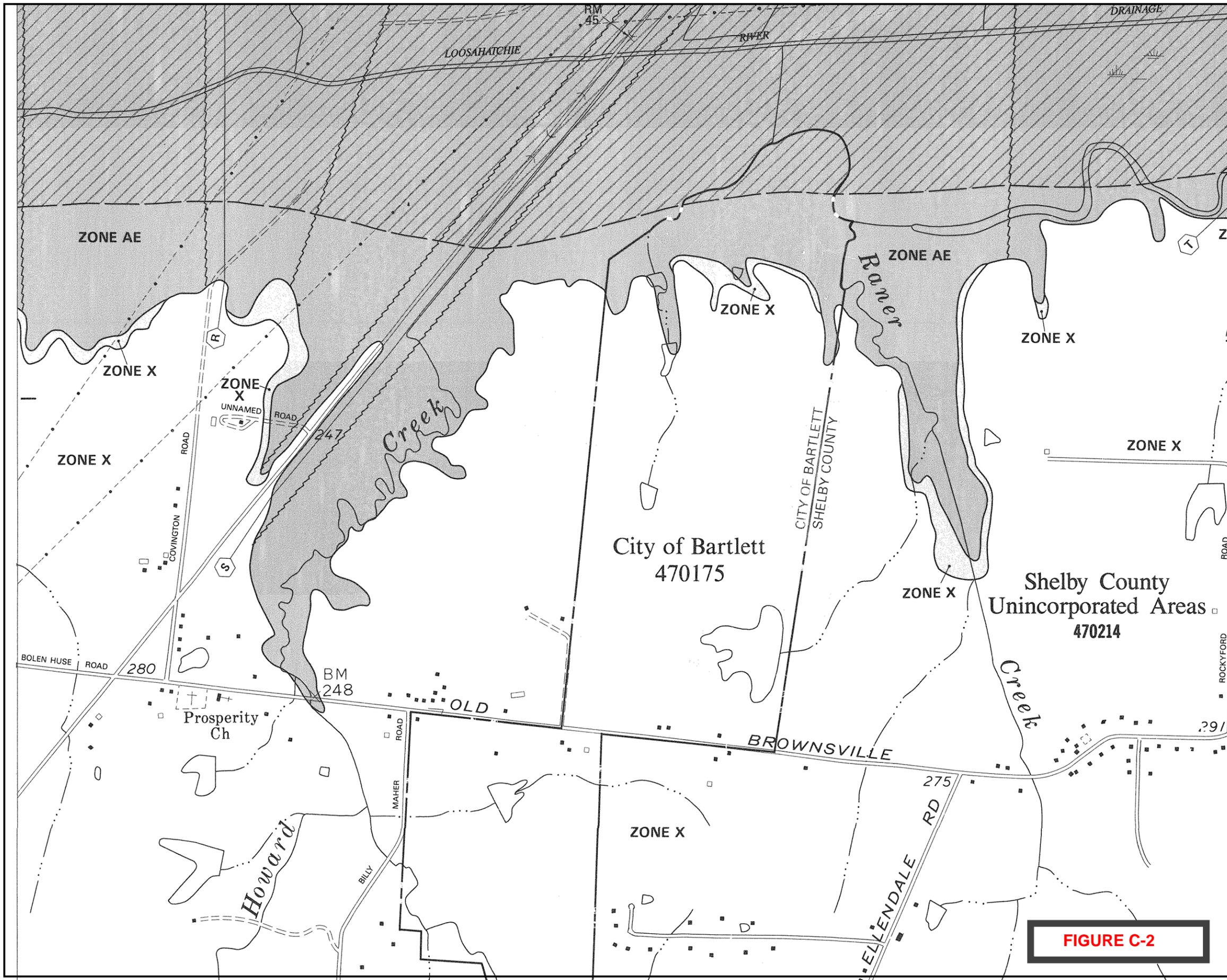
ENVIRONMENTAL CONSIDERATIONS

Preliminary Environmental Evaluation

If preliminary field reviews indicate the presence of any of the following facilities or Economic, Social and Environmental categories (ESE), place the number of facilities in the blank opposite the item. Where more than one location option is to be considered, place its letter designation in the blank.

	<u>Option</u>
1.) Hazardous Material Site or Underground Storage Tanks.....	_____X_____
2.) Floodplains.....	_____
3.) Historical, archaeological, cultural, or natural landmark, or cemeteries.....	_____X_____
4.) Airport.....	_____
5.) Residential establishment.....	_____X_____
6.) Urban area, city, town, or community..... (Bartlett, Pop. 48,500)	_____
7.) Commercial area, shopping center.....	_____
8.) Institutional usages:	
a. School or other educational institution.....	_____X_____
b. Hospital or other medical facility.....	_____
c. Church or other religious institution.....	_____X_____
d. Public Building, e.g., fire station.....	_____X_____
e. Defense installation.....	_____
9.) Agricultural land usage.....	_____
10.) Forested land.....	_____
11.) Industrial park, factory.....	_____
12.) Recreational usages:	
a. Park or recreational area, State Natural Area.....	_____
b. Wildlife refuge or wildlife management area.....	_____
13.) Waterway:	
a. Lake.....	_____
b. Pond.....	_____X_____
c. River.....	_____
d. Stream.....	_____X_____
e. Spring.....	_____
14.) Railroad Crossings.....	_____
15.) Location coordinated with local officials.....	_____
16.) Other.....	_____

Figure C-1



APPROXIMATE SCALE
 1000 0 1000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

**FIRM
 FLOOD INSURANCE RATE MAP**

**SHELBY COUNTY,
 TENNESSEE AND
 INCORPORATED AREAS**

PANEL 105 OF 300
 (SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BARTLETT, CITY OF	470175	0105	E
UNINCORPORATED AREAS	470214	0105	E

Notice To User: The MAP NUMBER shown below should be used when placing map orders; the COMMUNITY NUMBER shown above should be used on insurance applications for the subject community.

**MAP NUMBER
 47157C0105 E**

**EFFECTIVE DATE:
 DECEMBER 2, 1994**

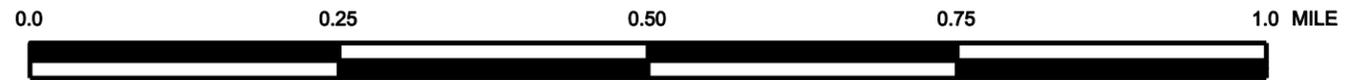


Federal Emergency Management Agency

FIGURE C-2

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

ENVIRONMENTAL CONSIDERATIONS
LAYOUT SHEET
PROPOSED IMPROVEMENTS
OLD BROWNSVILLE ROAD
SHELBY COUNTY



SCALE: 1 = 800'

FIGURE C-3