



*Service and Good Work. . .  
Our Foundation, Our Future  
Since 1946*

January 16, 2009

Mr. Joe W. Matlock  
Tennessee Department of Transportation  
Environmental Division  
505 Deaderick Street  
Suite 900, J.K. Polk Building  
Nashville, TN 37243

**RE: Environmental Document Determination  
Byhalia Road Widening  
Town of Collierville, Shelby County, Tennessee**

Mr. Matlock:

The attached purpose and need document is intended to provide sufficient information for the Town of Collierville's proposed widening of Byhalia Road (partial SR-175) from Holmes Road to SR-385 (Bill Morris Parkway) located in the Town of Collierville, Shelby County, Tennessee (the Project), for the determination of the appropriate class of action for the Project. The project also includes the proposed extension of E. Shelby Drive (proposed SR-175) from the Woodgrove subdivision on the east side of Byhalia Road to Byhalia Road to match up with E. Shelby Drive on the west side of Byhalia Road.

Please review and advise accordingly.

Sincerely,

**PICKERING FIRM INCORPORATED**

A handwritten signature in black ink that reads "Patrick W. Neal".

Patrick W. Neal, P.E.  
Project Manager

PN:pwn

T:\23058\JoeMatlockLtr 01-16-2009.doc

**BYHALIA ROAD WIDENING PROJECT  
FROM HOLMES ROAD TO SR-385 (BILL MORRIS PARKWAY)  
SHELBY COUNTY**

**Project Description**

The primary purpose of this project is to improve Byhalia Road (partial SR-175) between Holmes Road and SR-385 (Bill Morris Pkwy) for enhanced regional and local transportation mobility. The project is located in southeast Shelby County in the Town of Collierville and within the Memphis Metropolitan Area. The project has a total length of approximately 1.73 miles, requires approximately 9.5 acres of new right-of-way (7 acres or 74% is to be dedicated) and includes the following segments:

- Segment 1 – Resurfacing an existing 2-lane open shoulder section of Byhalia Road just north of Holmes Road. This segment is contained within existing right-of-way, is approximately 0.30 miles in length and acts as a transition into segment 2.
- Segment 2 – Resurfacing an existing 5-lane curb and gutter section of Byhalia Road bordered by the Southridge subdivision on the west and Estanaula Trails subdivision on the east. The typical section for this segment will include two 11'-0" wide (minimum) lanes in each direction with the outside lane in each direction being 13'-0" wide to allow for a bicycle lane. It will also include a 12'-0" wide continuous two-way left turn lane (CTWLTL) in the middle. This segment is contained within existing right-of-way, is approximately 0.45 miles in length, has existing 5'-0" wide sidewalks on each side, and 40' wide landscape easements on each side.
- Segment 3 – Widening an existing 2-lane open shoulder section of Byhalia Road south of E. Shelby Drive to a 5-lane curb and gutter section with 5'-0" wide sidewalks on each side. The typical section would be the same as Segment 2 with a proposed right-of-way width of 84'-0". The amount of proposed right-of-way required for this segment is 1 acre (65% is to be dedicated). The segment is approximately 0.24 miles in length and contains a section along the west side bordering the Southridge subdivision that has already been widened. It also includes a proposed 40' wide landscape easement on both sides.
- Segment 4 – Widening an existing 2-lane open shoulder section of Byhalia Road (SR-175) north of E. Shelby Drive to a 6-lane curb and gutter section with a 28'-0" wide raised median and a proposed right-of-way width of 115'-0". The amount of proposed right-of-way required for this segment is 5.3 acres (84% is to be dedicated). The typical section for this segment will include three 12'-0" wide lanes in each direction with the outside lane being 16'-0" wide to allow for a bicycle lane. Median openings and a 12'-0" wide left turn lane will be provided at each side road. This segment is approximately 0.85 miles in length and contains a section along the east side bordering the Preserve at Oak Grove subdivision (Oak Grove PD Phase 1) that has already been widened. It also includes a proposed 40' wide landscape easement on both sides.
- Segment 5 – Extension of E. Shelby Drive (proposed SR-175) from Woodgrove subdivision (Oak Grove PD Phase 4) on the west side of Byhalia Road to connect with the intersection of Byhalia Road and E. Shelby Drive on the east side of Byhalia Road. The typical section for this segment will include three 12'-0" wide lanes in each direction, an 18'-0" wide raised

median, 5'-0" wide sidewalks on each side and a proposed right-of-way width of 114'-0". The amount of proposed right-of-way required for this segment is 2.6 acres (51% is to be dedicated). This segment is approximately 1,000' in length and will remove the existing 300' offset between the two intersections of Shelby Post Rd. (SR-175)/E. Shelby Drive and Byhalia Road making it a much safer single intersection.

- Segment 6 – Widening E. Shelby Drive from Byhalia Road (SR-175) to Deep Woods Road which has been widened on the north side already. The typical section for this segment will include three 12'-0" wide lanes in each direction, an 18'-0" wide raised median, 5'-0" wide sidewalks on each side and a proposed right-of-way width of 114'-0". The amount of proposed right-of-way required for this segment is 0.6 acres (100% is to be dedicated). This segment is approximately 700' in length and will include 40' wide landscape easements on each side.

### **Community Profile**

The Town of Collierville has experienced tremendous growth since 1990 (approximately 207%) and is considered one of the most desirable areas to live in Shelby County. The Town of Collierville has a population of 44,304 as of 2008 which reflects an increase of 39% since the 2000 census. Byhalia Road is a vital north-south connection to Collierville for residents and non-residents alike who work and shop in Collierville. It also serves as the main route to Sycamore Elementary School located east of Byhalia Road on the east side of Estanaula Trails subdivision.

### **PURPOSE AND NEED:**

#### **Project Status**

This project was initiated at the request of the Town of Collierville. The Town of Collierville, Memphis/Shelby County Metropolitan Planning Organization (MPO), and the Tennessee Department of Transportation (TDOT) have collaborated throughout the development process to ensure that the transportation needs envisioned by the local community are coordinated. This project is on the Memphis Urban Area 2030 Long Range Transportation Plan as an existing congested corridor and the Town of Collierville's Major Road Plan. The project will follow the provisions of the National Environmental Policy Act (NEPA) and TDOT guidelines. A contract between the Town of Collierville and TDOT is forthcoming with an agreement for TDOT to fund the project for construction; the funding source has not been identified at this time. The Town of Collierville, however, has selected the project design consultant.

#### **System Linkage**

Byhalia Road (partial SR-175) is functionally classified as a minor arterial in the MPO's Long Range Transportation Plan providing a needed north-south link to the southeast part of Shelby County. Improving the level-of-service for this section of Byhalia Road will improve the vehicular mobility for the Town of Collierville residents, southeastern Shelby County residents and emergency services. The portion of Byhalia Road that is the subject of this Purpose and Need is connected to major east-west highways including E. Shelby Drive (proposed SR-175) and SR-385 (Bill Morris Pkwy). Byhalia Road in its entirety is approximately 32 miles long

extending from SR-4 in Mississippi to Johnson Park on the north side of Collierville. Other major east-west highway connections outside of the study area include US 78 and SR-302 (Goodman Road) in Mississippi and US 72 (SR-57, Poplar Ave) in Tennessee.

### **Existing Conditions**

The existing route of Byhalia Road (partial SR-175) within the study area measures approximately 1.73 miles with the majority of the route being zoned residential with the remainder being a mix of office and retail. The 2-lane portions of the route consist of two 11'-0" wide lanes with minimal shoulders (if any). The 2-lane portions are shoulder deficient and fail to meet current design standards. Based on a posted speed limit of 45 mph, there are several vertical curves that do not meet current design standards. Also, the existing offset configuration of the intersection of Shelby Post Rd. (SR-175)/E. Shelby Drive and Byhalia Road is not desirable. As part of this project, it is proposed to re-align the western portion of E. Shelby Drive (proposed SR-175) to eliminate the 300' offset between the two existing intersections making it a much safer single intersection.

### **Traffic**

The existing Average Annual Daily Traffic (AADT) on Byhalia Road (partial SR-175) for 2008 ranges from 8,070 vehicles per day (vpd) to 10,808 vpd. According to the MPO's 2030 traffic demand model for this section of Byhalia Road (partial SR-175), the projected AADT ranges from 19,990 vpd to 21,422 vpd.

### **Level of Service**

The character of roadway's operating conditions can be quantified by a "Level of Service" (LOS) analysis. The LOS analysis incorporates several factors including traffic volumes, number of lanes, terrain, directional split, heavy vehicles, and shoulder widths.

LOS is a qualitative measure that describes the character of traffic conditions related to speed and travel time, freedom to maneuver, traffic interruptions, etc. There are six levels ranging from "A" to "F" with "F" being the worst. Each level represents a range of operating conditions. General descriptions of operating conditions for each of the levels of service related to this report as found in the Highway Capacity Manual are as follows:

## LOS Traffic Flow Conditions

LOS		Description
Acceptable	A	Free-flow traffic operations at average travel speeds. Vehicles completely unimpeded in ability to maneuver. Minimal delay at signalized intersections.
	B	Reasonably unimpeded traffic operations at average travel speeds. Vehicle maneuverability slightly restricted. Low traffic delays.
	C	Stable traffic operations. Lane changes becoming more restricted. Travel speeds reduced to half of average free flow travel speeds. Longer intersection delays.
Unacceptable	D	Small increases in traffic flow can cause increased delays. Delays likely attributable to increase traffic, reduced signal progression and adverse timing.
	E	Significant delays. Travel speeds reduced to one third of average free flow travel speed.
	F	Extremely low speeds. Intersection congestion. Long delays. Extensive traffic queues at intersections.

The LOS on Byhalia Road (partial SR-175), based on the 2008 AADT of 10,808 vpd, is “D” for a 2-lane roadway. The LOS for the projected 2030 AADT of 21,422 vpd is “E” for the “no-build” alternative and “A” for the “build” alternative.

### **Transportation Demand**

The Byhalia Road project is included in the current MPO Long Range Transportation Plan and in the Town of Collierville’s Major Road Plan. The Town of Collierville approached TDOT in April of 2006 requesting their participation in the project.

### **Social and Economic Conditions**

Byhalia Road (partial SR-175) is a vital north-south minor arterial that runs through the Town of Collierville and provides connectivity with southeast Shelby County and north Mississippi and access to US 72 and US 78. The majority of the property along Byhalia Road (partial SR-175) within the study area is zoned residential. The Oak Grove Planned Development was approved by the Town of Collierville’s Planning Commission in April of 1999 and by the Town of Collierville’s Board of Mayor and Aldermen in June of 1999. There is approximately 425 acres within the planned development including office, residential (townhouse and single-family), and retail uses which could lead to economic growth for the Town of Collierville. The Oak Grove Planned Development is located along both sides of Byhalia Road (SR-175) between E. Shelby Drive (proposed SR-175) and SR-385 (Bill Morris Pkwy). Widening improvements to the existing route would provide greater ease of access to existing properties and improved quality of life for the residents immediately adjacent to the existing route. It would also improve access to

the Avenue at Carriage Crossing which is an open air shopping center located west of the project, Sycamore Elementary School which is located in the eastern section of Estanaula Trails subdivision, Collierville First Assembly of God Church which borders the project, and Estanaula Park which is located on the south end of the project near Holmes Road.

### **Land Use**

Collierville is located in southeast Shelby County and is steadily growing, as are most of the suburbs outside the greater Memphis metropolitan area. The main land use along the portion of Byhalia Road from Holmes Road to E. Shelby Drive (proposed SR-175) is zoned for residential which primarily consists of single-family residential lots. The land use along the portion of Byhalia Road (SR-175) from E. Shelby Drive (proposed SR-175) to SR-385 (Bill Morris Pkwy) is zoned for residential (approximately 40%) and commercial (approximately 60%). The commercial zoning is positioned towards the north end of Byhalia Road (SR-175) near SR-385 (Bill Morris Pkwy).

### **Modal Relationships**

Byhalia Road is a major north-south route with highway access that connects to US 72 (SR-57, Poplar Ave) and SR-385 (Bill Morris Pkwy) in Tennessee and SR-302 (Goodman Road), US 78, and SR-4 in Mississippi.

### **Safety**

The accident rate for Byhalia Road (partial SR-175) from Holmes Road to SR-385 (Bill Morris Pkwy) has ranged from 11-20 between 2004 and 2008. The accidents occurring at the intersection with SR-385 were excluded in the accident rate analysis. Over the last 5 years the average accident rate for this 1.73-mile portion of Byhalia Road (partial SR-175) is 15 accidents per year. Due to the lack of shoulders there is very little opportunity for recovery of an errant vehicle. Site distance issues do exist with many of the private drives and residential street access points. The proposed widening should reduce the crash rate with improved sight distance and the addition of curb with buffer area. Also, elimination of the offset Shelby Post Rd. (SR-175)/E. Shelby Drive intersection (which accounts for approximately 40% of the accidents within the project limits) will enhance safety.



# BYHALIA ROAD WIDENING

DESCRIPTION	OVERALL VIEW	PROJECT #	23058.00
SCALE	N.T.S.	DATE	1/16/2009

DOCUMENT

SHEET

FIGURE 1



Architecture Planning  
Management Engineering  
6775 Lenox Center Court  
Memphis, TN 38115  
901.726.0810  
901.272.6911 fax



**BYHALIA ROAD WIDENING**

DOCUMENT

SHEET

**FIGURE 2**

DESCRIPTION	PROJECT #	DATE
SEGMENT 1	23058.00	1/16/2009
SCALE	N.T.S.	



Architecture Planning  
Management Engineering  
6775 Lenox Center Court  
Memphis, TN 38115  
901.726.0810  
901.272.6911 fax



**SEGMENT 2 NOTES:**

1. NO PROP. R.O.W. REQ'D.
2. NO WIDENING, ONLY RESURFACING.
3. EXIST. SIDEWALKS ON BOTH SIDES.
4. PROP. BICYCLE LANES ON BOTH SIDES.
5. EXIST. 40' WIDE LANDSCAPE ESMT. ON BOTH SIDES.

Architecture Planning  
Management Engineering  
6775 Lenox Center Court  
Memphis, TN 38115  
901.726.0810  
901.272.6911 fax



**BYHALIA ROAD WIDENING**

DOCUMENT

SHEET

DESCRIPTION	PROJECT #	DATE
SEGMENT 2	23058.00	1/16/2009
SCALE	N.T.S.	

**FIGURE 3**



SOUTHRIDGE SUBDIVISION

ESTANAULA TRAILS SUBDIVISION

SEGMENT 2 (APPROX. 0.45 MILES)

BYHALIA ROAD

WINDING RIDGE ROAD

SEGMENT 3

- SEGMENT 2 NOTES:
1. NO PROP. R.O.W. REQ'D.
  2. NO WIDENING, ONLY RESURFACING.
  3. EXIST. SIDEWALKS ON BOTH SIDES.
  4. PROP. BICYCLE LANES ON BOTH SIDES.
  5. EXIST. 40' WIDE LANDSCAPE ESMT. ON BOTH SIDES.

Architecture Planning  
Management Engineering  
6775 Lenox Center Court  
Memphis, TN 38115  
901.726.0810  
901.272.6911 fax



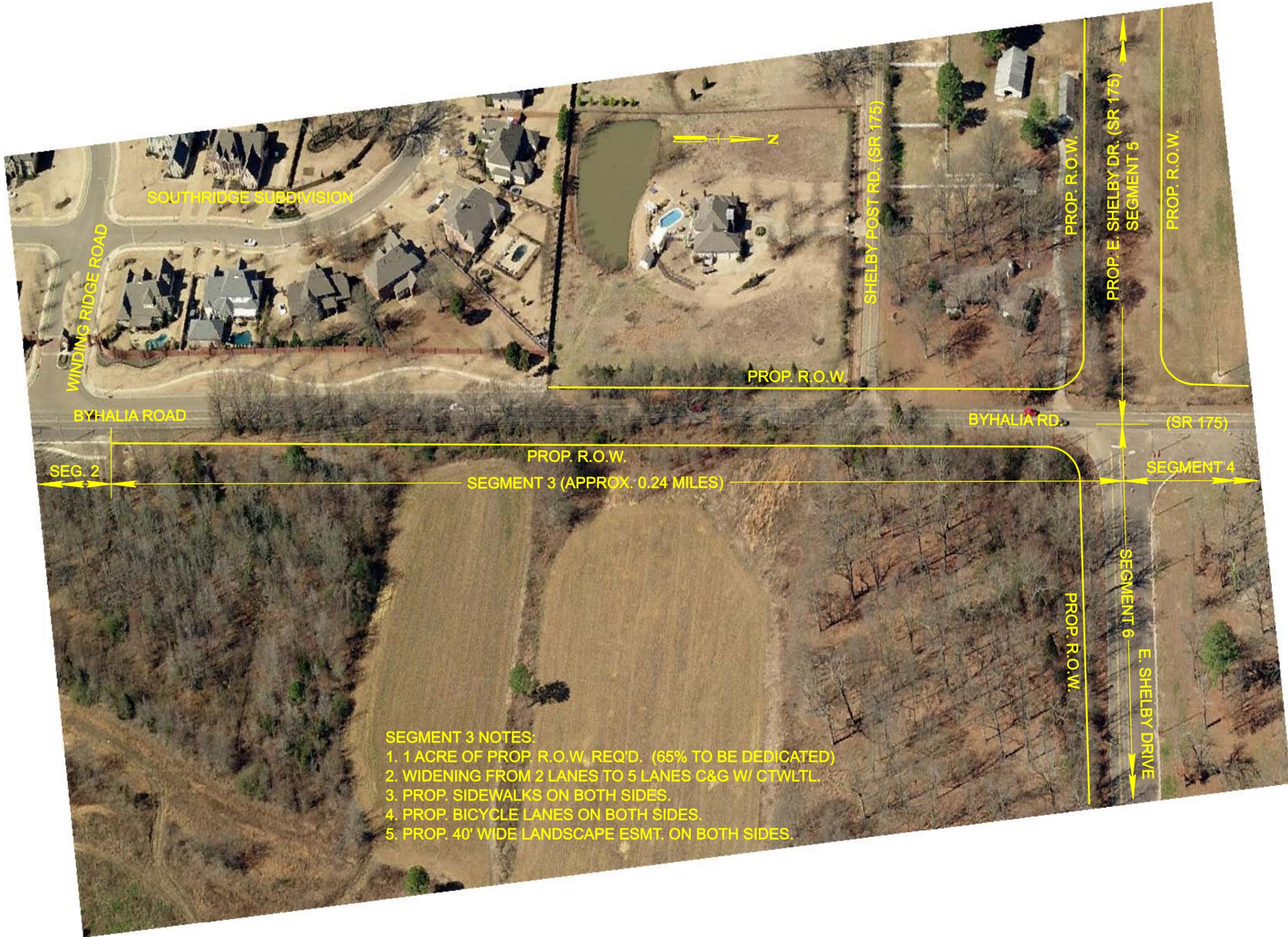
**BYHALIA ROAD WIDENING**

DESCRIPTION	PROJECT #	DATE
SEGMENT 2	23058.00	1/16/2009
SCALE	N.T.S.	

DOCUMENT #

SHEET #

**FIGURE 3A**



- SEGMENT 3 NOTES:**
1. 1 ACRE OF PROP. R.O.W. REQ'D. (65% TO BE DEDICATED)
  2. WIDENING FROM 2 LANES TO 5 LANES C&G W/ CTWLTL.
  3. PROP. SIDEWALKS ON BOTH SIDES.
  4. PROP. BICYCLE LANES ON BOTH SIDES.
  5. PROP. 40' WIDE LANDSCAPE ESMT. ON BOTH SIDES.

**BYHALIA ROAD WIDENING**



**Pickering Firm**  
Incorporated

Architecture Planning  
Management Engineering  
6775 Lenox Center Court  
Memphis, TN 38115  
901.726.0810  
901.272.6911 fax

DESCRIPTION	PROJECT #	DATE
SEGMENT 3	23058.00	1/16/2009
SCALE	N.T.S.	

DOCUMENT #

SHEET #

**FIGURE 4**



Architecture Planning  
Management Engineering

**Pickering Firm**  
Incorporated

6775 Lenox Center Court  
Memphis, TN 38115

901.726.0810  
901.272.6911 fax

**BYHALIA ROAD WIDENING**

PROJECT #	23058.00	DATE	1/16/2009
DESCRIPTION	SEGMENT 4	SCALE	N.T.S.

DOCUMENT

SHEET

**FIGURE 5**



- SEGMENT 4 NOTES:**
1. 5.3 ACRES OF PROP. R.O.W. REQ'D. (84% TO BE DEDICATED)
  2. WIDENING FROM 2 LANES TO 6 LANES C&G W/ RAISED MEDIAN.
  3. PROP. SIDEWALKS ON BOTH SIDES.
  4. PROP. BICYCLE LANES ON BOTH SIDES.
  5. EXIST./PROP. 40' WIDE LANDSCAPE ESMT. ON BOTH SIDES.

Architecture Planning  
Management Engineering

**Pickering Firm**  
Incorporated

6775 Lenox Center Court  
Memphis, TN 38115

901.726.0810  
901.272.6911 fax

<b>BYHALIA ROAD WIDENING</b>	
DESCRIPTION	PROJECT #
SEGMENT 4	23058.00
SCALE	DATE
N.T.S.	1/16/2009

DOCUMENT #

SHEET #

**FIGURE 5A**



- SEGMENT 4 NOTES:**
1. 5.3 ACRES OF PROP. R.O.W. REQ'D. (84% TO BE DEDICATED)
  2. WIDENING FROM 2 LANES TO 6 LANES C&G W/ RAISED MEDIAN.
  3. PROP. SIDEWALKS ON BOTH SIDES.
  4. PROP. BICYCLE LANES ON BOTH SIDES.
  5. EXIST./PROP. 40' WIDE LANDSCAPE ESMT. ON BOTH SIDES.

**BYHALIA ROAD WIDENING**

DOCUMENT		
SHEET		
DESCRIPTION	SEGMENT 4	
PROJECT	23058.00	
SCALE	N.T.S.	
DATE	1/16/2009	



**Pickering Firm**  
Incorporated

Architecture Planning  
Management Engineering  
6775 Lenox Center Court  
Memphis, TN 38115  
901.726.0810  
901.272.6911 fax



- SEGMENT 5 NOTES:**
1. 2.6 ACRES OF PROP. R.O.W. REQ'D. (51% TO BE DEDICATED)
  2. PROP. EXTENSION OF 6 LANE C&G W/ RAISED MEDIAN.
  3. PROP. SIDEWALKS ON BOTH SIDES.
  4. PROP. 40' WIDE LANDSCAPE ESMT. ON BOTH SIDES.

Architecture Planning  
Management Engineering  
6775 Lenox Center Court  
Memphis, TN 38115  
901.726.0810  
901.272.6911 fax



**BYHALIA ROAD WIDENING**

DESCRIPTION	PROJECT #	DATE
SEGMENT 5	23058.00	1/16/2009
SCALE	N.T.S.	

DOCUMENT

SHEET

**FIGURE 6**