

D.O.T. 66

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**INTERDEPARTMENT CORRESPONDENCE**

**FILE** P. I. No. 0004404, Cobb County **OFFICE** Preconstruction  
MSL-0004-00(404)  
SR 176/Lost Mountain/Mars Hill Road  
8 Intersections **DATE** July 13, 2005

**FROM** *C. John Furd*  
Margaret B. Pirkle, P.E., Assistant Director of Preconstruction

**TO** SEE DISTRIBUTION

**SUBJECT APPROVED PROJECT CONCEPT REPORT**

Attached for your files is the approval for subject project.

MBP/cj

Attachment

DISTRIBUTION:

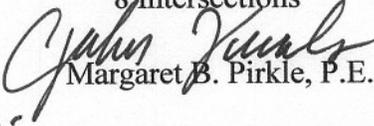
Brian Summers  
Harvey Keepler  
Ken Thompson  
Jamie Simpson  
Michael Henry  
Keith Golden  
Joe Palladi (file copy)  
Paul Liles  
Babs Abubakari  
Ben Buchan  
Bryant Poole  
BOARD MEMBER

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

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**INTERDEPARTMENT CORRESPONDENCE**

**FILE** P.I. No. 0004404, Cobb County **OFFICE** Preconstruction  
MSL-0004-00(404)  
SR 176/Lost Mountain/Mars Hill Road  
8 Intersections **DATE** June 28, 2005

**FROM**  Margaret B. Pirkle, P.E., Assistant Director of Preconstruction

**TO**  David E. Studstill, Jr., P.E., Chief Engineer

**SUBJECT** PROJECT CONCEPT REPORT

This project consists of safety improvements to eight (8) intersections along SR 176/Lost Mountain Road/Mars Hill Road from Corner Road extending north to Mars Hill Church Road. The intersections to be improved include Corner Road, Nichols Road, Due West Road, Hadaway Road, Burnt Hickory Road, Old Stilesboro Road-County Line Road, Giles Road-Hill road, and Mars Hill Church Road. State Route 176/Lost Mountain Road/Mars Hill Road is a vital north-south transportation arterial to move traffic in Cobb County. The limited number of turn lanes and length of turn lanes, lack of traffic signals, lack of coordination between signals, and substandard geometric design, have contributed to the congestion and degraded operation of each of the eight respective intersections. These deficiencies have resulted in unsafe driving conditions for the turning maneuvers at the intersections. The present volumes for 2004 on SR 176/Lost Mountain Road/Mars Hill Road range from 8,268 VPD to 19,671 VPD. The projected volumes for 2027 range from 18,342 VPD to 38,882 VPD. The most recent accident data (2000, 2001, 2002, and 2003) for these eight intersections show 189 accidents in the past four years.

The construction will consist of alignment changes, adding turn lanes, lengthening existing turn lanes, adding traffic signals, upgrading existing signals and coordination of traffic signals. Additionally, all intersections will be upgraded to meet ADA requirements. Sidewalks will be provided behind all new curb and gutter sections.

Environmental concerns include requiring a COE 404 permit; a Categorical Exclusion be prepared; a public information open house will be required for detours; time saving procedures are not appropriate.

The estimated costs for this project are:

	<u>PROPOSED</u>	<u>APPROVED</u>	<u>FUNDING</u>	<u>PROG DATE</u>
Construction (includes E&C and inflation)	\$4,300,000	\$4,300,000	RRB	2007
Right-of-Way & Utilities*	Local	Local		

David Studstill  
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P.I. No. 0004404, Cobb  
June 28, 2005

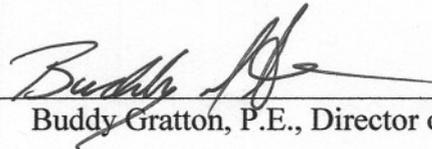
\*Cobb County signed PMA on 12-3-03 for PE, right-of-way, utilities and construction.

I recommend this project concept be approved.

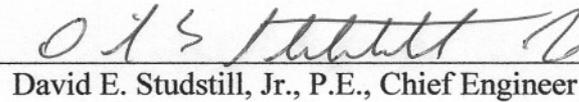
MBP:JDQ/cj

Attachment

CONCUR

  
Buddy Gratton, P.E., Director of Preconstruction

APPROVE

  
David E. Studstill, Jr., P.E., Chief Engineer

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

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**INTERDEPARTMENT CORRESPONDENCE**

**FILE** MSL-0004-00(404) Cobb County  
P.I. No. 0004404  
SR 176/Lost Mountain/Mars Hill Rd  
-Eight Intersections

**OFFICE** Urban Design

**DATE** June 9, 2005

**FROM**  James B. Buchan, P.E., State Urban Design Engineer

**TO** Margaret B. Pirkle, P.E., Assistant Director of Preconstruction

**SUBJECT** **Project Concept Report**

Attached is the original copy of the concept report for your further handling for approval in accordance with the Plan Development Process (PDP).

If you have any questions, please contact Albert Welch or Steve Adewale at (404) 656-5447.

JBB:ASW:asa   
Attachment

cc: David Mulling, Project Review Engineer, w/attachment  
Harvey Keepler, State Environmental/Location Engineer, w/attachment  
Keith Golden, State Traffic Safety and Design Engineer, w/attachment  
Joe Palladi, State Transportation Planning Administrator, w/attachment  
Jamie Simpson, Financial Management Administrator, w/attachment  
Bryant Poole, District 7 Engineer, w/attachment  
Paul Liles, State Bridge & Structural Engineer

DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA

Urban Design Office

PROJECT CONCEPT REPORT

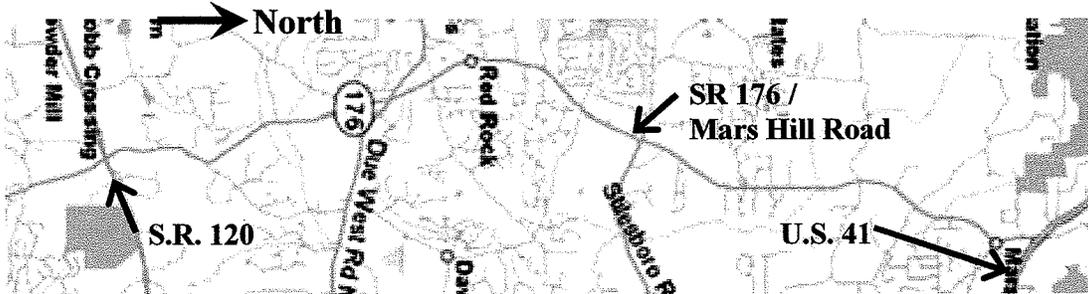
Project Number:MSL-0004(404)

Cobb

P. I. Number : 0004404

Federal Route Number: N/A

State Route Number: SR 176



Operational Improvement of Eight Intersection on SR 176/Lost Mountain Road/Mars Hill Road  
From SR 176/Lost Mountain Road @ Corner Road to SR 176/Mars Hill Road @ Mars Hill Church Road

Recommendation for approval:

DATE 9-30-05

DATE 6-14-05

[Signature]  
Project Manager  
[Signature]  
State Urban Design Engineer

The concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Program (RTP) and/or the State Transportation Improvement Program (STIP).

DATE \_\_\_\_\_

\_\_\_\_\_  
State Transportation Planning Administrator

DATE \_\_\_\_\_

\_\_\_\_\_  
State Transportation Financial Management Administrator

DATE \_\_\_\_\_

\_\_\_\_\_  
State Environment/Location Engineer

DATE \_\_\_\_\_

\_\_\_\_\_  
State Traffic Safety and Design Engineer

DATE \_\_\_\_\_

\_\_\_\_\_  
District Engineer

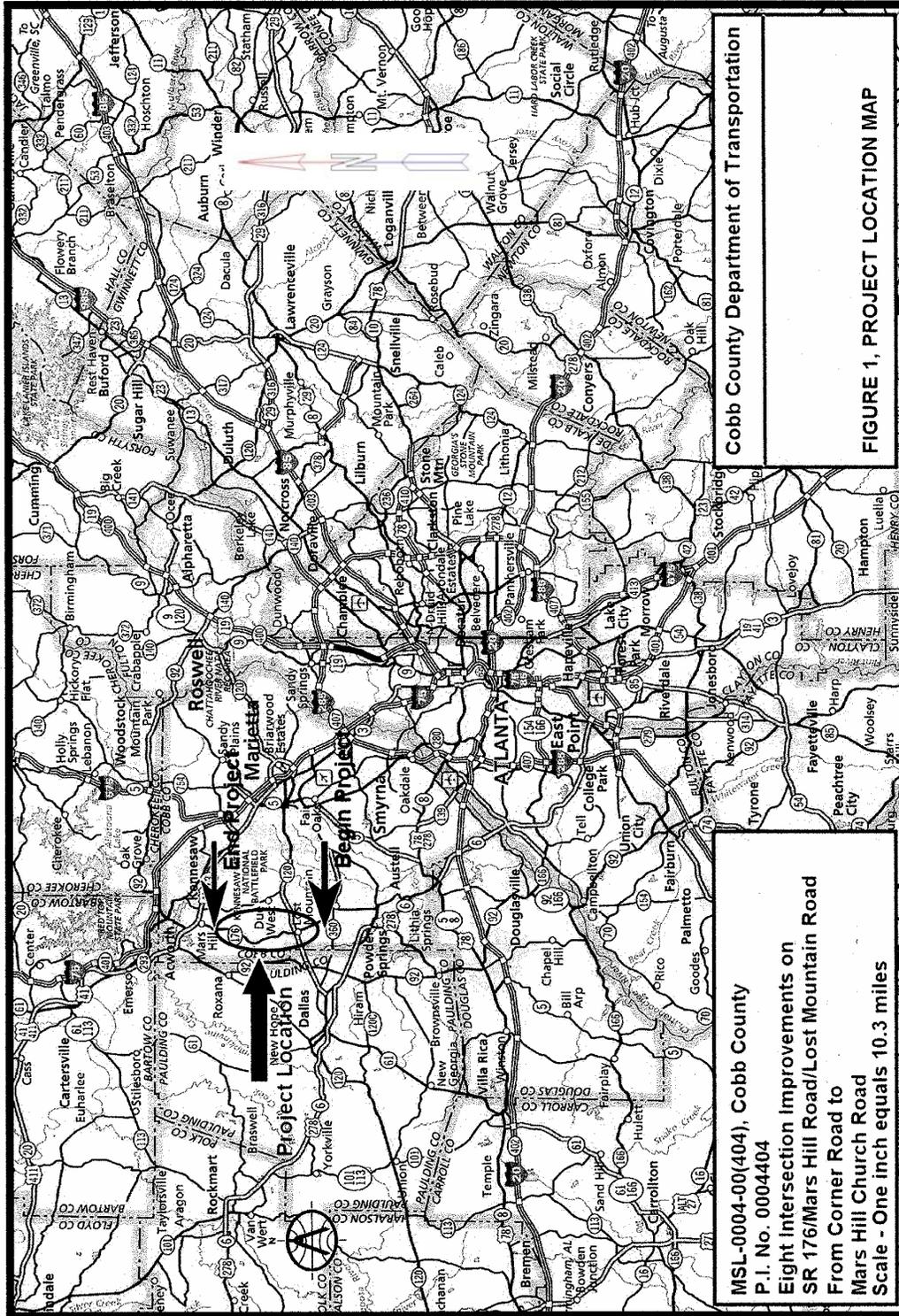
DATE \_\_\_\_\_

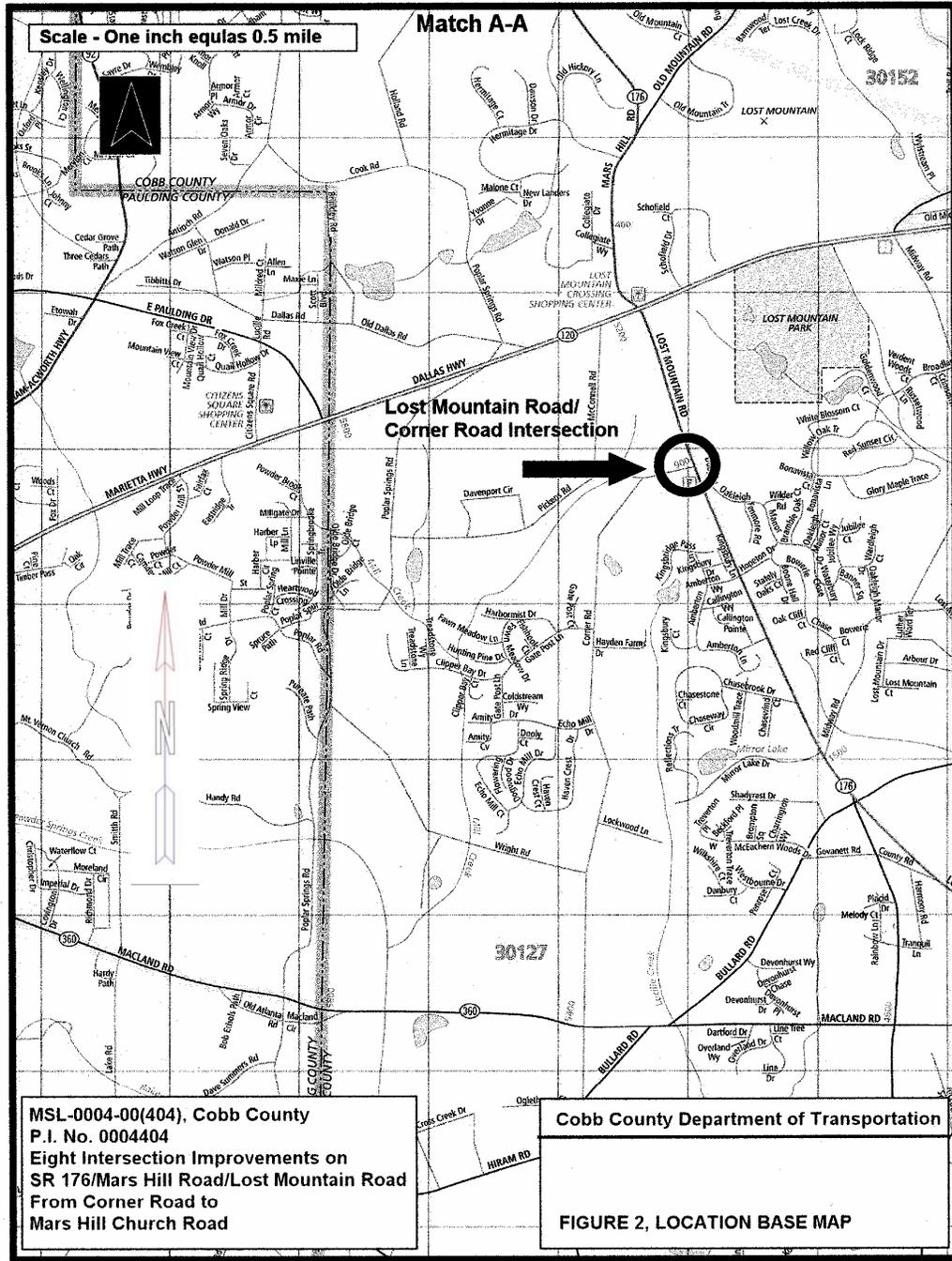
\_\_\_\_\_  
Project Review Engineer

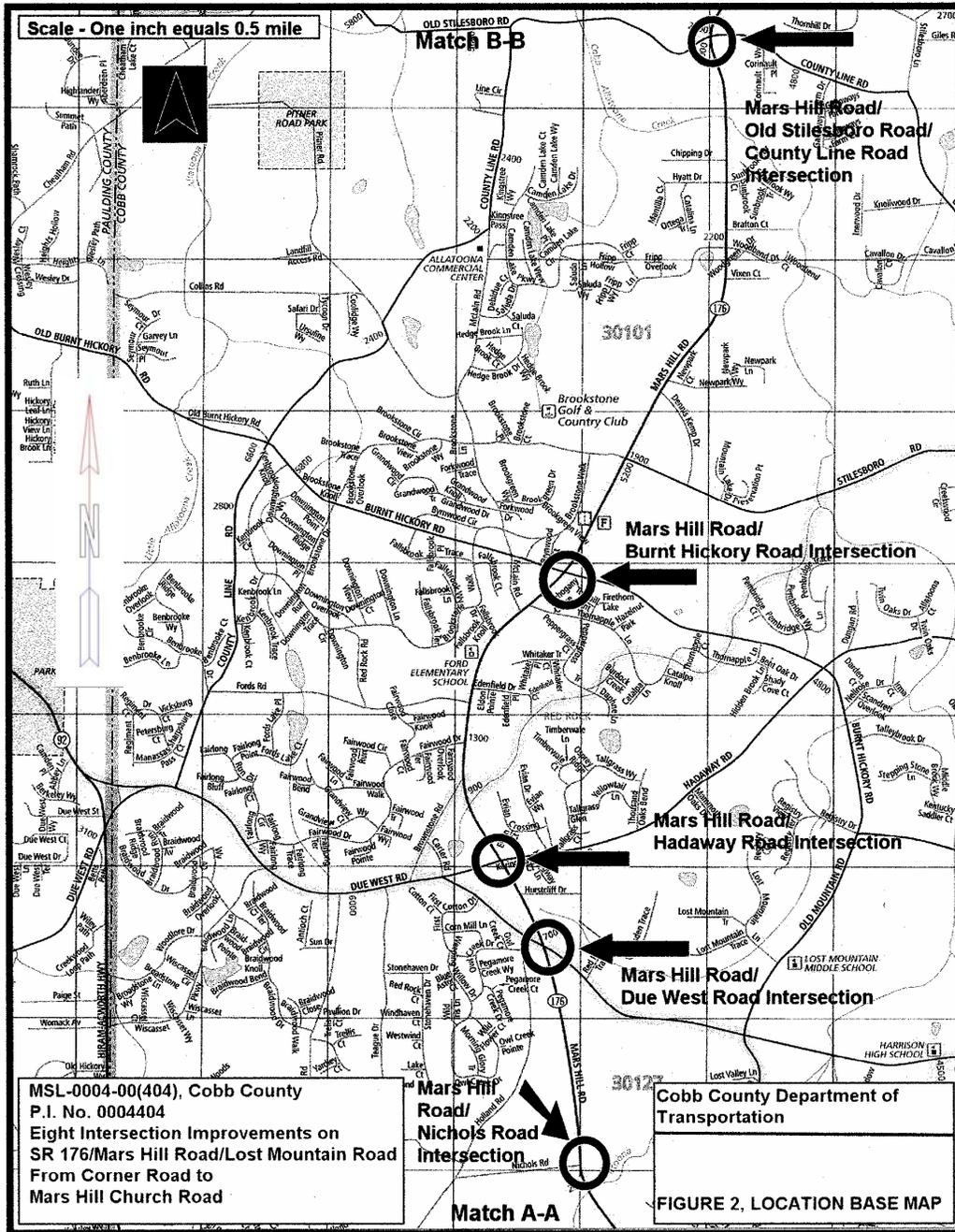
DATE \_\_\_\_\_

\_\_\_\_\_  
State Bridge & Structural Design Engineer

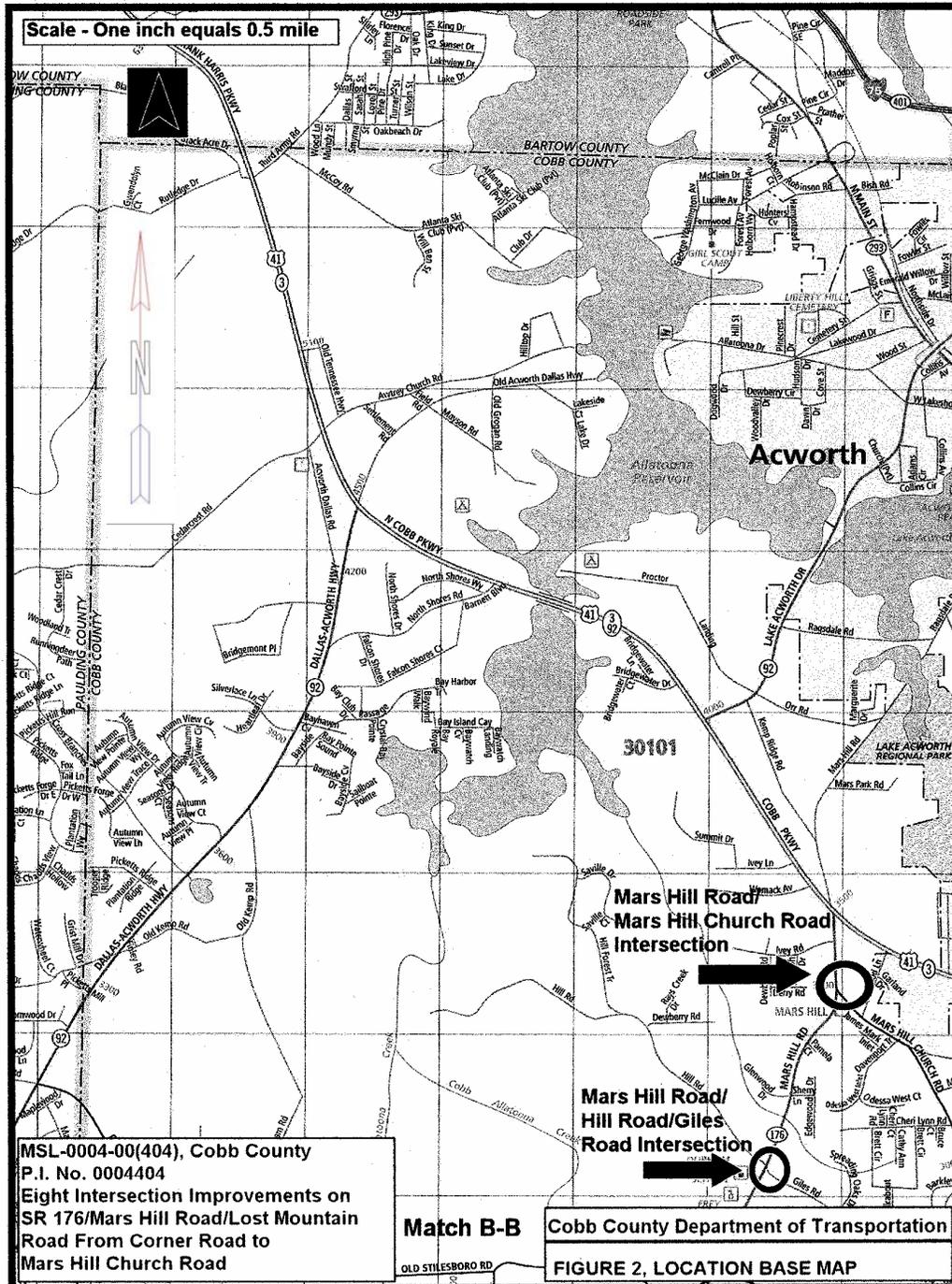
### Location Map







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 County: Cobb



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P. I. Number: 0004404  
County: Cobb

## **Need and Purpose**

### **PROJECT NUMBER MSL-0004-00(404), COBB COUNTY**

**P.I. NO. 0004404**

**ARC # CO325**

#### **NEED AND PURPOSE**

The purpose of this RRB (Reimbursement Revenue Bonds) project is to mitigate congestion by improving eight (8) intersections along the arterial of SR 176/Mars Hill Road and Lost Mountain Road and to enhance safety through operational improvements at each intersection. The proposed improvements would include alignment changes, adding turn lanes, lengthening existing turn lanes, adding traffic signals, upgrading existing traffic signals and coordination of traffic signals.

In the spring of 2002, the Boards of Commissioners in Clayton, Coweta, Douglas, Henry, Cobb, DeKalb, Fulton, Gwinnett, Paulding and Rockdale counties all voted to participate in the Georgia Regional Transportation Authority (GRTA) Regional Express Bus System and Arterial Road Program. In exchange for a one-time payment toward the costs of the service, GRTA will provide express bus service to each of these counties. Additionally, the counties have identified arterial road projects with a value approximately ten times that of the operating costs payment. Using bonds from the State Road and Tollway Authority (SRTA), GRTA will work with these counties, the Atlanta Regional Commission (ARC) and the Georgia Department of Transportation (GDOT) to build the projects. Cobb has identified the following eight (8) intersection improvements along SR 176/Mars Hill Road and Lost Mountain Road as one of these arterial road projects: SR 176/Lost Mountain Road/Corner Road, SR 176/Mars Hill Road/Nichols Road, SR 176/Mars Hill Road/ Due West Road, SR 176/Mars Hill Road/Hadaway Road, SR 176/Mars Hill Road/Burnt Hickory Road, SR 176/Mars Hill Road/Old Stilesboro Road/County Line Road, SR 176/Mars Hill Road/Hill Road/Giles Road, and SR 176/Mars Hill Road/Mars Hill Church Road.

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Destinations for mostly residents along the SR 176/Mars Hill Road and Lost Mountain Road project corridor include US 41/SR 3 to the north and SR 120/Dallas Highway to the south (Figure 1, Project Location Map, and Figure 2, Location Base Map). The proposed improvements would provide operational and safety enhancements to each intersection to allow more free flowing traffic movements.

Ensuring more free flowing traffic and vehicle safety along this project corridor and in particular at each intersection is essential due to the traffic volumes. Existing 2004 traffic volumes and future 2027 traffic volumes for each respective proposed intersection improvement are presented below in Table 1, Existing and Future Traffic Volumes for Eight Intersections along SR 176/Mars Hill Road/Lost Mountain Road from Corner Road to Mars Hill Church Road. The increase in traffic volumes at each respective intersection in combination with inadequate turning movements has the potential to result in an increase in accidents and/or injuries at each intersection.

<b>TABLE 1</b>				
<b>Existing and Future Traffic Volumes for Eight Intersections along</b>			<b>SR 176/Mars Hill</b>	
<b>Road/Lost Mountain Road from Corner Road to Mars Hill Church Road</b>				
<b>Intersection</b>	<b>SR 176/Mars Hill Road/Lost Mountain Road (VPD)</b>		<b>Respective Side Road (VPD)</b>	
	Existing (2004)	Future (2027)	Existing (2004)	Future (2027)
SR 176/Lost Mountain Road/Corner Road	13710		7045	
		27095		13921
SR 176/Mars Hill Road/Nichols Road	10697		1829	
		21144		3614
SR 176/Mars Hill Road/Due West Road	9764		10346	
		19300		20450
SR 176/Mars Hill Road/Hadaway Road	8268		3553	
		18342		7024
SR 176/Mars Hill Road/Burnt Hickory Road	19671		5421	
		38882		10714
SR 176/Mars Hill Road/Old Stilesboro Road/County Line Road	19592		3963	
		38724		7834
SR 176/Mars Hill Road/Hill Road/Giles Road	16177		1080	
		32004		1874
SR 176/Mars Hill Road/Mars Hill Church Road	17417		3637	
		34425		7188

At each respective intersection, SR 176/Mars Hill Road and Lost Mountain Road is one 12-foot lane in each direction with the exception of the following two locations. At the intersection of SR 176/Mars Hill Road/Burnt Hickory Road there is an existing 12-foot right turn lane from northbound SR 176/Mars Hill Road onto Burnt Hickory Road. At the intersection of SR 176/Lost Mountain Road/Corner Road, there is an existing 12-foot right turn lane from southbound SR 176/Lost Mountain Road onto Corner Road. Also at each respective intersection with SR 176/Mars Hill Road and Lost Mountain Road, the cross roads are one 12-foot lane in each direction with the exception of the following two locations. At the intersection of SR 176/Mars Hill Road/Old Stilesboro Road/County Line Road, there is an existing 12-foot right turn lane from westbound Old Stilesboro Road onto SR 176/Mars Hill Road. At the intersection of SR 176/Lost Mountain Road/Corner Road, there is an existing 12-foot right turn lane from eastbound Corner Road to SR 176/Lost Mountain Road. The limited number of turn lanes and length of turn lanes, lack of traffic signals, lack of coordination between traffic signals and substandard geometric design (horizontal and vertical curvature) have contributed to the congestion and degraded operation of each of these eight (8) respective intersections.

A three-year history of accidents at each of the eight (8) respective intersections is shown in Table 2, Accident History for Eight Intersections along SR 176/Mars Hill Road/Lost Mountain Road from Corner Road to Mars Hill Church Road. This table provides the number of total accidents per intersection, per type and per year between 2000 and 2003.

Accident Table 2

Table 2 Accident History for Eight Intersections along SR 176/Mars Hill Road/ Lost Mountain Road from Corner Road to Mars Hill Church Road													
Year	Lost Mountain Road @ Corner Road					Total	Mars Hill Road @ Burnt Hickory Road					Total	
	Angle	Sideswipe	Rear End	Fixed Object	Other		Angle	Sideswipe	Rear End	Fixed Object	Other		
2000	0	0	3	0	0	3	1	0	0	0	0	1	
2001	8	1	6	2	0	17	2001	2	10	1	1	15	
2002	8	1	2	0	1	12	2002	3	8	0	0	12	
2003	2	0	3	0	0	5	2003	2	11	1	0	16	
<b>Total</b>	<b>18</b>	<b>2</b>	<b>14</b>	<b>2</b>	<b>1</b>	<b>37</b>	<b>Total</b>	<b>7</b>	<b>29</b>	<b>2</b>	<b>1</b>	<b>44</b>	
Mars Hill Road @ Old Stilesboro Road/County Line Road													
Year	Type of Accident					Total	Type of Accident					Total	
2000	Rear End	Fixed Object	Total	Angle	Sideswipe	Rear End	Other	Total	Angle	Sideswipe	Rear End	Other	Total
2000	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	3	0	3	1	0	0	0	0	1	0	0	0	1
2002	4	1	5	2	2	0	0	3	2	2	0	3	7
2003	2	1	3	0	1	2	0	3	0	1	2	0	3
<b>Total</b>	<b>9</b>	<b>2</b>	<b>11</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>11</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>11</b>
Mars Hill Road @ Hill Road/Giles Road													
Year	Type of Accident					Total	Type of Accident					Total	
2000	Angle	Sideswipe	Rear End	Fixed Object	Other	Total	Angle	Sideswipe	Rear End	Fixed Object	Other	Total	
2000	0	0	1	0	0	1	0	0	0	0	0	0	
2001	2	0	4	0	0	6	2001	0	2	0	0	2	
2002	2	1	6	1	1	11	2002	2	1	0	0	3	
2003	3	0	5	1	0	9	2003	0	3	0	1	4	
<b>Total</b>	<b>7</b>	<b>1</b>	<b>16</b>	<b>2</b>	<b>1</b>	<b>27</b>	<b>Total</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>1</b>	<b>9</b>	
Mars Hill Road @ Hadaway Road													
Year	Type of Accident					Total	Type of Accident					Total	
2000	Angle	Rear End	Fixed Object	Total	Angle	Rear End	Fixed Object	Total	Angle	Rear End	Fixed Object	Total	
2000	0	0	0	0	0	0	0	0	0	0	0	0	
2001	15	2	1	18	2001	3	6	3	3	0	0	12	
2002	5	0	0	5	2002	3	1	0	0	0	0	4	
2003	2	1	0	4	2003	3	2	0	1	1	1	6	
<b>Total</b>	<b>23</b>	<b>3</b>	<b>1</b>	<b>27</b>	<b>Total</b>	<b>9</b>	<b>9</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>23</b>	

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Angle and rear end accident types account for the majority of accidents that have occurred over the past three years at each respective intersection. Providing individual geometric and operational improvements to each of these respective intersections will contribute to the overall improved flow of traffic, operation and safety along the entire corridor of SR 176/Mars Hill Road/Lost Mountain Road between Corner Road and Mars Hill Church Road and at each individual intersection.

The termini are logical for each respective intersection in that SR 176/Mars Hill Road and Lost Mountain Road and all intersecting cross roads will remain one 12-foot lane in each direction with the exception of added turn lanes to assist in the respective improvements to the operation of each intersection. Numerous residences are served by SR 176/Mars Hill Road and Lost Mountain Road being a north south arterial through street that connects to two (2) major east west arterials in the immediate area; SR 120/Dallas Highway to the south and US 41/SR 3 to the north. In the future, residents will be able to access SR 176/Mars Hill Road and Lost Mountain Road from each of these eight (8) respective intersections quicker because of these operational improvements.

**Description of the proposed project:** To enhance safety through operational improvements at eight intersections along SR 176/Lost Mountain Road/Mars Hill Road from just south of SR 120 to US 41 in Cobb county Georgia.

**These intersections are:**

1. SR 176/Lost Mountain Road @ Corner Road- existing signalized “T” intersection.
2. SR 176/Mars Hill Road @ Nichols Road –existing stop control on Nichols Road-“T” intersection.
3. SR 176/Mars Hill Road @ Due West Road-existing signalized four way intersection.
4. SR 176/Mars Hill Road @ Hadaway Road-existing signalized four way intersection.
5. SR 176/Mars Hill Road @ Burnt Hickory Road-existing signalized four way intersection.
6. SR 176/Mars Hill Road @ Old Stilesboro Road-County Line Road-existing stop control on side streets-four way intersection.
7. SR 176/Mars Hill Road @ Giles Road- Hill Road-existing stop control on side streets-four way intersection.
8. SR 176/Mars Hill Road @ Mars Hill Church Road – existing stop control on side street-“T” intersection.

**Proposed operational improvements includes the following:**

1. 12 ft. wide through travel lane on all approaches of the intersections
1. 12 ft. wide separate left turn lane on all approaches of the intersections.
2. 12. Ft. wide separate right turn lane on all approaches of the intersections
3. Minimum 540 ft. long turn bay will be provided for 45 mph posted speed roadway and 430 ft. long turn bay will provided for all other roadways.
4. When provided, rural shoulder for 45 mph posted speed limit roadway includes: 12 ft. wide graded shoulder , 12 ft. wide front slope @ 4:1 , 4 ft. flat bottom ditch and back slope @ 2:1
5. When provided, rural shoulder for 40 mph or less posted speed limit roadway includes: 10 ft. wide graded shoulder , 12 ft. wide front slope @ 4:1 , 2 ft. flat bottom ditch and back slope @ 2:1
6. When provided, urban shoulder for all posted speed limit roadway includes: 16 ft. wide shoulder to accommodate 30” curb and gutter and ADA compliant 5 ft .wide concrete sidewalk.  
Urban shoulders are proposed at some location to minimize Right-of-Way impact and to provide continuity for pedestrian movements.
7. All existing Traffic Signals will be upgraded and New Traffic Signal will be installed at SR 176/Mars Hill Road @ Old Stilesboro Road-County Line Road and SR 176/Mars Hill Road @ Mars Hill Church Road
- 8 . Due to proximity of Due West Road and Hadaway Road intersections, SR 176/ Mars Hill Road will be widened to provide 3- 12 ft. lanes from Due West Road to Hadaway Road
9. Due to proximity of Old Stilesboro Road-County Line Road and Giles Road-Hill Road intersections, SR 176/ Mars Hill Road will be widened to provide 3- 12 ft. lanes from Old Stilesboro Road-County Line Road to Giles Road-Hill Road.

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The above-mentioned improvements will enhance the safety at intersections and provide efficient traffic operation for an average of 15 years.

**Is the project located in a Non-attainment area? YES.....**

ARC’s conforming plan’s model description for TIP No. CO-325 includes the following: Roadway operations for Lost Mountain Road/Mars Hill Road – SR 176 Intersection Improvements from Corner, Hadaway, Stilesboro, Mars Hill Church.

The proposed project concept is the same as ARC’s in that roadway operational improvements are being made to eight intersections along Mars Hill Road/SR 176 from Corner Road to Mars Hill Church Road. These roadway operational improvements include adding turn lanes, correcting horizontal and vertical alignments, providing standard shoulder widths, and upgrading and adding traffic signals.

**These intersections are:**

1. SR 176/Lost Mountain Road @ Corner Road- existing signalized “T” intersection.
2. SR 176/Mars Hill Road @ Nichols Road –existing stop control on Nichols Road-“T” intersection.
3. SR 176/Mars Hill Road @ Due West Road-existing signalized four way intersection.
4. SR 176/Mars Hill Road @ Hadaway Road-existing signalized four way intersection.
5. SR 176/Mars Hill Road @ Burnt Hickory Road-existing signalized four way intersection.
6. SR 176/Mars Hill Road @ Old Stilesboro Road-County Line Road-existing stop control on side streets-four way intersection.
7. SR 176/Mars Hill Road @ Giles Road- Hill Road-existing stop control on side streets-four way intersection.
8. SR 176/Mars Hill Road @ Mars Hill Church Road – existing stop control on sidestreet-“T” intersection.

**PDP Classification:** Major  X  Minor \_\_\_\_\_

**Federal Oversight:** Full Oversight ( ), Exempt( X ), State Funded( ), or Other ( )

**Functional Classification:** SR 176- Minor Urban Arterial \_\_\_\_\_

**U. S. Route Number(s):** N/A \_\_\_\_\_ **State Route Number(s):** 176 \_\_\_\_\_

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**Traffic (AADT):**

Current Year: (2007) See...Table... Design Year: (2027) See...Table.....

<b>TRAFFIC DATA</b>	<b>SR 176/LOST MTN.</b>	<b>CORNER ROAD</b>
<b>TRAFFIC AADT 2004</b>	13710	7045
<b>TRAFFIC AADT 2007</b>	14985	7700
<b>TRAFFIC AADT 2027</b>	27095	13921
<b>K FACTOR %</b>	9	10
<b>DIRECTIONAL DISTRIBUTION</b>	55	50
<b>TRAFFIC DHV 2027</b>	2581	1503
<b>% TRUCK</b>	2	2
<b>% 24 HR TRUCK</b>	2	2
<b>SPEED DESIGN</b>	45	35

<b>TRAFFIC DATA</b>	<b>SR 176/MARS HILL</b>	<b>NICHOLS ROAD</b>
<b>TRAFFIC AADT 2004</b>	10698	1829
<b>TRAFFIC AADT 2007</b>	11693	1999
<b>TRAFFIC AADT 2027</b>	21144	3614
<b>K FACTOR %</b>	8	14
<b>DIRECTIONAL DISTRIBUTION</b>	60	75
<b>TRAFFIC DHV 2027</b>	2053	609
<b>% TRUCK</b>	2	2
<b>% 24 HR TRUCK</b>	2	2
<b>SPEED DESIGN</b>	45	35

<b>TRAFFIC DATA</b>	<b>SR 176/MARS HILL</b>	<b>DUE WEST ROAD</b>
<b>TRAFFIC AADT 2004</b>	9764	10346
<b>TRAFFIC AADT 2007</b>	10672	11309
<b>TRAFFIC AADT 2027</b>	19300	20450
<b>K FACTOR %</b>	9	10
<b>DIRECTIONAL DISTRIBUTION</b>	50	65
<b>TRAFFIC DHV 2027</b>	1789	1831
<b>% TRUCK</b>	2	2
<b>% 24 HR TRUCK</b>	2	2
<b>SPEED DESIGN</b>	45	45/40

<b>TRAFFIC DATA</b>	<b>SR 176/MARS HILL</b>	<b>HADAWAY ROAD</b>
<b>TRAFFIC AADT 2004</b>	8268	3553
<b>TRAFFIC AADT 2007</b>	9037	3884
<b>TRAFFIC AADT 2027</b>	18342	7024
<b>K FACTOR %</b>	9	13
<b>DIRECTIONAL DISTRIBUTION</b>	50	60
<b>TRAFFIC DHV 2027</b>	1553	727
<b>% TRUCK</b>	2	2
<b>% 24 HR TRUCK</b>	2	2
<b>SPEED DESIGN</b>	45	40

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<b>TRAFFIC DATA</b>	<b>SR 176/MARS HILL</b>	<b>BURNT HICKORY ROAD</b>
<b>TRAFFIC AADT 2004</b>	19671	5421
<b>TRAFFIC AADT 2007</b>	21501	5926
<b>TRAFFIC AADT 2027</b>	38882	10714
<b>K FACTOR %</b>	8	9
<b>DIRECTIONAL DISTRIBUTION</b>	50	65
<b>TRAFFIC DHV 2027</b>	3336	1033
<b>% TRUCK</b>	2	2
<b>% 24 HR TRUCK</b>	2	2
<b>SPEED DESIGN</b>	45	35

<b>TRAFFIC DATA</b>	<b>SR 176/MARS HILL</b>	<b>OLD STILESBORO/COUNTY</b>
<b>TRAFFIC AADT 2004</b>	19592	3963
<b>TRAFFIC AADT 2007</b>	21414	4332
<b>TRAFFIC AADT 2027</b>	38724	7834
<b>K FACTOR %</b>	8	10
<b>DIRECTIONAL DISTRIBUTION</b>	55	70
<b>TRAFFIC DHV 2027</b>	2900	729
<b>% TRUCK</b>	2	2
<b>% 24 HR TRUCK</b>	2	2
<b>SPEED DESIGN</b>	45	35

<b>TRAFFIC DATA</b>	<b>SR 176/MARS HILL</b>	<b>GILES ROAD/HILL ROAD</b>
<b>TRAFFIC AADT 2004</b>	16177	1080
<b>TRAFFIC AADT 2007</b>	17709	1036
<b>TRAFFIC AADT 2027</b>	32004	1874
<b>K FACTOR %</b>	8	10
<b>DIRECTIONAL DISTRIBUTION</b>	55	55
<b>TRAFFIC DHV 2027</b>	2769	184
<b>% TRUCK</b>	2	2
<b>% 24 HR TRUCK</b>	2	2
<b>SPEED DESIGN</b>	45	35

<b>TRAFFIC DATA</b>	<b>SR 176/MARS HILL</b>	<b>MARS HILL CHURCH ROAD</b>
<b>TRAFFIC AADT 2004</b>	17417	3637
<b>TRAFFIC AADT 2007</b>	19037	3975
<b>TRAFFIC AADT 2027</b>	34425	7188
<b>K FACTOR %</b>	8	8
<b>DIRECTIONAL DISTRIBUTION</b>	55	55
<b>TRAFFIC DHV 2027</b>	2801	525
<b>% TRUCK</b>	2	2
<b>% 24 HR TRUCK</b>	2	2
<b>SPEED DESIGN</b>	45	35

**Existing design features:- See Tables A-H for existing features**

- Typical Section:-*See Tables*
- Posted speed ..... mph *See Tables* Minimum radius of curvature: - *See Tables*.....
- Maximum super-elevation rate for curve:-*See Tables*
- Maximum grade:..... % - *See Tables*
- Width of right-of-way: ..... ft.- *See Tables*
- Major structures:..... - *See Tables*
- Major interchanges or intersections along project: - **SR 120 at south end of project and US 41 at north end of project**
- Existing length of roadway segment and the beginning mile log for each county segment. For new location projects, the existing length of roadway is Zero(0) –*See Tables*

**TABLE A**

Existing Design Features	SR 176 @ Corner Rd (*) –M.P. # 6.79	Corner Road
Typical Section	2- 12 ft. +/- lane undivided and 4 ft. +/- grassed shoulder (+)	2-12 ft.+/- lane undivided and 2 ft. +/- grassed shoulder
Posted Speed	45 mph	35 mph
Minimum radius of curve ft.	3820	573
Max. SE rate for curve	4.0 %	4.0 %.
Maximum Grade	4.76 %	5.27 %
Existing Width of R.O.W.	80'	50'
Major Structures	None	None
Length of roadway-ft.	1800	800 ft.

(\*)- Signalized Intersection ,(+)- Existing SB Right Turn Lane

**TABLE B**

Existing Design Features	SR 176 @ Nichols Rd-M.P. # 8.80	Nichols Road
Typical Section	2- 12 ft. +/- lane undivided and 4 ft. +/- grassed shoulder	2-12 ft.+/- lane undivided and 2 ft. +/- grassed shoulder
Posted Speed	45 mph	30 mph
Minimum radius of curve ft.	1146	819
Max. SE Rate for curve	4.0 %.	4.0 %
Maximum Grade	4.81 %	7.76 %
Existing Width of R.O.W.	100'	50'
Major Structures	DBL 10'X8' Box Culvert-Two Loc. (X)	None
Length of roadway-ft.	1900	700

(x)- DBL 10' x 8' Concrete Box Culvert for Allatoona Creek on SR 176 just south of Nichols Road  
 DBL 10' x 8' Concrete Box Culvert for Tributary of Allatoona Creek on SR 176 just north of Nichols Road

**Table C**

Existing Design Features	SR 176 @ Due West Rd (*) – M.P. # 9.64	Due West Rd
Typical Section	2- 12 ft. +/- lane undivided and 4 ft. +/- grassed shoulder	2-12 ft.+/- lane undivided and 2 ft .+/- grassed shoulder
Posted Speed	45 mph	40/45 mph
Minimum radius of curve ft.	5730	1432
Max. SE Rate for curve	4.0 %	4.0 %
Maximum Grade	6.85 %	2.6 %
Existing Width of R.O.W.	100'	100' (west of 176) 50' (east)
Major Structures	None	None
Length of roadway-ft.	1900	2200

(\*)- Signalized Intersection

**Table D**

Existing Design Features	SR 176 @ Hadaway Rd(*)- M.P. # 10.01	Hadaway Road
Typical Section	2- 12 ft. +/- lane undivided and 4 ft. +/- grassed shoulder	2-12 ft.+/- lane undivided and 2 ft .+/- grassed shoulder
Posted Speed	45 mph	40 mph
Minimum radius of curve ft.	5730	1273
Max. SE Rate for curve	4.0 %	4.0 %
Maximum Grade	6.85 %	2.98 %
Existing Width of R.O.W.	100'	80'
Major Structures	None	None
Length of roadway-ft.	2000	1600

(\*)- Signalized Intersection

**Table E**

Existing Design Features	SR 176 @ Burnt Hickory Rd(*)- M.P. # 11.28	Burnt Hickory Road
Typical Section	2- 12 ft. +/- lane undivided and 4 ft. +/- grassed shoulder	2-12 ft.+/- lane undivided and 2 ft .+/- grassed shoulder
Posted Speed	45 mph	40 mph
Minimum radius of curve ft.	1637	1910
Max. SE Rate for curve	4.0 %	4.0 %
Maximum Grade	6.84 %	6.35 %
Existing Width of R.O.W.	100'	75' (west of 176) 80' (east)
Major Structures	None	None
Length of roadway-ft.	2500	1900

(\*)- Signalized Intersection

**Table F-1**

Existing Design Features	SR 176 @ Old Stilesboro-County Line- M.P. # 11.78	Old Stilesboro Road
Typical Section	2- 12 ft. +/- lane undivided and 4 ft. +/- grassed shoulder	2-12 ft.+/- lane undivided and 2 ft .+/- grassed shoulder
Posted Speed	45 mph	35 mph
Minimum radius of curve ft	1146	1432
Max. SE Rate for curve	4.0 %.	4.0 %
Maximum Grade	8.02 %	5.62 %
Existing Width of R.O.W.	90-100	50
Major Structures	Single 6' X6'. Box Culvert- (x)	None
Length of roadway-ft.	4200	800

(X)- 6'x6' Box Culvert over Tributary of Allatoona Creek on SR 176 between Old Stilesboro Rd-County Line and Giles Road-Hill road

**Table F-2**

Existing Design Features	SR 176 @ Old Stilesboro–County Line -M.P. # 11.78	Countyline Road
Typical Section	2- 12 ft. +/- lane undivided and 4 ft. +/- grassed shoulder	2-12 ft.+/- lane undivided and 2 ft .+/- grassed shoulder
Posted Speed	45 mph	35 mph
Minimum radius of curve ft.	1164	716
Max. SE Rate for curve	4.0 %	4.0 %
Maximum Grade	8.02 %	7.7 %
Existing Width of R.O.W.	90-100	50
Major Structures	None	None
Length of roadway-ft.	4200	2000

**Table G-1**

Existing Design Features	SR 176 @ Giles Rd.-Hill Rd.- M.P. # 13.97	Giles Road
Typical Section	2- 12 ft. +/- lane undivided and 4 ft. +/- grassed shoulder	2-12 ft.+/- lane undivided and 2 ft .+/- grassed shoulder
Posted Speed	45 mph	35 mph
Minimum radius of curve ft.	1146	5730
Max. SE Rate for curve	4.0 %	4.0 %
Maximum Grade	8.02 %	3.66 %
Existing Width of R.O.W.	80-90	40
Major Structures	None	None
Length of roadway-ft.	4200	1200

**Table G-2**

Existing Design Features	SR 176 @ Giles Rd.-Hill Rd.-M.P. # 13.97	Hill Road
Typical Section	2- 12 ft. +/- lane undivided and 4 ft. +/- grassed shoulder	2-12 ft.+/- lane undivided and 2 ft .+/- grassed shoulder
Posted Speed	45 mph	30 mph
Minimum radius of curve ft.	1146	1042
Max. SE Rate for curve	4.0 %	4.0 %
Maximum Grade	8.02 %	9.12
Existing Width of R.O.W.	80-90	50
Major Structures	None	None
Length of roadway-ft.	80-90	1200

**Table H**

Existing Design Features	SR 176 @ Mars Hill Church Rd- M.P.# 14.60	Mars Hill Church Road
Typical Section	2- 12 ft. +/- lane undivided and 4 ft. +/- grassed shoulder	2-12 ft.+/- lane undivided and 2 ft .+/- grassed shoulder
Posted Speed	45 mph	35 mph
Minimum radius of curve ft.	739	None
Max. SE Rate for curve	4.0 %	4.0 %
Maximum Grade	2.64 %	3.34 %
Existing Width of R.O.W.	80'	50'
Major Structures	None	None
Length of roadway-ft.	1300	800

**Proposed Design Features: See Tables I-P for proposed features.**

- Proposed typical section(s): -*See Tables*
- Proposed Design Speed Mainline : - *See Tables*
- Proposed Maximum grade Mainline\_\_\_%- *See Tables* Maximum grade allowabl - *See Tables*
- Proposed Maximum grade Side Street %- *See Tables* Maximum grade allowable\_ % *See Tables*
- Proposed Maximum grade driveway 15 %
- Proposed Minimum radius of curve- *See Tables* Minimum radius allowable- *See Tables*
- Proposed Maximum super-elevation rate for curve:\_\_\_See **Tables**

**Table I**

<b>Proposed Design Features</b>	<b>SR 176 @ Corner Rd</b>	<b>Corner Road</b>
<b>Proposed Typical Section</b>	1-12 ft. NB & SB TH. Lanes (*) 1-12 ft. NB LT. Lane 1-12 ft. SB RT Lane	1-12 ft. WB TH. Lane (*) 1-12 ft. EB LT. Lane 1-12 ft. EB RT. Lane
<b>Proposed Design Speed</b>	45 mph	35 mph
<b>Proposed Max. Grade</b>	4.76 %	5.27 %
<b>Max. Allowable Grade</b>	7 %	10 %
<b>Prop. Min. radius for Curve ft.</b>	3819	578
<b>Minimum radius allowable</b>	730'	420'
<b>Prop. Max. SE rate for curve</b>	4 %	4 %

(\*)- 12 ft . Rural Shoulder on west side of SR 176/Lost Mountain Road south of Corner Road , remainder of roadway provides for 16 ft . Urban shoulder which include 30" Curb & Gutter and 5' Sidewalk.

**Table J**

<b>Proposed Design Features</b>	<b>SR 176 @ Nichols Rd</b>	<b>Nichols Road</b>
<b>Proposed Typical Section</b>	1-12 ft. NB & SB TH. Lanes (*) 1-12 ft. NB LT. Lane 1-12 ft. SB RT Lane	1-12 ft. WB TH. Lane (*) 1-12 ft. EB LT. Lane 1-12 ft. EB RT. Lane
<b>Proposed Design Speed</b>	45 mph	35 mph
<b>Proposed Max. Grade</b>	4.81 %	5.81 %
<b>Max. Allowable Grade</b>	7 %	10 %
<b>Prop. Min. radius for Curve ft.</b>	1146	819
<b>Minimum radius allowable</b>	730'	420'
<b>Prop. Max. SE rate for curve</b>	4 %	.4 %.

(X)- 16 ft. Urban Shoulder on East side of SR 176/Mars Hill Road which includes 30" Curb and Gutter and 5' Sidewalk. 12 ft. Rural Shoulder on West side of SR 176/Mars Hill Road and 10 ft. Rural Shoulder on Nichlos Road.

**Table K**

<b>Proposed Design Features</b>	<b>SR 176 @ Due West Rd</b>	<b>Due West Road (*)</b>
<b>Proposed Typical Section</b>	1-12 ft. NB & SB TH. Lanes (*) 1-12 ft. NB & SBLT. Lane 1-12 ft. NB & SB RT Lane	1-12 ft. EB & WB TH. Lane (*) 1-12 ft. EB & WB LT. Lane 1-12 ft. EB & WB RT. Lane
<b>Proposed Design Speed</b>	45 mph	40/45 mph
<b>Proposed Max. Grade</b>	6.85 %	2.60 %
<b>Max. Allowable Grade</b>	7 %	10 % & /7 % (x)
<b>Prop. Min. radius for Curve ft.</b>	5730	1432/1527 (x)
<b>Minimum radius allowable</b>	730'	730' and 565' (x)
<b>Prop. Max. SE rate for curve</b>	4 %	4 %

(X)- Due West Road Posted Speed Limit : 40 mph west of SR 176 and 45 mph east of SR 176

(\*)- Due to proximity of intersections , 3 –12 ft. lanes on SR 176 from Due West Road to Hadaway.  
 16 ft. Urban Shoulder on east side of SR 176 from Due West Road to Hadaway and on Due West Road from Holand Road to the end of project. (East End), which includes 30” Curb & Gutter and 5’ Sidewalk.  
 12 ft. Rural Shoulder on west side of SR 176/Mars Hill Road and 10 ft. Rural Shoulder on remainder of Due West Road.

**Table L**

<b>Proposed Design Features</b>	<b>SR 176 @ Hadaway Rd</b>	<b>Hadaway Road</b>
<b>Proposed Typical Section</b>	1-12 ft. NB & SB TH. Lanes (*) 1-12 ft. NB & SBLT. Lane 1-12 ft. NB & SB RT Lane	1-12 ft. EB & WB TH. Lane (*) 1-12 ft. EB & WB LT. Lane 1-12 ft. EB & WB RT. Lane
<b>Proposed Design Speed</b>	45 mph	40 mph
<b>Proposed Max. Grade</b>	6.85 %	2.97 %
<b>Max. Allowable Grade</b>	7 %	10 %
<b>Prop. Min. radius for Curve ft.</b>	5730	1273
<b>Minimum radius allowable</b>	730'	565'
<b>Prop. Max. SE rate for curve</b>	4 %	4 %

(\*)- Due to the proximity of the intersections, 3 –12 ft. lanes on SR 176 from Due West Road to Hadaway.  
 16 ft. Urban Shoulder on east side of SR 176 from Due West Road to Hadaway and on Hadaway Road from east of SR 176 to the end of project (East End), which includes 30” Curb & Gutter and 5’ Sidewalk.  
 12 ft. Rural Shoulder on west side of SR 176/Mars Hill Road and 10 ft. Rural Shoulder on remainder of Hadaway Road.

**Table M**

<b>Proposed Design Features</b>	<b>SR 176 @ Burnt Hickory Rd</b>	<b>Burnt Hickory Road</b>
<b>Proposed Typical Section</b>	1-12 ft. NB & SB TH. Lanes (*) 1-12 ft. NB & SBLT. Lane 1-12 ft. NB & SB RT Lane	1-12 ft. EB & WB TH. Lane (*) 1-12 ft. EB & WB LT. Lane 1-12 ft. EB & WB RT. Lane
<b>Proposed Design Speed</b>	45 mph	40 mph
<b>Proposed Max. Grade</b>	5.54 %	6.08 %
<b>Max. Allowable Grade</b>	7 %	10 %
<b>Prop. Min. radius for Curve ft.</b>	1637	1909
<b>Minimum radius allowable</b>	730'	565'
<b>Prop. Max. SE rate for curve</b>	4 %	4 %

(\*) 16 ft. Urban Shoulder on east side of SR 176 from Subdivision Entrance to Burnt Hickory Road and on Burnt Hickory Road on south side from SR 176 to the end of project (East End), which includes 30” Curb & Gutter and 5’ Sidewalk. 12 ft. Rural Shoulder on remainder of SR 176/Mars Hill Road and 10 ft. Rural Shoulder on remainder of Burnt Hickory Road.

**Table N-1**

<b>Proposed Design Features</b>	<b>SR 176 @ Old Stilesboro-CountyLine</b>	<b>Old Stilesboro Road</b>
<b>Proposed Typical Section</b>	1-12 ft. NB & SB TH. Lanes (*) 1-12 ft. NB & SBLT. Lane 1-12 ft. NB & SB RT Lane	1-12 ft. EB & WB TH. Lane (*) 1-12 ft. EB & WB LT. Lane 1-12 ft. EB & WB RT. Lane
<b>Proposed Design Speed</b>	45 mph	35 mph
<b>Proposed Max. Grade</b>	7.93 %	4.28 %
<b>Max. Allowable Grade</b>	7 %	10 %
<b>Prop. Min. radius for Curve ft.</b>	1146	716
<b>Minimum radius allowable</b>	730'	420'
<b>Prop. Max. SE rate for curve</b>	4 %	4 %

**Table N-2**

<b>Proposed Design Features</b>	<b>SR 176 @ Old Stilesboro-CountyLine</b>	<b>County Line Road</b>
<b>Proposed Typical Section</b>	1-12 ft. NB & SB TH. Lanes (*) 1-12 ft. NB & SBLT. Lane 1-12 ft. NB & SB RT Lane	1-12 ft. EB & WB TH. Lane (*) 1-12 ft. EB & WB LT. Lane 1-12 ft. EB & WB RT. Lane
<b>Proposed Design Speed</b>	45 mph	35 mph
<b>Proposed Max. Grade</b>	7.93 %	7.7 %
<b>Max. Allowable Grade</b>	7 %	10 %
<b>Prop. Min. radius for Curve ft.</b>	1146	1432
<b>Minimum radius allowable</b>	730'	420'
<b>Prop. Max. SE rate for curve</b>	4 %	4 %

**Table O-1**

<b>Proposed Design Features</b>	<b>SR 176 @ Giles Rd-Hill Rd.</b>	<b>Giles Road</b>
<b>Proposed Typical Section</b>	1-12 ft. NB & SB TH. Lanes (*) 1-12 ft. NB & SBLT. Lane 1-12 ft. NB & SB RT Lane	1-12 ft. EB & WB TH. Lane (*) 1-12 ft. EB & WB LT. Lane 1-12 ft. EB & WB RT. Lane
<b>Proposed Design Speed</b>	45 mph	35 mph
<b>Proposed Max. Grade</b>	7.93 %	3.12 %
<b>Max. Allowable Grade</b>	7 %	10 %
<b>Prop. Min. radius for Curve ft.</b>	1146	5729
<b>Minimum radius allowable</b>	730'	420'
<b>Prop. Max. SE rate for curve</b>	4 %	4 %

**Table O-2**

<b>Proposed Design Features</b>	<b>SR 176 @ Giles Rd-Hill Rd</b>	<b>Hill Road</b>
<b>Proposed Typical Section</b>	1-12 ft. NB & SB TH. Lanes (*) 1-12 ft. NB & SBLT. Lane 1-12 ft. NB & SB RT Lane	1-12 ft. EB & WB TH. Lane (*) 1-12 ft. EB & WB LT. Lane 1-12 ft. EB & WB RT. Lane
<b>Proposed Design Speed</b>	45 mph	35 mph
<b>Proposed Max. Grade</b>	7.93 %	3.44 %
<b>Max. Allowable Grade</b>	7 %	10 %
<b>Prop. Min. radius for Curve ft.</b>	1146	1041
<b>Minimum radius allowable</b>	730'	420'
<b>Prop. Max. SE rate for curve</b>	4 %	4 %

(\*)- Due to proximity of intersections , 3 –12 ft. lanes on SR 176 from Old Stilesboro Road/County Line Road to Giles Road/Hill Road (continued on next page)

16 ft. Urban Shoulder on SR 176/Mars Hill Road from just south of Old Stilesboro Road/County Line Road Intersection to just north of Giles Road/Hill Road intersection. Further 16 ft. urban shoulder on section of Old Stilesboro Road, County Line Road, Giles Road and Hill Road to minimize impacts. 16 ft. Urban Shoulder includes 30" Curb & Gutter and 5' Sidewalk.

12 ft. Rural Shoulder on remainde of SR 176/Mars Hill Road and 10 ft. Rural Shouder on remiader of Old Stilesboro Road, County Line Road, Giles Road and Hill Road.

**Table P**

<b>Proposed Design Features</b>	<b>SR 176 @ Mars Hill Church Rd</b>	<b>Mars Hill Church Road</b>
<b>Proposed Typical Section</b>	1-12 ft. NB & SB TH. Lanes (*) 1-12 ft. SB LT. Lane 1-12 ft. NB RT Lane	1-12 ft.EB TH. Lane (*) 1-12 ft. WB LT. Lane 1-12 ft. WB RT. Lane
<b>Proposed Design Speed</b>	45 mph	35 mph
<b>Proposed Max. Grade</b>	2.64 %	1.40 %
<b>Max. Allowable Grade</b>	7 %	10 %
<b>Prop. Min. radius for Curve ft.</b>	739	None
<b>Minimum radius allowable</b>	730'	420'
<b>Minimum radius allowable</b>	4 %	4 %

(\*)12 ft. Rural Shoulder SR 176/Mars Hill Road and 10 ft. Rural Shouder on Mars Hill Church Road.

- Proposed Right-of-Way
  - Width: Varies from 92 ft to 120 ft./SR 176-See Table

<b>R/W and Parcel</b>	<b>SR 176 @ Corner Rd</b>	<b>Corner Road</b>
<b>Maximum Req'd R/W width-ft.</b>	102	72
<b>#'s of Parcel</b>	22	3

<b>R/W and Parcel</b>	<b>SR 176 @ Nichols Rd</b>	<b>Nichols Road</b>
<b>Maximum Req'd R/W width-ft.</b>	120	96
<b>#'s of Parcel</b>	8	5

<b>R/W and Parcel</b>	<b>SR 176 @ Due West Rd/Hadaway Rd.</b>	<b>Due West Road</b>
<b>Maximum Req'd R/W width-ft.</b>	116	100
<b>#'s of Parcel</b>	24	17

<b>R/W and Parcel</b>	<b>SR 176 @ Due West Rd/Hadaway Rd.</b>	<b>Hadaway Road</b>
<b>Maximum Req'd R/W width-ft.</b>	116(same as Due West Road)	108
<b>#'s of Parcel</b>	24( same as Due west Road)	8

<b>R/W and Parcel</b>	<b>SR 176 @ Burnt Hickory Rd</b>	<b>Burnt Hickory Road</b>
<b>Maximum Req'd R/W width-ft.</b>	116	130
<b>#'s of Parcel</b>	21	15

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R/W and Parcel	SR 176 @ Old Stilesboro-County Line	Old Stilesboro-County Line
Maximum Req'd R/W width-ft.	120	108/88
#'s of Parcel	17	15

R/W and Parcel	SR 176 @ Giles Rd/Hill rd	Giles Rd./Hill Rd.
Maximum Req'd R/W width-ft.	120(same as County Line/Old Stilesboro)	108
#'s of Parcel	17(same as County Line/Old Stilesboro)	13

R/W and Parcel	SR 176 @ Mars Hill Church Rd	Mars Hill Church Road
Maximum Req'd R/W width-ft.	116	96
#'s of Parcel	13	4

**Total estimated 187 parcels**

- Easements: Temporary ( ), Permanent (X), Utility ( ), Other ( ).
- Type of access control: Full ( ), Partial ( ), By Permit (X), Other ( ).
- Number of parcels: 187                      Number of displacements:
  - Business: None
  - Residences: None
  - Mobile homes: N/A
  - Other: N/A
- Structures:
  - Bridge Culvert:
    1. DBL 10'x 8' Concrete Box Culvert on SR 176/Mars Hill Road just south of Nichols Road over Allatoona Creek
    2. DBL 10'x 8' Concrete Box Culvert on SR 176/Mars Hill Road just north of Nichols Road over Tributary to Allatoona Creek
  - Retaining walls (*Describe alternates*)
- Major intersections and interchange-SR 120 @ south end and SR 41 @ north end of project.
- Traffic control during construction:

**Stage Construction and Detour Plans:**

**SR 176/Lost Mountain Road @ Corner Road:**

1. Stage Construction will be required.
2. Existing Traffic Operation will be maintained

**SR 176/Mars Hill Road @ Nichols Road:**

1. Stage Construction will be required on SR 176/Mars Hill Road.
2. Existing Traffic Operation will be maintained on SR 176/Mars Hill Road
3. Nichols Road will be closed to Through traffic during construction
3. Through traffic will be detoured using SR 120/ Holland Road and Due West Road.

**SR 176/Mars Hill Road @ Due West Road:**

1. Stage Construction will be required on Due West Road.
2. Existing Traffic Operation will be maintained on Due West Road
3. SR 176/Mars Hill Road will be closed to Through traffic between Due West Road and Hadaway Road during construction
4. Through traffic will be detoured using Due West Road and Hadaway Road.

**SR 176/Mars Hill Road @ Hadaway Road:**

1. Stage Construction will be required on Hadaway Road.
2. Existing Traffic Operation will be maintained on Hadaway Road
3. SR 176/Mars Hill Road will be closed to Through traffic between Due West Road and Hadaway Road during construction
4. Through traffic will be detoured using Due West Road and Hadaway Road.

**SR 176/Mars Hill Road @ Burnt Hickory Road:**

1. Stage Construction will be required on SR 176/Mars Hill Road
2. Existing Traffic Operation will be maintained on SR 176/Mars Hill Road
3. Burnt Hickory Road will be closed to Through traffic between SR 176/Mars Hill Road and Hadaway Road during construction
4. Through traffic will be detoured using Hadaway Road.

**SR 176/Mars Hill Road @ Old Stilesboro Road-County Line Road:**

1. Stage Construction will be required on SR 176/Mars Hill Road and County Line Road
2. Existing Traffic Operation will be maintained on SR 176/Mars Hill Road and County Line Road
3. Stilesboro Road will be closed to Through traffic between SR 176/Mars Hill Road and Giles Road during construction
4. Through traffic will be detoured using Giles Road.

**SR 176/Mars Hill Road @ Giles Road-Hill Road:**

1. Stage Construction will be required on SR 176/Mars Hill Road, Giles Road and Hill Road
2. Existing Traffic Operation will be maintained on SR 176/Mars Hill Road, Giles Road and Hill Road.

**SR 176/Mars Hill Road @ Mars Hill Church Road:**

1. Stage Construction will be required.
2. Existing Traffic Operation will be maintained

- Design Exceptions to controlling criteria anticipated:

	<u>UNDETERMINED</u>	<u>YES</u>	<u>NO</u>
HORIZONTAL ALIGNMENT:	( )	(X)	( )
ROADWAY WIDTH:	( )	( )	(X)
SHOULDER WIDTH:	( )	( )	(X)
VERTICAL GRADES:	( )	(X)	( )
CROSS SLOPES:	( )	( )	(X)
STOPPING SIGHT DISTANCE:	( )	(X)	( )
SUPERELEVATION RATES:	( )	( )	(X)
HORIZONTAL CLEARANCE:	( )	( )	(X)
SPEED DESIGN:	( )	( )	(X)
VERTICAL CLEARANCE:	( )	( )	(X)
BRIDGE WIDTH:	( )	( )	(X)
BRIDGE STRUCTURAL CAPACITY:	( )	( )	(X)

1. Vertical Grade- Existing 7.93 % Vertical Grade on SR 176/Mars Hill Road north of Giles Road/Hill Road Inersection.
2. Stopping Distance at SR 176/ Mars Hill Road and Giles Road/Hill Road Intersection.

- Design Variances

1. Skew Angle –The existing skew angle of SR 176/Mars Hill Road @ Due West Road is 42.37 degrees, which is less than 60 degrees.

- Environmental concerns: Section 404 Permit anticipated

- Level of environmental analysis:

- Are Time Savings Procedures appropriate? Yes ( ), No (X),
- Categorical exclusion ( X ),
- Environmental Assessment/Finding of No Significant Impact (FONSI) ( ), or
- Environmental Impact Statement (EIS) ( ).

- Utility involvement's:

Power: Cobb EMC ,Georgia Power, Georgia Transmission Corporation,  
 Municipal Electric Authority of Georgia

Gas: Atlanta Gas Light,Austell Gas System

Telephone: Bell South Communications, Qwest

Cable: Comcast

Water: Cobb County Water System, Cobb County Marietta Water System

Sanitary: Cobb County

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County: Cobb

### **Project responsibilities:**

- Design: Cobb County Department of Transportation
- Right-of-Way Acquisition: Cobb County Department of Transportation
- Relocation of Utilities: Owner of Utility Company
- Letting to contract: Georgia Department of Transportation
- Supervision of construction: Georgia Department of Transportation
- Providing material pits: Construction Contractor
- Providing detours: construction Contractor

### **Coordination**

- Initial Concept Meeting date and brief summary. Attach minutes - Scheduled for October 26, 2004
- P A R meetings, dates and results - Not Required.
- FEMA, USCG, and/or TVA- FEMA coordination will be required.
- Public involvement.-Public information open house meeting will be required for proposed detours.
- Local government comments - See minutes of meetings.
- Other projects in the area: None
- Railroads - None
- Other coordination to date – Letter of Early Coordination Request sent on Sept. 3, 2004 to the following:
  - Atlanta Regional Commission
  - Cobb County Board of Commissioners
  - U.S. Department of Housing and Urban Development
  - Federal Emergency Management Agency
  - Georgia Forestry Commission
  - National Center for Environmental Health
  - U. S. Department of Interior
  - Natural Resources Conservation Services
  - U. S. Geological Survey-Environmental Affairs Program
  - Mayor-City of Acworth
  - Mayor-City of Dallas
  - Mayor –City of Kennesaw
  - U. S. Environmental Protection Agency

### **Scheduling – Responsible Parties' Estimate**

- Time to complete the environmental process: 4 Months.
- Time to complete preliminary construction plans: 4 Months.
- Time to complete right-of-way plans: 2 Months.
- Time to complete the Section 404 Permit: 7 Months.
- Time to complete final construction plans: 6 Months.
- Time to complete to purchase right-of-way: 12 Months.
- List other major items that will affect the project schedule: Not available.

**Other alternates considered: -No Build**

**Comments:** Proposed Improvement of eight intersections along SR 176/Lost Mountain Road-Mars Hill Road will enhance safety through operational improvements. Project plans will be completed in English units.

Due to Financial Constraints, improvements on all Eight Intersections along SR 176/Lost Mountain Road Mars Hill Road are not practical. Hence, Cobb County Department of Transportation prioritized the Intersections for the much needed improvement. This will provide cost effectiveness within the established Budget.

**Priorities are:**

1) Mars Hill Road @ Burnt Hickory Road – Without improvements this intersection is projected to reach level of service F in 2018, which is the earliest in the corridor. At this intersection, Mars Hill Road has the second highest projected traffic volume in the corridor at 30,601 VPD. The projected side street volume is also second highest in the corridor at 10,495 VPD. The estimated cost for this intersection is the fourth lowest in the corridor. The only intersection having an earlier failure date and higher traffic volumes is at Due West Road which is given a lower priority for reasons noted below.

2) Mars Hill Road @ County Line Road/Old Stilesboro Road – Without improvements this intersection will reach level of service F in 2019 which is the second earliest in the corridor. This intersection also has the 3<sup>rd</sup> highest projected mainline traffic in the corridor at 27,728 VPD and the 5<sup>th</sup> highest projected side street traffic volume at 4,561 VPD. Intersections with higher traffic volumes are given lower priorities for reasons noted below.

3) Lost Mountain Road @ Corner Road – Without improvements, this intersection will reach LOS F in 2020. A new Cobb County school has been constructed near this intersection, which will increase demands for turning movements. This intersection has the 4<sup>th</sup> highest main line and side street volumes in the corridor. Interim improvements have been made to this intersection and as part of the interim project, Cobb County committed to GDOT to make full improvements to the intersection as part of the SR 176 project.

4) Mars Hill Road @ Nichols Road – This intersection has a high projected main line volume at 24,981 VPD and has a very high number of accidents. Almost all accidents at this intersection are preventable with turn lanes. This intersection was not one of the original 8 intersections and was added to substitute for an intersection done under another project. Therefore, it is given a lower priority.

5) Mars Hill Road @ Hill Road/Giles Road - This intersection was not one of the original 8 intersections and was added to substitute for an intersection done under another project. Therefore, it is given a lower priority. This intersection has relatively high main line projected traffic at 28,845 VPD. This intersection will not reach LOS of F by the design year.

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P. I. Number: 0004404  
County: Cobb

6) Mars Hill Road @ Mars Hill Church Road – This intersection has the highest main line projected traffic in the corridor. However, it is given a lower priority because a private development is proposed for this area which will realign Mars Hill Church Road and add turn lanes as proposed in the project.

7) Mars Hill Road @ Hadaway Road – This intersection has the best existing level of service and will not reach LOS F in the design year. Therefore, it is given a lower priority.

8) Mars Hill Road @ Due West Road – This intersection has a relatively high main line volume and the highest side street volume. This intersection has the earliest failure date in the corridor of 2015. However, improvements to the intersection would require a major relocation of the existing roadway or a major design exception which GDOT would not want to grant. This is due to the existing intersection angle of the two roads which is not near minimum angles required by AASHTO criteria. Relocation of the roadways would cause severe impacts to the surrounding community and would require such a large portion of the project budget that funds would not be left to improve a significant number of the remaining intersections.

**Attachments:**

1. Cost Estimates:
  - a. Construction including E&C
  - b. Right-of-Way
  - c. Utilities.TBD
2. Sketch location map
3. Typical section
4. Traffic Diagram
5. Concept Layout Sheets
6. Accident summaries
7. Capacity analysis
8. Minutes of Initial Concept and Concept meetings- Held October 26, 2004
9. Minutes of any meetings that show support or objection to the concept-N/A
10. LGPA's or PMA's,
11. Minutes of Other Meetings (4)

1-Jun-05

Proj. :SR 176 @ Eight Intersection

Sub: Concept Cost

<b>Intersection</b>	<b>Corner Road</b>	<b>Nichols Road</b>	<b>Due West Road</b>	<b>Hadaway Road</b>	<b>Burnt Hickory Road</b>	<b>Old Stilesbor/ County Line</b>	<b>Giles/Hill Road</b>	<b>Mars Hill Church Road</b>	<b>Total</b>
<b>Right of Way</b>	1,687,000.00	1,395,200.00	1,767,400.00	778,100.00	2,167,900.00	877,700.00	2,108,300.00	2,482,600.00	<b>13,264,200.00</b>
<b>Utility</b>									<b>0.00</b>
<b>construction</b>	765,415.66	836,297.45	1,114,726.67	858,444.47	1,091,741.89	1,145,398.01	943,912.61	480,438.72	<b>7,236,375.48</b>
<b>Total</b>	<b>2,452,415.66</b>	<b>2,231,497.45</b>	<b>2,882,126.67</b>	<b>1,636,544.47</b>	<b>3,259,641.89</b>	<b>2,023,098.01</b>	<b>3,052,212.61</b>	<b>2,963,038.72</b>	<b>20,500,575.48</b>

File: pi 004404 SR 176 intersection cost 06 01 05

## Estimate Report for file "INT 1 CORNER RD"

Section ROADWAY					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1.00	LS	5000.00	TRAFFIC CONTROL -	5000.0
153-1300	1.00	EA	7000.00	FIELD ENGINEERS OFFICE TP 3	7000.0
201-1500	1.00	LS	0.00	CLEARING & GRUBBING -	0.0
205-0001	0.00	CY	3.32	UNCLASS EXCAV	0.0
207-0203	52.00	CY	34.39	FOUND BKFFILL MATL, TP II	1788.28
210-0100	1.00	LS	45140.44	GRADING COMPLETE -	45140.44
310-1101	4600.00	TN	13.87	GR AGGR BASE CRS, INCL MATL	63802.0
318-3000	200.00	TN	15.68	AGGR SURF CRS	3136.0
402-1812	1890.00	TN	39.10	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	73899.0
402-3121	1840.00	TN	36.84	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	67785.6
402-3131	900.00	TN	37.20	RECYCLED ASPH CONC 9.5 MM SUPERPAVE, GP 2 ONLY, INCL	33480.0
402-3190	615.00	TN	39.32	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	24181.8
413-1000	580.00	GL	0.95	BITUM TACK COAT	551.0
441-0014	0.00	SY	23.00	DRIVEWAY CONCRETE, 4 IN TK	0.0
441-0016	0.00	SY	27.26	DRIVEWAY CONCRETE, 6 IN TK	0.0
441-0104	2160.00	SY	22.66	CONC SIDEWALK, 4 IN	48945.6
441-0301	0.00	EA	1642.20	CONC SPILLWAY, TP 1	0.0
441-0600	0.00	CY	581.79	CONC HEADWALLS	0.0
441-4020	0.00	SY	27.82	CONC VALLEY GUTTER, 6 IN	0.0
441-6222	3700.00	LF	10.95	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	40515.0
500-3101	0.00	CY	453.12	CLASS A CONCRETE	0.0
500-3201	10.00	CY	450.00	CLASS B CONCRETE, RETAINING WALL	4500.0
500-3800	5.00	CY	615.84	CLASS A CONCRETE, INCL REINF STEEL	3079.20
500-9999	50.00	CY	135.00	CLASS B CONC, BASE OR PVMT WIDENING	6750.0
511-1000	0.00	LB	0.70	BAR REINF STEEL	0.0
550-1180	1978.00	LF	28.07	STORM DRAIN PIPE, 18 IN, H 1-10	55522.46
550-1240	0.00	LF	32.96	STORM DRAIN PIPE, 24 IN, H 1-10	0.0
550-1300	0.00	LF	42.71	STORM DRAIN PIPE, 30 IN, H 1-10	0.0
550-1360	215.00	LF	50.72	STORM DRAIN PIPE, 36 IN, H 1-10	10904.8
550-1420	60.00	LF	66.56	STORM DRAIN PIPE, 42 IN, H 1-10	3993.60
550-2180	0.00	LF	23.08	SIDE DRAIN PIPE, 18 IN, H 1-10	0.0
550-3318	0.00	EA	650.69	SAFETY END SECTION 18 IN, STORM DRAIN, 4:1 SLOPE	0.0
550-3324	0.00	EA	881.86	SAFETY END SECTION 24 IN, STORM DRAIN, 4:1 SLOPE	0.0
550-3330	0.00	EA	1364.67	SAFETY END SECTION 30 IN, STORM DRAIN, 4:1 SLOPE	0.0
550-4218	1.00	EA	422.05	FLARED END SECTION 18 IN, STORM DRAIN	422.05
550-4224	0.00	EA	491.31	FLARED END SECTION 24 IN, STORM DRAIN	0.0
550-4230	0.00	EA	663.31	FLARED END SECTION 30 IN, STORM DRAIN	0.0
550-4236	1.00	EA	845.91	FLARED END SECTION 36 IN, STORM DRAIN	845.91
550-4242	0.00	EA	1007.47	FLARED END SECTION 42 IN, STORM DRAIN	0.0
573-2006	500.00	LF	11.36	UNDDR PIPE INCL DRAINAGE AGGR, 6 IN	5680.0
603-6006	0.00	SY	4.25	SAND-CEMENT BAG RIP RAP, 6 IN	0.0
634-1200	30.00	EA	84.28	RIGHT OF WAY MARKERS	2528.4
641-1200	530.00	LF	11.99	GUARDRAIL, TP W	6354.7
641-5001	2.00	EA	442.71	GUARDRAIL ANCHORAGE, TP 1	885.42
641-5012	2.00	EA	1427.91	GUARDRAIL ANCHORAGE, TP 12	2855.82
668-1100	14.00	EA	1720.77	CATCH BASIN, GP 1	24090.78
668-1110	0.00	LF	173.15	CATCH BASIN, GP 1, ADDL DEPTH	0.0
668-1200	1.00	EA	2473.18	CATCH BASIN, GP 2	2473.18
668-2100	4.00	EA	1999.18	DROP INLET, GP 1	7996.72
668-2105	0.00	EA	3358.60	DROP INLET, GP 1, SPCL DES	0.0
668-2110	0.00	LF	176.39	DROP INLET, GP 1, ADDL DEPTH	0.0
668-2200	0.00	EA	2162.13	DROP INLET, GP 2	0.0
668-4300	0.00	EA	1736.17	STORM SEWER MANHOLE, TP 1	0.0
668-4311	0.00	LF	202.33	STORM SEWER MANHOLE, TP 1, ADDL DEPTH, CL 1	0.0
668-4400	0.00	EA	2743.41	STORM SEWER MANHOLE, TP 2	0.0
<b>Section Sub Total:</b>					<b>\$554,107.76</b>

<b>Section PERMANENT EROSION CONTROL</b>					
<b>Item Number</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Price</b>	<b>Item Description</b>	<b>Cost</b>
441-0204	280.00	SY	25.74	PLAIN CONC DITCH PAVING, 4 IN	7207.2
603-2024	0.00	SY	40.97	STN DUMPED RIP RAP, TP 1, 24 IN	0.0
603-2182	24.00	SY	42.60	STN DUMPED RIP RAP, TP 3, 24 IN	1022.40
603-7000	24.00	SY	3.99	PLASTIC FILTER FABRIC	95.76
700-6910	3.00	AC	766.98	PERMANENT GRASSING	2300.94
700-7000	9.00	TN	56.75	AGRICULTURAL LIME	510.75
700-7010	15.00	GL	19.29	LIQUID LIME	289.34
700-8000	3.00	TN	226.17	FERTILIZER MIXED GRADE	678.51
700-8100	150.00	LB	1.43	FERTILIZER NITROGEN CONTENT	214.5
710-9000	0.00	SY	4.35	PERMANENT SOIL REINFORCING MAT	0.0
715-2200	600.00	SY	1.96	BITUMINOUS TREATED ROVING, WATERWAYS	1176.0
716-2000	1000.00	SY	1.11	EROSION CONTROL MATS, SLOPES	1110.0
<b>Section Sub Total:</b>					<b>\$14,605.41</b>

<b>Section TEMPORARY EROSION CONTROL</b>					
<b>Item Number</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Price</b>	<b>Item Description</b>	<b>Cost</b>
163-0232	2.00	AC	460.72	TEMPORARY GRASSING	921.44
163-0240	15.00	TN	189.34	MULCH	2840.1
163-0300	1.00	EA	1113.37	CONSTRUCTION EXIT	1113.37
163-0503	2.00	EA	461.52	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 3	923.04
163-0520	200.00	LF	12.16	CONSTRUCT AND REMOVE TEMPORARY PIPE SLOPE DRAIN	2432.0
163-0530	24.00	LF	2.37	CONSTRUCT AND REMOVE BALED STRAW EROSION CHECK	56.88
163-0550	18.00	EA	177.49	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	3194.82
165-0010	1500.00	LF	0.91	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	1365.0
165-0030	500.00	LF	1.19	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	595.0
165-0070	24.00	LF	1.23	MAINTENANCE OF BALED STRAW EROSION CHECK	29.52
165-0087	2.00	EA	160.62	MAINTENANCE OF SILT CONTROL GATE, TP 3	321.24
165-0101	1.00	EA	353.90	MAINTENANCE OF CONSTRUCTION EXIT	353.9
165-0105	18.00	EA	81.74	MAINTENANCE OF INLET SEDIMENT TRAP	1471.32
167-1000	2.00	EA	2086.78	WATER QUALITY MONITORING AND SAMPLING	4173.56
171-0010	1500.00	LF	1.76	TEMPORARY SILT FENCE, TYPE A	2640.0
171-0030	500.00	LF	3.09	TEMPORARY SILT FENCE, TYPE C	1545.0
<b>Section Sub Total:</b>					<b>\$23,976.19</b>

<b>Section SIGNING AND MARKING</b>					
<b>Item Number</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Price</b>	<b>Item Description</b>	<b>Cost</b>
636-1020	100.00	SF	13.16	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 3	1316.0
636-1031	100.00	SF	17.26	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING TP 6	1726.00
636-2070	260.00	LF	6.77	GALV STEEL POSTS, TP 7	1760.19
653-0120	10.00	EA	56.09	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	560.90
653-0130	0.00	EA	67.97	THERMOPLASTIC PVMT MARKING, ARROW, TP 3	0.0
653-1501	9600.00	LF	0.25	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	2400.0
653-1502	9600.00	LF	0.23	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	2208.0
653-1704	100.00	LF	3.17	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	317.0
653-6004	300.00	SY	2.40	THERMOPLASTIC TRAF STRIPING, WHITE	720.0
653-6006	300.00	SY	2.52	THERMOPLASTIC TRAF STRIPING, YELLOW	756.0
654-1001	300.00	EA	3.21	RAISED PVMT MARKERS TP 1	963.0
<b>Section Sub Total:</b>					<b>\$12,727.10</b>

<b>Section TRAFFIC SIGNALIZATION</b>					
<b>Item Number</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Price</b>	<b>Item Description</b>	<b>Cost</b>
639-4004	4.00	EA	3853.99	STRAIN POLE, TP IV	15415.96
647-1000	1.00	LS	75000.00	TRAFFIC SIGNAL INSTALLATION NO - 1	75000.0
<b>Section Sub Total:</b>					<b>\$90,415.96</b>

**Total Estimated Cost: \$695,832.42**

**Subtotal Construction Cost      \$695,832.42**

E&C Rate 10.0 %      \$69,583.24

Inflation Rate 0 % @ 0 Years      \$0.00

**Total Construction Cost      \$765,415.66**

Right Of Way      \$1,687,000.00

ReImb. Utilities      \$0.00

**Grand Total Project Cost      \$2,452,415.66**

## Estimate Report for file "INT 2 NICHOLS RD"

Section ROADWAY					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1.00	LS	5000.00	TRAFFIC CONTROL -	5000.0
153-1300	1.00	EA	7000.00	FIELD ENGINEERS OFFICE TP 3	7000.0
201-1500	1.00	LS	0.00	CLEARING & GRUBBING -	0.0
205-0001	0.00	CY	3.32	UNCLASS EXCAV	0.0
207-0203	160.00	CY	34.39	FOUND BKFFILL MATL, TP II	5502.4
210-0100	1.00	LS	113666.96	GRADING COMPLETE -	113666.96
310-1101	3540.00	TN	13.87	GR AGGR BASE CRS, INCL MATL	49099.79
318-3000	300.00	TN	15.68	AGGR SURF CRS	4704.0
402-1812	1990.00	TN	39.10	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	77809.0
402-3121	1540.00	TN	36.84	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	56733.60
402-3131	810.00	TN	37.20	RECYCLED ASPH CONC 9.5 MM SUPERPAVE, GP 2 ONLY, INCL	30132.00
402-3190	510.00	TN	39.32	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	20053.2
413-1000	510.00	GL	0.95	BITUM TACK COAT	484.5
441-0014	0.00	SY	23.00	DRIVEWAY CONCRETE, 4 IN TK	0.0
441-0016	0.00	SY	27.26	DRIVEWAY CONCRETE, 6 IN TK	0.0
441-0104	1060.00	SY	22.66	CONC SIDEWALK, 4 IN	24019.6
441-0301	0.00	EA	1642.20	CONC SPILLWAY, TP 1	0.0
441-0600	19.00	CY	581.79	CONC HEADWALLS	11054.00
441-4020	0.00	SY	27.82	CONC VALLEY GUTTER, 6 IN	0.0
441-6222	1890.00	LF	10.95	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	20695.5
500-3101	363.00	CY	453.12	CLASS A CONCRETE	164482.56
500-3201	10.00	CY	450.00	CLASS B CONCRETE, RETAINING WALL	4500.0
500-3800	5.00	CY	615.84	CLASS A CONCRETE, INCL REINF STEEL	3079.20
500-9999	30.00	CY	135.00	CLASS B CONC, BASE OR PVMT WIDENING	4050.0
511-1000	37775.00	LB	0.70	BAR REINF STEEL	26442.5
550-1180	700.00	LF	28.07	STORM DRAIN PIPE, 18 IN, H 1-10	19649.0
550-1240	30.00	LF	32.96	STORM DRAIN PIPE, 24 IN, H 1-10	988.80
550-1300	0.00	LF	42.71	STORM DRAIN PIPE, 30 IN, H 1-10	0.0
550-1360	0.00	LF	50.72	STORM DRAIN PIPE, 36 IN, H 1-10	0.0
550-1420	0.00	LF	66.56	STORM DRAIN PIPE, 42 IN, H 1-10	0.0
550-2180	60.00	LF	23.08	SIDE DRAIN PIPE, 18 IN, H 1-10	1384.8
550-3318	4.00	EA	650.69	SAFETY END SECTION 18 IN, STORM DRAIN, 4:1 SLOPE	2602.76
550-3324	0.00	EA	881.86	SAFETY END SECTION 24 IN, STORM DRAIN, 4:1 SLOPE	0.0
550-3330	0.00	EA	1364.67	SAFETY END SECTION 30 IN, STORM DRAIN, 4:1 SLOPE	0.0
550-4218	3.00	EA	422.05	FLARED END SECTION 18 IN, STORM DRAIN	1266.15
550-4224	1.00	EA	491.31	FLARED END SECTION 24 IN, STORM DRAIN	491.31
550-4230	2.00	EA	663.31	FLARED END SECTION 30 IN, STORM DRAIN	1326.62
550-4236	0.00	EA	845.91	FLARED END SECTION 36 IN, STORM DRAIN	0.0
550-4242	0.00	EA	1007.47	FLARED END SECTION 42 IN, STORM DRAIN	0.0
573-2006	600.00	LF	11.36	UNDDR PIPE INCL DRAINAGE AGGR, 6 IN	6816.0
603-6006	0.00	SY	4.25	SAND-CEMENT BAG RIP RAP, 6 IN	0.0
634-1200	34.00	EA	84.28	RIGHT OF WAY MARKERS	2865.52
641-1200	0.00	LF	11.99	GUARDRAIL, TP W	0.0
641-5001	0.00	EA	442.71	GUARDRAIL ANCHORAGE, TP 1	0.0
641-5012	0.00	EA	1427.91	GUARDRAIL ANCHORAGE, TP 12	0.0
668-1100	7.00	EA	1720.77	CATCH BASIN, GP 1	12045.39
668-1110	0.00	LF	173.15	CATCH BASIN, GP 1, ADDL DEPTH	0.0
668-1200	0.00	EA	2473.18	CATCH BASIN, GP 2	0.0
668-2100	1.00	EA	1999.18	DROP INLET, GP 1	1999.18
668-2105	0.00	EA	3358.60	DROP INLET, GP 1, SPCL DES	0.0
668-2110	0.00	LF	176.39	DROP INLET, GP 1, ADDL DEPTH	0.0
668-2200	0.00	EA	2162.13	DROP INLET, GP 2	0.0
668-4300	0.00	EA	1736.17	STORM SEWER MANHOLE, TP 1	0.0
668-4311	0.00	LF	202.33	STORM SEWER MANHOLE, TP 1, ADDL DEPTH, CL 1	0.0
668-4400	0.00	EA	2743.41	STORM SEWER MANHOLE, TP 2	0.0
<b>Section Sub Total:</b>					<b>\$679,944.36</b>

<b>Section PERMANENT EROSION CONTROL</b>					
<b>Item Number</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Price</b>	<b>Item Description</b>	<b>Cost</b>
441-0204	600.00	SY	25.74	PLAIN CONC DITCH PAVING, 4 IN	15443.99
603-2024	260.00	SY	40.97	STN DUMPED RIP RAP, TP 1, 24 IN	10652.19
603-2182	32.00	SY	42.60	STN DUMPED RIP RAP, TP 3, 24 IN	1363.2
603-7000	292.00	SY	3.99	PLASTIC FILTER FABRIC	1165.08
700-6910	5.00	AC	766.98	PERMANENT GRASSING	3834.9
700-7000	9.00	TN	56.75	AGRICULTURAL LIME	510.75
700-7010	25.00	GL	19.29	LIQUID LIME	482.25
700-8000	5.00	TN	226.17	FERTILIZER MIXED GRADE	1130.85
700-8100	250.00	LB	1.43	FERTILIZER NITROGEN CONTENT	357.5
710-9000	500.00	SY	4.35	PERMANENT SOIL REINFORCING MAT	2175.0
715-2200	1000.00	SY	1.96	BITUMINOUS TREATED ROVING, WATERWAYS	1960.0
716-2000	2000.00	SY	1.11	EROSION CONTROL MATS, SLOPES	2220.0
<b>Section Sub Total:</b>					<b>\$41,295.73</b>

<b>Section TEMPORARY EROSION PROTECTION</b>					
<b>Item Number</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Price</b>	<b>Item Description</b>	<b>Cost</b>
163-0232	3.00	AC	460.72	TEMPORARY GRASSING	1382.16
163-0240	24.00	TN	189.34	MULCH	4544.16
163-0300	1.00	EA	1113.37	CONSTRUCTION EXIT	1113.37
163-0503	0.00	EA	461.52	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 3	0.0
163-0520	400.00	LF	12.16	CONSTRUCT AND REMOVE TEMPORARY PIPE SLOPE DRAIN	4864.0
163-0530	0.00	LF	2.37	CONSTRUCT AND REMOVE BALED STRAW EROSION CHECK	0.0
163-0550	9.00	EA	177.49	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	1597.41
165-0010	900.00	LF	0.91	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	819.0
165-0030	1200.00	LF	1.19	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	1428.0
165-0070	0.00	LF	1.23	MAINTENANCE OF BALED STRAW EROSION CHECK	0.0
165-0087	0.00	EA	160.62	MAINTENANCE OF SILT CONTROL GATE, TP 3	0.0
165-0101	1.00	EA	353.90	MAINTENANCE OF CONSTRUCTION EXIT	353.9
165-0105	9.00	EA	81.74	MAINTENANCE OF INLET SEDIMENT TRAP	735.66
167-1000	2.00	EA	2086.78	WATER QUALITY MONITORING AND SAMPLING	4173.56
171-0010	900.00	LF	1.76	TEMPORARY SILT FENCE, TYPE A	1584.0
171-0030	1200.00	LF	3.09	TEMPORARY SILT FENCE, TYPE C	3708.0
<b>Section Sub Total:</b>					<b>\$26,303.22</b>

<b>Section SIGNING AND MARKING</b>					
<b>Item Number</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Price</b>	<b>Item Description</b>	<b>Cost</b>
636-1020	100.00	SF	13.16	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 3	1316.0
636-1031	100.00	SF	17.26	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING TP 6	1726.00
636-2070	260.00	LF	6.77	GALV STEEL POSTS, TP 7	1760.19
653-0120	10.00	EA	56.09	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	560.90
653-0130	0.00	EA	67.97	THERMOPLASTIC PVMT MARKING, ARROW, TP 3	0.0
653-1501	9600.00	LF	0.25	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	2400.0
653-1502	9600.00	LF	0.23	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	2208.0
653-1704	100.00	LF	3.17	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	317.0
653-6004	300.00	SY	2.40	THERMOPLASTIC TRAF STRIPING, WHITE	720.0
653-6006	300.00	SY	2.52	THERMOPLASTIC TRAF STRIPING, YELLOW	756.0
654-1001	300.00	EA	3.21	RAISED PVMT MARKERS TP 1	963.0
<b>Section Sub Total:</b>					<b>\$12,727.10</b>

**Total Estimated Cost: \$760,270.41****Subtotal Construction Cost      \$760,270.41**

E&amp;C Rate 10.0 %      \$76,027.04

Inflation Rate 0 % @ 0 Years      \$0.00

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**Total Construction Cost      \$836,297.45**

Right Of Way      \$1,395,200.00

ReImb. Utilities      \$0.00

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**Grand Total Project Cost      \$2,231,497.45**

## Estimate Report for file "INT 3 DUE WEST RD"

Section ROADWAY					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1.00	LS	5000.00	TRAFFIC CONTROL -	5000.0
153-1300	1.00	EA	7000.00	FIELD ENGINEERS OFFICE TP 3	7000.0
201-1500	1.00	LS	0.00	CLEARING & GRUBBING -	0.0
205-0001	0.00	CY	3.32	UNCLASS EXCAV	0.0
207-0203	14.00	CY	34.39	FOUND BKFFILL MATL, TP II	481.46
210-0100	1.00	LS	91333.36	GRADING COMPLETE -	91333.36
310-1101	8900.00	TN	13.87	GR AGGR BASE CRS, INCL MATL	123443.0
318-3000	500.00	TN	15.68	AGGR SURF CRS	7840.0
402-1812	3920.00	TN	39.10	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	153272.0
402-3121	3900.00	TN	36.84	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	143676.0
402-3131	1670.00	TN	37.20	RECYCLED ASPH CONC 9.5 MM SUPERPAVE, GP 2 ONLY, INCL	62124.00
402-3190	1300.00	TN	39.32	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	51116.0
413-1000	1130.00	GL	0.95	BITUM TACK COAT	1073.5
441-0014	0.00	SY	23.00	DRIVEWAY CONCRETE, 4 IN TK	0.0
441-0016	0.00	SY	27.26	DRIVEWAY CONCRETE, 6 IN TK	0.0
441-0104	2285.00	SY	22.66	CONC SIDEWALK, 4 IN	51778.1
441-0301	0.00	EA	1642.20	CONC SPILLWAY, TP 1	0.0
441-0600	0.00	CY	581.79	CONC HEADWALLS	0.0
441-4020	0.00	SY	27.82	CONC VALLEY GUTTER, 6 IN	0.0
441-6222	4110.00	LF	10.95	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	45004.5
500-3101	0.00	CY	453.12	CLASS A CONCRETE	0.0
500-3200	0.00	CY	285.15	CLASS B CONCRETE	0.0
500-3201	10.00	CY	307.64	CLASS B CONCRETE, RETAINING WALL	3076.39
500-3800	9.00	CY	615.84	CLASS A CONCRETE, INCL REINF STEEL	5542.56
500-9999	75.00	CY	135.00	CLASS B CONC, BASE OR PVMT WIDENING	10125.0
550-1180	1128.00	LF	28.07	STORM DRAIN PIPE, 18 IN, H 1-10	31662.96
550-1240	60.00	LF	32.96	STORM DRAIN PIPE, 24 IN, H 1-10	1977.60
550-1300	0.00	LF	42.71	STORM DRAIN PIPE, 30 IN, H 1-10	0.0
550-1360	0.00	LF	50.72	STORM DRAIN PIPE, 36 IN, H 1-10	0.0
550-1420	0.00	LF	66.56	STORM DRAIN PIPE, 42 IN, H 1-10	0.0
550-1480	75.00	LF	77.08	STORM DRAIN PIPE, 48 IN, H 1-10	5781.0
550-2180	0.00	LF	23.08	SIDE DRAIN PIPE, 18 IN, H 1-10	0.0
550-2242	72.00	LF	48.00	SIDE DRAIN PIPE, 24 IN, H 15-20	3456.0
550-2300	30.00	LF	34.04	SIDE DRAIN PIPE, 30 IN, H 1-10	1021.19
550-3318	4.00	EA	650.69	SAFETY END SECTION 18 IN, STORM DRAIN, 4:1 SLOPE	2602.76
550-3324	4.00	EA	881.86	SAFETY END SECTION 24 IN, STORM DRAIN, 4:1 SLOPE	3527.44
550-3330	2.00	EA	1364.67	SAFETY END SECTION 30 IN, STORM DRAIN, 4:1 SLOPE	2729.34
550-4218	0.00	EA	422.05	FLARED END SECTION 18 IN, STORM DRAIN	0.0
550-4224	2.00	EA	491.31	FLARED END SECTION 24 IN, STORM DRAIN	982.62
573-2006	700.00	LF	11.36	UNDDR PIPE INCL DRAINAGE AGGR, 6 IN	7952.0
603-6006	0.00	SY	4.25	SAND-CEMENT BAG RIP RAP, 6 IN	0.0
634-1200	14.00	EA	84.28	RIGHT OF WAY MARKERS	1179.92
641-1200	0.00	LF	11.99	GUARDRAIL, TP W	0.0
641-5001	0.00	EA	442.71	GUARDRAIL ANCHORAGE, TP 1	0.0
641-5012	0.00	EA	1427.91	GUARDRAIL ANCHORAGE, TP 12	0.0
668-1100	8.00	EA	1720.77	CATCH BASIN, GP 1	13766.16
668-1110	0.00	LF	173.15	CATCH BASIN, GP 1, ADDL DEPTH	0.0
668-1200	0.00	EA	2473.18	CATCH BASIN, GP 2	0.0
668-2100	0.00	EA	1999.18	DROP INLET, GP 1	0.0
668-2105	0.00	EA	3358.60	DROP INLET, GP 1, SPCL DES	0.0
668-2110	0.00	LF	176.39	DROP INLET, GP 1, ADDL DEPTH	0.0
668-2200	0.00	EA	2162.13	DROP INLET, GP 2	0.0
668-4300	1.00	EA	1736.17	STORM SEWER MANHOLE, TP 1	1736.17
668-4311	2.00	LF	202.33	STORM SEWER MANHOLE, TP 1, ADDL DEPTH, CL 1	404.66
668-4400	0.00	EA	2743.41	STORM SEWER MANHOLE, TP 2	0.0

**Section Sub Total: \$840,665.71**

<b>Section PERMANENT EROSION CONTROL</b>					
<b>Item Number</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Price</b>	<b>Item Description</b>	<b>Cost</b>
441-0204	100.00	SY	25.74	PLAIN CONC DITCH PAVING, 4 IN	2574.0
603-2024	32.00	SY	40.97	STN DUMPED RIP RAP, TP 1, 24 IN	1311.04
603-2182	0.00	SY	42.60	STN DUMPED RIP RAP, TP 3, 24 IN	0.0
603-7000	32.00	SY	3.99	PLASTIC FILTER FABRIC	127.68
700-6910	7.00	AC	766.98	PERMANENT GRASSING	5368.86
700-7000	14.00	TN	56.75	AGRICULTURAL LIME	794.5
700-7010	35.00	GL	19.29	LIQUID LIME	675.15
700-8000	7.00	TN	226.17	FERTILIZER MIXED GRADE	1583.18
700-8100	350.00	LB	1.43	FERTILIZER NITROGEN CONTENT	500.5
710-9000	100.00	SY	4.35	PERMANENT SOIL REINFORCING MAT	434.99
715-2200	100.00	SY	1.96	BITUMINOUS TREATED ROVING, WATERWAYS	196.0
716-2000	500.00	SY	1.11	EROSION CONTROL MATS, SLOPES	555.0
<b>Section Sub Total:</b>					<b>\$14,120.92</b>

<b>Section TEMPORARY EROSION CONTROL</b>					
<b>Item Number</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Price</b>	<b>Item Description</b>	<b>Cost</b>
163-0232	4.00	AC	460.72	TEMPORARY GRASSING	1842.88
163-0240	33.00	TN	189.34	MULCH	6248.22
163-0300	1.00	EA	1113.37	CONSTRUCTION EXIT	1113.37
163-0503	3.00	EA	461.52	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 3	1384.56
163-0520	100.00	LF	12.16	CONSTRUCT AND REMOVE TEMPORARY PIPE SLOPE DRAIN	1216.0
163-0530	0.00	LF	2.37	CONSTRUCT AND REMOVE BALED STRAW EROSION CHECK	0.0
163-0550	8.00	EA	177.49	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	1419.92
165-0010	1080.00	LF	0.91	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	982.80
165-0030	600.00	LF	1.19	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	714.0
165-0070	0.00	LF	1.23	MAINTENANCE OF BALED STRAW EROSION CHECK	0.0
165-0087	3.00	EA	160.62	MAINTENANCE OF SILT CONTROL GATE, TP 3	481.86
165-0101	1.00	EA	353.90	MAINTENANCE OF CONSTRUCTION EXIT	353.9
165-0105	8.00	EA	81.74	MAINTENANCE OF INLET SEDIMENT TRAP	653.92
167-1000	2.00	EA	2086.78	WATER QUALITY MONITORING AND SAMPLING	4173.56
171-0010	1080.00	LF	1.76	TEMPORARY SILT FENCE, TYPE A	1900.8
171-0030	600.00	LF	3.09	TEMPORARY SILT FENCE, TYPE C	1854.0
<b>Section Sub Total:</b>					<b>\$24,339.79</b>

<b>Section SIGNING AND MARKING</b>					
<b>Item Number</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Price</b>	<b>Item Description</b>	<b>Cost</b>
636-1020	150.00	SF	13.16	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 3	1974.0
636-1031	150.00	SF	17.26	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING TP 6	2589.00
636-2070	400.00	LF	6.77	GALV STEEL POSTS, TP 7	2708.0
653-0120	450.00	EA	56.09	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	25240.5
653-0130	0.00	EA	67.97	THERMOPLASTIC PVMT MARKING, ARROW, TP 3	0.0
653-1501	15000.00	LF	0.25	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	3750.0
653-1502	15000.00	LF	0.23	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	3450.0
653-1704	150.00	LF	3.17	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	475.5
653-6004	450.00	SY	2.40	THERMOPLASTIC TRAF STRIPING, WHITE	1080.0
653-6006	450.00	SY	2.52	THERMOPLASTIC TRAF STRIPING, YELLOW	1134.0
654-1001	450.00	EA	3.21	RAISED PVMT MARKERS TP 1	1444.5
<b>Section Sub Total:</b>					<b>\$43,845.50</b>

<b>Section TRAFFIC SIGNALIZATION</b>					
<b>Item Number</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Price</b>	<b>Item Description</b>	<b>Cost</b>
639-4004	4.00	EA	3853.99	STRAIN POLE, TP IV	15415.96
647-1000	1.00	LS	75000.00	TRAFFIC SIGNAL INSTALLATION NO - 3	75000.0
<b>Section Sub Total:</b>					<b>\$90,415.96</b>

**Total Estimated Cost: \$1,013,387.88**

**Subtotal Construction Cost      \$1,013,387.88**

E&C Rate 10.0 %      \$101,338.79

Inflation Rate 0.0 % @ 0.0 Years      \$0.00

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**Total Construction Cost      \$1,114,726.67**

Right Of Way      \$1,767,400.00

ReImb. Utilities      \$0.00

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**Grand Total Project Cost      \$2,882,126.67**

## Estimate Report for file "INT 4 HADAWAY RD"

Section ROADWAY					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1.00	LS	5000.00	TRAFFIC CONTROL -	5000.0
153-1300	1.00	EA	7000.00	FIELD ENGINEERS OFFICE TP 3	7000.0
201-1500	1.00	LS	0.00	CLEARING & GRUBBING -	0.0
205-0001	0.00	CY	3.32	UNCLASS EXCAV	0.0
207-0203	20.00	CY	34.39	FOUND BKFFILL MATL, TP II	687.8
210-0100	1.00	LS	37628.72	GRADING COMPLETE -	37628.72
310-1101	5800.00	TN	13.87	GR AGGR BASE CRS, INCL MATL	80446.0
318-3000	500.00	TN	15.68	AGGR SURF CRS	7840.0
402-1812	4040.00	TN	39.10	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	157964.0
402-3121	2600.00	TN	36.84	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	95784.00
402-3131	1310.00	TN	37.20	RECYCLED ASPH CONC 9.5 MM SUPERPAVE, GP 2 ONLY, INCL	48732.00
402-3190	860.00	TN	39.32	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	33815.2
413-1000	830.00	GL	0.95	BITUM TACK COAT	788.5
441-0014	0.00	SY	23.00	DRIVEWAY CONCRETE, 4 IN TK	0.0
441-0016	0.00	SY	27.26	DRIVEWAY CONCRETE, 6 IN TK	0.0
441-0104	1280.00	SY	22.66	CONC SIDEWALK, 4 IN	29004.8
441-0301	0.00	EA	1642.20	CONC SPILLWAY, TP 1	0.0
441-0600	0.00	CY	581.79	CONC HEADWALLS	0.0
441-4020	0.00	SY	27.82	CONC VALLEY GUTTER, 6 IN	0.0
441-6222	2300.00	LF	10.95	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	25185.0
500-3101	0.00	CY	453.12	CLASS A CONCRETE	0.0
500-3200	0.00	CY	285.15	CLASS B CONCRETE	0.0
500-3201	10.00	CY	307.64	CLASS B CONCRETE, RETAINING WALL	3076.39
500-3800	8.00	CY	615.84	CLASS A CONCRETE, INCL REINF STEEL	4926.72
500-9999	75.00	CY	135.00	CLASS B CONC, BASE OR PVMT WIDENING	10125.0
550-1180	1063.00	LF	28.07	STORM DRAIN PIPE, 18 IN, H 1-10	29838.41
550-1240	0.00	LF	32.96	STORM DRAIN PIPE, 24 IN, H 1-10	0.0
550-1300	0.00	LF	42.71	STORM DRAIN PIPE, 30 IN, H 1-10	0.0
550-1420	0.00	LF	66.56	STORM DRAIN PIPE, 42 IN, H 1-10	0.0
550-1480	36.00	LF	77.08	STORM DRAIN PIPE, 48 IN, H 1-10	2774.88
550-2180	220.00	LF	23.08	SIDE DRAIN PIPE, 18 IN, H 1-10	5077.59
550-3318	10.00	EA	650.69	SAFETY END SECTION 18 IN, STORM DRAIN, 4:1 SLOPE	6506.90
550-3324	0.00	EA	881.86	SAFETY END SECTION 24 IN, STORM DRAIN, 4:1 SLOPE	0.0
550-3330	0.00	EA	1364.67	SAFETY END SECTION 30 IN, STORM DRAIN, 4:1 SLOPE	0.0
550-4118	2.00	EA	272.29	FLARED END SECTION 18 IN, SIDE DRAIN	544.58
550-4124	0.00	EA	337.64	FLARED END SECTION 24 IN, SIDE DRAIN	0.0
550-4130	0.00	EA	543.18	FLARED END SECTION 30 IN, SIDE DRAIN	0.0
550-4136	0.00	EA	529.84	FLARED END SECTION 36 IN, SIDE DRAIN	0.0
550-4142	0.00	EA	1026.00	FLARED END SECTION 42 IN, SIDE DRAIN	0.0
573-2006	800.00	LF	11.36	UNDDR PIPE INCL DRAINAGE AGGR, 6 IN	9088.0
603-6006	0.00	SY	4.25	SAND-CEMENT BAG RIP RAP, 6 IN	0.0
634-1200	12.00	EA	84.28	RIGHT OF WAY MARKERS	1011.36
641-1200	0.00	LF	11.99	GUARDRAIL, TP W	0.0
641-5001	0.00	EA	442.71	GUARDRAIL ANCHORAGE, TP 1	0.0
641-5012	0.00	EA	1427.91	GUARDRAIL ANCHORAGE, TP 12	0.0
668-1100	9.00	EA	1720.77	CATCH BASIN, GP 1	15486.93
668-1110	0.00	LF	173.15	CATCH BASIN, GP 1, ADDL DEPTH	0.0
668-1200	0.00	EA	2473.18	CATCH BASIN, GP 2	0.0
668-2100	0.00	EA	1999.18	DROP INLET, GP 1	0.0
668-2105	0.00	EA	3358.60	DROP INLET, GP 1, SPCL DES	0.0
668-2110	0.00	LF	176.39	DROP INLET, GP 1, ADDL DEPTH	0.0
668-2200	0.00	EA	2162.13	DROP INLET, GP 2	0.0
668-4300	1.00	EA	1736.17	STORM SEWER MANHOLE, TP 1	1736.17
668-4311	0.00	LF	202.33	STORM SEWER MANHOLE, TP 1, ADDL DEPTH, CL 1	0.0
668-4400	3.00	EA	2743.41	STORM SEWER MANHOLE, TP 2	8230.23
<b>Section Sub Total:</b>					<b>\$628,299.20</b>

<b>Section PERMANENT EROSION CONTROL</b>					
<b>Item Number</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Price</b>	<b>Item Description</b>	<b>Cost</b>
441-0204	100.00	SY	25.74	PLAIN CONC DITCH PAVING, 4 IN	2574.0
603-2024	32.00	SY	40.97	STN DUMPED RIP RAP, TP 1, 24 IN	1311.04
603-2182	0.00	SY	42.60	STN DUMPED RIP RAP, TP 3, 24 IN	0.0
603-7000	32.00	SY	3.99	PLASTIC FILTER FABRIC	127.68
700-6910	6.00	AC	766.98	PERMANENT GRASSING	4601.88
700-7000	11.00	TN	56.75	AGRICULTURAL LIME	624.25
700-7010	28.00	GL	19.29	LIQUID LIME	540.12
700-8000	5.00	TN	226.17	FERTILIZER MIXED GRADE	1130.85
700-8100	300.00	LB	1.43	FERTILIZER NITROGEN CONTENT	429.0
710-9000	100.00	SY	4.35	PERMANENT SOIL REINFORCING MAT	434.99
715-2200	100.00	SY	1.96	BITUMINOUS TREATED ROVING, WATERWAYS	196.0
716-2000	500.00	SY	1.11	EROSION CONTROL MATS, SLOPES	555.0
<b>Section Sub Total:</b>					<b>\$12,524.82</b>

<b>Section TEMPORARY EROSION CONTROL</b>					
<b>Item Number</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Price</b>	<b>Item Description</b>	<b>Cost</b>
163-0232	3.00	AC	460.72	TEMPORARY GRASSING	1382.16
163-0240	27.00	TN	189.34	MULCH	5112.18
163-0300	1.00	EA	1113.37	CONSTRUCTION EXIT	1113.37
163-0503	9.00	EA	461.52	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 3	4153.68
163-0520	100.00	LF	12.16	CONSTRUCT AND REMOVE TEMPORARY PIPE SLOPE DRAIN	1216.0
163-0530	0.00	LF	2.37	CONSTRUCT AND REMOVE BALED STRAW EROSION CHECK	0.0
163-0550	10.00	EA	177.49	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	1774.9
165-0010	2100.00	LF	0.91	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	1911.0
165-0030	600.00	LF	1.19	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	714.0
165-0070	0.00	LF	1.23	MAINTENANCE OF BALED STRAW EROSION CHECK	0.0
165-0087	9.00	EA	160.62	MAINTENANCE OF SILT CONTROL GATE, TP 3	1445.58
165-0101	1.00	EA	353.90	MAINTENANCE OF CONSTRUCTION EXIT	353.9
165-0105	10.00	EA	81.74	MAINTENANCE OF INLET SEDIMENT TRAP	817.4
167-1000	2.00	EA	2086.78	WATER QUALITY MONITORING AND SAMPLING	4173.56
171-0010	2100.00	LF	1.76	TEMPORARY SILT FENCE, TYPE A	3696.0
171-0030	600.00	LF	3.09	TEMPORARY SILT FENCE, TYPE C	1854.0
<b>Section Sub Total:</b>					<b>\$29,717.73</b>

<b>Section SIGNING AND MARKING</b>					
<b>Item Number</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Price</b>	<b>Item Description</b>	<b>Cost</b>
636-1020	150.00	SF	13.16	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 3	1974.0
636-1031	150.00	SF	17.26	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING TP 6	2589.00
636-2070	400.00	LF	6.77	GALV STEEL POSTS, TP 7	2708.0
653-0120	15.00	EA	56.09	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	841.35
653-1501	15000.00	LF	0.25	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	3750.0
653-1502	15000.00	LF	0.23	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	3450.0
653-1704	150.00	LF	3.17	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	475.5
653-6004	450.00	SY	2.40	THERMOPLASTIC TRAF STRIPING, WHITE	1080.0
653-6006	450.00	SY	2.52	THERMOPLASTIC TRAF STRIPING, YELLOW	1134.0
654-1001	450.00	EA	3.21	RAISED PVMT MARKERS TP 1	1444.5
654-1003	0.00	EA	3.21	RAISED PVMT MARKERS TP 3	0.0
<b>Section Sub Total:</b>					<b>\$19,446.35</b>

**Section TRAFFIC SIGNALIZATION**

Item Number	Quantity	Units	Unit Price	Item Description	Cost
639-4004	4.00	EA	3853.99	STRAIN POLE, TP IV	15415.96
647-1000	1.00	LS	75000.00	TRAFFIC SIGNAL INSTALLATION NO - 4	75000.0
<b>Section Sub Total:</b>					<b>\$90,415.96</b>

**Total Estimated Cost: \$780,404.06****Subtotal Construction Cost      \$780,404.06**

E&amp;C Rate 10.0 %      \$78,040.41

Inflation Rate 0 % @ 0 Years      \$0.00

**Total Construction Cost      \$858,444.47**

Right Of Way      \$778,100.00

ReImb. Utilities      \$0.00

**Grand Total Project Cost      \$1,636,544.47**

## Estimate Report for file "INT 5 BURNT HICKORY"

Section ROADWAY					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1.00	LS	10000.00	TRAFFIC CONTROL -	10000.0
153-1300	1.00	EA	7000.00	FIELD ENGINEERS OFFICE TP 3	7000.0
201-1500	1.00	LS	0.00	CLEARING & GRUBBING -	0.0
205-0001	0.00	CY	3.32	UNCLASS EXCAV	0.0
207-0203	20.00	CY	34.39	FOUND BKFFILL MATL, TP II	687.8
210-0100	1.00	LS	100264.31	GRADING COMPLETE -	100264.31
310-1101	8570.00	TN	13.87	GR AGGR BASE CRS, INCL MATL	118865.9
318-3000	500.00	TN	15.68	AGGR SURF CRS	7840.0
402-1812	3000.00	TN	39.10	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	117300.0
402-3121	4025.00	TN	36.84	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	148281.0
402-3131	1500.00	TN	37.20	RECYCLED ASPH CONC 9.5 MM SUPERPAVE, GP 2 ONLY, INCL	55800.00
402-3190	1350.00	TN	39.32	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	53082.0
413-1000	1060.00	GL	0.95	BITUM TACK COAT	1007.0
441-0014	0.00	SY	23.00	DRIVEWAY CONCRETE, 4 IN TK	0.0
441-0016	0.00	SY	27.26	DRIVEWAY CONCRETE, 6 IN TK	0.0
441-0104	870.00	SY	22.66	CONC SIDEWALK, 4 IN	19714.2
441-0301	0.00	EA	1642.20	CONC SPILLWAY, TP 1	0.0
441-0600	0.00	CY	581.79	CONC HEADWALLS	0.0
441-4020	0.00	SY	27.82	CONC VALLEY GUTTER, 6 IN	0.0
441-6222	191.00	LF	10.95	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	2091.45
500-3101	0.00	CY	453.12	CLASS A CONCRETE	0.0
500-3200	3.00	CY	285.15	CLASS B CONCRETE	855.44
500-3201	120.00	CY	450.00	CLASS B CONCRETE, RETAINING WALL	54000.0
500-3800	75.00	CY	615.84	CLASS A CONCRETE, INCL REINF STEEL	46188.0
500-9999	50.00	CY	135.00	CLASS B CONC, BASE OR PVMT WIDENING	6750.0
511-1000	32.00	LB	0.70	BAR REINF STEEL	22.4
550-1180	380.00	LF	28.07	STORM DRAIN PIPE, 18 IN, H 1-10	10666.6
550-1240	0.00	LF	32.96	STORM DRAIN PIPE, 24 IN, H 1-10	0.0
550-1300	0.00	LF	42.71	STORM DRAIN PIPE, 30 IN, H 1-10	0.0
550-1360	120.00	LF	50.72	STORM DRAIN PIPE, 36 IN, H 1-10	6086.4
550-1420	70.00	LF	66.56	STORM DRAIN PIPE, 42 IN, H 1-10	4659.2
550-2180	480.00	LF	23.08	SIDE DRAIN PIPE, 18 IN, H 1-10	11078.4
550-3318	28.00	EA	650.69	SAFETY END SECTION 18 IN, STORM DRAIN, 4:1 SLOPE	18219.32
550-3330	0.00	EA	1364.67	SAFETY END SECTION 30 IN, STORM DRAIN, 4:1 SLOPE	0.0
550-4118	0.00	EA	272.29	FLARED END SECTION 18 IN, SIDE DRAIN	0.0
550-4124	0.00	EA	337.64	FLARED END SECTION 24 IN, SIDE DRAIN	0.0
550-4130	0.00	EA	543.18	FLARED END SECTION 30 IN, SIDE DRAIN	0.0
550-4136	2.00	EA	529.84	FLARED END SECTION 36 IN, SIDE DRAIN	1059.68
550-4142	2.00	EA	1026.00	FLARED END SECTION 42 IN, SIDE DRAIN	2052.0
573-2006	1000.00	LF	11.36	UNDDR PIPE INCL DRAINAGE AGGR, 6 IN	11360.0
603-6006	2.00	SY	4.25	SAND-CEMENT BAG RIP RAP, 6 IN	8.5
634-1200	34.00	EA	84.28	RIGHT OF WAY MARKERS	2865.52
641-1200	460.00	LF	11.99	GUARDRAIL, TP W	5515.40
641-5001	3.00	EA	442.71	GUARDRAIL ANCHORAGE, TP 1	1328.12
641-5012	3.00	EA	1427.91	GUARDRAIL ANCHORAGE, TP 12	4283.73
668-1100	0.00	EA	1720.77	CATCH BASIN, GP 1	0.0
668-1110	0.00	LF	173.15	CATCH BASIN, GP 1, ADDL DEPTH	0.0
668-1200	0.00	EA	2473.18	CATCH BASIN, GP 2	0.0
668-2100	0.00	EA	1999.18	DROP INLET, GP 1	0.0
668-2105	0.00	EA	3358.60	DROP INLET, GP 1, SPCL DES	0.0
668-2110	0.00	LF	176.39	DROP INLET, GP 1, ADDL DEPTH	0.0
668-2200	0.00	EA	2162.13	DROP INLET, GP 2	0.0
668-4300	0.00	EA	1736.17	STORM SEWER MANHOLE, TP 1	0.0
668-4311	0.00	LF	202.33	STORM SEWER MANHOLE, TP 1, ADDL DEPTH, CL 1	0.0
668-4400	0.00	EA	2743.41	STORM SEWER MANHOLE, TP 2	0.0

**Section Sub Total: \$828,932.39**

**Section PERMANENT EROSION CONTROL**

Item Number	Quantity	Units	Unit Price	Item Description	Cost
441-0204	100.00	SY	25.74	PLAIN CONC DITCH PAVING, 4 IN	2574.0
603-2024	32.00	SY	40.97	STN DUMPED RIP RAP, TP 1, 24 IN	1311.04
603-2182	46.00	SY	42.60	STN DUMPED RIP RAP, TP 3, 24 IN	1959.60
603-7000	78.00	SY	3.99	PLASTIC FILTER FABRIC	311.22
700-6910	7.00	AC	766.98	PERMANENT GRASSING	5368.86
700-7000	9.00	TN	56.75	AGRICULTURAL LIME	510.75
700-7010	33.00	GL	19.29	LIQUID LIME	636.56
700-8000	6.00	TN	226.17	FERTILIZER MIXED GRADE	1357.02
700-8100	350.00	LB	1.43	FERTILIZER NITROGEN CONTENT	500.5
710-9000	50.00	SY	4.35	PERMANENT SOIL REINFORCING MAT	217.49
715-2200	100.00	SY	1.96	BITUMINOUS TREATED ROVING, WATERWAYS	196.0
716-2000	1000.00	SY	1.11	EROSION CONTROL MATS, SLOPES	1110.0
<b>Section Sub Total:</b>					<b>\$16,053.06</b>

**Section TEMPORARY EROSION CONTROL**

Item Number	Quantity	Units	Unit Price	Item Description	Cost
163-0240	33.00	TN	189.34	MULCH	6248.22
163-0300	1.00	EA	1113.37	CONSTRUCTION EXIT	1113.37
163-0503	16.00	EA	461.52	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 3	7384.32
163-0520	50.00	LF	12.16	CONSTRUCT AND REMOVE TEMPORARY PIPE SLOPE DRAIN	608.0
163-0530	0.00	LF	2.37	CONSTRUCT AND REMOVE BALED STRAW EROSION CHECK	0.0
163-0550	1.00	EA	177.49	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	177.49
165-0010	3000.00	LF	0.91	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	2730.0
165-0020	0.00	LF	1.05	MAINTENANCE OF TEMPORARY SILT FENCE, TP B	0.0
165-0030	1200.00	LF	1.19	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	1428.0
165-0070	0.00	LF	1.23	MAINTENANCE OF BALED STRAW EROSION CHECK	0.0
165-0087	16.00	EA	160.62	MAINTENANCE OF SILT CONTROL GATE, TP 3	2569.92
165-0101	1.00	EA	353.90	MAINTENANCE OF CONSTRUCTION EXIT	353.9
165-0105	1.00	EA	81.74	MAINTENANCE OF INLET SEDIMENT TRAP	81.74
167-1000	2.00	EA	2086.78	WATER QUALITY MONITORING AND SAMPLING	4173.56
171-0010	3000.00	LF	1.76	TEMPORARY SILT FENCE, TYPE A	5280.0
171-0030	1200.00	LF	3.09	TEMPORARY SILT FENCE, TYPE C	3708.0
<b>Section Sub Total:</b>					<b>\$35,856.52</b>

**Section SIGNING AND MARKING**

Item Number	Quantity	Units	Unit Price	Item Description	Cost
636-1020	200.00	SF	13.16	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 3	2632.0
636-1031	200.00	SF	17.26	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING TP 6	3452.00
636-2070	520.00	LF	6.77	GALV STEEL POSTS, TP 7	3520.39
653-0120	20.00	EA	56.09	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	1121.80
653-0130	0.00	EA	67.97	THERMOPLASTIC PVMT MARKING, ARROW, TP 3	0.0
653-1501	15000.00	LF	0.25	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	3750.0
653-1502	15000.00	LF	0.23	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	3450.0
653-1704	200.00	LF	3.17	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	634.0
653-6004	250.00	SY	2.40	THERMOPLASTIC TRAF STRIPING, WHITE	600.0
653-6006	250.00	SY	2.52	THERMOPLASTIC TRAF STRIPING, YELLOW	630.0
654-1001	450.00	EA	3.21	RAISED PVMT MARKERS TP 1	1444.5
<b>Section Sub Total:</b>					<b>\$21,234.70</b>

<b>Section TRAFFIC SIGNALIZATION</b>					
<b>Item Number</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Price</b>	<b>Item Description</b>	<b>Cost</b>
639-4004	4.00	EA	3853.99	STRAIN POLE, TP IV	15415.96
647-1000	1.00	LS	75000.00	TRAFFIC SIGNAL INSTALLATION NO - 5	75000.0
<b>Section Sub Total:</b>					<b>\$90,415.96</b>

**Total Estimated Cost: \$992,492.63**

**Subtotal Construction Cost      \$992,492.63**

E&C Rate 10.0 %      \$99,249.26

Inflation Rate 0 % @ 0 Years      \$0.00

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**Total Construction Cost      \$1,091,741.89**

Right Of Way      \$2,167,900.00

ReImb. Utilities      \$0.00

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**Grand Total Project Cost      \$3,259,641.89**

## Estimate Report for file "INT 6 COUNTY LINE RD"

Section ROADWAY					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1.00	LS	10000.00	TRAFFIC CONTROL -	10000.0
153-1300	1.00	EA	7000.00	FIELD ENGINEERS OFFICE TP 3	7000.0
201-1500	1.00	LS	0.00	CLEARING & GRUBBING -	0.0
205-0001	0.00	CY	3.32	UNCLASS EXCAV	0.0
207-0203	50.00	CY	34.39	FOUND BKFFILL MATL, TP II	1719.5
210-0100	1.00	LS	146808.28	GRADING COMPLETE -	146808.28
310-1101	6510.00	TN	13.87	GR AGGR BASE CRS, INCL MATL	90293.7
318-3000	500.00	TN	15.68	AGGR SURF CRS	7840.0
402-1812	2710.00	TN	39.10	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	105961.0
402-3121	2740.00	TN	36.84	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	100941.6
402-3131	1170.00	TN	37.20	RECYCLED ASPH CONC 9.5 MM SUPERPAVE, GP 2 ONLY, INCL	43524.0
402-3190	920.00	TN	39.32	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	36174.4
413-1000	790.00	GL	0.95	BITUM TACK COAT	750.5
441-0014	0.00	SY	23.00	DRIVEWAY CONCRETE, 4 IN TK	0.0
441-0016	0.00	SY	27.26	DRIVEWAY CONCRETE, 6 IN TK	0.0
441-0104	2240.00	SY	22.66	CONC SIDEWALK, 4 IN	50758.4
441-0301	0.00	EA	1642.20	CONC SPILLWAY, TP 1	0.0
441-0600	0.00	CY	581.79	CONC HEADWALLS	0.0
441-4020	0.00	SY	27.82	CONC VALLEY GUTTER, 6 IN	0.0
441-6222	0.00	LF	10.95	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	0.0
500-3101	113.00	CY	453.12	CLASS A CONCRETE	51202.56
500-3200	17.00	CY	285.15	CLASS B CONCRETE	4847.54
500-3201	125.00	CY	307.64	CLASS B CONCRETE, RETAINING WALL	38455.0
500-3800	75.00	CY	615.84	CLASS A CONCRETE, INCL REINF STEEL	46188.0
500-9999	100.00	CY	135.00	CLASS B CONC, BASE OR PVMT WIDENING	13500.0
511-1000	14602.00	LB	0.70	BAR REINF STEEL	10221.4
550-1180	1082.00	LF	28.07	STORM DRAIN PIPE, 18 IN, H 1-10	30371.74
550-1240	150.00	LF	32.96	STORM DRAIN PIPE, 24 IN, H 1-10	4944.0
550-1300	210.00	LF	42.71	STORM DRAIN PIPE, 30 IN, H 1-10	8969.1
550-1360	100.00	LF	50.72	STORM DRAIN PIPE, 36 IN, H 1-10	5072.0
550-1420	0.00	LF	66.56	STORM DRAIN PIPE, 42 IN, H 1-10	0.0
550-1480	0.00	LF	77.08	STORM DRAIN PIPE, 48 IN, H 1-10	0.0
550-2180	90.00	LF	23.08	SIDE DRAIN PIPE, 18 IN, H 1-10	2077.2
550-3318	6.00	EA	650.69	SAFETY END SECTION 18 IN, STORM DRAIN, 4:1 SLOPE	3904.14
550-3324	0.00	EA	881.86	SAFETY END SECTION 24 IN, STORM DRAIN, 4:1 SLOPE	0.0
550-4218	1.00	EA	422.05	FLARED END SECTION 18 IN, STORM DRAIN	422.05
550-4224	0.00	EA	491.31	FLARED END SECTION 24 IN, STORM DRAIN	0.0
550-4230	0.00	EA	663.31	FLARED END SECTION 30 IN, STORM DRAIN	0.0
550-4236	0.00	EA	845.91	FLARED END SECTION 36 IN, STORM DRAIN	0.0
573-2006	0.00	LF	11.36	UNDDR PIPE INCL DRAINAGE AGGR, 6 IN	0.0
603-6006	0.00	SY	4.25	SAND-CEMENT BAG RIP RAP, 6 IN	0.0
634-1200	30.00	EA	84.28	RIGHT OF WAY MARKERS	2528.4
641-1200	415.00	LF	11.99	GUARDRAIL, TP W	4975.85
641-5001	1.00	EA	442.71	GUARDRAIL ANCHORAGE, TP 1	442.71
641-5012	1.00	EA	1427.91	GUARDRAIL ANCHORAGE, TP 12	1427.91
668-1100	13.00	EA	1720.77	CATCH BASIN, GP 1	22370.01
668-1110	4.00	LF	173.15	CATCH BASIN, GP 1, ADDL DEPTH	692.6
668-1200	0.00	EA	2473.18	CATCH BASIN, GP 2	0.0
668-2100	0.00	EA	1999.18	DROP INLET, GP 1	0.0
668-2105	0.00	EA	3358.60	DROP INLET, GP 1, SPCL DES	0.0
668-2110	0.00	LF	176.39	DROP INLET, GP 1, ADDL DEPTH	0.0
668-2200	1.00	EA	2162.13	DROP INLET, GP 2	2162.13
668-4300	0.00	EA	1736.17	STORM SEWER MANHOLE, TP 1	0.0
668-4311	0.00	LF	202.33	STORM SEWER MANHOLE, TP 1, ADDL DEPTH, CL 1	0.0
668-4400	0.00	EA	2743.41	STORM SEWER MANHOLE, TP 2	0.0

**Section Sub Total: \$856,545.73**

**Section PERMANENT EROSION CONTROL**

Item Number	Quantity	Units	Unit Price	Item Description	Cost
441-0204	500.00	SY	25.74	PLAIN CONC DITCH PAVING, 4 IN	12870.0
603-2182	150.00	SY	42.60	STN DUMPED RIP RAP, TP 3, 24 IN	6390.0
603-7000	150.00	SY	3.99	PLASTIC FILTER FABRIC	598.5
700-6910	4.00	AC	766.98	PERMANENT GRASSING	3067.92
700-7000	7.00	TN	56.75	AGRICULTURAL LIME	397.25
700-7010	18.00	GL	19.29	LIQUID LIME	347.21
700-8000	4.00	TN	226.17	FERTILIZER MIXED GRADE	904.68
700-8100	200.00	LB	1.43	FERTILIZER NITROGEN CONTENT	286.0
710-9000	250.00	SY	4.35	PERMANENT SOIL REINFORCING MAT	1087.5
715-2200	250.00	SY	1.96	BITUMINOUS TREATED ROVING, WATERWAYS	490.0
716-2000	5000.00	SY	1.11	EROSION CONTROL MATS, SLOPES	5550.00
<b>Section Sub Total:</b>					<b>\$31,989.07</b>

**Section TEMPORARY EROSION CONTROL**

Item Number	Quantity	Units	Unit Price	Item Description	Cost
163-0232	2.00	AC	460.72	TEMPORARY GRASSING	921.44
163-0240	18.00	TN	189.34	MULCH	3408.12
163-0300	1.00	EA	1113.37	CONSTRUCTION EXIT	1113.37
163-0503	7.00	EA	461.52	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 3	3230.64
163-0520	200.00	LF	12.16	CONSTRUCT AND REMOVE TEMPORARY PIPE SLOPE DRAIN	2432.0
163-0530	500.00	LF	2.37	CONSTRUCT AND REMOVE BALED STRAW EROSION CHECK	1185.0
163-0550	20.00	EA	177.49	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	3549.8
165-0010	4500.00	LF	0.91	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	4095.0
165-0030	1000.00	LF	1.19	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	1190.0
165-0070	500.00	LF	1.23	MAINTENANCE OF BALED STRAW EROSION CHECK	615.0
165-0087	7.00	EA	160.62	MAINTENANCE OF SILT CONTROL GATE, TP 3	1124.34
165-0101	1.00	EA	353.90	MAINTENANCE OF CONSTRUCTION EXIT	353.9
165-0105	20.00	EA	81.74	MAINTENANCE OF INLET SEDIMENT TRAP	1634.8
167-1000	2.00	EA	2086.78	WATER QUALITY MONITORING AND SAMPLING	4173.56
171-0010	4500.00	LF	1.76	TEMPORARY SILT FENCE, TYPE A	7920.0
171-0030	1000.00	LF	3.09	TEMPORARY SILT FENCE, TYPE C	3090.0
<b>Section Sub Total:</b>					<b>\$40,036.97</b>

**Section SIGNING AND MARKING**

Item Number	Quantity	Units	Unit Price	Item Description	Cost
636-1020	175.00	SF	13.16	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 3	2303.0
636-1031	175.00	SF	17.26	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING TP 6	3020.50
636-2070	450.00	LF	6.77	GALV STEEL POSTS, TP 7	3046.5
653-0210	18.00	EA	89.33	THERMOPLASTIC PVMT MARKING, WORD, TP 1	1607.94
653-1501	17000.00	LF	0.25	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	4250.0
653-1502	17000.00	LF	0.23	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	3910.0
653-6004	500.00	SY	2.40	THERMOPLASTIC TRAF STRIPING, WHITE	1200.0
653-6006	500.00	SY	2.52	THERMOPLASTIC TRAF STRIPING, YELLOW	1260.0
654-1001	525.00	EA	3.21	RAISED PVMT MARKERS TP 1	1685.25
<b>Section Sub Total:</b>					<b>\$22,283.19</b>

**Section TRAFFIC SIGNALIZATION**

Item Number	Quantity	Units	Unit Price	Item Description	Cost
639-4004	4.00	EA	3853.99	STRAIN POLE, TP IV	15415.96
647-1000	1.00	LS	75000.00	TRAFFIC SIGNAL INSTALLATION NO - 6	75000.0
<b>Section Sub Total:</b>					<b>\$90,415.96</b>

**Total Estimated Cost: \$1,041,270.92****Subtotal Construction Cost \$1,041,270.92**

E&amp;C Rate 10.0 % \$104,127.09

Inflation Rate 0 % @ 0 Years \$0.00

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**Total Construction Cost \$1,145,398.01**

Right Of Way \$877,700.00

ReImb. Utilities \$0.00

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**Grand Total Project Cost \$2,023,098.01**

## Estimate Report for file "INT 7 GILES-HILL RD"

Section ROADWAY					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1.00	LS	10000.00	TRAFFIC CONTROL -	10000.0
153-1300	1.00	EA	7000.00	FIELD ENGINEERS OFFICE TP 3	7000.0
201-1500	1.00	LS	0.00	CLEARING & GRUBBING -	0.0
205-0001	0.00	CY	3.32	UNCLASS EXCAV	0.0
207-0203	0.00	CY	34.39	FOUND BKFFILL MATL, TP II	0.0
210-0100	1.00	LS	76467.72	GRADING COMPLETE -	76467.72
310-1101	7670.00	TN	13.87	GR AGGR BASE CRS, INCL MATL	106382.9
318-3000	500.00	TN	15.68	AGGR SURF CRS	7840.0
402-1812	3760.00	TN	39.10	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	147016.0
402-3121	3330.00	TN	36.84	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	122677.20
402-3131	1510.00	TN	37.20	RECYCLED ASPH CONC 9.5 MM SUPERPAVE, GP 2 ONLY, INCL	56172.00
402-3190	1120.00	TN	39.32	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	44038.4
413-1000	995.00	GL	0.95	BITUM TACK COAT	945.25
441-0014	0.00	SY	23.00	DRIVEWAY CONCRETE, 4 IN TK	0.0
441-0016	0.00	SY	27.26	DRIVEWAY CONCRETE, 6 IN TK	0.0
441-0104	2160.00	SY	22.66	CONC SIDEWALK, 4 IN	48945.6
441-0301	0.00	EA	1642.20	CONC SPILLWAY, TP 1	0.0
441-0600	0.00	CY	581.79	CONC HEADWALLS	0.0
441-4020	0.00	SY	27.82	CONC VALLEY GUTTER, 6 IN	0.0
441-6222	0.00	LF	10.95	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	0.0
500-3101	0.00	CY	453.12	CLASS A CONCRETE	0.0
500-3200	28.00	CY	285.15	CLASS B CONCRETE	7984.19
500-3201	75.00	CY	307.64	CLASS B CONCRETE, RETAINING WALL	23073.0
500-3800	50.00	CY	615.84	CLASS A CONCRETE, INCL REINF STEEL	30792.0
500-9999	150.00	CY	135.00	CLASS B CONC, BASE OR PVMT WIDENING	20250.0
511-1000	240.00	LB	0.70	BAR REINF STEEL	168.0
550-1180	1060.00	LF	28.07	STORM DRAIN PIPE, 18 IN, H 1-10	29754.2
550-1240	250.00	LF	32.96	STORM DRAIN PIPE, 24 IN, H 1-10	8240.0
550-1300	0.00	LF	42.71	STORM DRAIN PIPE, 30 IN, H 1-10	0.0
550-1360	0.00	LF	50.72	STORM DRAIN PIPE, 36 IN, H 1-10	0.0
550-1420	0.00	LF	66.56	STORM DRAIN PIPE, 42 IN, H 1-10	0.0
550-2180	255.00	LF	23.08	SIDE DRAIN PIPE, 18 IN, H 1-10	5885.4
550-2242	0.00	LF	48.00	SIDE DRAIN PIPE, 24 IN, H 15-20	0.0
550-3318	12.00	EA	650.69	SAFETY END SECTION 18 IN, STORM DRAIN, 4:1 SLOPE	7808.28
550-3324	0.00	EA	881.86	SAFETY END SECTION 24 IN, STORM DRAIN, 4:1 SLOPE	0.0
550-3330	0.00	EA	1364.67	SAFETY END SECTION 30 IN, STORM DRAIN, 4:1 SLOPE	0.0
550-4218	2.00	EA	422.05	FLARED END SECTION 18 IN, STORM DRAIN	844.1
550-4224	4.00	EA	491.31	FLARED END SECTION 24 IN, STORM DRAIN	1965.24
550-4230	0.00	EA	663.31	FLARED END SECTION 30 IN, STORM DRAIN	0.0
550-4236	0.00	EA	845.91	FLARED END SECTION 36 IN, STORM DRAIN	0.0
550-4242	0.00	EA	1007.47	FLARED END SECTION 42 IN, STORM DRAIN	0.0
573-2006	0.00	LF	11.36	UNDDR PIPE INCL DRAINAGE AGGR, 6 IN	0.0
603-6006	0.00	SY	4.25	SAND-CEMENT BAG RIP RAP, 6 IN	0.0
634-1200	35.00	EA	84.28	RIGHT OF WAY MARKERS	2949.8
641-1200	0.00	LF	11.99	GUARDRAIL, TP W	0.0
641-5001	0.00	EA	442.71	GUARDRAIL ANCHORAGE, TP 1	0.0
641-5012	0.00	EA	1427.91	GUARDRAIL ANCHORAGE, TP 12	0.0
668-1100	8.00	EA	1720.77	CATCH BASIN, GP 1	13766.16
668-1110	0.00	LF	173.15	CATCH BASIN, GP 1, ADDL DEPTH	0.0
668-1200	0.00	EA	2473.18	CATCH BASIN, GP 2	0.0
668-2200	0.00	EA	2162.13	DROP INLET, GP 2	0.0
668-4300	0.00	EA	1736.17	STORM SEWER MANHOLE, TP 1	0.0
668-4311	0.00	LF	202.33	STORM SEWER MANHOLE, TP 1, ADDL DEPTH, CL 1	0.0
668-4400	0.00	EA	2743.41	STORM SEWER MANHOLE, TP 2	0.0
<b>Section Sub Total:</b>					<b>\$780,965.45</b>

**Section PERMANENT EROSION CONTROL**

Item Number	Quantity	Units	Unit Price	Item Description	Cost
441-0204	500.00	SY	25.74	PLAIN CONC DITCH PAVING, 4 IN	12870.0
603-2024	37.00	SY	40.97	STN DUMPED RIP RAP, TP 1, 24 IN	1515.88
603-2182	0.00	SY	42.60	STN DUMPED RIP RAP, TP 3, 24 IN	0.0
603-7000	37.00	SY	3.99	PLASTIC FILTER FABRIC	147.63
700-6910	6.00	AC	766.98	PERMANENT GRASSING	4601.88
700-7000	11.00	TN	56.75	AGRICULTURAL LIME	624.25
700-7010	28.00	GL	19.29	LIQUID LIME	540.12
700-8000	5.00	TN	226.17	FERTILIZER MIXED GRADE	1130.85
700-8100	300.00	LB	1.43	FERTILIZER NITROGEN CONTENT	429.0
710-9000	250.00	SY	4.35	PERMANENT SOIL REINFORCING MAT	1087.5
715-2200	250.00	SY	1.96	BITUMINOUS TREATED ROVING, WATERWAYS	490.0
716-2000	5000.00	SY	1.11	EROSION CONTROL MATS, SLOPES	5550.00
<b>Section Sub Total:</b>					<b>\$28,987.12</b>

**Section TEMPORARY EROSION CONTROL**

Item Number	Quantity	Units	Unit Price	Item Description	Cost
163-0232	3.00	AC	460.72	TEMPORARY GRASSING	1382.16
163-0240	27.00	TN	189.34	MULCH	5112.18
163-0300	1.00	EA	1113.37	CONSTRUCTION EXIT	1113.37
163-0503	7.00	EA	461.52	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 3	3230.64
163-0520	0.00	LF	12.16	CONSTRUCT AND REMOVE TEMPORARY PIPE SLOPE DRAIN	0.0
163-0530	500.00	LF	2.37	CONSTRUCT AND REMOVE BALED STRAW EROSION CHECK	1185.0
163-0550	0.00	EA	177.49	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	0.0
165-0010	3840.00	LF	0.91	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	3494.4
165-0030	0.00	LF	1.19	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	0.0
165-0070	500.00	LF	1.23	MAINTENANCE OF BALED STRAW EROSION CHECK	615.0
165-0087	7.00	EA	160.62	MAINTENANCE OF SILT CONTROL GATE, TP 3	1124.34
165-0101	1.00	EA	353.90	MAINTENANCE OF CONSTRUCTION EXIT	353.9
165-0105	0.00	EA	81.74	MAINTENANCE OF INLET SEDIMENT TRAP	0.0
167-1000	2.00	EA	2086.78	WATER QUALITY MONITORING AND SAMPLING	4173.56
171-0010	3840.00	LF	1.76	TEMPORARY SILT FENCE, TYPE A	6758.4
171-0030	0.00	LF	3.09	TEMPORARY SILT FENCE, TYPE C	0.0
<b>Section Sub Total:</b>					<b>\$28,542.95</b>

**Section SIGNING AND MARKING**

Item Number	Quantity	Units	Unit Price	Item Description	Cost
636-1020	150.00	SF	13.16	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 3	1974.0
636-1031	150.00	SF	17.26	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING TP 6	2589.00
636-2070	400.00	LF	6.77	GALV STEEL POSTS, TP 7	2708.0
653-0120	15.00	EA	56.09	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	841.35
653-1501	15000.00	LF	0.25	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	3750.0
653-1502	15000.00	LF	0.23	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	3450.0
653-1704	150.00	LF	3.17	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	475.5
653-6004	450.00	SY	2.40	THERMOPLASTIC TRAF STRIPING, WHITE	1080.0
653-6006	450.00	SY	2.52	THERMOPLASTIC TRAF STRIPING, YELLOW	1134.0
654-1001	500.00	EA	3.21	RAISED PVMT MARKERS TP 1	1605.0
<b>Section Sub Total:</b>					<b>\$19,606.85</b>

**Total Estimated Cost: \$858,102.37**

<b>Subtotal Construction Cost</b>	<b>\$858,102.37</b>
E&C Rate 10.0 %	\$85,810.24
Inflation Rate 0 % @ 0 Years	\$0.00
	<hr/>
<b>Total Construction Cost</b>	<b>\$943,912.61</b>
Right Of Way	\$2,108,300.00
ReImb. Utilities	\$0.00
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<b>Grand Total Project Cost</b>	<b>\$3,052,212.61</b>

## Estimate Report for file "INT 8 MARS HILL CHURCH RD"

Section ROADWAY					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1.00	LS	5000.00	TRAFFIC CONTROL -	5000.0
153-1300	1.00	EA	7000.00	FIELD ENGINEERS OFFICE TP 3	7000.0
201-1500	1.00	LS	0.00	CLEARING & GRUBBING -	0.0
205-0001	0.00	CY	3.32	UNCLASS EXCAV	0.0
207-0203	0.00	CY	34.39	FOUND BKFFILL MATL, TP II	0.0
210-0100	1.00	LS	52244.20	GRADING COMPLETE -	52244.2
310-1101	2030.00	TN	13.87	GR AGGR BASE CRS, INCL MATL	28156.1
318-3000	700.00	TN	15.68	AGGR SURF CRS	10976.0
402-1812	1200.00	TN	39.10	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	46920.0
402-3121	1000.00	TN	36.84	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	36840.0
402-3131	610.00	TN	37.20	RECYCLED ASPH CONC 9.5 MM SUPERPAVE, GP 2 ONLY, INCL	22692.0
402-3190	340.00	TN	39.32	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	13368.8
413-1000	515.00	GL	0.95	BITUM TACK COAT	489.25
441-0014	0.00	SY	23.00	DRIVEWAY CONCRETE, 4 IN TK	0.0
441-0016	0.00	SY	27.26	DRIVEWAY CONCRETE, 6 IN TK	0.0
441-0104	0.00	SY	22.66	CONC SIDEWALK, 4 IN	0.0
441-0301	0.00	EA	1642.20	CONC SPILLWAY, TP 1	0.0
441-0600	0.00	CY	581.79	CONC HEADWALLS	0.0
441-4020	0.00	SY	27.82	CONC VALLEY GUTTER, 6 IN	0.0
441-6222	0.00	LF	10.95	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	0.0
500-3101	0.00	CY	453.12	CLASS A CONCRETE	0.0
500-3200	0.00	CY	285.15	CLASS B CONCRETE	0.0
500-3201	40.00	CY	450.00	CLASS B CONCRETE, RETAINING WALL	18000.0
500-3800	10.00	CY	615.84	CLASS A CONCRETE, INCL REINF STEEL	6158.40
500-9999	50.00	CY	135.00	CLASS B CONC, BASE OR PVMT WIDENING	6750.0
511-1000	0.00	LB	0.70	BAR REINF STEEL	0.0
550-1180	225.00	LF	28.07	STORM DRAIN PIPE, 18 IN, H 1-10	6315.75
550-1240	70.00	LF	32.96	STORM DRAIN PIPE, 24 IN, H 1-10	2307.20
550-1300	0.00	LF	42.71	STORM DRAIN PIPE, 30 IN, H 1-10	0.0
550-1360	0.00	LF	50.72	STORM DRAIN PIPE, 36 IN, H 1-10	0.0
550-2180	220.00	LF	23.08	SIDE DRAIN PIPE, 18 IN, H 1-10	5077.59
550-2242	0.00	LF	48.00	SIDE DRAIN PIPE, 24 IN, H 15-20	0.0
550-3318	14.00	EA	650.69	SAFETY END SECTION 18 IN, STORM DRAIN, 4:1 SLOPE	9109.66
550-3324	0.00	EA	881.86	SAFETY END SECTION 24 IN, STORM DRAIN, 4:1 SLOPE	0.0
550-3330	0.00	EA	1364.67	SAFETY END SECTION 30 IN, STORM DRAIN, 4:1 SLOPE	0.0
550-4218	4.00	EA	422.05	FLARED END SECTION 18 IN, STORM DRAIN	1688.2
550-4224	2.00	EA	491.31	FLARED END SECTION 24 IN, STORM DRAIN	982.62
550-4230	0.00	EA	663.31	FLARED END SECTION 30 IN, STORM DRAIN	0.0
550-4236	0.00	EA	845.91	FLARED END SECTION 36 IN, STORM DRAIN	0.0
573-2006	500.00	LF	11.36	UNDDR PIPE INCL DRAINAGE AGGR, 6 IN	5680.0
603-6006	0.00	SY	4.25	SAND-CEMENT BAG RIP RAP, 6 IN	0.0
634-1200	30.00	EA	84.28	RIGHT OF WAY MARKERS	2528.4
641-1200	510.00	LF	11.99	GUARDRAIL, TP W	6114.90
641-5001	4.00	EA	442.71	GUARDRAIL ANCHORAGE, TP 1	1770.84
641-5012	4.00	EA	1427.91	GUARDRAIL ANCHORAGE, TP 12	5711.64
668-1100	0.00	EA	1720.77	CATCH BASIN, GP 1	0.0
668-1110	0.00	LF	173.15	CATCH BASIN, GP 1, ADDL DEPTH	0.0
668-1200	0.00	EA	2473.18	CATCH BASIN, GP 2	0.0
668-2100	0.00	EA	1999.18	DROP INLET, GP 1	0.0
668-2105	0.00	EA	3358.60	DROP INLET, GP 1, SPCL DES	0.0
668-2110	0.00	LF	176.39	DROP INLET, GP 1, ADDL DEPTH	0.0
668-2200	0.00	EA	2162.13	DROP INLET, GP 2	0.0
668-4300	0.00	EA	1736.17	STORM SEWER MANHOLE, TP 1	0.0
668-4311	0.00	LF	202.33	STORM SEWER MANHOLE, TP 1, ADDL DEPTH, CL 1	0.0
668-4400	0.00	EA	2743.41	STORM SEWER MANHOLE, TP 2	0.0
<b>Section Sub Total:</b>					<b>\$301,881.56</b>

<b>Section PERMANENT EROSION CONTROL</b>					
<b>Item Number</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Price</b>	<b>Item Description</b>	<b>Cost</b>
441-0204	100.00	SY	25.74	PLAIN CONC DITCH PAVING, 4 IN	2574.0
603-2024	50.00	SY	40.97	STN DUMPED RIP RAP, TP 1, 24 IN	2048.5
603-2182	0.00	SY	42.60	STN DUMPED RIP RAP, TP 3, 24 IN	0.0
603-7000	50.00	SY	3.99	PLASTIC FILTER FABRIC	199.5
700-6910	5.00	AC	766.98	PERMANENT GRASSING	3834.9
700-7000	9.00	TN	56.75	AGRICULTURAL LIME	510.75
700-7010	23.00	GL	19.29	LIQUID LIME	443.66
700-8000	4.00	TN	226.17	FERTILIZER MIXED GRADE	904.68
700-8100	250.00	LB	1.43	FERTILIZER NITROGEN CONTENT	357.5
710-9000	300.00	SY	4.35	PERMANENT SOIL REINFORCING MAT	1305.0
715-2200	500.00	SY	1.96	BITUMINOUS TREATED ROVING, WATERWAYS	980.0
716-2000	500.00	SY	1.11	EROSION CONTROL MATS, SLOPES	555.0
<b>Section Sub Total:</b>					<b>\$13,713.50</b>

<b>Section TEMPORARY EROSION CONTROL</b>					
<b>Item Number</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Price</b>	<b>Item Description</b>	<b>Cost</b>
163-0232	3.00	AC	460.72	TEMPORARY GRASSING	1382.16
163-0240	5.00	TN	189.34	MULCH	946.7
163-0300	1.00	EA	1113.37	CONSTRUCTION EXIT	1113.37
163-0503	9.00	EA	461.52	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 3	4153.68
163-0520	100.00	LF	12.16	CONSTRUCT AND REMOVE TEMPORARY PIPE SLOPE DRAIN	1216.0
163-0530	0.00	LF	2.37	CONSTRUCT AND REMOVE BALED STRAW EROSION CHECK	0.0
163-0550	0.00	EA	177.49	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	0.0
165-0010	1020.00	LF	0.91	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	928.2
165-0020	0.00	LF	1.05	MAINTENANCE OF TEMPORARY SILT FENCE, TP B	0.0
165-0030	300.00	LF	1.19	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	357.0
165-0070	0.00	LF	1.23	MAINTENANCE OF BALED STRAW EROSION CHECK	0.0
165-0087	9.00	EA	160.62	MAINTENANCE OF SILT CONTROL GATE, TP 3	1445.58
165-0101	1.00	EA	353.90	MAINTENANCE OF CONSTRUCTION EXIT	353.9
165-0105	0.00	EA	81.74	MAINTENANCE OF INLET SEDIMENT TRAP	0.0
167-1000	2.00	EA	2086.78	WATER QUALITY MONITORING AND SAMPLING	4173.56
171-0010	1020.00	LF	1.76	TEMPORARY SILT FENCE, TYPE A	1795.2
171-0030	300.00	LF	3.09	TEMPORARY SILT FENCE, TYPE C	927.0
<b>Section Sub Total:</b>					<b>\$18,792.35</b>

<b>Section SIGNING AND MARKING</b>					
<b>Item Number</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Price</b>	<b>Item Description</b>	<b>Cost</b>
636-1020	100.00	SF	13.16	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 3	1316.0
636-1031	100.00	SF	17.26	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING TP 6	1726.00
636-2070	260.00	LF	6.77	GALV STEEL POSTS, TP 7	1760.19
653-0120	10.00	EA	56.09	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	560.90
653-1501	8000.00	LF	0.25	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	2000.0
653-1502	8000.00	LF	0.23	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	1840.0
653-1704	100.00	LF	3.17	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	317.0
653-6004	300.00	SY	2.40	THERMOPLASTIC TRAF STRIPING, WHITE	720.0
653-6006	300.00	SY	2.52	THERMOPLASTIC TRAF STRIPING, YELLOW	756.0
654-1001	300.00	EA	3.21	RAISED PVMT MARKERS TP 1	963.0
<b>Section Sub Total:</b>					<b>\$11,959.10</b>

<b>Section TRAFFIC SIGNALIZATION</b>					
<b>Item Number</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Price</b>	<b>Item Description</b>	<b>Cost</b>
639-4004	4.00	EA	3853.99	STRAIN POLE, TP IV	15415.96
647-1000	1.00	LS	75000.00	TRAFFIC SIGNAL INSTALLATION NO - 8	75000.0
<b>Section Sub Total:</b>					<b>\$90,415.96</b>

**Total Estimated Cost: \$436,762.47**

**Subtotal Construction Cost      \$436,762.47**

E&C Rate 10.0 %      \$43,676.25

Inflation Rate 0 % @ 0 Years      \$0.00

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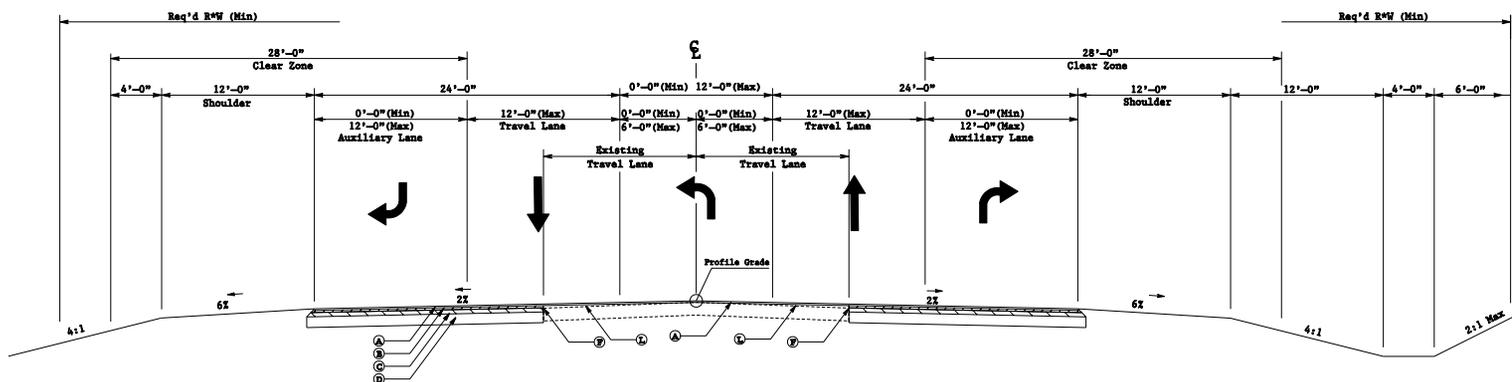
**Total Construction Cost      \$480,438.72**

Right Of Way      \$2,482,600.00

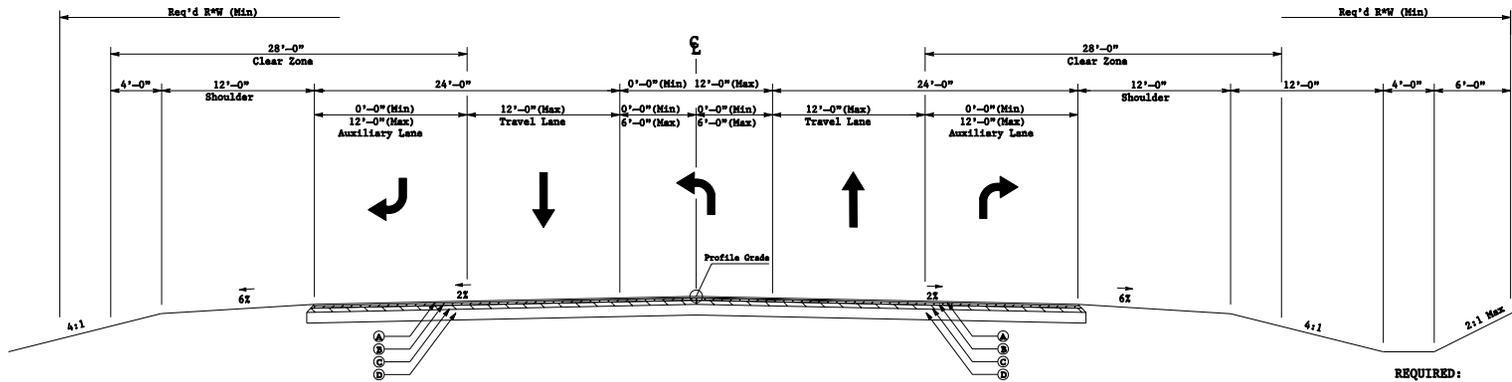
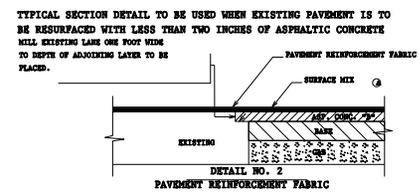
ReImb. Utilities      \$0.00

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**Grand Total Project Cost      \$2,963,038.72**



SR 176 \* MARS HILL ROAD  
WIDENING SECTION  
TANGENT



SR 176 \* MARS HILL ROAD  
FULL SECTION  
TANGENT

DESIGN SPEED : 45 MPH

**ALLOWABLE RANGES TABLE**

FOR THIS PROJECT, CROSS SLOPES THAT ARE ADJUSTED TO "BEST FIT" EXISTING PAVEMENT SLOPES ARE SUBJECT TO THE FOLLOWING LIMITS:

A. NORMAL CROWN

SECTION WITH GRADES 0.5% OR GREATER	SECTION WITH GRADES LESS THAN 0.5%
0.0150 FT/FT - MINIMUM	0.0150 FT/FT - MINIMUM
0.0200 FT/FT - DESIRABLE	0.0200 FT/FT - DESIRABLE
0.0250 FT/FT - MAXIMUM	0.0300 FT/FT - MAXIMUM

B. SUPERELEVATION RATE  
S.E. RATE SHOWN ON PLANS OR SE RATE EXISTING IN FIELD, WHICHEVER IS GREATER.

C. SUPERELEVATION TRANSITION LENGTH (LENGTH FROM FLAT POINT TO FULL SE)

RATE OF CHANGE	CORRESPONDING DIFFERENCE IN GRADE BETWEEN PIVOT POINT AND EDGE OF PAVEMENT
MINIMUM 1:150	0.67%
DESIRABLE 1:200	0.50%
MAXIMUM 1:300	0.33%

LENGTH SHALL BE SET TO AVOID CREATING A FLAT CUTTER GRADE ON LOW SIDE AND TO AVOID FLAT CROSS SLOPES AT OR NEAR THE LOW POINT OF VERTICAL CURVES.

D. POSITIONING OF SUPERELEVATION TRANSITION LENGTH ON SIMPLE CURVES  
50% OF TRANSITION INSIDE CURVE - MAXIMUM  
33% OF TRANSITION INSIDE CURVE - DESIRABLE  
20% OF TRANSITION INSIDE CURVE - MINIMUM

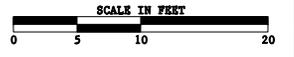
NOTE: CROWN WIPE-OUT SHALL BE AT THE SAME RATE AS THE SE TRANSITION.

E. SMOOTHING OF BREAKS IN EDGE PROFILE AT BEGIN AND END OF TRANSITION SHALL BE ACCOMPLISHED BY VERTICAL CURVE WITH A MINIMUM LENGTH (IN FEET) EQUAL TO THE SPEED DESIGN (IN MPH).

- REQUIRED:
- (A) ASPHALTIC CONCRETE, 12.5MM SUPERPAVE (165 LB.\*SQ. YD.) - LEVEL "B"
  - (B) ASPHALTIC CONCRETE, 19.0MM SUPERPAVE (210 LB.\*SQ. YD.) - LEVEL "B"
  - (C) ASPHALTIC CONCRETE, 25.0MM SUPERPAVE (440 LB.\*SQ. YD.) - LEVEL "A"
  - (D) 12" GRADED AGGREGATE BASE COURSE
  - (E) PAVEMENT REINFORCEMENT FABRIC - SEE DETAIL #2
  - (L) ASPHALTIC CONCRETE LEVELING COURSE AS REQ'D.

R.K. SHAH & ASSOCIATES, INC.  
ENGINEERS

TRANSPORTATION \* SITE \* CIVIL  
1280 WENCHESTER PARKWAY ATLANTA, GEORGIA 30309  
BUILDING 1280, SUITE 240  
TELEPHONE 770\*436-5070 FAX 770\*436-5410



REVISION DATES

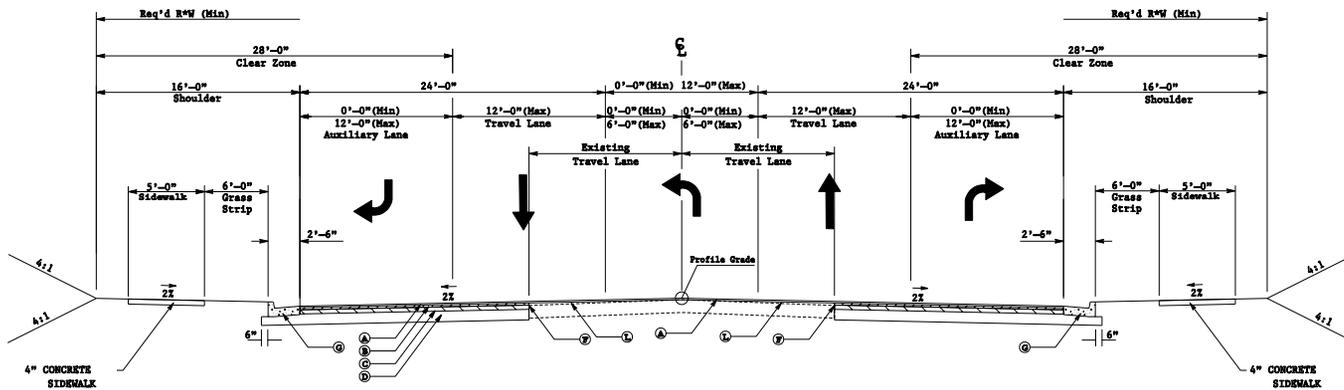
STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION

OFFICE: \$OFFICE\$\$

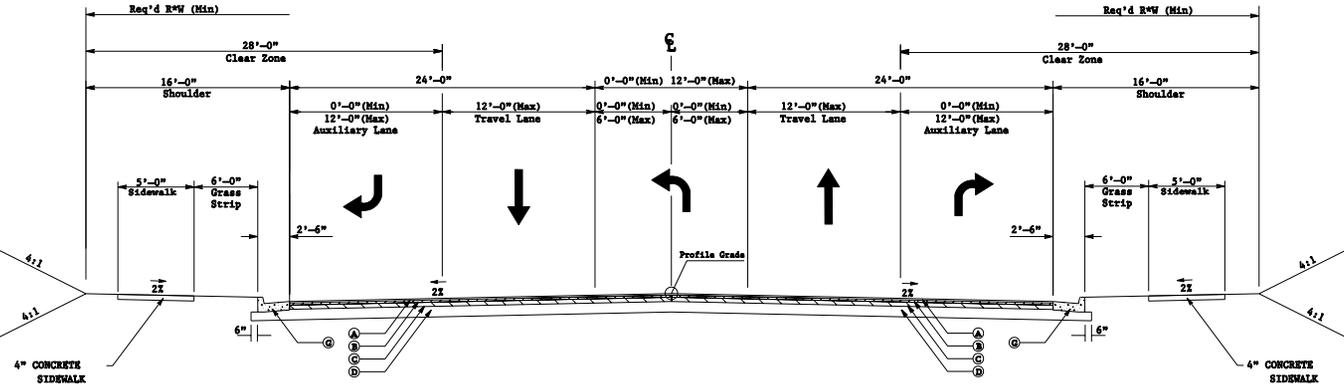
TYPICAL SECTIONS

\$PROJECTNAME1\$\$\$\$  
\$PROJECTNAME2\$\$\$\$

DRAWING No. T-01

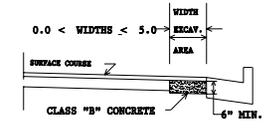


**SR 176 \* MARS HILL ROAD  
DUE WEST ROAD (EAST OF SR 176)  
WIDENING SECTION  
TANGENT**



**SR 176 \* MARS HILL ROAD  
FULL SECTION  
TANGENT**

DESIGN SPEED : 45 MPH



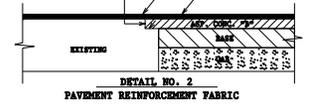
NO SCALE  
**CLASS "B" CONCRETE BASE OR PAVEMENT WIDENING**  
 Item Code 500-9999 - Cu. Yds.  
 In unexcavated areas between the existing paving and new curb and gutter that are 5'-0" or less in width, Class "B" concrete shall be placed in line of the base and paving specified by the typical section. Payment will be made under "Class B Concrete Base and Pavement Widening."  
 In excavated areas greater than 5'-0" in width, the Contractor shall place base and paving as specified on the typical section.  
 See plans for details of curb and gutter construction.

**ALLOWABLE RANGES TABLE**

FOR THIS PROJECT, CROSS SLOPES THAT ARE ADJUSTED TO "BEST FIT" EXISTING PAVEMENT SLOPES ARE SUBJECT TO THE FOLLOWING LIMITS:

- A. NORMAL CROWN
- | SECTION WITH GRADES 0.5% OR GREATER | SECTION WITH GRADES LESS THAN 0.5% |
|-------------------------------------|------------------------------------|
| 0.0150 FT/FT - MINIMUM              | 0.0150 FT/FT - MINIMUM             |
| 0.0200 FT/FT - DESIRABLE            | 0.0200 FT/FT - DESIRABLE           |
| 0.0250 FT/FT - MAXIMUM              | 0.0300 FT/FT - MAXIMUM             |
- B. SUPERELEVATION RATE  
 S. E. RATE SHOWN ON PLANS OR SE RATE EXISTING IN FIELD, WHICHEVER IS GREATER.
- C. SUPERELEVATION TRANSITION LENGTH (LENGTH FROM FLAT POINT TO FULL SE)
- | RATE OF CHANGE  | CORRESPONDING DIFFERENCE IN GRADE BETWEEN PIVOT POINT AND EDGE OF PAVEMENT |
|-----------------|--|
| MINIMUM 1:150   | 0.67%  |
| DESIRABLE 1:200 | 0.50%  |
| MAXIMUM 1:500   | 0.33%  |
- LENGTH SHALL BE SET TO AVOID CREATING A FLAT GUTTER GRADE ON LOW SIDE AND TO AVOID FLAT CROSS SLOPES AT OR NEAR THE LOW POINT OF VERTICAL CURVES.
- D. POSITIONING OF SUPERELEVATION TRANSITION LENGTH ON SIMPLE CURVES  
 50% OF TRANSITION INSIDE CURVE - MAXIMUM  
 33% OF TRANSITION INSIDE CURVE - DESIRABLE  
 20% OF TRANSITION INSIDE CURVE - MINIMUM
- NOTE: CROWN WIPE-OUT SHALL BE AT THE SAME RATE AS THE SE TRANSITION.
- E. SMOOTHING OF BREAKS IN EDGE PROFILE AT BEGIN AND END OF TRANSITION SHALL BE ACCOMPLISHED BY VERTICAL CURVE WITH A MINIMUM LENGTH (IN FEET) EQUAL TO THE SPEED DESIGN (IN MPH).

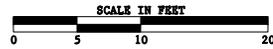
TYPICAL SECTION DETAIL TO BE USED WHEN EXISTING PAVEMENT IS TO BE RESURFACED WITH LESS THAN TWO INCHES OF ASPHALTIC CONCRETE. HILL EXISTING LANE ONE FOOT WIDE TO DEPTH OF ADJOINING LANE TO BE PLACED.



- (A) ASPHALTIC CONCRETE, 12.5MM SUPERPAVE (165 LB.\*SQ. YD.) - LEVEL "B"
- (B) ASPHALTIC CONCRETE, 19.0MM SUPERPAVE (220 LB.\*SQ.YD.) - LEVEL "B"
- (C) ASPHALTIC CONCRETE, 25.0MM SUPERPAVE (440 LB.\*SQ.YD.) - LEVEL "A"
- (D) 12" GRADED AGGREGATE BASE COURSE
- (E) PAVEMENT REINFORCEMENT FABRIC - SEE DETAIL #2
- (G) 8"x30" CONCRETE CURB AND GUTTER TYPE 2 GA. STD. 9032B
- (L) ASPHALTIC CONCRETE LEVELING COURSE AS REQ'D.

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 BUILDING 1280, SUITE 240  
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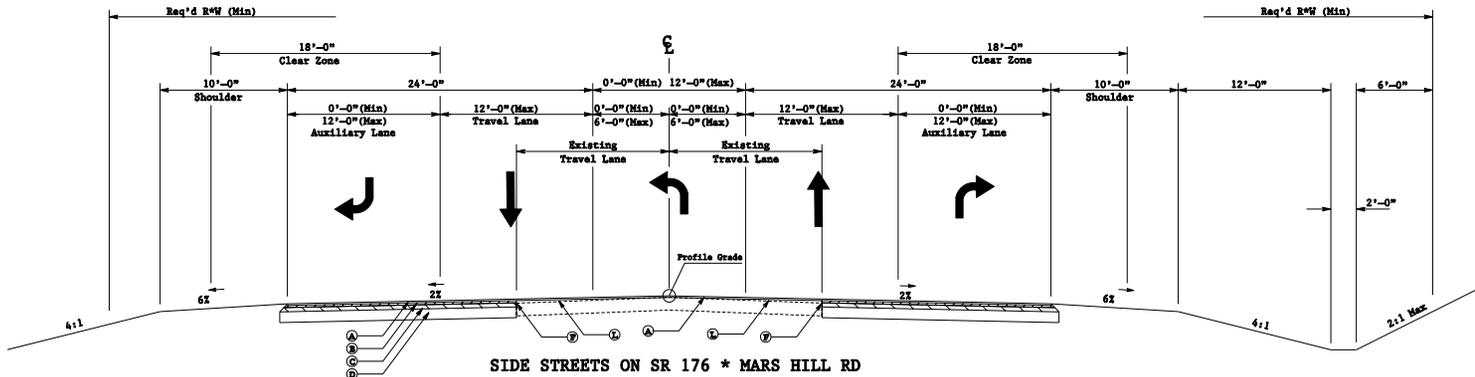
**REVISION DATES**

NO.	DATE	DESCRIPTION

STATE OF GEORGIA  
 DEPARTMENT OF TRANSPORTATION  
 OFFICE: \$OFFICE\$\$\$  
**TYPICAL SECTIONS**

\$PROJECTNAME1\$\$\$  
 \$PROJECTNAME2\$\$\$

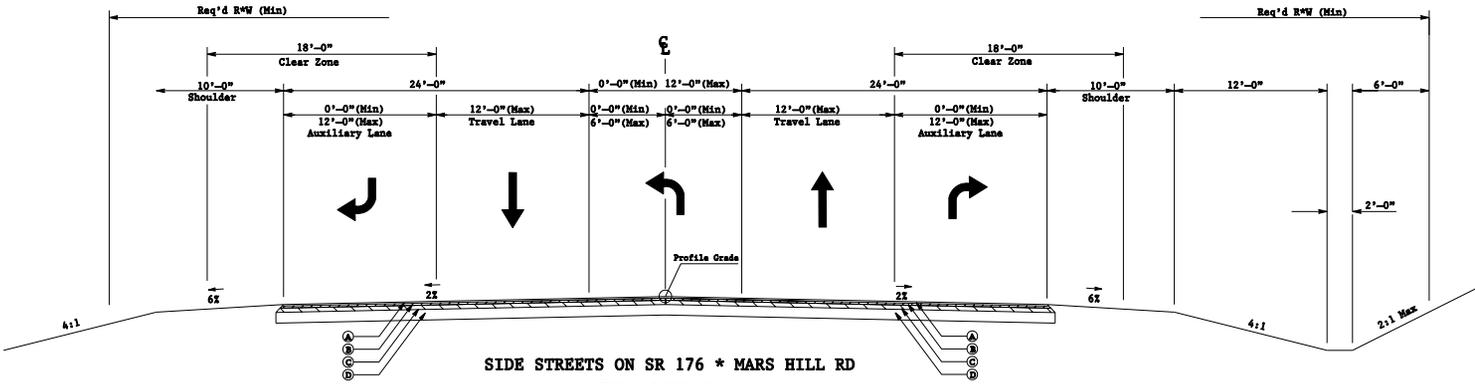
DRAWING No.  
**T-02**



**SIDE STREETS ON SR 176 \* MARS HILL RD  
WIDENING SECTION**

APPLIES TO DUE WEST RD. STA.3002+47.00 TO STA.3002+94.172  
 STA.3008+46.631 TO STA.3010+00.00  
 HADAWAY RD. STA.4000+50.00 TO STA.4007+15.167  
 BURNT HICKORY RD. STA.5001+00.00 TO STA.5002+03.44  
 COUNTY LINE RD. STA.6000+00.00 TO STA.6001+25.69  
 HILL RD. STA.7000+00.00 TO STA.7001+27.819  
 GILES RD. STA.7507+50.00 TO STA.7511+00.00

TANGENT



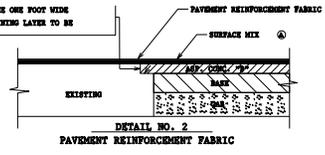
**SIDE STREETS ON SR 176 \* MARS HILL RD**

APPLIES TO DUE WEST RD. STA.3002+47.00 TO STA.3002+94.172  
 STA.3008+46.631 TO STA.3010+00.00  
 HADAWAY RD. STA.4000+50.00 TO STA.4007+15.167  
 BURNT HICKORY RD. STA.5001+00.00 TO STA.5002+03.44  
 COUNTY LINE RD. STA.6000+00.00 TO STA.6001+25.69  
 HILL RD. STA.7000+00.00 TO STA.7001+27.819  
 GILES RD. STA.7507+50.00 TO STA.7511+00.00

TANGENT

DESIGN SPEED : 40 MPH OR LESS

TYPICAL SECTION DETAIL TO BE USED WHEN EXISTING PAVEMENT IS TO BE RESURFACED WITH LESS THAN TWO INCHES OF ASPHALTIC CONCRETE. WILL EXISTING LANE ONE FOOT WIDE TO DEPTH OF ADJOINING LAYER TO BE PLACED.



**ALLOWABLE RANGES TABLE**

FOR THIS PROJECT, CROSS SLOPES THAT ARE ADJUSTED TO "BEST FIT" EXISTING PAVEMENT SLOPES ARE SUBJECT TO THE FOLLOWING LIMITS:

NORMAL CROWN	
SECTION WITH GRADES 0.5% OR GREATER	SECTION WITH GRADES LESS THAN 0.5%
0.0150 FT/FT - MINIMUM	0.0150 FT/FT - MINIMUM
0.0200 FT/FT - DESIRABLE	0.0200 FT/FT - DESIRABLE
0.0250 FT/FT - MAXIMUM	0.0300 FT/FT - MAXIMUM

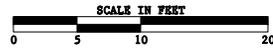
- B. SUPERELEVATION RATE  
 S.E. RATE SHOWN ON PLANS OR SE RATE EXISTING IN FIELD, WHICHEVER IS GREATER.
- C. SUPERELEVATION TRANSITION LENGTH (LENGTH FROM FLAT POINT TO FULL SE)
- | RATE OF CHANGE  | CORRESPONDING DIFFERENCE IN GRADE BETWEEN PIVOT POINT AND EDGE OF PAVEMENT |
|-----------------|--|
| MINIMUM 1:150   | 0.67%  |
| DESIRABLE 1:200 | 0.50%  |
| MAXIMUM 1:300   | 0.33%  |
- LENGTH SHALL BE SET TO AVOID CREATING A FLAT GUTTER GRADE ON LOW SIDE AND TO AVOID FLAT CROSS SLOPES AT OR NEAR THE LOW POINT OF VERTICAL CURVES.
- D. POSITIONING OF SUPERELEVATION TRANSITION LENGTH ON SIMPLE CURVES  
 50% OF TRANSITION INSIDE CURVE - MAXIMUM  
 33% OF TRANSITION INSIDE CURVE - DESIRABLE  
 20% OF TRANSITION INSIDE CURVE - MINIMUM
- NOTE: CROWN WIPE-OUT SHALL BE AT THE SAME RATE AS THE SE TRANSITION.
- E. SMOOTHING OF BREAKS IN EDGE PROFILE AT BEGIN AND END OF TRANSITION SHALL BE ACCOMPLISHED BY VERTICAL CURVE WITH A MINIMUM LENGTH (IN FEET) EQUAL TO THE SPEED DESIGN (IN MPH).

**REQUIRED:**

- (A) ASPHALTIC CONCRETE, 12.5MM SUPERPAVE (165 LB.\*SQ. YD.) - LEVEL "B"
- (B) ASPHALTIC CONCRETE, 19.0MM SUPERPAVE (220 LB.\*SQ.YD.) - LEVEL "B"
- (C) ASPHALTIC CONCRETE, 25.0MM SUPERPAVE (440 LB.\*SQ.YD.) - LEVEL "A"
- (D) 12" GRADED AGGREGATE BASE COURSE
- (E) PAVEMENT REINFORCEMENT FABRIC - SEE DETAIL #2
- (L) ASPHALTIC CONCRETE LEVELING COURSE AS REQ'D.

**R.K. SHAH & ASSOCIATES, INC.**  
ENGINEERS

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 1220 WENCHSTER PARKWAY ATLANTA, GEORGIA 30309  
 BUILDING 1220, SUITE 240  
 TELEPHONE 770\*436-5070 FAX 770\*436-5410

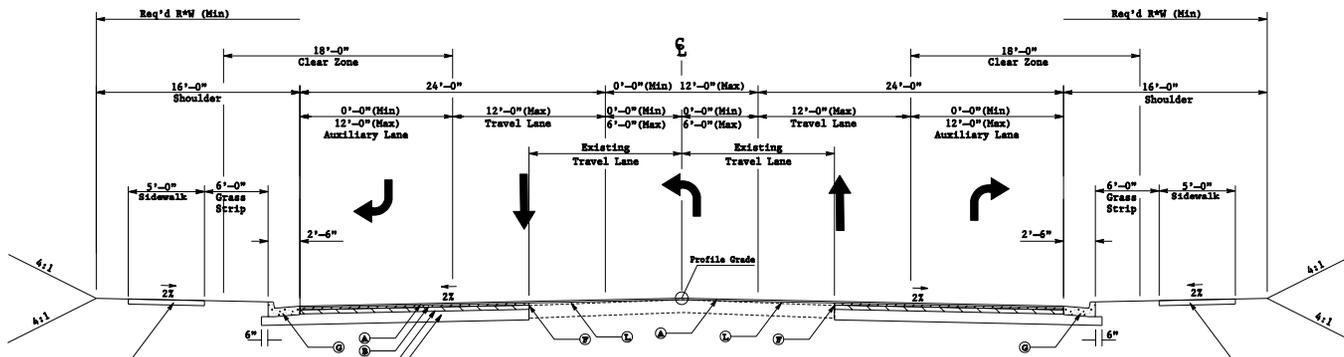


**REVISION DATES**

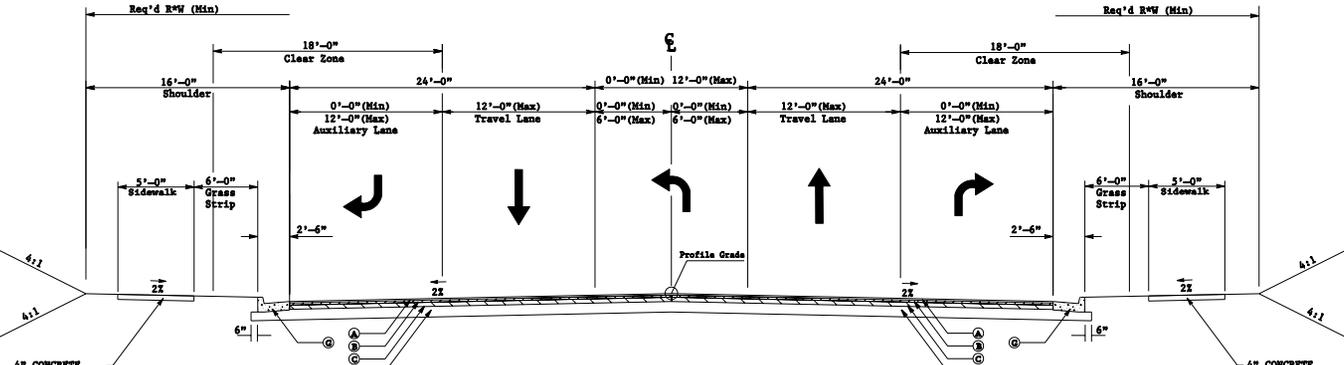

STATE OF GEORGIA  
 DEPARTMENT OF TRANSPORTATION  
 OFFICE: \$OFFICE\$\$  
**TYPICAL SECTIONS**

\$PROJECTNAME1\$\$\$\$  
 \$PROJECTNAME2\$\$\$\$

DRAWING No.  
**T-03**

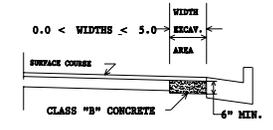


**SIDE STREETS ON SR 176 \* MARS HILL RD  
WIDENING SECTION**  
APPLIES TO DUE WEST RD. STA. 3010+00.00 TO STA. 3013+73.869  
HADAWAY RD. STA. 4013+40.863 TO STA. 4015+60.00  
TANGENT



**SIDE STREETS ON SR 176 \* MARS HILL RD  
FULL SECTION**  
APPLIES TO COUNTY LINE RD. STA. 6016+00.00 TO STA. 6018+26.38  
OLD STILESBORO RD. STA. 6500+00.00 TO STA. 6504+60.665  
HILL RD. STA. 7007+65.99 TO STA. 7009+94.26  
GILES RD. STA. 7500+00.00 TO STA. 7503+20.00  
TANGENT

DESIGN SPEED : 40 MPH OR LESS



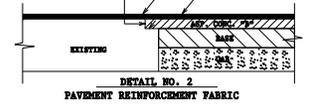
NO SCALE  
CLASS "B" CONCRETE BASE OR PAVEMENT WIDENING  
Item Code 500-9999 - Cu. Yds.  
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See plans for details of curb and gutter construction.

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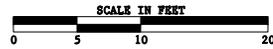
TYPICAL SECTION DETAIL TO BE USED WHEN EXISTING PAVEMENT IS TO BE RESURFACED WITH LESS THAN TWO INCHES OF ASPHALTIC CONCRETE WILL EXISTING LANE ONE FOOT WIDE TO DEPTH OF ADJOINING LANE TO BE PLACED.



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- (E) PAVEMENT REINFORCEMENT FABRIC - SEE DETAIL #2
- (G) 8"x30" CONCRETE CURB AND GUTTER TYPE 2 GA. STD. 9032B
- (L) ASPHALTIC CONCRETE LEVELING COURSE AS REQ'D.

R.K. SHAH & ASSOCIATES, INC.  
ENGINEERS

TRANSPORTATION \* SITE \* CIVIL  
1220 WINCHESTER PARKWAY ATLANTA, GEORGIA 30309  
BUILDING 1220, SUITE 240  
TELEPHONE 770\*436-5070 FAX 770\*436-5410



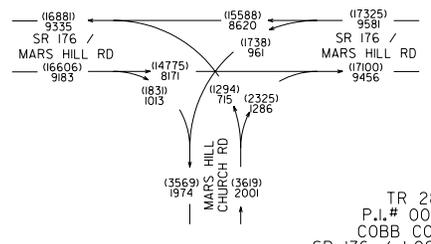
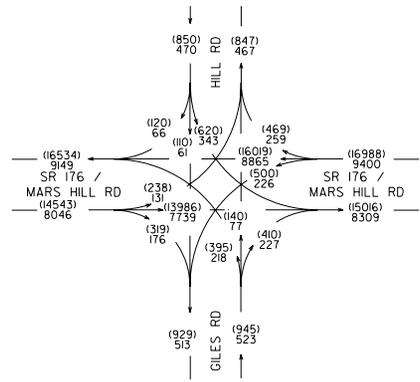
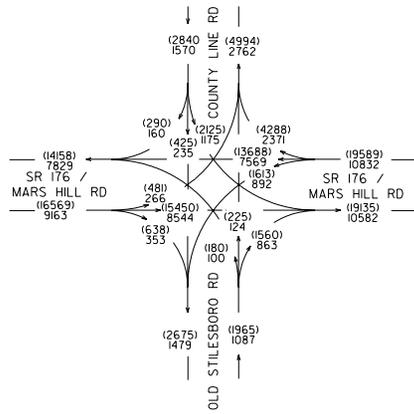
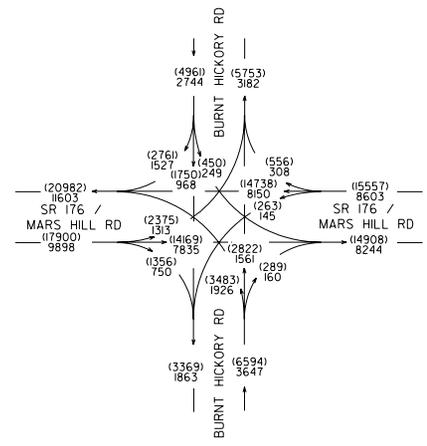
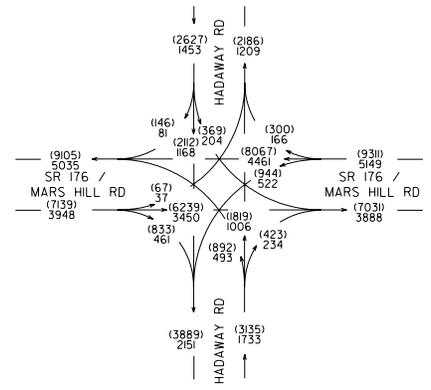
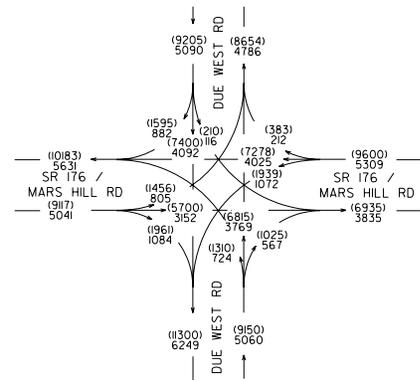
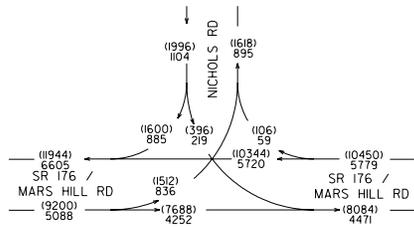
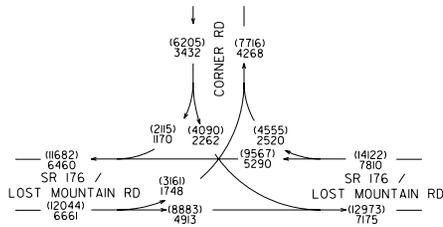
REVISION DATES

NO.	DATE	DESCRIPTION

STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: \$OFFICE\$\$\$  
TYPICAL SECTIONS

\$PROJECTNAME1\$\$\$\$  
\$PROJECTNAME2\$\$\$\$

DRAWING No.  
T-04



SR 176 / MARS HILL RD / LOST MOUNTAIN RD  
24 HR. T = 2%

TR 288  
P.I.# 004404  
COBB COUNTY  
SR 176 / LOST MTN /  
MARS HILL RD  
&  
EIGHT INTERSECTIONS  
2007 ADT = 000  
2027 ADT = (000)

RGL  
2/01

**R.K. SHAH & ASSOCIATES, INC.**  
ENGINEERS

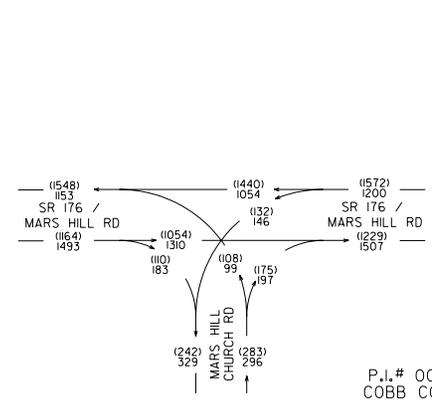
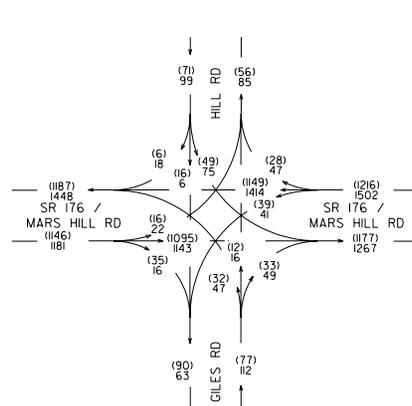
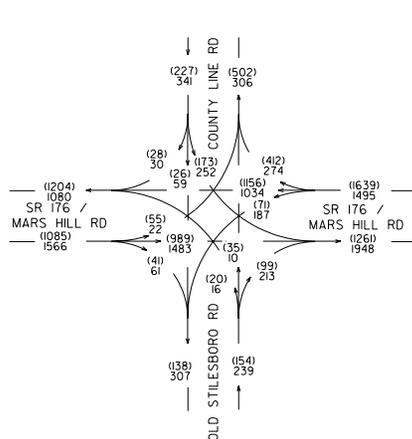
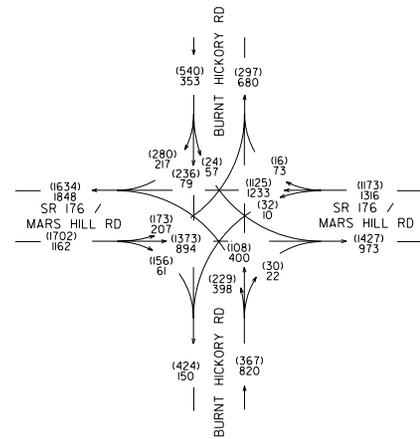
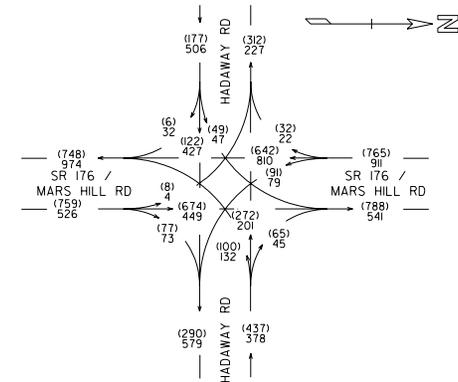
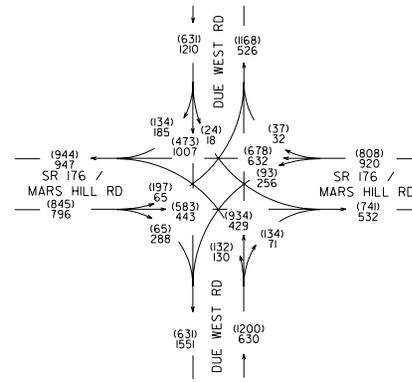
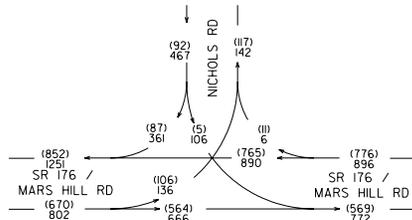
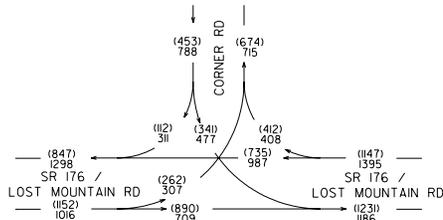
TRANSPORTATION / SITE / CIVIL  
1280 WINCHESTER PARKWAY ATLANTA, GEORGIA 30080  
BUILDING 1280, SUITE 240  
TELEPHONE 770/436-5070 FAX 770/436-5410

REVISION DATES	

STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: URBAN DESIGN  
TRAFFIC DIAGRAM

SR 176 @ EIGHT INTERSECTION  
SR176 @ CORNER RD

DRAWING No.  
**10-1**



SR 176  
T = 2%

P.L.# 004404  
COBB COUNTY  
SR 176 / LOST MTN /  
MARS HILL RD  
&  
EIGHT INTERSECTIONS  
2027 AM DHV = 000  
2027 PM DHV = (000)

R/L  
2/01

**R.K. SHAH & ASSOCIATES, INC.**  
ENGINEERS

TRANSPORTATION / SITE / CIVIL  
1280 WINCHESTER PARKWAY ATLANTA, GEORGIA 30080  
BUILDING 1280, SUITE 240

TELEPHONE 770/436-5070 FAX 770/436-5410

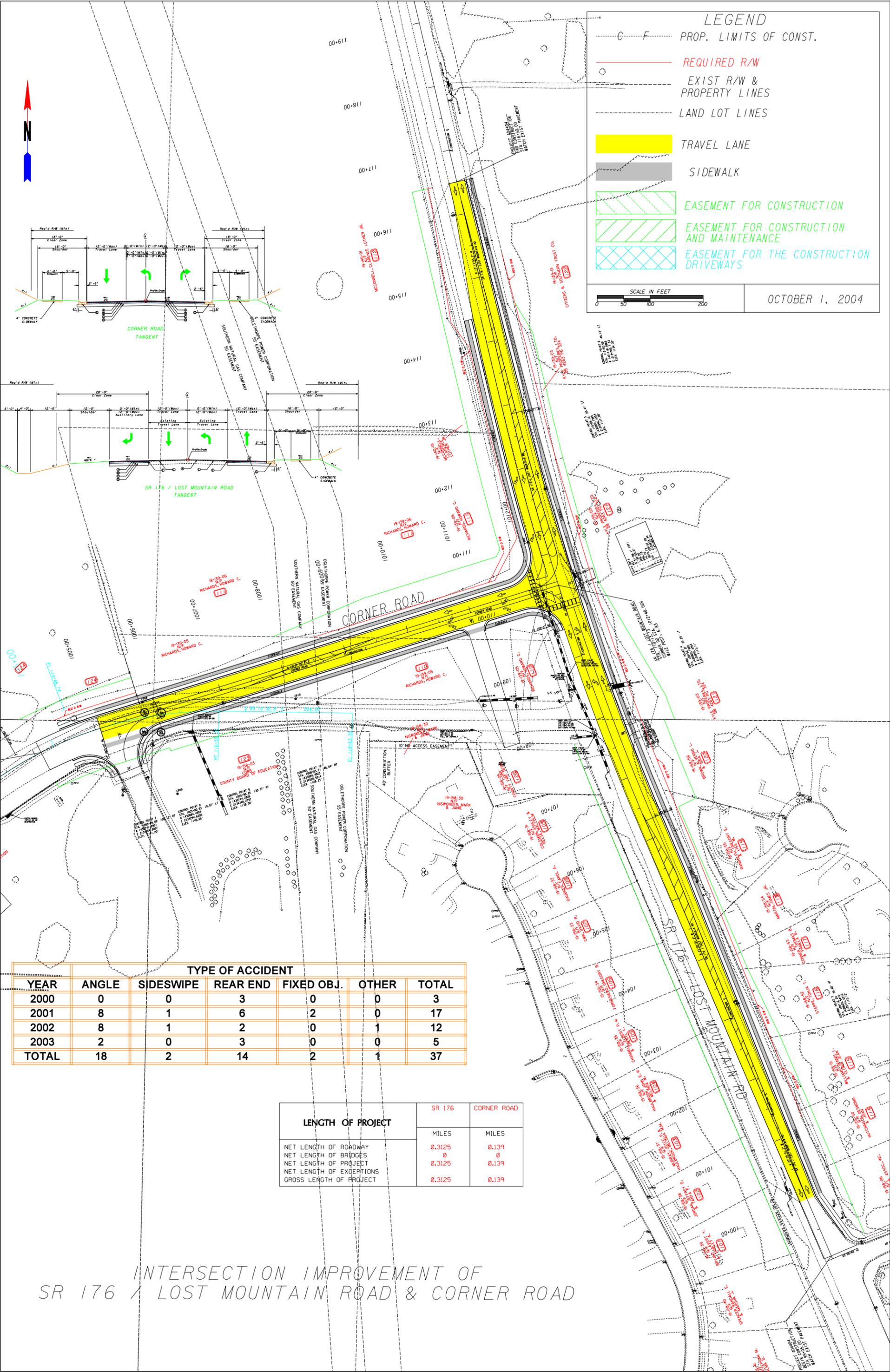
REVISION DATES

NO.	DATE	DESCRIPTION

STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: URBAN DESIGN  
TRAFFIC DIAGRAM

SR 176 @ EIGHT INTERSECTION  
SR 176 @ CORNER RD

DRAWING No.  
**10-2**

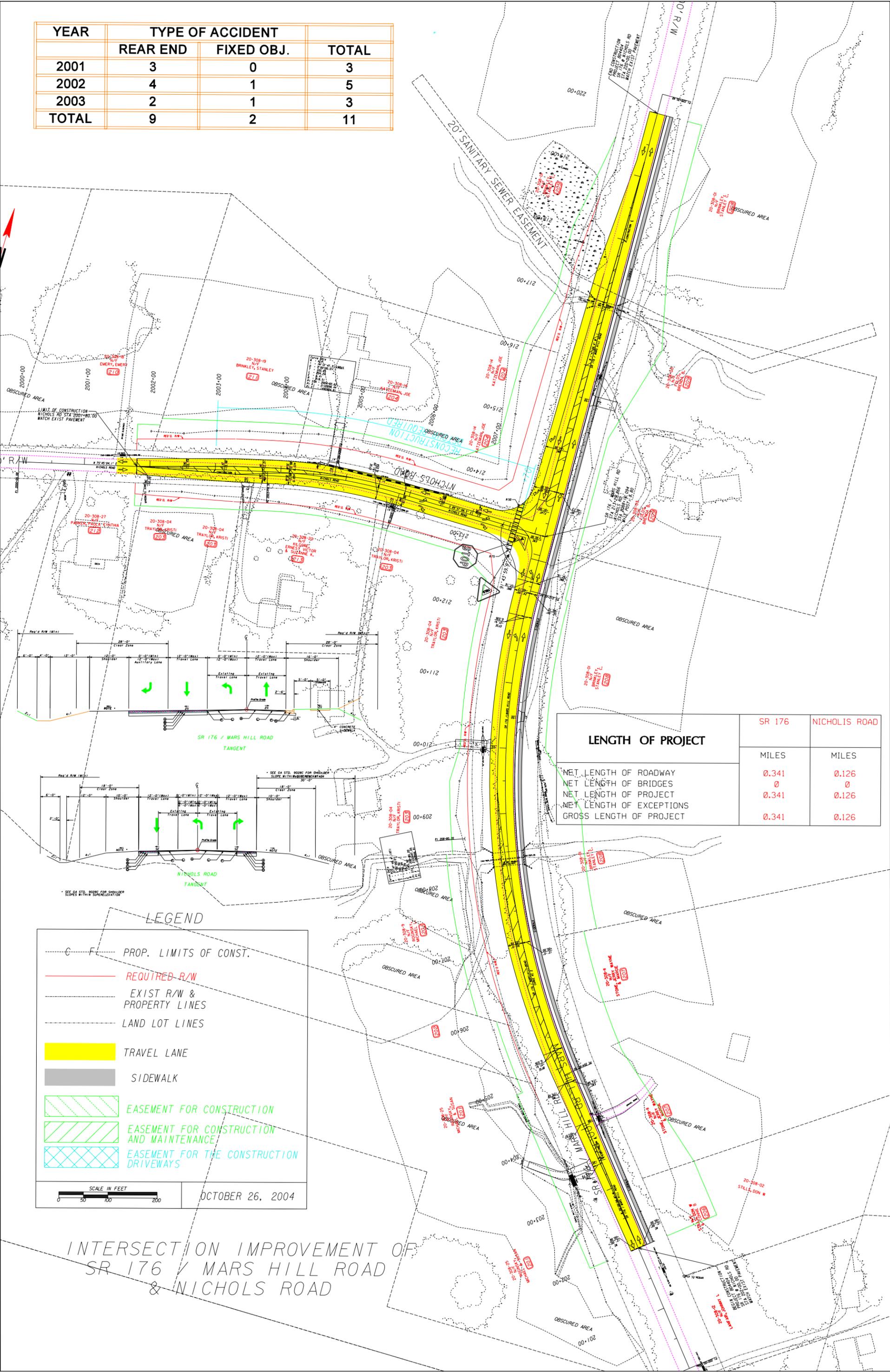


YEAR	ANGLE	TYPE OF ACCIDENT				TOTAL
		SIDESWIPE	REAR END	FIXED OBJ.	OTHER	
2000	0	0	3	0	0	3
2001	8	1	6	2	0	17
2002	8	1	2	0	1	12
2003	2	0	3	0	0	5
<b>TOTAL</b>	<b>18</b>	<b>2</b>	<b>14</b>	<b>2</b>	<b>1</b>	<b>37</b>

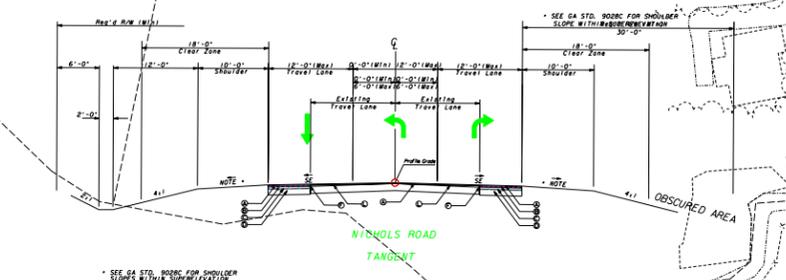
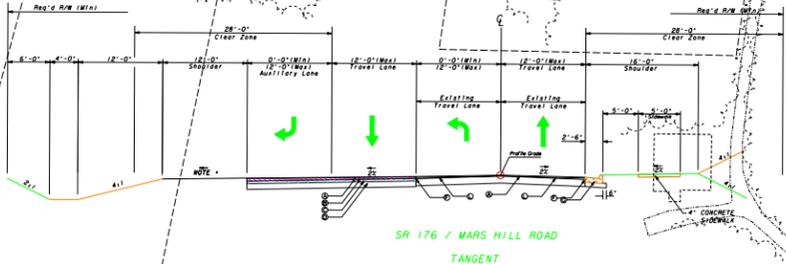
LENGTH OF PROJECT	SR 176	CORNER ROAD
	MILES	MILES
NET LENGTH OF ROADWAY	0.3125	0.139
NET LENGTH OF BRIDGES	0	0
NET LENGTH OF PROJECT	0.3125	0.139
NET LENGTH OF EXCEPTIONS		
GROSS LENGTH OF PROJECT	0.3125	0.139

INTERSECTION IMPROVEMENT OF  
SR 176 / LOST MOUNTAIN ROAD & CORNER ROAD

YEAR	TYPE OF ACCIDENT		
	REAR END	FIXED OBJ.	TOTAL
2001	3	0	3
2002	4	1	5
2003	2	1	3
<b>TOTAL</b>	<b>9</b>	<b>2</b>	<b>11</b>



LENGTH OF PROJECT	SR 176	NICHOLS ROAD
		MILES
NET LENGTH OF ROADWAY	0.341	0.126
NET LENGTH OF BRIDGES	0	0
NET LENGTH OF PROJECT	0.341	0.126
NET LENGTH OF EXCEPTIONS		
GROSS LENGTH OF PROJECT	0.341	0.126



**LEGEND**

- C --- F --- PROP. LIMITS OF CONST.
- REQUIRED R/W
- EXIST R/W & PROPERTY LINES
- LAND LOT LINES
- TRAVEL LANE
- SIDEWALK
- ▨ EASEMENT FOR CONSTRUCTION
- ▨ EASEMENT FOR CONSTRUCTION AND MAINTENANCE
- ▨ EASEMENT FOR THE CONSTRUCTION DRIVEWAYS

SCALE IN FEET  
0 50 100 200

OCTOBER 26, 2004

INTERSECTION IMPROVEMENT OF  
SR 176 / MARS HILL ROAD  
& NICHOLS ROAD

YEAR	TYPE OF ACCIDENT			TOTAL
	ANGLE	REAR END	FIXED OBJ.	
2001	15	2	1	18
2002	5	0	0	5
2003	3	1	0	4
<b>TOTAL</b>	<b>23</b>	<b>3</b>	<b>1</b>	<b>27</b>

LENGTH OF PROJECT	SR 176	HADAWAY ROAD
	MILES	MILES
NET LENGTH OF ROADWAY	0.701	0.294
NET LENGTH OF BRIDGES	0	0
NET LENGTH OF PROJECT	0.701	0.294
NET LENGTH OF EXCEPTIONS		
GROSS LENGTH OF PROJECT	0.701	0.294

INTERSECTION IMPROVEMENT OF  
SR 176 / MARS HILL ROAD & HADAWAY ROAD

LENGTH OF PROJECT	SR 176	DUE WEST ROAD
	MILES	MILES
NET LENGTH OF ROADWAY	0.701	0.398
NET LENGTH OF BRIDGES	0	0
NET LENGTH OF PROJECT	0.701	0.398
NET LENGTH OF EXCEPTIONS		
GROSS LENGTH OF PROJECT	0.701	0.398

INTERSECTION IMPROVEMENT OF  
SR 176 / MARS HILL ROAD  
& DUE WEST ROAD

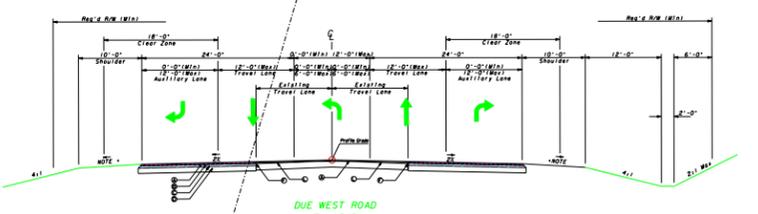
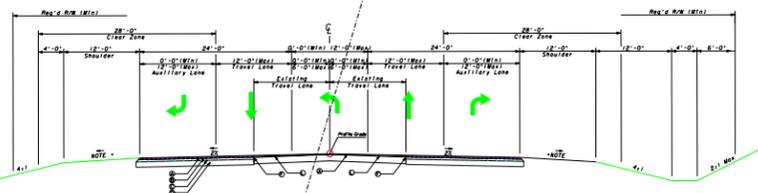
LEGEND

- C --- F --- PROP. LIMITS OF CONST.
- REQUIRED R/W
- EXIST R/W & PROPERTY LINES
- LAND LOT LINES
- TRAVEL LANE
- SIDEWALK
- EASEMENT FOR CONSTRUCTION
- EASEMENT FOR CONSTRUCTION AND MAINTENANCE
- EASEMENT FOR THE CONSTRUCTION DRIVEWAYS

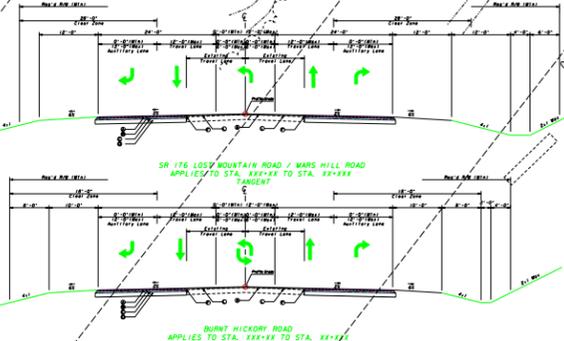
SCALE IN FEET  
0 50 100 200

OCTOBER 26, 2004

YEAR	TYPE OF ACCIDENT					TOTAL
	ANGLE	SIDESWIPE	REAR END	FIXED OBJ.	OTHER	
2000	0	0	1	0	0	1
2001	2	0	4	0	0	6
2002	2	1	6	1	1	11
2003	3	0	5	1	0	9
<b>TOTAL</b>	<b>7</b>	<b>1</b>	<b>16</b>	<b>2</b>	<b>1</b>	<b>27</b>



YEAR	TYPE OF ACCIDENT					
	ANGLE	SIDESWIPE	REAR END	FIXED OBJ.	OTHER	TOTAL
2000	1	0	0	0	0	1
2001	1	2	10	1	1	15
2002	3	1	8	0	0	12
2003	2	2	11	1	0	16
<b>TOTAL</b>	<b>7</b>	<b>5</b>	<b>29</b>	<b>2</b>	<b>1</b>	<b>44</b>



**LEGEND**

- C --- F --- PROP. LIMITS OF CONST.
- REQUIRED R/W
- EXIST R/W & PROPERTY LINES
- LAND LOT LINES
- TRAVEL LANE
- SIDEWALK
- ▨ EASEMENT FOR CONSTRUCTION
- ▨ EASEMENT FOR CONSTRUCTION AND MAINTENANCE
- ▨ EASEMENT FOR THE CONSTRUCTION DRIVeways

SCALE IN FEET  
0 50 100 200

OCTOBER 1, 2004

PLAN OF IMPROVEMENT OF INTERSECTION OF SR 176 / MARS HILL ROAD & BURNT HICKORY ROAD

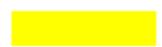
LENGTH OF PROJECT	SR 176	BURNT HICKORY ROAD
	MILES	MILES
NET LENGTH OF ROADWAY	0.445	0.331
NET LENGTH OF BRIDGES	0	0
NET LENGTH OF PROJECT	0.445	0.331
NET LENGTH OF EXCEPTIONS		
GROSS LENGTH OF PROJECT	0.445	0.331

LENGTH OF PROJECT	SR 176	GILES ROAD	HILL ROAD
	MILES	MILES	MILES
NET LENGTH OF ROADWAY	0.762	0.208	0.189
NET LENGTH OF BRIDGES	0	0	0
NET LENGTH OF PROJECT	0.762	0.208	0.189
NET LENGTH OF EXCEPTIONS			
GROSS LENGTH OF PROJECT	0.762	0.208	0.189

INTERSECTION IMPROVEMENT OF  
SR 176 / MARS HILL RD.  
AND HILL / GILES RD

YEAR	TYPE OF ACCIDENT				TOTAL
	ANGLE	REAR END	FIXED OBJ.	OTHER	
2001	0	2	0	0	2
2002	2	1	0	0	3
2003	0	3	0	1	4
<b>TOTAL</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>1</b>	<b>9</b>

LEGEND

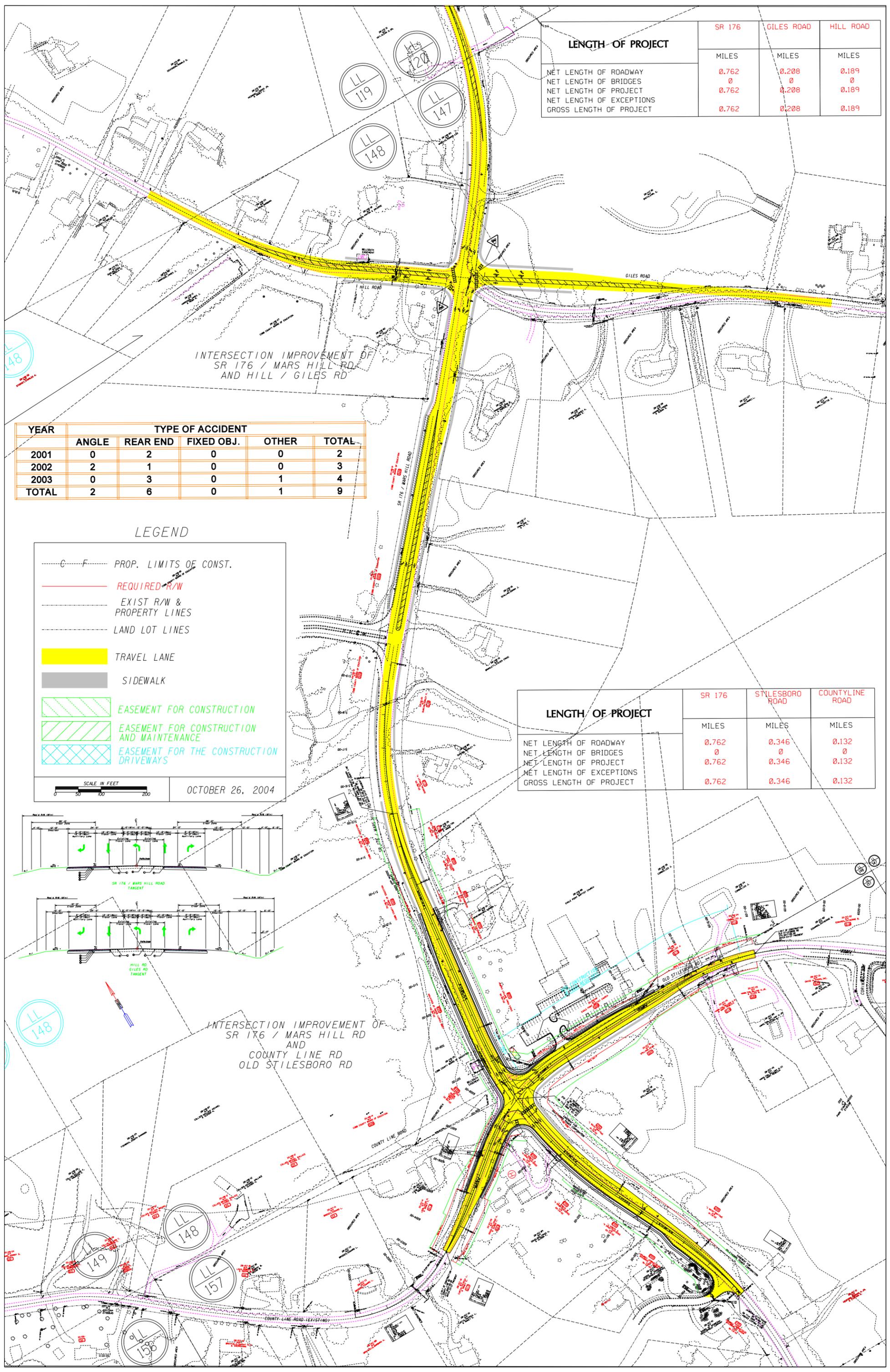
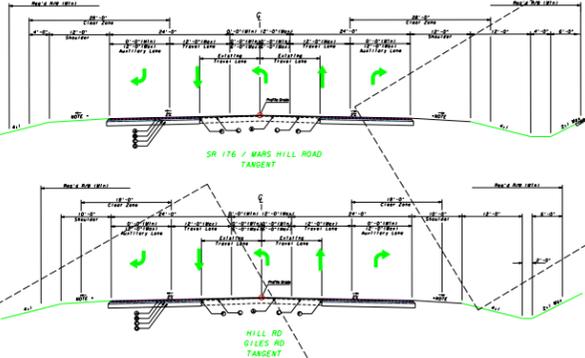
--- G --- F --- PROP. LIMITS OF CONST.  
 --- REQUIRED R/W  
 --- EXIST R/W & PROPERTY LINES  
 --- LAND LOT LINES  
 TRAVEL LANE  
 SIDEWALK  
 EASEMENT FOR CONSTRUCTION  
 EASEMENT FOR CONSTRUCTION AND MAINTENANCE  
 EASEMENT FOR THE CONSTRUCTION DRIVEWAYS

SCALE IN FEET: 0 50 100 200

OCTOBER 26, 2004

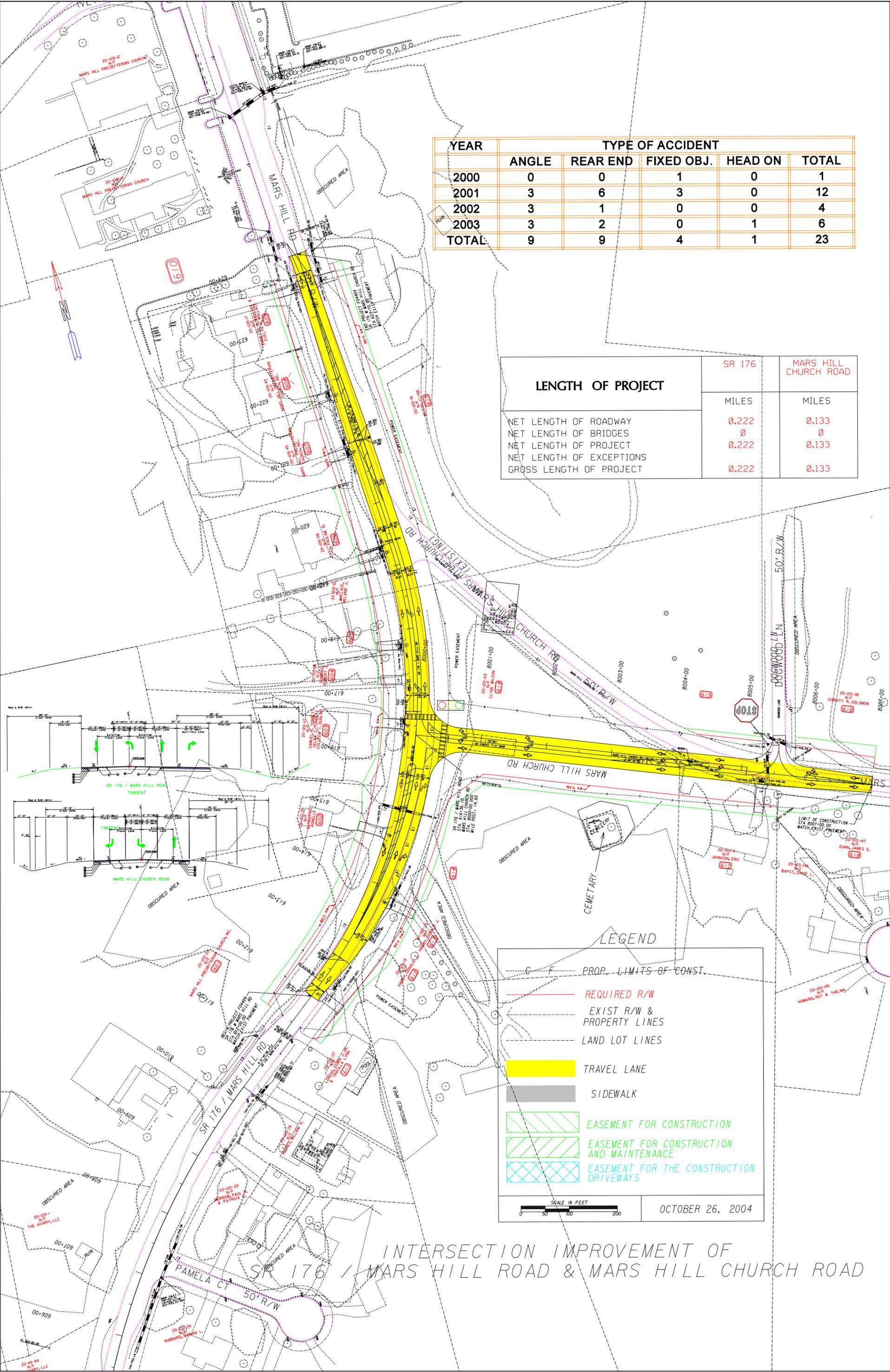
LENGTH OF PROJECT	SR 176	STILESBORO ROAD	COUNTYLINE ROAD
	MILES	MILES	MILES
NET LENGTH OF ROADWAY	0.762	0.346	0.132
NET LENGTH OF BRIDGES	0	0	0
NET LENGTH OF PROJECT	0.762	0.346	0.132
NET LENGTH OF EXCEPTIONS			
GROSS LENGTH OF PROJECT	0.762	0.346	0.132

INTERSECTION IMPROVEMENT OF  
SR 176 / MARS HILL RD  
AND  
COUNTY LINE RD  
OLD STILESBORO RD



YEAR	TYPE OF ACCIDENT				TOTAL
	ANGLE	REAR END	FIXED OBJ.	HEAD ON	
2000	0	0	1	0	1
2001	3	6	3	0	12
2002	3	1	0	0	4
2003	3	2	0	1	6
<b>TOTAL</b>	<b>9</b>	<b>9</b>	<b>4</b>	<b>1</b>	<b>23</b>

LENGTH OF PROJECT	SR 176	MARS HILL CHURCH ROAD
	MILES	MILES
NET LENGTH OF ROADWAY	0.222	0.133
NET LENGTH OF BRIDGES	0	0
NET LENGTH OF PROJECT	0.222	0.133
NET LENGTH OF EXCEPTIONS	0.222	0.133
GROSS LENGTH OF PROJECT	0.222	0.133



**LEGEND**

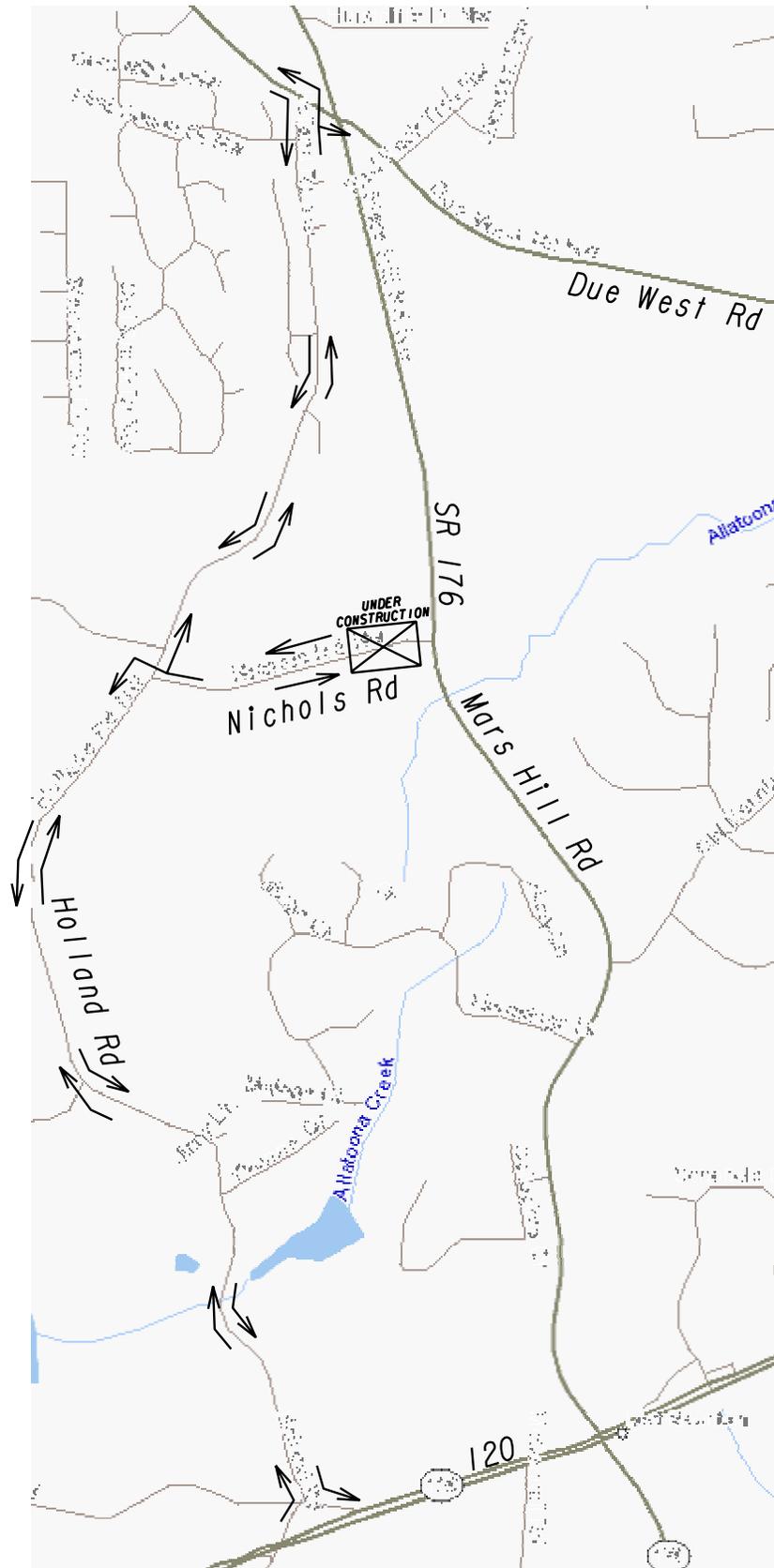
- PROP. LIMITS OF CONST.
- REQUIRED R/W
- EXIST R/W & PROPERTY LINES
- LAND LOT LINES
- TRAVEL LANE
- SIDEWALK
- EASEMENT FOR CONSTRUCTION
- EASEMENT FOR CONSTRUCTION AND MAINTENANCE
- EASEMENT FOR THE CONSTRUCTION DRIVEWAYS

SCALE IN FEET: 0, 50, 100, 200

OCTOBER 26, 2004

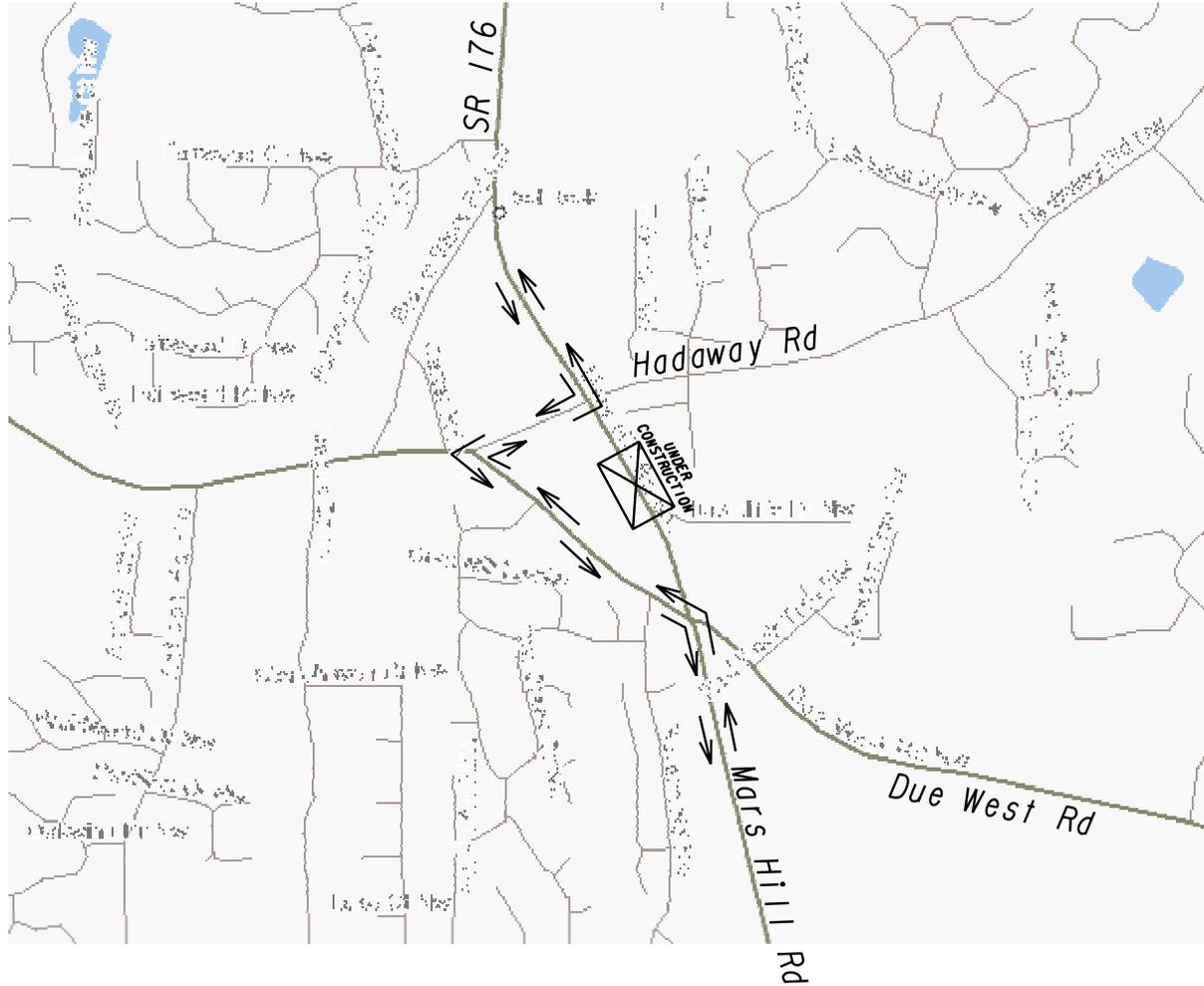
INTERSECTION IMPROVEMENT OF  
SR 176 / MARS HILL ROAD & MARS HILL CHURCH ROAD

# DETOUR MAP FOR NICHOLS ROAD



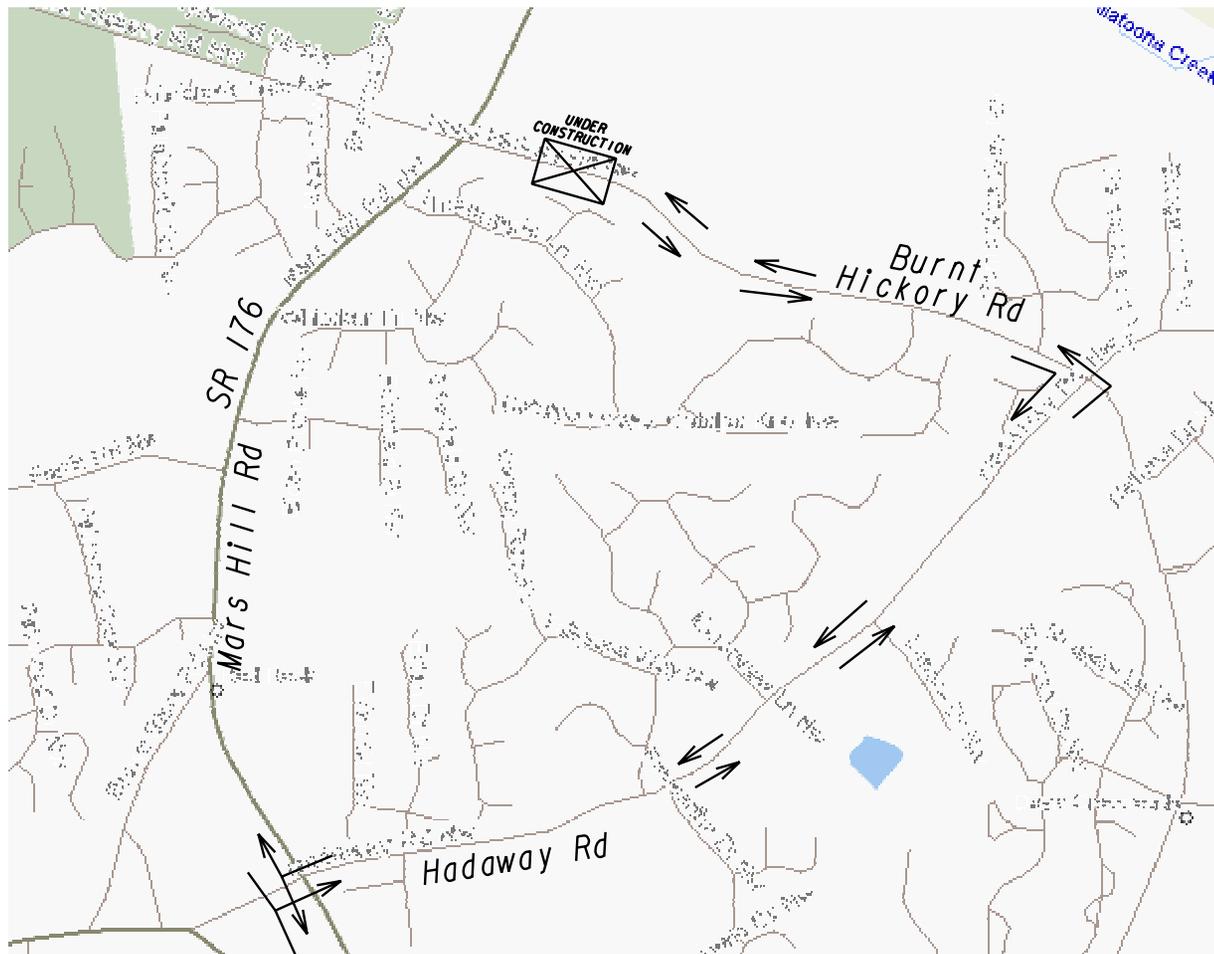
SCALE: 1 in = 1000 ft

DETOUR MAP FOR SR 176 @ DUE WEST & HADAWAY RD



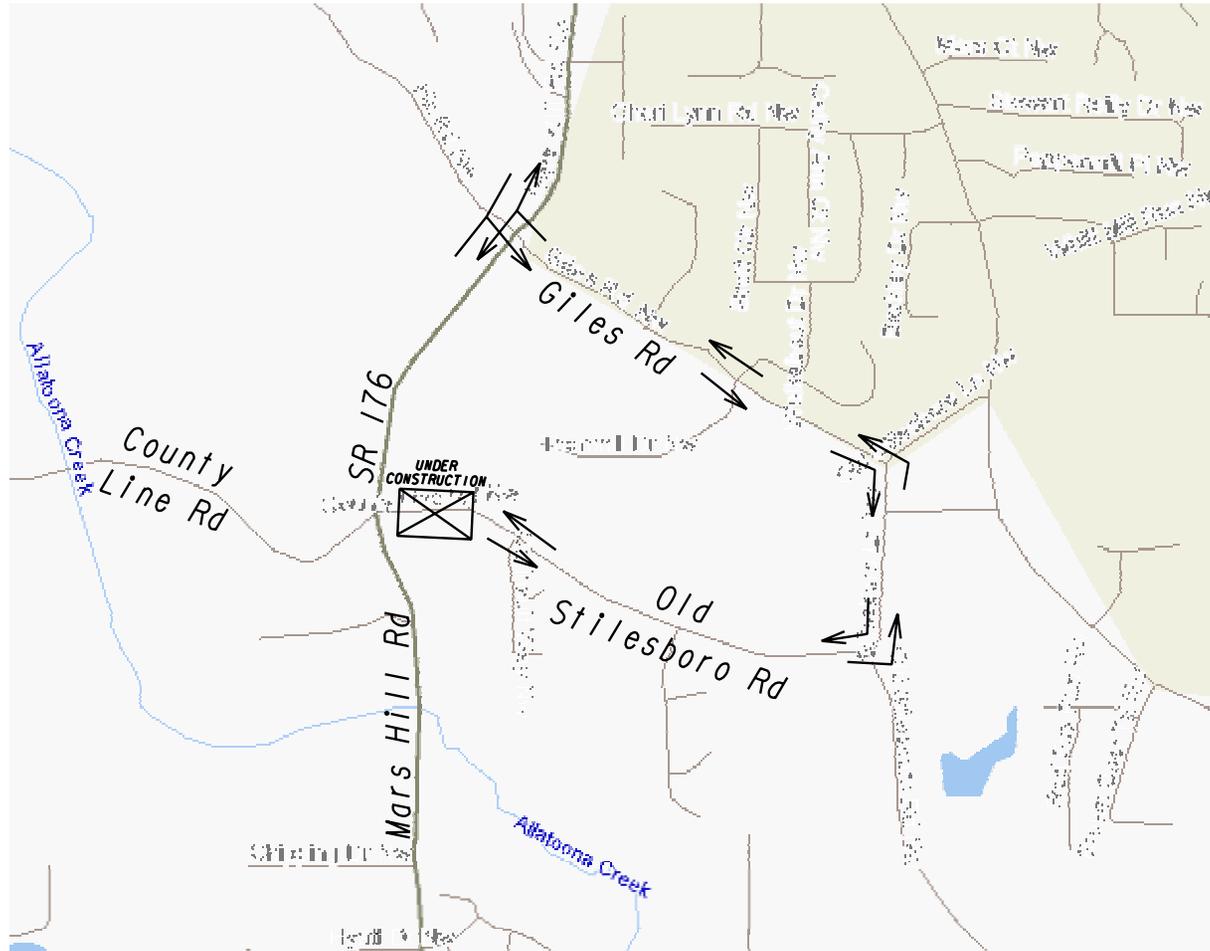
SCALE: 1 in = 1000 ft

DETOUR MAP FOR BURNT HICKORY RD



SCALE: 1 in = 1000 ft

DETOUR MAP FOR OLD STILESBORO RD



SCALE: 1 in = 1000 ft

May 21, 2004

## **MINUTES OF MEETING**

Date of Meeting: May 21, 2004 /Time of Meeting: 1:30 P.M.

Place of Meeting: GDOT Urban Design Conference Room No. 352

**Cobb County DOT Project No. TR 288**

**GDOT Project No. MSL-0004 (404), P.I. No. 0004404/ARC CO-325**

**Project Description: SR 176/Lost Mountain Road/Mars Hill Road @ Eight Intersections Between Corner and Cobb Parkway**

### **Eight Intersections:**

- SR 176/Lost Mountain Road @ Corner Road
- SR 176/Mars Hill Road @ Nichols Road
- SR 176/Mars Hill Road @ Due West Road
- SR 176/Mars Hill Road @ Hadaway Road
- SR 176/Mars Hill Road @ Burnt Hickory Road
- SR 176/Mars Hill Road @ County Line Road/Old Stilesboro Road
- SR 176/Mars Hill Road @ Giles Road/Hill Road and
- SR 176/Mars Hill Road @ Mars Hill Church Road

### **SUB: Review of Project Design Criteria and Progress Concept Plans**

#### **Meeting Attendees:**

Ms. Jan C. Hilliard, Project Manager /GDOT – Urban Design

Mr. Nicoe Alexander, Urban Design Office/GDOT – Urban Design

Mr. Mike Wright, Project Manager/Cobb County Department of Transportation.

Mr. Raju Shah, Project Manager/R .K. SHAH & ASSOCIATES, INC.

Cobb County Department of Transportation advised Urban Design regarding substituting the Nichols Road Intersection for the Stilesboro Road/Brookstone Dr. Intersection. The reason for the substitution is that the Stilesboro Road/Brookstone Dr. intersection is currently signalized and only needs the left-turn lane added which the county will handle. The county wanted to use the money at the Nichols Road Intersection because more extensive work will be needed to make that intersection operate more efficiently.

Consultant presented Project Design Criteria established by the Cobb County Department of Transportation in meetings of March 30 and April 2, 2004 for Urban Design's review and concurrence.

May 21, 2004

## **MINUTES OF MEETING**

Page 2

**Cobb County DOT Project No. TR 288**

**GDOT Project No. MSL-0004 (404), P.I. No. 0004404/ARC CO-325**

Urban Design tentatively accepted the project design criteria, however they wanted to review the criteria further as written in the Kick-Off meeting minutes that was given to them for the first time at this meeting, and they will then advise the county if all is satisfactory.

Consultant presented the progress Concept Plans and Typical Sections for each of the Eight Intersections.

The county and consultant pointed out that the distance along SR 176/Mars Hill Road between the proposed intersection improvements at Due West Road and Hadaway Road is such that once the left-turn lanes are added, there will only be a short section along SR 176/Mars Hill Road between the two intersections that will have two lanes. Therefore the county proposed to make it three lanes the entire distance along SR 176 between those two intersections. The county proposed a 12-foot wide two-way left-turn lane to extend between the left-turn only lanes at the intersections.

Urban Design concurred that it made sense for continuity, however, they suggested using a 14-foot wide two-way left-turn lane.

Urban Design asked the consultant to revise the typical sections for the following:

1. Provide minimum 3 ft. deep ditch on rural sections for the side streets.
2. Clarify left-turn arrow on the typical sections.

The consultant stated that Long Engineering is the sub consultant preparing the database and Photo Science is doing the mapping.

## **ACTION ITEMS**

Urban Design will investigate and advise the consultant on the following:

1. Clarify criteria for providing right turn/deceleration lane.
2. Verify width of two-way left turn lane (12 ft./14ft.) on SR 176/Mars Hill Road between Due West Road and Hadaway Road.
3. Verify location of Clear Zone determination i.e. from the edge of the outside through lane or from the edge of the right turn lane.

Consultant will provide an updated schedule for the project to Urban Design.

**Above is the understanding of items discussed and agreed upon. Please advise of any error or omissions.**

# MINUTES OF MEETING

August 10, 2004

## COBB COUNTY DEPARTMENT OF TRANSPORTATION

Engineering Division  
1890 County Services Parkway  
Marietta, GA 30008  
Phone: 770-528-1616

DRAFT

By:  
Mike Wright

Date of Meeting:  
August 6, 2004

Place:  
GDOT Urban Design

Project No.:  
TR 288, GDOT MSL-0004(404), Cobb Co.  
PI No. 0004404  
Project Name:  
SR176/Lost Mountain Rd/Mars Hill Rd. –  
Eight intersections

Time:  
2:00 pm

### Those Present:

Darryl VanMeter, GDOT Urban Design  
Darrell Richardson, GDOT Urban Design  
Raju Shah, R.K. Shah and Associates  
Renard Johnson, R.K. Shah and Associates  
Robert Garner, R.K. Shah and Associates  
Mike Wright, Cobb County DOT

Steve Adewale, GDOT Urban Design

### Purpose of meeting:

To acquaint Darryl VanMeter, as new GDOT PM with work of RK Shah to date and discuss questions regarding **project** issues that may require design variances and exceptions.

### Discussion:

- R.K. Shah and Associates made a presentation showing the conceptual layout for each of the eight intersections in the project.
- According to Darrell Richardson, there are two projects in the TIP to widen SR 176 to 4 lanes divided, PI no. 721680 and PI no. 721685. Because of these two projects, GDOT will likely want to acquire additional r/w to accommodate the future widening as part of this project. This will have severe impacts to this project. If Cobb County does not support this widening, it may be removed from the TIP and additional right of way would not be required. Cobb County is to provide a statement to GDOT regarding support of the project as soon as possible.
- Right turn lanes will not necessarily be required at all intersections. Requirements will be determined on a case by case basis. Impacts to developed residential properties and costs will be considered in the evaluation.
- The issue of clear zone and the point on the typical section to be referenced. Mr. VanMeter discussed two methods: (1) Use the edge of through travel lane and the ADT and speed design (2) Use the edge of the right turn lane with a reduced speed and ADT.

For the purpose of this project , it was recommended to use method No.1 to establish the clear zone.

- GDOT would desire to put curb and gutter urban sections at all signalized intersections.
- Although curb and gutter no longer count toward reducing clear zone, the elimination of the drainage ditches and use of a flat shoulder will decrease the clear zone requirements at urban intersections.
- GDOT instructed R. K. Shah to :
  - Proceed with Soil Surveys
  - Set up a meeting with GDOT OEL prior to the Initial Concept Meeting
  - Submit copies of concept plans shown at the meeting to the District Utility Engineer
  - Use the revised template of both the existing and proposed design features in the PDP for the Concept Report.
- GDOT has requested a Right of Way Estimate for the Concept Report. Apparently this is not in the scope of services for the Consultant Services Agreement.
- GDOT will aim for having the Initial Concept Meeting in mid September of 2004.

This represents our understanding of items discussed at the above referenced meeting. Please contact Mike Wright at 770-528-4375 with any additional comments or corrections.

Copies:

Attendees  
Bob Galante  
File TR 288

# MEMORANDUM

**Date:** 8-31-04

**To:** File

**From:** Lori Kennedy

**Subject:** MSL-0004-00(404), Cobb County  
Mars Hill Road – Eight Intersection Improvements  
Meeting Minutes – 8-31-04

A meeting was conducted on August 31, 2004 at the GDOT Office of Environment and Location to review the environmental status of the subject project. The following individuals were in attendance:

Raju Shah, R.K. Shah & Associates (770-436-5070)  
Lori G. Kennedy, KEA Group (770-933-9110)  
Mike Wright, Cobb County DOT (770-528-4375)  
Rich Williams, GDOT OEL (404-699-4438)

The meeting began with Mr. Shah reviewing the conceptual design being proposed for each intersection improvement. Mr. Shah indicated that he is preparing for a Concept Team Meeting with the Department that would most likely take place at the end of September. He indicated that the Urban Design Office has approached the Cobb County DOT about possibly purchasing additional right-of-way at each intersection for future improvements that would include a long range plan for widening the entire corridor of Mars Hill Road that is in the Department's Work Program. Mr. Williams indicated that if additional right-of-way was purchased this would need to be evaluated in the NEPA process and it would most likely delay the current NEPA document that was being completed.

Copies of early coordination letters to be distributed along with the Need and Purpose statement were provided to Mr. Williams for his review and comment. Ms. Kennedy then proceeded to review the various areas of the NEPA document (Categorical Exclusion) that have been completed to date.

- 1 - The Need and Purpose statement is complete and has been reviewed by Cobb County DOT. There have been no comments on it to date.
- 2 - The Ecology Report is nearly completed and no wetland impacts are anticipated. Linear feet of stream impact will be determined once Mr. Shah provides

KEA Group with information on which culverts and/or pipes would be replaced and/or extended. Once the linear feet of stream impact is determined the Ecology Report will be completed and forwarded to the Department for their review and comment. Ms. Kennedy also indicated impacts to four regulated 100-year flood zone at existing culvert crossings on Mars Hill Road. These impacts would be due to culvert extensions only.

3 - The draft history survey has been completed and is being routed to KEA Group. Once KEA Group receives this report they will forward it to the Department for review. There is one eligible historic resource identified on Burnt Hickory Road. The Section 106 notification letter has been sent out by Terracon through the Department.

4 - The air study is in the process of being completed. Mr. Shah explained to Mr. Williams that the design for each intersection is an interim improvement and would not satisfy 2027 design year traffic. Mr. Williams indicated that he would coordinate with Greg Hood in the office and get back with Ms. Kennedy concerning information on the air study.

5 - The UST study is underway. Ms. Kennedy indicated that USTs or hazardous waste was not anticipated to be encountered based on the current land use. Mr. Williams indicated that if the UST study was not completed by the time the CE document was ready to be submitted that was o.k. and it could be incorporated into a reevaluation.

6 - No displacements are anticipated for the project. And a noise study is not required.

7 - Mr. Shah indicated that the County would like to begin purchasing right-of-way in June, 2005. Mr. Williams indicated that the approval of the NEPA document before this date should not be a problem based on what he heard today concerning impacts.

# MINUTES OF MEETING

October 25, 2004

## COBB COUNTY DEPARTMENT OF TRANSPORTATION

Engineering Division  
1890 County Services Parkway  
Marietta, GA 30008  
Phone: 770-528-1616

By:  
Mike Wright

Date of Meeting: October 14, 2004

Place:  
GDOT Urban Design

DRAFT

Project No.:  
**TR 288, GDOT MSL-0004(404), Cobb Co.**  
**PI No. 0004404**  
Project Name:  
**SR176/Lost Mountain Rd/Mars Hill Rd. –**  
**Eight intersections**

Time: 9:00 A.M.

### **Those Present:**

Darryl Van Meter, GDOT Urban Design  
Darrell Richardson, GDOT Urban Design  
Raju Shah, R.K. Shah and Associates  
Robert Garner, R.K. Shah and Associates  
Mike Wright, Cobb County DOT  
Steve Adewale, GDOT Urban Design

**Purpose of meeting:** To discuss issues raised at the August 6, 2004 meeting with GDOT and efforts and status of resolution of these issues. To discuss the Draft Concept Report prior to the Initial Concept Meeting.

### **Discussion:**

- Additional right of way for the future four lane project will be evaluated on a parcel by parcel basis. The additional right of way will be acquired in cases where impacts will cause severe damages to be paid and total acquisition will not be a significant increase. It is not intended to add parcels to the job in order to do this.
- R. K. Shah is to identify vacant parcels to facilitate the right of way acquisition noted above.
- The question of splitting the projects into phases if some intersections can be ready but other cannot was discussed. GRTA will have to answer questions regarding using the Bond Money in phases rather than one project. The decision as to whether intersections will be designated as phases will need to be made by the time the r/w plans are complete.
- CCDOT needs to set priorities for the projects to divide into phases and possibly delete projects if budget is exceeded.
- The current right of way estimate is \$2 Million. There needs to be a more detailed right of way estimate made.
- R. K. Shah needs to show existing and proposed traffic signals on the plan displays.
- R. K. Shah to verify if a signal is proposed for Nichols Road.
- The work shown on Nichols Road appears to encroach into a creek. Impacts to the environmental documentation should be evaluated.

- Right of way needs to be certified by appraiser on the GDOT approved list. CCDOT is to check if CCDOT right of way section may qualify to certify right of way.

This represents our understanding of items discussed at the above referenced meeting. Please contact Mike Wright at 770-528-4375 with any additional comments or corrections.

Copies:

Attendees  
Bob Galante  
File TR 288

May 18, 2005

**MINUTES OF INITIAL CONCEPT MEETING**

Date of Meeting: October 26, 2004 /Time of Meeting: 10:00 A.M.  
Place of Meeting: GDOT Urban Design Conference Room No. 352

**Cobb County DOT Project No. TR 288**  
**GDOT Project No. MSL-0004 (404), P.I. No. 0004404/ARC CO-325**

**Project Description: SR 176/Lost Mountain Road/Mars Hill Road @ Eight Intersections**

**Eight Intersections:**

- SR 176/Lost Mountain Road @ Corner Road
- SR 176/Mars Hill Road @ Nichols Road
- SR 176/Mars Hill Road @ Due West Road
- SR 176/Mars Hill Road/Hadaway Road
- SR 176/Mars Hill Road/Burnt Hickory Road
- SR 176/Mars Hill Road/County Line Road/Old Stilesboro Road
- SR 176/Mars Hill Road/Giles Road/Hill Road and
- SR 176/Mars Hill Road/Mars Hill Church Road

**Meeting Attendees:**

Name	Organization	Tel. #	E-Mail
Theresa Holder	GDOT-Urban Design-	404-646-5447	<a href="mailto:theresa.holder@dot.state.ga.us">theresa.holder@dot.state.ga.us</a> .
Jennifer Zhan	ARCADIS	770-436-5070	<a href="mailto:yzhan@arcadis-us.com">yzhan@arcadis-us.com</a>
Lori Kennedy	Kennedy Eng. & Assoc.	770-933-9110	<a href="mailto:lkennedy@keagroup.com">lkennedy@keagroup.com</a>
Robert Garner	R.K. SHAH & ASSOC.,	770-436-5070	<a href="mailto:robert.garner@rkshah.com">robert.garner@rkshah.com</a>
Darrell Richardson	GDOT-Urban Design-	404-657-9872	<a href="mailto:darrell.richardson@dot.state.ga.us">darrell.richardson@dot.state.ga.us</a>
Clyde Cunningham	GDOT-District # 7-Util	770-986-1090	<a href="mailto:clyde.cunningham@dot.state.ga.us">clyde.cunningham@dot.state.ga.us</a>
Donzell Mitchell	GDOT- Area II Const	770-528-3238	<a href="mailto:donzell.mitchell@dot.state.ga.us">donzell.mitchell@dot.state.ga.us</a>
Ron Wishon	GDOT Eng. Services	404-651-7470	<a href="mailto:ron.wishon@dot.state.ga.us">ron.wishon@dot.state.ga.us</a>
Lisa Favors	GDOT-OEL	404-699-6883	<a href="mailto:lisa.favors@dot.state.ga.us">lisa.favors@dot.state.ga.us</a>
Mike Wright	Cobb County -DOT	770-528-4375	<a href="mailto:michael.wright@cobbcounty.org">michael.wright@cobbcounty.org</a>
Steve Adewale	GDOT-Urban Design-	404-657-5447	<a href="mailto:steve.adewale@dot.state.ga.us">steve.adewale@dot.state.ga.us</a>
Raju Shah	R.K. SHAH & ASSOC.,	770-436-5070	<a href="mailto:raju.shah@rkshah.com">raju.shah@rkshah.com</a>
Alex Laffey	GDOT-Traffic ops	770-980-1227	<a href="mailto:alex.laffey@dot.state.ga.us">alex.laffey@dot.state.ga.us</a>
Darryl VanMeter	GDOT-Urban Design-	404-656-5447	<a href="mailto:darryl.vanmeter@dot.state.ga.us">darryl.vanmeter@dot.state.ga.us</a>
Ben Buchan	GDOT-Urban Design-	404-656-5436	<a href="mailto:ben.buchan@dot.state.ga.us">ben.buchan@dot.state.ga.us</a>
Roger Henze	GRTA	404-463-3094	<a href="mailto:rhenze@grta.org">rhenze@grta.org</a>
Scott Zehngraff	GDOT-TS&O	404-635-8127	<a href="mailto:Scott.zehngraff@dot.state.ga.us">Scott.zehngraff@dot.state.ga.us</a>

May 18, 2005

Page 2

**MINUTES OF INITIAL CONCEPT MEETING**

**GDOT Project No. MSL-0004 (404), P.I. No. 0004404/ARC CO-325**

Mr. Van Meter welcomed the participants to the Initial Concept Team Meeting for the above referenced Project.

The participant introduced themselves and identified the scope of their involvement.

Mr. Shah of R. K. SHAH & ASSOCIATES described and gave details of the project.

**Scope of Work:**

Improvements of Eight Separate Intersections on SR 176/Lost Mountain Road/Mars Hill Road, to provide at a minimum, one 12 ft. through lane in each direction, one 12 ft. separate left turn lane per approach and one 12 ft. separate right turn lane per intersection approach.

16 ft. wide Urban shoulders, with 6 ft. sidewalk, on the outside are provided to minimize impacts when deemed necessary. When urban shoulder is provided, the project will establish required Right-of-Way at 28 ft. from the through edge of travel lane to provide the required clear zone for 45 mph posted/design speed on the Main Line and applicable Side Streets.

Similarly, on side streets, 16 ft. wide Urban shoulder with 6 ft. sidewalk on the outside are provided to minimize impacts when deemed necessary. The project will establish required Right-of-Way at 18 ft. from the through edge of travel lane to provide the required clear zone for 30-40 mph posted/design speed on applicable Side Streets.

The Main Line rural section will provide for 12 ft. wide shoulder, 12 ft wide front slope at 4:1, 4 ft. flat bottom ditch and 6ft. wide back slope @ 2:1. For the Main Line when Rural shoulder is provided, the project will establish required Right-of-Way at 34 ft. from the edge of travel lane.

On the Side Streets, the rural section will provide for 10 ft. wide shoulder, 12 ft wide front slope at 4:1, 2 ft. flat bottom ditch and 6ft .wide back slope @ 2:1. For Side Streets when Rural shoulder is provided, the project will establish required Right-of-Way at 30 ft. from the edge of travel lane.

All Improvements as proposed here in are based on posted speed limits.

The project will upgrade existing traffic signals at Corner Road, Due West Road, Hadaway Road and Burnt Hickory Road.

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**MINUTES OF INITIAL CONCEPT MEETING**

**GDOT Project No. MSL-0004 (404), P.I. No. 0004404/ARC CO-325**

The project proposes to install new traffic signals at Old Stilesboro Road/County Line Road and Mars Hill Church Road Intersections.

Nichols Road and Giles Road/Hill Road intersections will have Stop control on the side street.

**Significant items of interest/consideration are:**

**SR 176 Lost Mountain Road @ Corner Road:**

- SR 176/Lost Mountain Road will be widened to the east side
- Corner Road will be relocated +/- 210 ft. to the north, to provide 90 degree angle of intersection.
- Bell South's above ground telephone equipments are located on the east side of Main Line.
- Southern Natural Gas Company's Pipe Line and Oglethrope Power Company's Power Line Crosses Corner Road.
- No offsite detour is proposed. All construction will be under Traffic.

**SR 176 Mars Hill Road @ Nichols Road:**

- SR 176/Mars Hill Road will be widened to the west side.
- Existing double 10 ft. X 8 ft. Concrete Box Culvert for Allatoona Creek, south of Nichols Road will be extended on both sides.
- Existing double 10 ft. X 8 ft. Concrete Box Culvert for tributary to Allatoona Creek, North of Nichols Road will be extended on both sides.
- An offsite detour is proposed for the widening and reconstruction of Nichols Road.
- Section 404 Permit is anticipated

**SR 176 Mars Hill Road @ Due West Road:**

- Design Variance is required for the existing angle of intersection of 42.37 Degrees.
- Due to the proximity of Due West Road and Hadaway Road Intersections, it is proposed to improve both intersections under one construction contract.
- An offsite detour is proposed for the widening and reconstruction of SR 176/Mars Hill Road between Due West Road and Hadaway Road.

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**MINUTES OF INITIAL CONCEPT MEETING**

**GDOT Project No. MSL-0004 (404), P.I. No. 0004404/ARC CO-325**

**SR 176 Mars Hill Road @ Hadaway Road:**

- Due to the proximity of Hadaway Road and Due West Road Intersections, it is proposed to improve both intersections under one construction contract.
- An offsite detour is proposed for the widening and reconstruction of SR 176/Mars Hill Road between Hadaway Road and Due West Road.

**SR 176 Mars Hill Road @ Burnt Hickory Road:**

- The existing angle of Intersection is approximately 67 degrees. The angle of Intersection will be improved to 70 degrees.
- An Historical Resource is located on the south side of Burnt Hickory Road just east of SR 176/Mars Hill Road. No Right-of-Way will be acquired from this property, but temporary construction easements will be required. Curb and gutter will be used to reduce impacts.
- An offsite detour is proposed for the widening and reconstruction of Burnt Hickory Road between SR 176/Mars Hill Road and Hadaway Road.

**SR 176 Mars Hill Road @ Old Stilesboro Road and County Line Road:**

- The existing angle of Intersection between County Line Road and SR 176/Mars Hill Road of +/- 53 Degrees will be improved to 82 Degrees by relocating County Line Road.
- Due to the proximity of Old Stilesboro Road/County Line Road and Giles Road/Hill Road Intersections, it is proposed to improve both intersections under one construction contract.
- An offsite detour is proposed for the widening and reconstruction of Old Stilesboro between SR 176/Mars Hill Road and Giles Road.

**SR 176 Mars Hill Road @ Giles Road and Hill Road**

- A Design Exception is required for the substandard Stopping Sight Distance at the Intersection.
- A Design Exception is required for the substandard Vertical Grade on SR 176/Mars Hill Road just north of the Intersection, for the posted/design speed of 45 mph.
- Due to the proximity of Giles Road/Hill and Old Stilesboro Road/County Line Road Intersections, it is proposed to improve both intersections under one construction contract.
- An offsite detour is proposed for the widening and reconstruction of Old Stilesboro Road between SR 176/Mars Hill Road and Giles Road.

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**MINUTES OF INITIAL CONCEPT MEETING**

**GDOT Project No. MSL-0004 (404), P.I. No. 0004404/ARC CO-325**

SR 176 Mars Hill Road @ Mars Hill Church Road:

- Mars Hill Church Road will be relocated +/- 370 ft. to the south to provide 90 degree angle of intersection.
- A Small Family Cemetery is located on the south side of proposed relocation of Mars Hill Church Road. No adverse impact is anticipated.
- No offsite detour is proposed. All construction will be under Traffic

Improvements proposed above for the eight intersections will provide safer and improved traffic operations for eight to fifteen years. Most intersections will fail before 2027 even with improvements.

Estimated Construction Cost is \$ 8, 367, 854.28 and Right of Way Cost is \$ 2,114,040 for all Eight Intersections. Budget for the Project is \$ 5.5 Million.

Mr. Shah thanked the participants for their time and opened the meeting for Comments and Questions.

- Mr. Wright stated that required right of way for the future four lane section is approximately 13 acres. This will add approximately \$1.2 M to the project cost.
- Mr. Richardson suggested that the project needs to acquire R.O.W for future Four Lane Section whenever it is practical, otherwise new development on now vacant land will make future project's R.O.W. more expensive.
- Mr. Wright stated that Right of way estimates do not include administrative costs. There are 187 parcels affected.
- Mr. VanMeter stated that Right of Way costs need to be certified by the GDOT's Right-of-Way Office.
- There was a question about if a 2' paved shoulder was required. The answer is not on auxiliary lanes, but yes on through lanes.
- Mr. VanMeter stated that all intersections cannot be closed at the same time during Construction.
- Mr. Bechan stated that the intersection of SR 176 and Due West Road will require a design exception. This intersection may require dual left turn lanes. R K SHAH & ASSOC. to show design alternates already considered for the improvements of angle of intersection to the Department.
- Mr. VanMeter stated due to the fact that detours are needed to construct the project, a public meeting will be required.

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**MINUTES OF INITIAL CONCEPT MEETING**

**GDOT Project No. MSL-0004 (404), P.I. No. 0004404/ARC CO-325**

- Mr. Mitchell agreed with the consultant that the construction time will be 18 to 24 months, if phased, to avoid closing all intersections at the same time.
- Mr. VanMeter stated that Cobb County will need to provide GDOT with a prioritization of the intersection projects. Any costs over the \$5.5M budget will be the responsibility of Cobb County.
- Mr. Wright asked how GRTA will consider prioritization of the intersection. Will there be a need for an amendment to the agreement?
- Mr. VanMeter stated that Right of way is scheduled for FY05.
- Mr. Zehngraft Stated that Pedestrian crossings will be required at all signalized intersections. No crosswalks are required at stop controlled intersections.
- Mr. VanMeter stated that the Consultant should provide a two way turn lane at the school. Coordinate with Mr. Zehngraft, and be consistent with statewide criteria.
- The Cobb County will revise the Concept Report to include prioritization of the intersections.
- Mr. Cunningham asked R K SHAH to provide a CD of design documents to the GDOT for utilities coordination.
- Mr. VanMeter stated that GDOT may be able to waive a final Concept Report meeting.

With no other comments or questions the meeting concluded @ 12:00 Noon.

**Recorded by: Mike Wright, Cobb County Department of Transportation**

LOCAL GOVERNMENT PROJECT AGREEMENT

BETWEEN

COPY  
ORIGINAL

COPY

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

AND

COBB COUNTY, GEORGIA

for

Received  
D.O.T. General Files  
03 DEC 17 AM 11:08

PRIORITY LAND TRANSPORTATION PROJECT  
SR 176/LOST MTN/MARS HILL ROAD @ EIGHT INTERSECTIONS BETWEEN  
CORNER ROAD & US 41/COBB PARKWAY

This AGREEMENT is made and entered into this 3<sup>rd</sup> day of December, 2003, by and between the DEPARTMENT OF TRANSPORTATION, an agency of the State of Georgia, hereinafter called the "DEPARTMENT", and COBB COUNTY, GEORGIA, acting by and through its Chairman and Board of Commissioners, hereinafter called the "COUNTY".

WHEREAS, the COUNTY has represented to the DEPARTMENT a desire to construct the land transportation project described as SR 176/Lost Mountain/Mars Hill Road @ Eight Intersections Between Corner Road & US 41/Cobb Parkway in Cobb County, Georgia, currently described as Georgia Department of Transportation Project Number MSL-0004-00(404), P. I. Number 0004404, hereinafter referred to as the "PROJECT"; and

WHEREAS, the DEPARTMENT, the COUNTY, the Georgia Regional Transportation Authority, a public authority of the State of Georgia ("GRTA"), and the State Road and Tollway Authority, a public authority of the State of Georgia ("SRTA"), previously entered into an Intergovernmental Agreement Relating to Land Public Transportation Systems and Land Transportation Projects ("Intergovernmental Agreement") concerning specific commitments of the respective parties to support the implementation of this PROJECT; and

WHEREAS, the COUNTY has represented to the DEPARTMENT a desire to participate in certain activities of the PROJECT as set forth in this AGREEMENT, and the DEPARTMENT has relied upon such representations; and

WHEREAS, the DEPARTMENT has expressed a willingness to participate in certain activities of the PROJECT as set forth in this AGREEMENT.

NOW, THEREFORE in consideration of the mutual promises made and of the benefits to flow from one to the other, the DEPARTMENT and the COUNTY hereby agree each with the other as follows:

1. The COUNTY shall fund all costs for the PROJECT's preconstruction engineering (design) activities, right of way acquisitions, utility relocations, and construction ("phases"). To fulfill its commitment, the COUNTY may utilize COUNTY funds, the funds identified in the Intergovernmental Agreement, or seek additional funding through, and in accordance with the existing regional transportation TIP or STIP programming process. The amount currently identified in the Intergovernmental Agreement for this project is \$5,500,000.00.
2. The DEPARTMENT shall support the implementation of the PROJECT as outlined in the Intergovernmental Agreement and the parties recognize that no funding is currently available in the regional transportation programming process. Funding for this PROJECT is limited to that amount currently identified in paragraph 1 of this Agreement.
3. The COUNTY shall be responsible for all costs for providing energy, maintenance, and operational costs of any roadway and interchange lighting within the PROJECT limits.
4. The COUNTY shall be responsible for all costs for the continual maintenance and the continual operations of any and all sidewalks within the PROJECT limits.
5. Both the COUNTY and the DEPARTMENT hereby acknowledge that TIME IS OF THE ESSENCE for the implementation of this PROJECT. Both parties shall adhere to the priorities established in the detailed project schedule attached as Schedule A of the Addendum to Local Government Project Agreement, ("Schedule A"), and the approved State Transportation Improvement Program ("STIP") or earlier. In the completion of respective commitments contained herein, changes may be made to the schedule if mutually identified and agreed upon, in writing, by the DEPARTMENT, the COUNTY, GRTA, and SRTA. If, for any reason, the COUNTY does not produce acceptable deliverables at the milestone dates defined in Schedule A or the STIP, the DEPARTMENT reserves the right to delay the project's implementation until the COUNTY comes into compliance with the Schedule A or until a revision can be mutually agreed upon.
6. All preconstruction engineering activities shall be accomplished by the COUNTY and in accordance with the DEPARTMENT's Plan Development Process, the applicable guidelines of the American Association of State Highway and Transportation Officials, hereinafter referred to as "AASHTO", the DEPARTMENT's Standard Specifications for the Construction of Transportation Systems, PROJECT schedules, Plan Presentation Guide, and applicable guidelines of the DEPARTMENT. The COUNTY'S responsibility for design shall include, but is not limited to the following items:

- a. Prepare the PROJECT concept report in accordance with the format used by the DEPARTMENT. The concept for the PROJECT shall be developed to accommodate the future traffic volumes as generated by the COUNTY as provided for in paragraph 6b and approved by the DEPARTMENT. The concept report shall be approved by the DEPARTMENT prior to the COUNTY beginning further development of the PROJECT plans. It is recognized by the parties that the approved concept may be modified by the COUNTY as required by the DEPARTMENT and reapproved by the DEPARTMENT during the course of design due to public input, environmental requirements, or right of way considerations.
- b. Develop the PROJECT'S base year (year facility is expected to be open to traffic) and design year (base year plus 20 years) traffic volumes. This shall include average daily traffic (ADT) and morning (am) and evening (p.m.) peak hour volumes. The traffic shall show all through and turning movement volumes at intersections for the ADT and peak hour volumes and shall indicate the percentage of trucks expected on the facility.
- c. Validate (check and update) the approved PROJECT concept and prepare a PROJECT Design Book for approval by the DEPARTMENT prior to the beginning of preliminary plans.
- d. Prepare environmental studies, documentation, and reports for the PROJECT that show the PROJECT is in compliance with the provisions of the National Environmental Protection Act, ("NEPA"). This shall include, but not be limited to, any and all archaeological, historical, ecological, air, noise, underground storage tanks (UST), hazardous waste site, and environmental justice studies required. The COUNTY shall submit to the DEPARTMENT all environmental documents and reports for review and approval by the DEPARTMENT and the FHWA.
- e. Prepare all public hearing and public information displays and conduct all required public hearings and public information meetings in accordance with DEPARTMENT practices.
- f. Perform all surveys, mapping, and soil investigation studies needed for design of the PROJECT.
- g. Perform all work required to obtain project permits, including, but not limited to, US Army Corps of Engineers 404 and Federal Emergency Management Agency (FEMA) approvals. These efforts shall be coordinated with the DEPARTMENT.
- h. Prepare the PROJECT'S drainage design including erosion control plans and the development of the hydraulic studies for the Federal Emergency Management Agency Floodways and acquisition of all necessary permits associated with the drainage design.

- i. Prepare traffic studies, preliminary construction plans, preliminary and final utility plans, preliminary and final right of way plans, staking of the required right of way, and final construction plans including signing, marking, and signal plans, erosion control, traffic handling, and construction sequence plans and specifications including special provisions for the PROJECT.
  - j. The COUNTY shall be responsible for the design of all bridge(s) and preparation of any required hydraulic and hydrological studies within the limits of this PROJECT in accordance with the DEPARTMENT's policies and guidelines. The COUNTY shall perform all necessary survey efforts in order to complete the design of the bridge(s) and prepare any required hydraulic and hydrological studies. The final bridge plans shall be incorporated into this PROJECT as a part of this AGREEMENT.
  - k. Provide certification, by a Georgia Registered Professional Engineer, that the construction plans have been prepared under the guidance of the professional engineer and are in accordance with AASHTO and DEPARTMENT guidelines.
  - l. Failure of the COUNTY to follow the DEPARTMENT's Plan Development Process will jeopardize the use of Federal funds and it shall be the responsibility of the COUNTY to make up a loss of that funding.
7. All Primary Consultant firms hired by the COUNTY to provide services on the PROJECT shall be prequalified with the DEPARTMENT in the appropriate area-classes. The DEPARTMENT shall, on request, furnish the COUNTY with a list of prequalified consultant firms in the appropriate area-classes.
  8. The PROJECT construction and right of way plans shall be prepared in English Units.
  9. All drafting and design work performed on the project shall be done utilizing Microstation and CAiCE software, respectively, and shall be organized as per the DEPARTMENT's guidelines on electronic file management.
  10. The DEPARTMENT shall review and has approval authority for all aspects of the PROJECT. The DEPARTMENT will work with the FHWA to obtain all needed approvals with information furnished by the COUNTY.
  11. Upon the COUNTY's determination of the rights of way required for the PROJECT and the approval of the right of way plans by the DEPARTMENT, the necessary rights of way for the PROJECT shall be acquired by the COUNTY. Right of way acquisition shall be in accordance with the law and the rules and regulations of the FHWA including, but not limited to, Title 23, United States Code; 23 CFR 710, et. seq., and 49 CFR Part 24, and the rules and regulations of the DEPARTMENT, and in accordance with the Contract for Acquisition of Right of Way to be prepared by the DEPARTMENT and executed between

the COUNTY and the DEPARTMENT prior to the commencement of any right of way activities. Failure of the COUNTY to follow these requirements may result in the loss of Federal funding for the PROJECT and it will be the responsibility of the COUNTY to make up the loss of that funding. All required right of way shall be obtained and cleared of obstructions, including underground storage tanks, prior to advertising the PROJECT for bids. The COUNTY shall further be responsible for making all changes to the approved right of way plans, as deemed necessary by the DEPARTMENT, for whatever reason, as needed to purchase the right of way or to match actual conditions encountered.

12. The COUNTY shall follow the DEPARTMENT's procedures for identification of existing and proposed utility facilities on the PROJECT. These procedures, in part, require all requests for existing, proposed, or relocated facilities to flow through the DEPARTMENT's Project Liaison and the District Utilities Engineer.
13. The COUNTY shall address all railroad concerns, comments, and requirements to the satisfaction of the DEPARTMENT.
14. Upon completion and approval of the PROJECT plans, certification that all needed rights of way have been obtained and cleared of obstructions, and certification that all needed permits for the PROJECT have been obtained, the DEPARTMENT shall let the PROJECT for construction. The DEPARTMENT shall be solely responsible for securing and awarding the construction contract for the PROJECT. The DEPARTMENT shall perform and bear all costs associated with inspection and materials testing during construction.
15. The COUNTY shall review and recommend all shop drawings to the DEPARTMENT for approval by the DEPARTMENT.
16. The COUNTY agrees that all reports, plans, drawings, studies, specifications, estimates, maps, computations, computer diskettes and printouts, and any other data prepared under the terms of this agreement shall become the property of the DEPARTMENT. This data shall be organized, indexed, bound, and delivered to the DEPARTMENT no later than the advertisement of the PROJECT for letting. The DEPARTMENT shall have the right to use this material without restriction or limitation and without compensation to the COUNTY.
17. The COUNTY shall be responsible for the professional quality, technical accuracy, and the coordination of all designs, drawings, specifications, and other services furnished by or on behalf of the COUNTY pursuant to this AGREEMENT. The COUNTY shall correct or revise, or cause to be corrected or revised, any errors or deficiencies in the designs, drawings, specifications, and other services furnished for this PROJECT. Failure by COUNTY to address the errors or deficiencies within 30 days shall cause the COUNTY to assume all responsibility for construction delays caused by the errors and deficiencies. All revisions shall be coordinated with the DEPARTMENT prior to issuance. The COUNTY shall, to the extent allowable by law, also be responsible for any claim, damage, loss or expense that is

attributable to negligent acts, errors, or omissions related to the designs, drawings, specifications, and other services furnished by or on behalf of the COUNTY pursuant to this AGREEMENT.

18. The COUNTY shall Certify that the provisions of Section 36-81-7 of the official Code of Georgia Annotated, relating to the "Requirements of Audits" are complied with in full such that:
  - a. Each Unit of local government having a population in excess of 1,500 persons or expenditures of \$175,000.00 or more shall provide for and cause to be made an annual audit of the financial affairs and transactions of all funds and activities of the local government for each fiscal year of the local government.
  - b. The governing authority of each local unit of government not included above shall provide for and cause to be made the audit required not less often than once every two fiscal years.
  - c. The governing authority of each local unit of government having expenditures of less than \$175,000.00 in that government's most recently ended fiscal year may elect to provide for and cause to be made, in lieu of the biennial audit, an annual report of agreed upon procedures for that fiscal year.
  - d. A copy of the report and any comments made by the state auditor shall be maintained as a public record for public inspection during the regular working hours at the principal office of the local government. Those units of local government not having a principal office shall provide notification to the public as to the location of and times during which the public may inspect the report.
19. This AGREEMENT is made and entered into in Fulton County, Georgia, and shall be governed and construed under the laws of the State of Georgia. The covenants herein contained shall, except as otherwise provided, accrue to the benefit of and be binding upon the successors and assigns of the parties hereto.
20. The parties agree this AGREEMENT shall not be binding and neither party hereto shall have any obligation or liability to the other whatsoever under this AGREEMENT unless and until such time as that certain Addendum to Local Government Project Agreement (Arterial Road Project) regarding the PROJECT shall have been (a) executed and delivered by the parties, and acknowledged and consented to by the SRTA and GRTA, and (b) attached to this AGREEMENT.
21. This AGREEMENT contains the entire understanding between the parties relating to the subject matter of the previously executed Local Government Project Agreement and supercedes all prior oral and written understandings, arrangements and agreements between the parties relating thereto. Any amendments to this AGREEMENT must be in writing, executed by the parties and have express reference to be made a part of this AGREEMENT.

IN WITNESS WHEREOF, the DEPARTMENT and the COUNTY have caused these presents to be executed under seal by their duly authorized representatives.

RECOMMENDED:

BOARD OF COMMISSIONERS  
Cobb County, Georgia

[Signature]  
State Urban Design Engineer

BY: [Signature]  
Chairman

[Signature]  
Director of Preconstruction

Signed, sealed and delivered this <sup>3d</sup> day of  
October 2003, in the presence of:

[Signature]  
Chief Engineer

[Signature]  
Witness  
[Signature]  
Notary Public



DEPARTMENT OF TRANSPORTATION

BY: [Signature]  
Commissioner

This Agreement approved by the Cobb  
County Commission at a meeting held at  
Marietta, Ga this  
9th day of Sept, 2003.

ATTEST:

[Signature]  
Treasurer

[Signature]  
Clerk of Commission



Reviewed as to Legal Form:

[Signature]  
Office of Legal Services

**APPROVED**  
PER MINUTES OF  
COBB COUNTY  
BOARD OF COMMISSIONERS

9/9/03

APPROVED AS TO FORM  
[Signature]  
COUNTY ATTORNEY'S OFFICE

ADDENDUM TO  
LOCAL GOVERNMENT PROJECT AGREEMENT  
(Arterial Road Project)

This ADDENDUM TO LOCAL GOVERNMENT PROJECT AGREEMENT (this "Addendum") is made effective as of this 3<sup>rd</sup> day of December, 2003, by and between the DEPARTMENT OF TRANSPORTATION, an agency of the State of Georgia ("DEPARTMENT"), and COBB COUNTY, GEORGIA, acting by and through its Board of Commissioners ("COUNTY").

WITNESSETH: That;

WHEREAS, the DEPARTMENT and the COUNTY entered into that certain Agreement between Department of Transportation State of Georgia and COBB County, dated December 3, 2003 (the "Local Government Project Agreement"), relating to the construction of **land transportation project improvements** described as **SR/176/Lost Mountain/Mars Hill Road @ Eight Intersections Between Corner Road & US41/Cobb Parkway in Cobb County, Georgia**, currently identified as Georgia Department of Transportation Project Number **MSL-0004-00(404)**, P.I. Number **0004404**, hereinafter referred to as the "PROJECT"; and

WHEREAS, the DEPARTMENT and the COUNTY, together with the **GEORGIA REGIONAL TRANSPORTATION AUTHORITY**, a public authority of the State of Georgia ("GRTA"), and the **STATE ROAD AND TOLLWAY AUTHORITY**, a public authority of the State of Georgia ("SRTA") entered into that certain Intergovernmental Agreement Relating to Land Public Transportation Systems and Land Transportation Projects, dated **June 13, 2002** (the "Intergovernmental Agreement"); and

WHEREAS, Section 2.6 of the Intergovernmental Agreement requires the DEPARTMENT and the COUNTY to amend the Local Government Project Agreement to clearly indicate the parties' respective roles and responsibilities with respect to each Land Transportation Project (as defined in the Intergovernmental Agreement); and

WHEREAS, the DEPARTMENT and the COUNTY desire to enter into this Addendum to the Local Government Project Agreement as required by the Intergovernmental Agreement, on the terms and conditions hereinafter set forth; and

NOW, THEREFORE, for and in consideration of the mutual promises made and of the benefits to flow from one to the other, the adequacy and sufficiency of which are hereby acknowledged, the DEPARTMENT and the COUNTY agree as follows:

1. Recitals; Definitions. The foregoing Recitals are true, correct and complete and are hereby incorporated in this Addendum by this reference. All capitalized terms used herein and not otherwise defined herein shall have the meanings ascribed to them in the Intergovernmental Agreement.

2. Projects. The PROJECT identified under this Addendum to the Local Government Project Agreement is acknowledged to be one of the Land Transportation Projects specified in the Intergovernmental Agreement. The COUNTY acknowledges and agrees that the PROJECT is and shall at all times be for the essential public purpose of providing facilities and services to meet land public transportation needs and environmental standards for the State of Georgia and to aid in the accomplishment of the purposes of GRTA.
3. Schedule. In addition to the provisions of the Local Government Project Agreement, the DEPARTMENT and the COUNTY recognize the need to maintain the PROJECT schedule for SRTA purposes and shall complete the PROJECT in accordance with the detailed project schedule attached hereto as Schedule A as near as practicable, provided that SRTA shall be notified by the COUNTY if a PROJECT milestone will be missed and what corrective actions will take place to reinstate the PROJECT schedule.
4. Funding. Notwithstanding the provisions of the Local Government Project Agreement, the PROJECT shall be funded as described in the Intergovernmental Agreement and as set forth below:
  - 4.1 The COUNTY will submit requisitions to the DEPARTMENT solely for, and will apply the proceeds received from the DEPARTMENT solely to, the payment of costs associated with the PROJECT.
  - 4.2 Each requisition for funds shall include the certifications substantially as described in Schedule B hereto, including a certificate of compliance with the Sources and Uses of Funds attached as Schedule C hereto (the "Sources and Uses of Funds Schedule") or an explanation of variances thereto.
  - 4.3 Each requisition for funds shall include evidence of payment by the COUNTY of the work or services for which the COUNTY would seek reimbursement.
5. Applicable Regulations. The COUNTY shall follow the DEPARTMENT's Plan Development Process and all applicable federal regulations, requirements, and restrictions in order to maintain federal eligibility for reimbursement through the Federal Highway Administration, if any, regardless of fund availability through the Intergovernmental Agreement.
6. Intergovernmental Agreement. The Intergovernmental Agreement is hereby incorporated in this Addendum by this reference. Nothing contained herein shall modify or amend any provision of the Intergovernmental Agreement. In the event of a conflict between the Local Government Project Agreement, this Addendum to the Local Government Project Agreement, and the Intergovernmental Agreement, the provisions of the Intergovernmental Agreement shall control.
7. No Further Modification. In the event of any inconsistency between the Local Government Project Agreement and this Addendum, the terms of this Addendum shall control. Except as otherwise modified herein, all terms and conditions in the Local Government Project Agreement shall remain in full force and effect.

8. Limited Purposes. The parties to this Addendum acknowledge and agree that this is a limited undertaking for the sole purpose of addressing the matters expressly agreed to herein. The parties hereto agree to work together in good faith to resolve any issues that arise and are not addressed in this Addendum.
9. Non-Discrimination. During the term of this Addendum, the parties agree to abide by the provisions of Executive Order 11246 on non-discrimination and will not discriminate against any person because of race, color, religion, sex or national origin. The parties will take affirmative action to ensure that perspective employees are employed without regard to their race, color, religion, sex or national origin. It is further agreed that the parties shall comply and shall require their contractors and consultants to comply with the regulations for COMPLIANCE WITH TITLE VI OF THE CIVIL RIGHTS ACT OF 1964, as amended, and 23 CFR 200.
10. Awards of Contract. The parties agree that in any contracts to be developed and awarded pursuant to this Addendum and all work and procedures relating to said contracts shall, at all times, conform to the applicable Federal and State of Georgia laws, rules, regulations, orders and approvals, including specifically procedures and requirements relating to labor standards, equal employment opportunity, non-discrimination and compliance with the Americans with Disabilities Act.
11. Miscellaneous.
  - 11.1 Assignment. Without the express written consent of the other parties, no party may assign, in whole or in part, any of its rights and obligations hereunder to any other party.
  - 11.2 No Third-Party Beneficiaries. Nothing herein shall be construed as conferring upon or giving to any person or entity, other than the parties hereto, any rights or benefit under or by reason of this Addendum.
  - 11.3 Notices. It shall be sufficient service or any notice, approval, consent, request, complaint, demand or other communication if the same shall be delivered or mailed by first class registered or certified mail, return receipt requested, or by facsimile transmission immediately followed by a telephone call to confirm receipt, and addressed as follows:

If to the DEPARTMENT:

Georgia Department of Transportation  
No. 2 Capital Square  
Atlanta, Georgia 30334  
Attention: J. Tom Coleman, Jr., Commissioner  
(404) 656-5206  
(404) 657-8389 Fax

If to the COUNTY: **Cobb County Department of Transportation**  
**1890 County Services Parkway**  
**Marietta, Georgia 30008**  
**Attention: David E. Montanye, Director**  
**(770) 528-1645**  
**(770) 528-1611 Fax**

The date upon which such notice is delivered will be deemed the date of receipt thereof. The persons listed above may, by notice given hereunder, designate any further or different addresses to which subsequent notices, approvals, consents, requests, complaints, demands or other communications shall be sent or persons to whose attention the same shall be directed.

- 11.4 Governing Law. This Addendum shall be governed by and interpreted in accordance with the laws of the State of Georgia.
- 11.5 Headings. The section and paragraph headings contained in this Addendum are for reference purposes only and shall not affect the meaning or interpretation of this Addendum.
- 11.6 No Waivers. No failure of a party to exercise any power given such party hereunder or to insist upon strict compliance by the other to its obligation hereunder, and no custom or practice of the parties in variance with the terms hereof, shall constitute a waiver of any rights of a party to demand exact compliance with the terms hereof.
- 11.7 Severability. If any provision of this Addendum, or any portion thereof, should be ruled void, invalid, unenforceable or contrary to public policy by any court of competent jurisdiction, then any remaining portion of such provision and all other provisions of this Addendum shall survive and be applied, and any invalid or unenforceable portion shall be construed or reformed to preserve as much of the original words, terms, purpose and intent as shall be permitted by law.
- 11.8 Interpretation. Should any provision of this Addendum require judicial interpretation, it is agreed and stipulated by and between the parties hereto that the court interpreting or construing the same shall not apply a presumption that the terms, conditions and provisions hereof shall be more strictly construed against one party by reason of the rule of construction that an instrument is to be construed more strictly against the party who prepared the same.
- 11.9 Time of the Essence. Time is of the essence in this Addendum and with respect to each and every provision herein.

[SIGNATURES ON FOLLOWING PAGE]

IN WITNESS WHEREOF, the DEPARTMENT and the COUNTY have hereunto executed this Addendum and affixed their seal through their duly authorized representatives, who have been first authorized to do so, on the day and year first above specified.

**COBB COUNTY**

By: [Signature]  
Name: **Samuel S. Olens**  
Title: **Chairman, Board of Commissioners**

Attest: [Signature]  
Name: **Sandra S. Richardson**  
Title: **Deputy County Clerk**

(SEAL)



DEPARTMENT OF  
TRANSPORTATION,  
STATE OF GEORGIA

By: [Signature]  
Name: **Harold E. Livrentas**  
Title: **Commissioner**

APPROVED AS TO FORM:

By: [Signature]

APPROVED PER MINUTES:

By: [Signature]

**APPROVED**  
PER MINUTES OF  
COBB COUNTY  
BOARD OF COMMISSIONERS

9/9/03

APPROVED AS TO FORM:

By: [Signature]

ACKNOWLEDGED AND CONSENTED TO BY:

STATE ROAD AND  
TOLLWAY AUTHORITY

By: [Signature]  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

GEORGIA REGIONAL  
TRANSPORTATION  
AUTHORITY

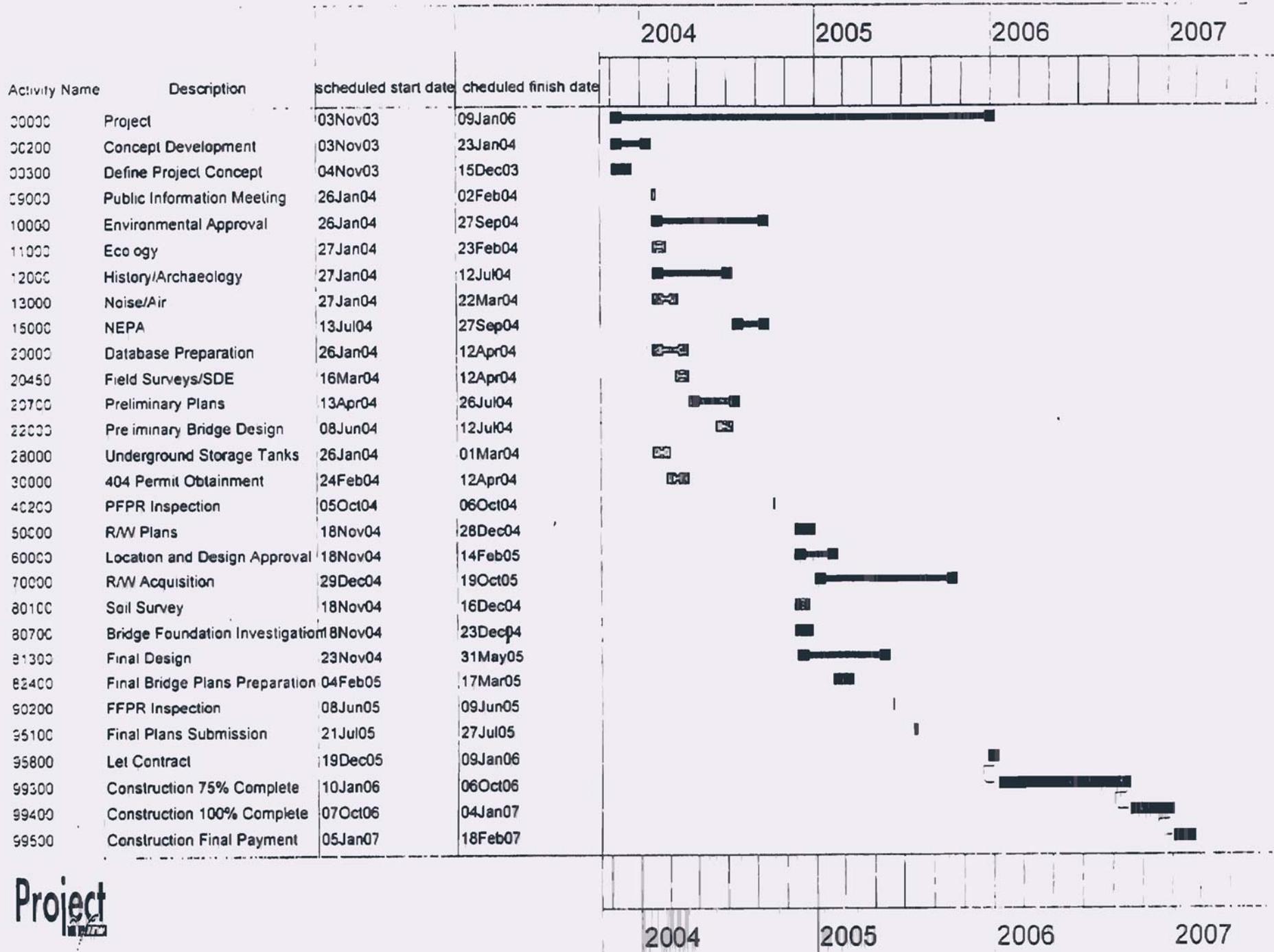
By: [Signature]  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

### Schedule A

County	Proj Id	Description	Activity Description	Sched Finish
COBB	0004404	SR 176/LOST MTN/MARS HILL@8 INTERSECTIONS BT CORNER&COBB PKY	PE Funding Authorization	2-Nov-2003
			Environmental Approval Complete	27-Sep-2004
			Let Contract	9-Jan-2006
			Construction 75% Complete	6-Oct-2006
			Construction 100% Complete	4-Jan-2007
			Construction Final Payment	18-Feb-2007

# Project : 0004404(0)

## SR 176/LOST MTN/MARS HILL@8 INTERSECTIONS BT CORNER&COBB.PKY



Schedule B

Requisition Form

As the \_\_\_\_\_ of the COUNTY, I hereby certify that an obligation in the stated amount has been incurred by the COUNTY for the PROJECT, as defined in that certain Local Government Project Agreement dated \_\_\_\_\_, as amended by Addendum to Local Government Project Agreement (Arterial Road Project) dated \_\_\_\_\_ (as amended, the "LGPA"), as follows:

*[specify the purpose and circumstances of such obligation in reasonable detail],*

that a bill or statement of amount for such obligation or a copy thereof is on file with the COUNTY, that such obligation has been paid by the COUNTY, and, has not been the subject of a previous requisition, and [is] [is not] in compliance with the Sources and Uses of Funds Schedule (as defined in the LGPA). *[If not in compliance, specify the variances here:*  
\_\_\_\_\_.]

I oversee systems to discover errors, if any, in the information described in the foregoing sentence, and upon any such discovery will submit a corrective requisition posthaste.

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**ALLOCATIONS  
CASH FLOW SCHEDULE C**

Projected Cash Flow by Month

For Project Number

0004404

FOR FUNDCODE

LGPA

Report Date: August 15, 2003

Month	Year	PH	Ps Amount	ROW Amount	Cst Amount	Total
November	2003	0004404	\$90,000.00	\$0.00	\$0.00	\$90,000.00
December	2003	0004404	\$45,000.00	\$0.00	\$0.00	\$45,000.00
<b>Total for Year:</b>	<b>2003</b>		<b>\$135,000.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$135,000.00</b>
January	2004	0004404	\$45,000.00	\$0.00	\$0.00	\$45,000.00
February	2004	0004404	\$15,000.00	\$0.00	\$0.00	\$15,000.00
March	2004	0004404	\$15,000.00	\$0.00	\$0.00	\$15,000.00
April	2004	0004404	\$15,000.00	\$0.00	\$0.00	\$15,000.00
May	2004	0004404	\$15,000.00	\$0.00	\$0.00	\$15,000.00
June	2004	0004404	\$15,000.00	\$0.00	\$0.00	\$15,000.00
July	2004	0004404	\$15,000.00	\$0.00	\$0.00	\$15,000.00
August	2004	0004404	\$15,000.00	\$0.00	\$0.00	\$15,000.00
September	2004	0004404	\$15,000.00	\$0.00	\$0.00	\$15,000.00
October	2004	0004404	\$15,000.00	\$0.00	\$0.00	\$15,000.00
November	2004	0004404	\$15,000.00	\$0.00	\$0.00	\$15,000.00
December	2004	0004404	\$45,000.00	\$0.00	\$0.00	\$45,000.00
<b>Total for Year:</b>	<b>2004</b>		<b>\$240,000.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$240,000.00</b>
January	2005	0004404	\$45,000.00	\$10,000.00	\$0.00	\$55,000.00
February	2005	0004404	\$5,000.00	\$10,000.00	\$0.00	\$15,000.00
March	2005	0004404	\$5,000.00	\$10,000.00	\$0.00	\$15,000.00
April	2005	0004404	\$5,000.00	\$72,000.00	\$0.00	\$77,000.00
May	2005	0004404	\$5,000.00	\$72,000.00	\$0.00	\$77,000.00
June	2005	0004404	\$5,000.00	\$72,000.00	\$0.00	\$77,000.00
July	2005	0004404	\$5,000.00	\$72,000.00	\$0.00	\$77,000.00
August	2005	0004404	\$20,000.00	\$72,000.00	\$0.00	\$92,000.00
September	2005	0004404	\$20,000.00	\$60,000.00	\$0.00	\$80,000.00
October	2005	0004404	\$20,000.00	\$60,000.00	\$0.00	\$80,000.00
November	2005	0004404	\$30,000.00	\$60,000.00	\$0.00	\$90,000.00
December	2005	0004404	\$30,000.00	\$15,000.00	\$0.00	\$45,000.00
<b>Total for Year:</b>	<b>2005</b>		<b>\$185,000.00</b>	<b>\$585,000.00</b>	<b>\$0.00</b>	<b>\$780,000.00</b>
January	2006	0004404	\$30,000.00	\$15,000.00	\$0.00	\$45,000.00
February	2006	0004404	\$0.00	\$0.00	\$0.00	\$0.00
March	2006	0004404	\$0.00	\$0.00	\$451,500.00	\$451,500.00
April	2006	0004404	\$0.00	\$0.00	\$451,500.00	\$451,500.00
May	2006	0004404	\$0.00	\$0.00	\$451,500.00	\$451,500.00
June	2006	0004404	\$0.00	\$0.00	\$451,500.00	\$451,500.00
July	2006	0004404	\$0.00	\$0.00	\$301,000.00	\$301,000.00
August	2006	0004404	\$0.00	\$0.00	\$301,000.00	\$301,000.00
September	2006	0004404	\$0.00	\$0.00	\$301,000.00	\$301,000.00
October	2006	0004404	\$0.00	\$0.00	\$318,200.00	\$318,200.00
<b>Total for Year:</b>	<b>2006</b>		<b>\$30,000.00</b>	<b>\$15,000.00</b>	<b>\$3,963,000.00</b>	<b>\$3,708,000.00</b>
January	2007	0004404	\$0.00	\$0.00	\$318,200.00	\$318,200.00
February	2007	0004404	\$0.00	\$0.00	\$318,200.00	\$318,200.00
<b>Total for Year:</b>	<b>2007</b>		<b>\$0.00</b>	<b>\$0.00</b>	<b>\$636,400.00</b>	<b>\$636,400.00</b>
<b>Total \$ for the Fundcode:</b>			<b>\$800,000.00</b>	<b>\$600,000.00</b>	<b>\$4,300,000.00</b>	<b>\$5,500,000.00</b>

## SCORING RESULTS AS PER TOPPS 2440-2

<b>Project Number:</b>		<b>County:</b>		<b>PI No.:</b>	
<b>Report Date:</b>			<b>Concept By:</b>		
			DOT Office:		
<input type="checkbox"/> CONCEPT					
			Consultant:		
<b>Project Type:</b> Choose One From Each Column		<input type="checkbox"/> Major	<input type="checkbox"/> Urban	<input type="checkbox"/> ATMS	
		<input type="checkbox"/> Minor	<input type="checkbox"/> Rural	<input type="checkbox"/> Bridge	
				<input type="checkbox"/> Building	
				<input type="checkbox"/> Interchange	
				<input type="checkbox"/> Intersection	
				<input type="checkbox"/> Interstate	
				<input type="checkbox"/> New Location	
				<input type="checkbox"/> Widening & Reconstruction	
				<input type="checkbox"/> Miscellaneous	
<b>FOCUS AREAS</b>	<b>SCORE</b>	<b>RESULTS</b>			
<b>Presentation</b>					
<b>Judgement</b>					
<b>Environmental</b>					
<b>Right-of-Way</b>					
<b>Utility</b>					
<b>Constructability</b>					
<b>Schedule</b>					