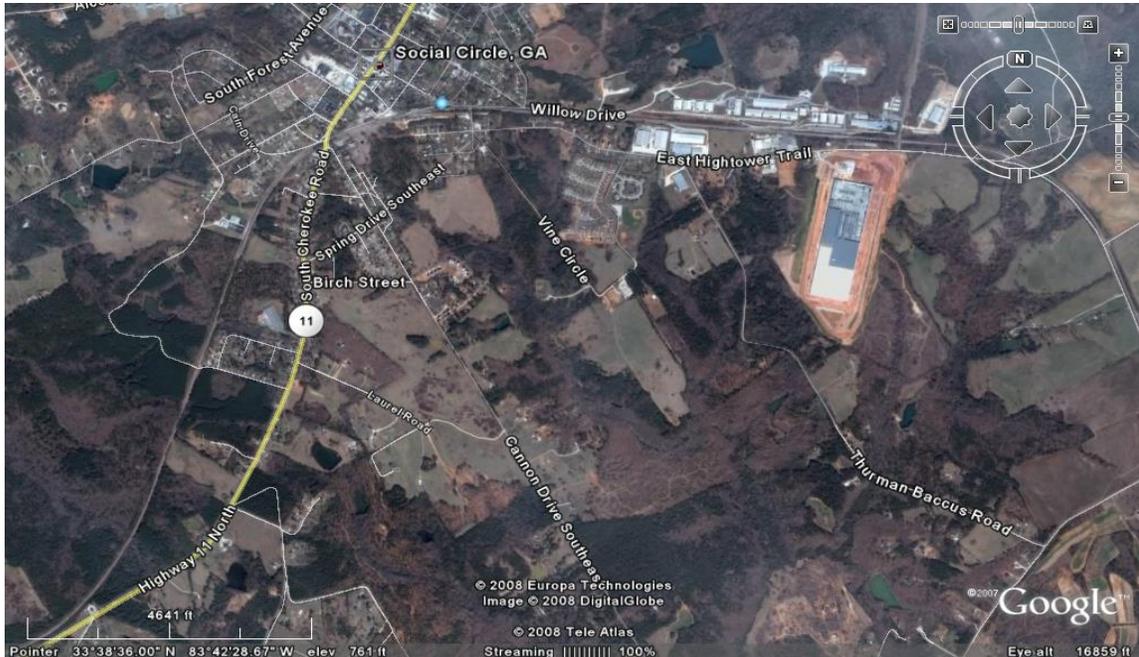


Value Engineering Study Report

Project: STP- 0007-00(217) - PI No. 0007217

Social Circle Bypass, Newton/Walton Counties



Value Management Team



Design Team



March 12, 2008



March 12, 2008

Ms. Lisa Myers
Design Review Engineer Manager
Georgia Department of Transportation
#2 Capitol Square, Room 266
Atlanta, GA 30334

RE: Submittal of the final Value Engineering Report
Project: STP- 0007-00(217) - PI No. 0007217
Social Circle ByPass, Newton/Walton Counties
PBS&J Project Task Order No. 29

Dear Ms. Myers:

Please find enclosed four (4) hard copies and a CD of our final Value Engineering Report for the above referenced project.

This Value Engineering Study identified:

Alternative Ideas:	13
Recommended Ideas:	5
Design Suggestions:	0

We trust that you will find this report to be in proper order. It should be noted that the results of this workshop are volatile in that they can be overcome by the events that accompany the expeditious continuance of the design process. Accordingly, we encourage an equally expeditious implementation meeting to design the disposition of the contents of this report.

On behalf of our VE Team, we thank you very much for this opportunity to work with you and the hard working staff of the Georgia Department of Transportation.

Yours truly,

A handwritten signature in black ink that reads 'Les M. Thomas'.

**Les M. Thomas, P.E., CVS-Life
VE Team Leader**

Value Engineering Study Report

Project STP- 0007-00(217) - PI No. 0007217

Social Circle ByPass, Newton/Walton Counties

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

INTRODUCTION

This report summarizes the analysis and conclusions by the PBS&J Value Engineering workshop team as they performed a VE study during the period of February 25 – February 28, 2008 in Atlanta, at the office of the Georgia Department of Transportation. The subject of the Value Engineering study was Project STP-0007-00(217), Walton Newton Counties. The concept designs for the project have been prepared by RS&H. At the time of the workshop, the plans had advanced to the concept design level.

PROJECT DESCRIPTION

The proposed Social Circle Bypass project is to construct a new location roadway extending approximately 2.8 miles north and east from SR 11/South Cherokee Road, just south of the Newton/Walton County line (mile log 13.00 in Newton County) and connecting to the existing Social Circle Bypass at East Hightower Trail in Walton County. This project will complete the eastern Bypass around downtown Social Circle. The project proposes to construct two (2) 12-foot lanes with 10-foot rural shoulders (6.5 foot paved, 3.5 foot grassed.)

The estimated construction cost is:	\$ 17,210,398
The estimated right of way acquisition cost is:	\$ 6,619,300
The estimated reimbursable utility cost is:	<u>\$ 181,922</u>
The Grand Total Project Cost is:	\$ 24,011,620

These projects are rather fully described in the documentation that is located in Tab 4 of this report, entitled *Project Description*.

PROJECT CONCERNS AND OBJECTIVES

Some of the information from the concept report and the designer's presentation indicated the following important points about the projec

- The consultant noted that there was a significant area of environmental justice
- Measures were being taken so as not to have to do an environmental permit
- Historic properties were addressed
- The proposed alignment was the 8th reviewed and was tentatively approved

VALUE ENGINEERING PROCESS

The Value Engineering team followed the seven step Value Engineering job plan as promulgated by the Georgia Department of Transportation. This seven step job plan includes the following

- Investigative
- Analysis
- Speculation
- Evaluation
- Development
- Recommendation
- Presentation

This report is a component of the Presentation Phase. As part of the VE workshop in Atlanta, the team made an informal presentation of their results on the last morning of the workshop. This report is intended to formalize the workshop results and set the stage for a formal implementation meeting in which alternatives and design suggestions will typically be accepted, accepted with modifications, or rejected for cause. The worksheet that follows, along with the formally developed alternatives and design suggestions can be used as a “score sheet” for the implementation meeting. It is also included in this report to identify, on a summary basis, the results of the workshop.

The reader is encouraged to visit the third tabbed section of this report entitled *Study Results* for a review of the details of the developed alternatives. The tabbed section *Project Description* includes information about the project itself and the tabbed section *Value Engineering Process* presents the detail process of the Value Engineering Study.

CONCLUSIONS AND RECOMMENDATIONS

During the speculation phase the VE Team identified *Alternative Design Ideas* that appeared to hold potential for reducing the construction cost, improving the end product and/or reducing the difficulty and time of project construction.

This Value Engineering Study identified:

Alternative Ideas:	13
Recommended Ideas:	5
Design Suggestions:	0

These Alternative Ideas and Design Suggestions may be found, in their documented form, in the section of this report entitled *Study Results*. The following *Summary of Alternatives and Design Suggestions* coupled with the documentation of the developed alternatives should provide the reader with the information required to fully evaluate the merits of each of the alternatives.

These and the other alternatives and design suggestions may be reviewed more thoroughly where they are documented in the third tab of this report entitled Study Results.

SUMMARY OF ALTERNATIVES & DESIGN SUGGESTIONS



Georgia Department of Transportation STP- 0007-00(217) - PI No. 0007217 Social Circle ByPass, Newton/Walton Counties		
Alternative Number	Description of Alternative	Initial Cost Savings
	ROADWAY (RD)	
RD - 1	USE 2' PAVED SHOULDER	\$622,651
RD - 4	USE CONSPAN IN-LIEU OF BRIDGES	\$617,902
RD - 7	USE EXISTING SOLO ACCESS ROAD	\$219,588
RD- 8	RE-ALIGN VERTICAL TO REDUCE "CUT"	\$699,252
RD - 13	USE 4' PAVED SHOULDERS	\$164,348

Study Results

STUDY RESULTS

INTRODUCTION

This section includes the study results presented in the form of fully developed Value Engineering alternatives that include descriptions of the original design, description of the alternative design configurations, comments on the technical justifications, opportunities and risks associated with the alternatives, sketches, calculations and technical justification for these alternatives. For the most part, these fully developed alternatives represent an array of

The documented alternatives also include Design Suggestions (DS). As their name implies, these are short write-ups making note of VE perspectives on technical issues and sharing some thoughts for consideration as the design moves forward.

This introductory sheet is followed by a Summary of Alternatives & Design Suggestions table. It should be noted that the alternatives that are included, which have cost estimates attached are not necessarily representative of the final cost outcome for each alternative. Some of these alternatives have components that are mutually exclusive so they may not be added together.

The users of this report are asked to consider these alternatives and design suggestions as a smorgasbord of choices for selection and use as the project moves forward. The following Summary of Alternatives & Design Suggestions may also be used as a “score sheet” within the bounds of an implementation meeting.

COST CALCULATIONS

The cost calculations are intended only as a guide to the approximate results that might be expected from implementation of the alternatives. They should be helpful in making clear choices as to the pursuit of individual alternatives.

A composite mark-up of 10% for the construction cost comparisons was derived from the cost estimate for the project. This estimate can be found in the section of this report entitled *Project Description*.

SUMMARY OF ALTERNATIVES & DESIGN SUGGESTIONS



Georgia Department of Transportation STP- 0007-00(217) - PI No. 0007217 Social Circle ByPass, Newton/Walton Counties		
Alternative Number	Description of Alternative	Initial Cost Savings
	ROADWAY (RD)	
RD – 1	USE 2' PAVED SHOULDER	\$622,651
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RD – 7	USE EXISTING SOLO ACCESS ROAD	\$219,588
RD– 8	RE-ALIGN VERTICAL TO REDUCE "CUT"	\$699,252
RD – 13	USE 4' PAVED SHOULDERS	\$164,348

Design Alternative



PROJECT:	Georgia Department of Transportation STP- 0007-00(217) PI No. 0007217 Social Circle ByPass, Newton/Walton Counties	ALTERNATIVE NO.:	RD – 1
DESCRIPTION:	USE 2' PAVED SHOULDER	SHEET NO.:	1 of 4

Current Design:

The current design proposes using a 6.5' paved shoulder on the new bypass.

Alternative Design:

The alternative design proposes using a 2' paved shoulder on the new bypass to match the existing bypass paved shoulder width to the north.

Opportunities:

- Reduced paving cost
- Reduction in construction time

Risks:

- Minimal design effort required

Technical Discussion:

The alternative design proposes using a 2' paved shoulder on the new bypass section. The minimum paved shoulder width for a minor rural arterial is 2'-0" as discussed on page 448 of the 2004 AASHTO green book. The shoulder width on the existing bypass that this extension is connecting to on the north has a 2' wide paved shoulder. Right of Way is not being adjusted since it is being acquired for future 4 lane roadway.

Cost Summar	Initial Cost	Present Worth Recurring Costs	Present Worth Life-Cycle Costs
Original Design	\$ 1,080,953		\$ 1,080,953
Alternative Design	\$ 458,303		\$ 458,303
Savings	\$ 622,651		\$ 622,651

Illustration



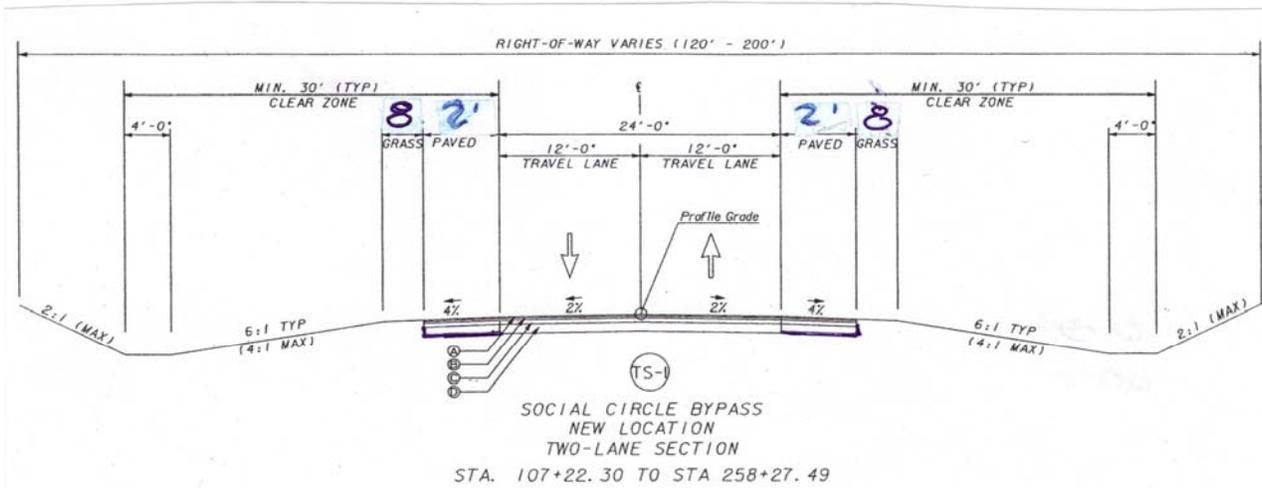
PROJECT: Georgia Department of Transportation
STP- 0007-00(217) PI No. 0007217
Social Circle ByPass, Newton/Walton Counties

ALTERNATIVE NO.:

RD - 1

DESCRIPTION: **USE 2' PAVED SHOULDER**

SHEET NO.: 2 of 4



Calculations



PROJECT:	Georgia Department of Transportation STP- 0007-00(217) PI No. 0007217 Social Circle ByPass, Newton/Walton Counties	ALTERNATIVE NO.:	RD - 1
DESCRIPTION:	USE 2' PAVED SHOULDER	SHEET NO.:	3 of 4

Roadway Length
Shoulder

From Station	To Station	Length (Ft)	Width (Ft)	SY		
10722.3	25827.49	15105	6.5	10,909	Left	Bypass
10722.3	25827.49	15105	6.5	10,909	Right	Bypass
70000	70338.31	338.31	13	489	SR 11/S. Cherokee Road	
50868	52489	1621	13	2,341	East Hightower Trail	

Area of Paving = 24,649 sy or SF = 221,839 SF

Original Design (6.5' width)

ITEM	Area (sf) X	Depth (ft)	=	Volume (cf) X	weight (lbs)/cf	=	weight	
12" GAB	0	0.5	=	0	135	=	0	tons
		weight						
ITEM	Area (sy) X	(lbs)/sy	=	Tons				
12.5 mm SP	24,649	165	=	2,034	T			
19.0 mm SP	24,649	275	=	3,389	T			
25.0 mm SP	24,649	330	=	4,067	T			

Alternative Design (2' width)

ITEM	Area (sf) X	Depth (ft)	=	Volume (cf) X	weight (lbs)/cf	=	weight	
12" GAB	68,260	1	=	68,260	135	=	4,608	tons
		weight						
ITEM	Area (sy) X	(lbs)/sy	=	Tons				
12.5 mm SP	7,584	165	=	626	T			
19.0 mm SP	7,584	275	=	1,043	T			
25.0 mm SP	7,584	330	=	1,251	T			

Cost Worksheet



PROJECT:	Georgia Department of Transportation STP- 0007-00(217) PI No. 0007217 Social Circle ByPass, Newton/Walton Counties	ALTERNATIVE NO.:	RD - 1
DESCRIPTION:	USE 2' PAVED SHOULDER	SHEET NO.:	4 of 4

CONSTRUCTION ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/ UNIT	TOTAL	NO. OF UNITS	COST/ UNIT	TOTAL
RIGHT OF WAY	LS	0	\$ 6,619,300	\$ -	0	\$ 6,619,300	\$ -
GAB	TN	0	\$ 25	\$ -	4,608	\$ 25	\$ 114,267
12.5 mm SUPERPAVE	TN	2,034	\$ 101	\$ 206,341	626	\$ 101	\$ 63,491
19.0 mm SUPERPAVE	TN	3,389	\$ 104	\$ 352,883	1,043	\$ 104	\$ 108,582
25.0 mm SUPERPAVE	TN	4,067	\$ 104	\$ 423,460	1,251	\$ 104	\$ 130,299
	Sub-total			\$ 982,685			\$ 416,639
Mark-up at	10.00%			\$ 98,268			\$ 41,664
	TOTAL			\$ 1,080,953			\$ 458,303
Estimated Savings:							\$ 622,651

Design Alternative



PROJECT:	Georgia Department of Transportation STP- 0007-00(217) PI No. 0007217 Social Circle ByPass, Newton/Walton Counties	ALTERNATIVE NO.:	RD – 4
DESCRIPTION:	USE CONSPAN IN-LIEU OF BRIDGES	SHEET NO.:	1 of 4

Current Design:

The original design as shown in the plans proposes double 10'x10' box culverts. The designer has developed an alternative utilizing ~180' x 43.25' bridges that is anticipated to be cheaper.

Alternative Design:

The alternative design proposes a "Conspan" type structure in lieu of either the double 10'x10' RCBC or the 180' bridges. The Conspan structures would be hydraulically equivalent to the double 10' x 10' RCBC and 160' and 180' in length.

Opportunities:

- Reduced structure cost.
- Reduced stream impacts due to "natural bottom".
- Speed construction.

Risks:

- Minimal design effort.
- Lack of contractor familiarity.
- Proprietary design.

Current Design:

The alternative design is really being compared to two original designs. The designer stated that the Bridge was the currently the preferred due to lower cost and the least streambed impacts. A "Conspan" options would have the advantage of reducing the streambed impacts like the bridge option at a lesser cost. It should also be noted that a "Conspan" structure was utilized on the existing section of the Social Circle Bypass.

Cost Summary	Initial Cost	Present Worth Recurring Costs	Present Worth Life-Cycle Costs
Original Design	\$ 1,712,700		\$ 1,712,700
Alternative Design	\$ 1,094,798		\$ 1,094,798
Savings	\$ 617,902		\$ 617,902

Illustration



PROJECT:	Georgia Department of Transportation STP- 0007-00(217) PI No. 0007217 Social Circle ByPass, Newton/Walton Counties	ALTERNATIVE NO.:	RD - 4
DESCRIPTION:	USE CONSPAN IN-LIEU OF BRIDGES	SHEET NO.:	2 of 4



Calculations



PROJECT:	Georgia Department of Transportation STP- 0007-00(217) PI No. 0007217 Social Circle ByPass, Newton/Walton Counties	ALTERNATIVE NO.:	RD – 4
DESCRIPTION:	USE CONSPAN IN-LIEU OF BRIDGES	SHEET NO.:	3 of 4

From Station Paving	To Station	Length (Ft)	Width (Ft)	SY		
18416	18597	181	37	744		
16401	16580	179	37	736		
Area of Paving =				1,480	sy	or SF = 13,320 SF
GAB 12"						
18416	18597	181	24	483		
16401	16580	179	24	477		
Area of base =				960	sy	or SF = 8,640 SF
GAB 6"						
18416	18597	181	13	261		
16401	16580	179	13	259		
Area of base =				520	sy	or SF = 4,680 SF
Alternative Design						
6" GAB	4,680 sf x 0.5 feet x (135#/cf) / (2,000#/ton) =>158 tons					
12" GAB	8,640 sf x 1.0 feet x (135#/cf) / (2,000#/ton) =>583 tons					
12.5 mm SP	1480 sy x (165#/sy) / (2,000#/ton) =>122 tons					
19.0 mm SP	1480 sy x (220#/sy) / (2,000#/ton) =>163 tons					
25.0 mm SP	1480 sy x (440#/sy) / (2,000#/ton) =>326 tons					
Unclassified excavation- (179'+180' length) x (average width 150') x (average height 20')/(27cf/cy) => 40,000 cy						
Bridge- (180' +179') x (43.25') = 15,570 sf						
Conspan- From the vendors estimate based on one 160' and one 180' 24' span x 11' rise structure in 25' of fill complete with headwalls and foundations.						

Cost Worksheet



PROJECT:	Georgia Department of Transportation STP- 0007-00(217) PI No. 0007217 Social Circle ByPass, Newton/Walton Counties	ALTERNATIVE NO.:	RD - 4
DESCRIPTION:	USE CONSPAN IN-LIEU OF BRIDGES	SHEET NO.:	4 of 4

CONSTRUCTION ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/ UNIT	TOTAL	NO. OF UNITS	COST/ UNIT	TOTAL
BRIDGES #1 & #2	SF	15,570	\$ 100.00	\$1,557,000	0	\$ 100	\$ -
CONSPAN STR 1 & STR 2	LS	0	\$ -	\$0	1	\$ 700,000	\$ 700,000
EARTHWORK	CY	0	\$ 5.34	\$0	40,000	\$ 5.34	\$ 213,600
GAB	TN	0	\$ 24.80	\$0	741	\$ 24.80	\$ 18,377
12.5 mm SUPERPAVE	TN	0	\$ 101.47	\$0	122	\$ 101.47	\$ 12,379
19.0 mm SUPERPAVE	TN	0	\$ 104.12	\$0	163	\$ 104.12	\$ 16,972
25.0 mm SUPERPAVE	TN	0	\$ 104.12	\$0	326	\$ 104.12	\$ 33,943
	Sub-total			\$ 1,557,000			\$ 995,271
Mark-up at	10.00%			\$ 155,700			\$ 99,527
	TOTAL			\$ 1,712,700			\$ 1,094,798
Estimated Savings:							\$ 617,902

Design Alternative



PROJECT:	Georgia Department of Transportation STP- 0007-00(217) PI No. 0007217 Social Circle ByPass, Newton/Walton Counties	ALTERNATIVE NO.:	RD – 7
DESCRIPTION:	USE EXISTING SOLO ACCESS ROAD	SHEET NO.:	1 of 4

Current Design:

The original design proposes using an alignment that diverges from the Solo Plant Access Road alignment.

Alternative Design:

The alternative design proposes using an alignment that is parallel to the Access Road from ~Station 218+00 to ~248+50.

Opportunities:

- Reduce unuseable remainder
- Center widening in existing R/W

Risks:

- Moderate design effort

Technical Discussion:

The alternative design would move the widening on existing Social Circle bypass further to the East. The re-alignment will come closer to centering the new construction in the existing right of way North of East High Tower Trail. The realignment will require widening the RR crossing and rebuilding the signals however this will also be required under the original design.

Cost Summar	Initial Cost	Present Worth Recurring Costs	Present Worth Life-Cycle Costs
Original Design	\$ 7,281,214	\$ -	\$ 7,281,214
Alternative Design	\$ 7,061,626	\$ -	\$ 7,061,626
Savings	\$ 219,588	\$ -	\$ 219,588

Illustration



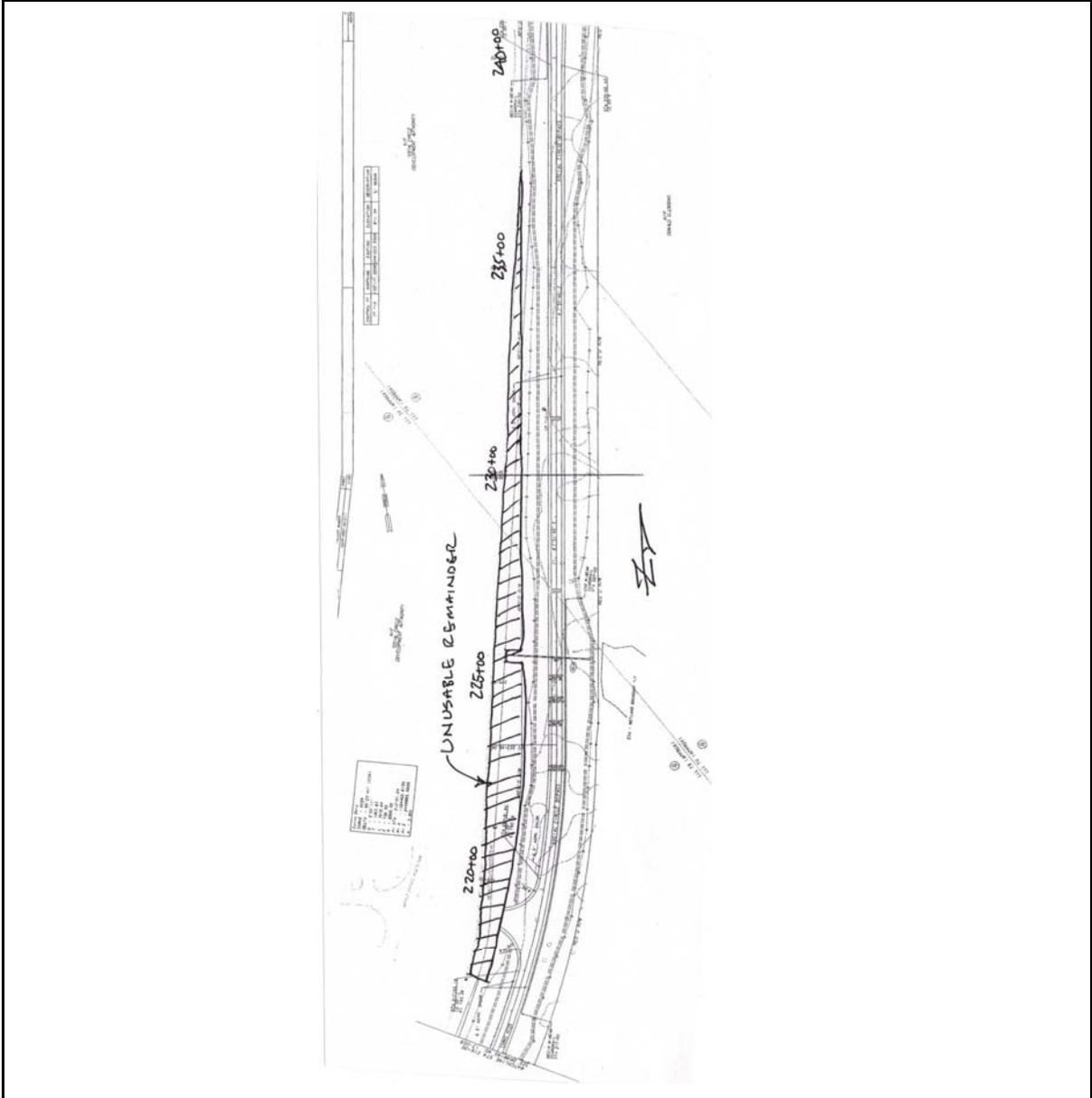
PROJECT: **Georgia Department of Transportation
STP- 0007-00(217) PI No. 0007217
Social Circle ByPass, Newton/Walton Counties**

ALTERNATIVE NO.:

RD - 7

DESCRIPTION: **USE EXISTING SOLO ACCESS
ROAD**

SHEET NO.: 2 of 4



Calculations



PROJECT:	Georgia Department of Transportation STP- 0007-00(217) PI No. 0007217 Social Circle ByPass, Newton/Walton Counties	ALTERNATIVE NO.:	RD - 7
DESCRIPTION:	USE EXISTING SOLO ACCESS ROAD	SHEET NO.:	3 of 4

LENGTH OF ROADWAY:

~STATION 218+00 TO ~STATION 238+00 => 2,000 LF

RIGHT OF WAY:

ASSUME EXCESS R/W IS 0' TO 50'

AREA- 2,000LF x (0'+50')/2 WIDE = 50,000sf

NET COST- INDUSTRIAL 50,000 SF @ \$1.15 => \$57,500

SCHEDULING CONTINGENCY- 55% => \$31,625

ADMINISTRATIVE/COURT COST- 60% => \$53,475

INFLATION FACTOR- 40% => \$57,040

TOTAL COST- \$199,640

ALTERNATIVE COST \$6,619,300 - \$199,640 = \$6,419,660

Design Alternative



PROJECT:	Georgia Department of Transportation STP- 0007-00(217) PI No. 0007217 Social Circle ByPass, Newton/Walton Counties	ALTERNATIVE NO.:	RD- 8
DESCRIPTION:	MODIFY VERTICAL PROFILE TO REDUCE "CUT"	SHEET NO.:	1 of 4

Current Design:

The original design results in ~140,000 cy of waste.

Alternative Design:

The alternative design proposes modifying the proposed alignment to reduce the amount of earthwork and more closely balance the job. It is also recommended to consider reducing the Design Speed to 60 mph to further

Opportunities:

- Reduced earthwork cost.
- Eliminate "special ditches".
- Avoid changing drainage patterns.
- Reduce R/W costs.

Risks:

- Moderate design effort.

Technical Discussion:

It appears that the profile could be modified in several areas to improve the earthwork balance on the job without adversely impacting the design. By introducing sag vertical curves at the natural outfalls, several hundred feet of special ditches can be eliminated. Directing water from its natural drainage pattern can also be minimized.

Cost Summary	Initial Cost	Present Worth Recurring Costs	Present Worth Life-Cycle Costs
Original Design	\$ 9,562,355		\$ 9,562,355
Alternative Design	\$ 8,863,103		\$ 8,863,103
Savings	\$ 699,252		\$ 699,252

Illustration



PROJECT:	Georgia Department of Transportation STP- 0007-00(217) PI No. 0007217 Social Circle ByPass, Newton/Walton Counties	ALTERNATIVE NO.:	RD- 8
DESCRIPTION:	MODIFY VERTICAL PROFILE TO REDUCE "CUT"	SHEET NO.:	2 of 4

VPI 146+75 ELEV.: 827.51, APPROACH -1.0638%, DEPARTURE -4.0000%, VC= 600', K= 204.34

VPI 166+50 ELEV.: 748.51, APPROACH -4.0000%, DEPARTURE +2.0000%, VC= 950', K= 158.33

VPI 175+50 ELEV.: 766.01, APPROACH +2.0000%, DEPARTURE -2.0000%, VC= 800', K= 200.00

VPI 185+00 ELEV.: 746.51, APPROACH -2.0000%, DEPARTURE +2.0000%, VC=750', K= 166.67

VPI 194+00 ELEV.: 764.51, APPROACH +2.0000%, DEPARTURE -1.6589%, VC= 750', K= 204.98

VPI 203+00 ELEV.: 749.58, APPROACH -1.6589%, DEPARTURE +3.9346%, VC= 750', K= 160.90

Calculations



PROJECT:	Georgia Department of Transportation STP- 0007-00(217) PI No. 0007217 Social Circle ByPass, Newton/Walton Counties	ALTERNATIVE NO.:	RD- 8
DESCRIPTION:	MODIFY VERTICAL PROFILE TO REDUCE "CUT"	SHEET NO.:	3 of 4

RIGHT OF WAY:

ASSUME R/W IS REDUCED FROM A NOMINAL 240' TO 180' FROM ~STATION 167+00 TO ~STATION 185+00

AREA-1,800LF X 50' = 90,000SF

NET COST- AGRICULTURAL 90,000 SF @ \$0.30 => \$27,000

SCHEDULING CONTINGENCY- 55% => \$14,850

ADMINISTRATIVE/COURT COST- 60% => \$25,110

INFLATION FACTOR- 40% => \$2,6784

TOTAL COST- \$93,744

ALTERNATIVE COST \$6,619,300 - \$93,744 = \$6,525,556

EARTHWORK:

ELIMINATE CUT FROM STATION 168+00 TO STATION 180+25 (1225 LF) ASSUME AN AVERAGE DEPTH OF 12 FEET AND A CONSTRUCTION LIMIT OF 180 FEET.

(1225 LF X 12 FT X 180 FT) / 27 CF/CY = 98,000 CY

ALTERNATIVE TOTAL: 375,00 CY - 98,000 CY = 277,000 CY

Design Alternative



PROJECT:	Georgia Department of Transportation STP- 0007-00(217) PI No. 0007217 Social Circle ByPass, Newton/Walton Counties	ALTERNATIVE NO.:	RD – 13
DESCRIPTION:	USE 4' PAVED SHOULDERS	SHEET NO.:	1 of 4

Current Design:

The current design proposes using a 6.5' paved shoulder on the new bypass.

Alternative Design:

The alternative design proposes using a 4' paved shoulder on the new bypass.

Opportunities:

- Reduced paving cost
- Reduction in construction time

Risks:

- Minimal design effort required

Technical Discussion:

The alternative design proposes using a 4' paved shoulder on the new bypass section. The minimum paved shoulder width for a minor rural arterial is 2'-0" as discussed on page 448 of the 2004 AASHTO green book. Right of Way is not adjusted since it is being acquired for future 4 lane roadway.

Cost Summar	Initial Cost	Present Worth Recurring Costs	Present Worth Life-Cycle Costs
Original Design	\$ 1,080,953		\$ 1,080,953
Alternative Design	\$ 916,605		\$ 916,605
Savings	\$ 164,348		\$ 164,348

Illustration



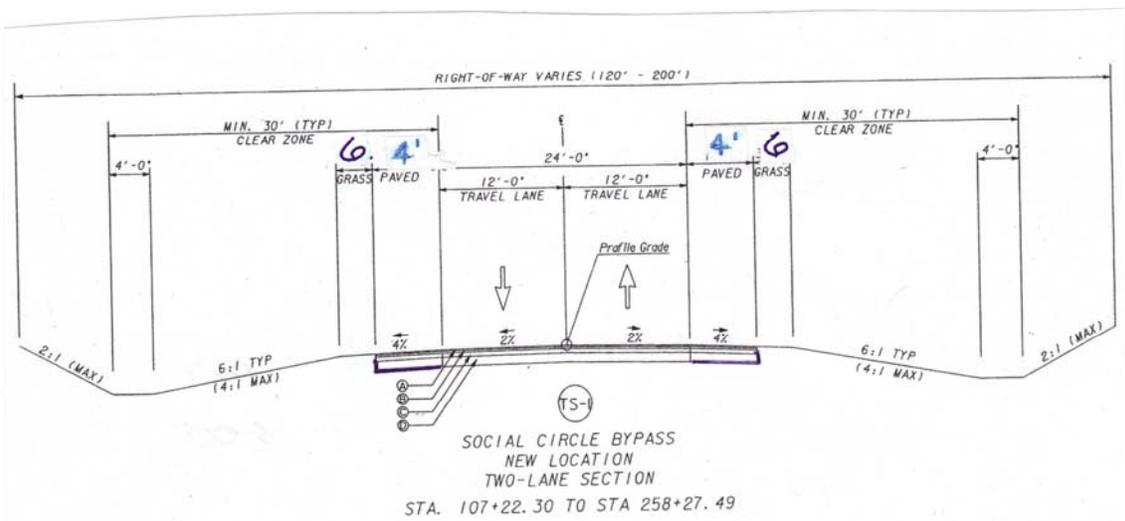
PROJECT: **Georgia Department of Transportation
STP- 0007-00(217) PI No. 0007217
Social Circle ByPass, Newton/Walton Counties**

ALTERNATIVE NO.:

RD - 13

DESCRIPTION: **USE 4' PAVED SHOULDERS**

SHEET NO.: 2 of 4



Calculations



PROJECT:	Georgia Department of Transportation STP- 0007-00(217) PI No. 0007217 Social Circle ByPass, Newton/Walton Counties	ALTERNATIVE NO.:	RD – 13
DESCRIPTION:	USE 4' PAVED SHOULDERS	SHEET NO.:	3 of 4

Roadway Length
Shoulder

From Station	To Station	Length (Ft)	Width (Ft)	SY		
10722.3	25827.49	15105.19	6.5	10,909	Left	Bypass
10722.3	25827.49	15105.19	6.5	10,909	Right	Bypass
70000	70338.31	338.31	13	489	SR 11/S. Cherokee Road	
50868	52489	1621	13	2,341	East Hightower Trail	

Area of Paving = 24,649 sy or SF = 221,839 SF

Original Design (6.5' width)

ITEM	Area (sf) X	Depth (ft)	=	Volume (cf) X	weight lbs/cf	=	weight
12" GAB	0	0.5	=	0	135	=	0 tons
ITEM	Area (sy) X	weight lbs/sy		Tons			
12.5 mm SP	24,649	165	=	2,034	T		
19.0 mm SP	24,649	275	=	3,389	T		
25.0 mm SP	24,649	330	=	4,067	T		

Alternative Design (4' width)

ITEM	Area (sf) X	Depth (ft)	=	Volume (cf) X	weight (lbs)/cf	=	weight
12" GAB	136,519	1	=	136,519	135	=	9,215 tons
ITEM	Area (sy) X	weight lbs/sy		Tons			
12.5 mm SP	15,169	165	=	1,251	T		
19.0 mm SP	15,169	275	=	2,086	T		
25.0 mm SP	15,169	330	=	2,503	T		

Project Description

PROJECT DESCRIPTION

The proposed Social Circle Bypass project is to construct a new location roadway extending approximately 2.8 miles north and east from SR 11/South Cherokee Road, just south of the Newton/Walton County line (mile log 13.00 in Newton County) and connecting to the existing Social Circle Bypass at East Hightower Trail in Walton County. This project will complete the eastern Bypass around downtown Social Circle. The project proposes to construct two (2) 12-foot lanes with 10-foot rural shoulders (6.5 foot paved, 3.5 foot grassed.)

The existing SR 11 roadway at the Walton/Newton County line is classified as a Rural Minor Arterial with two (2) 12-foot wide travel lanes; there are no existing shoulders. The existing northern portion of the Social Circle Bypass is a Rural Local Road with two (2) 12 foot wide travel lanes and right of way to accommodate a future four lane roadway section.

The estimated construction cost is:	\$ 17,210,398
The estimated right of way acquisition cost is:	\$ 6,619,300
The estimated reimbursable utility cost is:	<u>\$ 181,922</u>
The Grand Total Project Cost is:	\$ 24,011,620

REPRESENTATIVE DOCUMENTS

- Project Concept Report
- Construction Cost Estimates
- Right of Way Cost Estimates
- Typical Sections
- Construction Drawings
- Traffic Analysis

The VE Team utilized the supplied project materials noted above and the current GDOT standard drawings, details and specifications.

Representative documents follow:

Estimate Report for file "0007217"

Section ROADWAY					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
310-1101	87300	TN	24.80	GR AGGR BASE CRS, INCL MATL	2165040.00
400-3130	7646	TN	101.47	ASPH CONC 12.5 MM SUPERPAVE, GP 1 OR 2, INCL	775839.62
400-3605	12744	TN	104.12	ASPH CONC 19MM SUPERPAVE, GP 1 OR 2, INCL POLYMER MODIFIED BITUM MATL & H LIME	1326905.28
402-3143	15292	TN	104.12	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL	1592203.04
Section Sub Total:					\$5,859,987.94

Section EARTHWORK					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
201-1500	1	LS	3800000.00	CLEARING & GRUBBING -	3800000.00
205-0001	375200	CY	5.53	UNCLASS EXCAV	2074856.00
Section Sub Total:					\$5,874,856.00

Section SIGNING & MARKING					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
610-6560	1	EA	1021.56	REMOVE HISTORIC MARKER, STONE	1021.56
611-5420	1	EA	2810.00	RESET HISTORIC MARKER, STONE	2810.00
636-1020	320	SF	20.19	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 3	6460.80
636-1029	24	SF	17.79	HIGHWAY SIGNS, TP 2 MATL, REFL SHEETING, TP 3	426.96
636-2070	510	LF	9.22	GALV STEEL POSTS, TP 7	4702.20
636-2090	160	LF	10.06	GALV STEEL POSTS, TP 9	1609.60
653-0100	2	EA	392.63	THERMOPLASTIC PVMT MARKING, RR/HWY CROSSING SYMBOL	785.26
653-0120	70	EA	81.63	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	5714.10
653-1501	43400	LF	0.83	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	36022.00
653-1502	16500	LF	0.67	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	11055.00
653-1704	290	LF	5.21	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	1510.90
653-1804	1400	LF	2.15	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	3010.00
653-3501	2600	GLF	0.56	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	1456.00
653-3502	6310	GLF	0.43	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, YELLOW	2713.30
653-6004	2500	SY	3.68	THERMOPLASTIC TRAF STRIPING, WHITE	9200.00
653-6006	870	SY	3.54	THERMOPLASTIC TRAF STRIPING, YELLOW	3079.80
654-1001	420	EA	4.47	RAISED PVMT MARKERS TP 1	1877.40
654-1003	360	EA	4.69	RAISED PVMT MARKERS TP 3	1688.40
Section Sub Total:					\$95,143.28

Section TRAFFIC CONTROL					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	354098.22	TRAFFIC CONTROL -	354098.22
151-1000	1	Lump Sum	69767.00	MOBILIZATION	69767.00
310-5080	16400	SY	16.77	GR AGGR BASE CRS, 8 INCH, INCL MATL	275028.00
400-3130	970	TN	101.47	ASPH CONC 12.5 MM SUPERPAVE, GP 1 OR 2, INCL POLYMER-MODIFIED BITUM MATL & H LIME	98425.90
400-3604	1610	TN	103.78	ASPH CONC 12.5 MM SMA, GP 2 ONLY, INCL POLYMER-MODIFIED BITUM MATL & H LIME	167085.80
500-2100	10300	LF	48.97	CONCRETE BARRIER	504391.00
Section Sub Total:					\$1,468,795.92

Section DRAINAGE					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
550-1180	190	LF	50.30	STORM DRAIN PIPE, 18 IN, H 1-10	9557.00
550-1240	120	LF	61.02	STORM DRAIN PIPE, 24 IN, H 1-10	7322.40
550-1300	520	LF	88.13	STORM DRAIN PIPE, 30 IN, H 1-10	45827.60
550-1361	190	LF	118.77	STORM DRAIN PIPE, 36 IN, H 10-15	22566.30
550-1423	180	LF	161.00	STORM DRAIN PIPE, 42 IN, H 20-25	28980.00
550-4118	4	EA	430.83	FLARED END SECTION 18 IN, SIDE DRAIN	1723.32
550-4124	2	EA	450.37	FLARED END SECTION 24 IN, SIDE DRAIN	900.74
550-4230	4	EA	946.29	FLARED END SECTION 30 IN, STORM DRAIN	3785.16
550-4236	2	EA	1258.30	FLARED END SECTION 36 IN, STORM DRAIN	2516.60
550-4242	2	EA	1656.47	FLARED END SECTION 42 IN, STORM DRAIN	3312.94
Section Sub Total:					\$126,492.06

Section EROSION CONTROL - TEMPORARY					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
153-1300	1	EA	76410.93	FIELD ENGINEERS OFFICE TP 3	76410.93
162-1300	100	EA	875.00	EROSION CONTROL CHECK DAM, TP -	87500.00
163-0232	30	AC	676.15	TEMPORARY GRASSING	20284.50
163-0240	80	TN	266.50	MULCH	21320.00
163-0300	2	EA	1845.31	CONSTRUCTION EXIT	3690.62
165-0010	34400	LF	1.25	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	43000.00
165-0040	100	EA	88.24	MAINTENANCE OF EROSION CONTROL CHECKDAMS/DITCH CHECKS	8824.00
165-0101	2	EA	717.28	MAINTENANCE OF CONSTRUCTION EXIT	1434.56
171-0010	34400	LF	2.84	TEMPORARY SILT FENCE, TYPE A	97696.00
700-7000	80	TN	70.32	AGRICULTURAL LIME	5625.60
700-7010	70	GL	23.76	LIQUID LIME	1663.20
700-8000	6	TN	379.39	FERTILIZER MIXED GRADE	2276.34
Section Sub Total:					\$369,725.75

Section EROSION CONTROL - PERMANENT					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
163-0240	170	TN	266.50	MULCH	45305.00
700-6910	54	AC	1230.03	PERMANENT GRASSING	66421.62
700-7000	170	TN	70.32	AGRICULTURAL LIME	11954.40
700-7010	140	GL	23.76	LIQUID LIME	3326.40
700-8100	2700	LB	3.30	FERTILIZER NITROGEN CONTENT	8910.00
Section Sub Total:					\$135,917.42

Section RAILROAD					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
232-0001	1	Lump Sum	500000.00	RAILROAD CONSTRUCTION	500000.00
Section Sub Total:					\$500,000.00

Section Culvert #1					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
500-3101	212	CY	693.90	CLASS A CONCRETE	147106.80
511-1000	22585	LB	0.99	BAR REINF STEEL	22359.15
627-1000	161	SF	55.41	MSE WALL FACE, 0 - 10 FT HT, WALL NO - 1	8921.01
627-1000	188	SF	55.41	MSE WALL FACE, 0 - 10 FT HT, WALL NO - 2	10417.08
627-1010	1047	SF	54.78	MSE WALL FACE, 10 - 20 FT HT, WALL NO - 1	57354.66
627-1010	979	SF	54.78	MSE WALL FACE, 10 - 20 FT HT, WALL NO - 2	53629.62
627-1020	2834	SF	58.10	MSE WALL FACE, 20 - 30 FT HT, WALL NO - 1	164655.40
627-1020	2851	SF	58.10	MSE WALL FACE, 20 - 30 FT HT, WALL NO - 2	165643.10
Section Sub Total:					\$630,086.82

Section Culvert #2					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
500-3101	223	CY	693.90	CLASS A CONCRETE	154739.70
511-1000	24319	LB	0.99	BAR REINF STEEL	24075.81
627-1000	279	SF	55.41	MSE WALL FACE, 0 - 10 FT HT, WALL NO - 1	15459.39
627-1000	128	SF	55.41	MSE WALL FACE, 0 - 10 FT HT, WALL NO - 2	7092.48
627-1010	1040	SF	54.78	MSE WALL FACE, 10 - 20 FT HT, WALL NO - 1	56971.20
627-1010	1590	SF	54.78	MSE WALL FACE, 10 - 20 FT HT, WALL NO - 2	87100.20
627-1020	2330	SF	58.10	MSE WALL FACE, 20 - 30 FT HT, WALL NO - 1	135373.00
627-1020	1790	SF	58.10	MSE WALL FACE, 20 - 30 FT HT, WALL NO - 2	103999.00
Section Sub Total:					\$584,810.78

Total Estimated Cost: \$15,645,815.97

Subtotal Construction Cost \$15,645,815.97

E&C Rate 10.0 % \$1,564,581.60

Inflation Rate 0.0 % @ 0.0 Years \$0.00

Total Construction Cost	\$17,210,397.57
Right Of Way	\$6,619,300.00
ReImb. Utilities	\$181,922.32

Grand Total Project Cost	\$24,011,619.89
---------------------------------	------------------------

**Preliminary Right of Way Cost Estimate
REVISED**

Date:	January 31, 2008	P.I. Number: 0007217
Project:	CSSTP-0007-00(217) Walton	No. Parcels: 36
Existing/Requiring R/W:	Varies/Varies	
Project Termini:	From SR11 to East Hightower Trail	

Project Description: Social Circle Bypass

Land:

Industrial	707,909 s.f. @ \$1.15/s.f. = \$814,095
Residential	1,190,937 s.f. @ \$0.69/s.f. = \$821,747
Agricultural	902,114 s.f. @ \$0.30/s.f. = <u>\$270,634</u>

TOTAL \$1,906,476

Improvements:

None

Relocation:

Commercial @ \$25,000/parcel	N/A
Residential @ \$40,000/parcel	N/A

TOTAL \$0

Damages:

Proximity -	\$	0
Consequential	\$	0
Cost To Cure	\$	0

TOTAL \$ 0

SUB-TOTAL \$1,906,476

Net Cost		\$	1,906,476
Scheduling Contingency 55%		\$	1,048,562
Adm/Court Cost 60%		\$	1,773,023
Inflation Factor 40%		\$	<u>1,891,224</u>
			6,619,285

Total Cost

\$6,619,300

Prepared By: Harvey P. Booker, Consultant
Booker Real Estate Services, LLC

SUBMITTED FOR
Approved : APPROVAL ON 2/1/08
GDOT R/W

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE P. I. No. 0007217, Walton/Newton Counties OFFICE Preconstruction
CSSTP-0007-00(217)
Social Circle Bypass
DATE October 26, 2007

FROM  Genetha Rice-Singleton, Assistant Director of Preconstruction

TO  SEE DISTRIBUTION

SUBJECT APPROVED PROJECT CONCEPT REPORT

Attached for your files is the approval for subject project.

Attachment

DISTRIBUTION:

Brian Summers
Glenn Bowman
Ken Thompson
Michael Henry
Keith Golden
Babs Abubakari
Angela Alexander
Paul Liles
Tony Collins
BOARD MEMBER

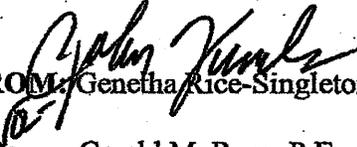
**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENTAL CORRESPONDENCE

FILE: P.I. No. 0007217, Walton/Newton Counties
CSSTP-0007-00(217)
Social Circle Bypass

OFFICE: Preconstruction

DATE: October 17, 2007


FROM: Genetha Rice-Singleton, Assistant Director of Preconstruction

TO: Gerald M. Ross, P.E., Chief Engineer

SUBJECT: PROJECT CONCEPT REPORT

This project comprises the Social Circle Bypass from S.R. 11/South Cherokee Road just south of the Newton/Walton County line northeasterly on new location and connecting to the existing Social Circle Bypass at East Hightower Road for a total of 2.80 miles. The existing northern portion of the Social Circle Bypass is a rural two lane roadway with existing right-of-way to accommodate a future four lane roadway section. This project will complete the eastern bypass around Social Circle and route traffic around historic downtown. The project will provide a usable alternative route and assist in economic development of the area by providing a more direct route to S.R. 11 and I-20.

The construction proposes two, 12' lanes with 10' shoulders (6.5' paved) on 245' of proposed right-of-way to accommodate a future four lane roadway section. At-grade intersections are proposed at S.R. 11/South Cherokee Road, CR 195/Cannon Drive, Thurman Baccus Road, East Hightower Trail, and CSX Railroad. A grade separation was considered for the CSX Railroad crossing, but eliminated after an evaluation indicated that the hazard index will be 2.15 with the protection of flashing lights, gates and bells. The projected traffic for the proposed bypass is 11,370 VPD in 2031. Operational analyses indicate the bypass will operate at level-of service "C" in the design year as a two lane roadway. Access control will be by permit with a speed design of 65 MPH.

A design exception is needed for the departure curve of the proposed Social Circle Bypass at S.R. 11/ South Cherokee Road to minimize displacements and eliminate a dangerous reverse curve condition. The design exception will result in a decreased radius for the curve and reduced posted speed of 45 MPH through this curve on the bypass. The bypass will be posted at 55 MPH (designed for 65 MPH) for the remainder of the project.

Environmental concerns include requiring a COE 404 permit; possible wetland impacts; An Environmental Assessment will be prepared; a Public hearing is required; Time saving procedures is not appropriate.

P.I. No. 0007217, Walton/Newton Counties
October 17, 2007

The estimated costs for this project are:

	<u>PROPOSED</u>	<u>APPROVED</u>	<u>FUNDING</u>	<u>PROG DATE</u>
Construction (includes E&C)	\$ 14,077,000	\$ 14,077,000	L250	2010
Right-of-way	\$ 5,653,000	\$ 5,653,000	L250/LY10	2008
Utilities*	\$ 182,000			

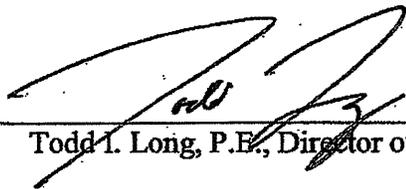
*Notification letter sent to Newton/Walton/Social Circle 2-16-05

I recommend this project concept be approved.

GRS: JDQ

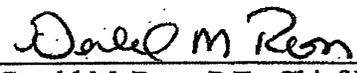
Attachment

CONCUR



Todd I. Long, P.E., Director of Preconstruction

APPROVED



Gerald M. Ross, P.E., Chief Engineer

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

Office of Consultant Design

PROJECT CONCEPT REPORT

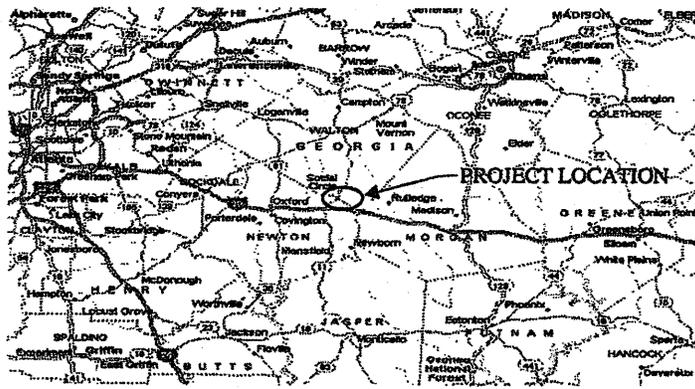
Project Number: CSSTP-0007-00(217)

County: Newton/Walton Counties

P. I. Number: 0007217

Federal Route Number: N/A

State Route Number: N/A



Social Circle Bypass
from SR 11/S. Cherokee Road northeasterly to East Hightower Trail

Recommendation for approval:

DATE 8-20-07

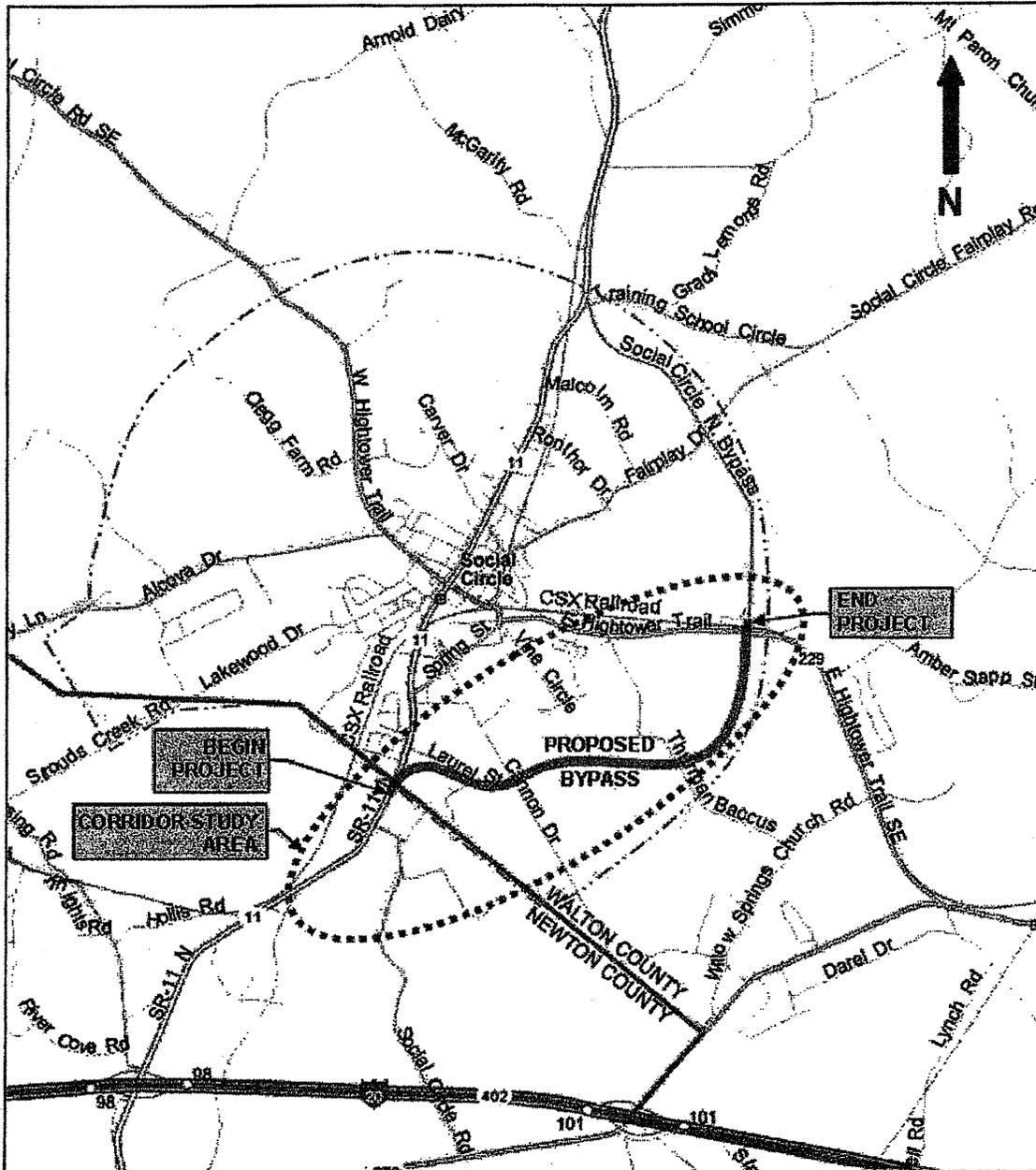
Yvonne C. Peltzman, P.E.
Project Manager

DATE 8-27-2007

M. Kahr Albutari, P.E.
State Consultant Design and Program Delivery Engineer

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

DATE _____	_____
	State Transportation Planning Administrator
DATE _____	_____
	State Transportation Financial Management Administrator
DATE _____	_____
	State Environmental/Location Engineer
DATE _____	_____
	State Traffic Safety & Design Engineer
DATE _____	_____
	District Engineer
DATE _____	_____
	Project Review Engineer
DATE _____	_____
	State Bridge Design Engineer



LOCATION

Project Location Map

NOT TO SCALE

CSSTP-0007-00(217)
SOCIAL CIRCLE BYPASS
 NEWTON & WALTON COUNTIES
 P.I. # 0007217

Project Concept Report page 3
Project Number: CSSTP-0007-00(217)
P. I. Number: 0007217
County: Newton/Walton Counties

Need and Purpose: Refer to Attachment #1.

Description of the proposed project: The proposed Social Circle Bypass project is to construct a new location roadway extending approximately 2.8 miles north and east from SR 11/S. Cherokee Road just south of the Newton/Walton County line (mile log 13.00 in Newton County) and connecting to the existing Social Circle Bypass at East Hightower Trail in Walton County. This project will complete the eastern Bypass around downtown Social Circle. The project proposes to construct two (2) 12-foot lanes with 10-foot rural shoulders (6.5 foot paved, 3.5 foot grassed.)

The existing SR 11 roadway at the Walton/Newton County line is classified as a Rural Minor Arterial with two (2) 12-foot wide travel lanes; there are no existing shoulders. The existing northern portion of the Social Circle Bypass is a Rural Local Road with two (2) 12-foot wide travel lanes and right of way to accommodate a future four lane roadway section; there are no existing shoulders.

The proposed new location roadway is to provide a facility that will adequately and safely serve current and future travel demand and provide interregional travel continuity for through traffic.

Is the project located in a Non-attainment area? Yes No.

This project is part of the Atlanta Regional Commission's (ARC's) Envision 6 plan and the current State Transportation Improvement Program. The projects in these plans have been modeled collectively to show a benefit to the Atlanta region's air quality. The project limits and description of the proposed Social Circle Bypass project are the same as those used for modeling purposes. Because of its inclusion in the above mentioned models, this project is expected to contribute to improvement in the Atlanta region's overall air quality.

PDP Classification: Major Minor

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

Functional Classification:	<u>Proposed Social Circle Bypass</u>	<u>Rural Major Collector</u>
	<u>State Route 11/S. Cherokee Road</u>	<u>Rural Minor Arterial</u>
	<u>Existing Social Circle Bypass</u>	<u>Rural Local Road</u>
	<u>E. Hightower Trail</u>	<u>Rural Major Collector</u>
	<u>Cannon Drive/CR 195</u>	<u>Rural Local Road</u>
	<u>Thurman Baccus Road</u>	<u>Rural Local Road</u>

The Office of Transportation Data, Federal Highway Coordinator will recommend to Federal Highway Administration that the proposed Social Circle Bypass be functionally classified as a Rural Major Collector and that the existing section of the Bypass be modified to a functional classification of Rural Major Collector (Refer to Attachment #8). If State Route 11 were to be relocated to the Bypass, the recommendation would be to functionally classify the entire Bypass as Rural Minor Arterial.

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

Traffic (AADT):

The year the project is anticipated to be open for traffic use is the base year, 2011. Therefore, the project will be designed to accommodate traffic growth until 2031.

<u>Traffic Data:</u>	Base Year	Design Year
Annual Average Daily Traffic (AADT)	2011	2031
Proposed Social Circle Bypass:	7,070	11,370
Existing N.E. Social Circle Bypass (Build):	6,450	10,650
SR11/S.Cherokee Rd. (Build):	6,000	10,000
E. Hightower Trail (Build):	3,450	5,700

Existing design features:

This is a new location project.

Proposed Design Features:

- Proposed typical section(s): Two 12-foot travel lanes with 10-foot shoulders (6.5' paved, 3.5' grassed). Turn lanes will be provided at the intersections of SR 11/S. Cherokee Road, CR 195/Cannon Drive, Thurman Baccus Road, and East Hightower Trail.
- Proposed Design Speed Mainline: 65 mph
 This project is classified as a Rural Major Collector (55 mph design speed). It is anticipated that SR 11 will be relocated to the Bypass, causing the Bypass to be reclassified as a Rural Minor Arterial (65 mph design speed). Therefore, the Bypass is to be designed at 65 mph to adhere to this future condition.
- Proposed Design Speed Side Streets:
 - SR 11/S. Cherokee Road 65 mph
 - Existing Social Circle Bypass 55 mph
 - E. Hightower Trail 55 mph
 - Cannon Drive/CR 195 45 mph
 - Thurman Baccus Road 45 mph
- Proposed Maximum grade Mainline: 3.9% Maximum grade 4%
- Proposed Maximum grade Side Street:
 - Cannon Drive/CR 195 5.3% Maximum grade 9%
 - Thurman Baccus Road 5.1% Maximum grade 9%
 - E. Hightower Trail 2.2% Maximum grade 7%
- Proposed Maximum grade driveway (residential) 15% Maximum grade +28%/-15%
- Proposed Maximum grade driveway (commercial) 10% Maximum grade ±11%
- Proposed e_{max} 6% (Rural paved road)
- Proposed Minimum Radii of curve 1060 ft Minimum Radii 1660 ft

- Right of way:
 - Width: Varies from 120'-245' ft
 - Easements: Temporary (), Permanent (X), Utility (), Other ().
 - Type of access control: Full (), Partial (), By Permit (X), Other ().
 - Number of parcels: 22 Number of displacements:
 - Business: 0
 - Residences: 1
 - Mobile homes: 0
 - Other: 0

- Structures:
 - Bridges: N/A
 - Retaining walls: N/A

- Major intersections:
 - SR 11/S. Cherokee Road – North of the proposed Social Circle Bypass, SR 11 will be realigned to form a new three-legged “T” intersection with the Bypass. Exclusive left and right turn lanes will be provided in all directions.
 - CR 195/Cannon Drive – Approximately 1386 feet of the existing two-lane rural local road will be reconstructed to form a new four-legged intersection with the Bypass. Exclusive left and right turn lanes will be provided along the proposed Bypass. The need for additional turn lanes will be explored in the preliminary design.
 - Thurman Baccus Road – Approximately 1301 feet of the existing two-lane rural local road will be reconstructed to form a new four-legged intersection with the Bypass. Exclusive left and right turn lanes will be provided along the proposed Bypass and a right turn lane will be provided eastbound on Thurman Baccus Road. The need for additional turn lanes will be explored in the preliminary design.
 - East Hightower Trail – Approximately 1804 feet of the existing two-lane rural local road will be reconstructed to form a new four-legged intersection with the Bypass. Exclusive left and right turn lanes will be provided in all directions.
 - CSX Railroad – Upgrade of existing crossing to match roadway improvements.
 - Northern Social Circle Bypass – Approximately 1007 feet of existing two-lane rural minor arterial road will be reconstructed to tie into with the Bypass.

- Traffic control during construction: No detours will be required for construction of the mainline new location project. Standard traffic control measures in accordance with the Georgia Department of Transportation (GDOT) Operations Work Zone Traffic Control Standards are proposed for construction of the proposed intersections at SR 11/S. Cherokee Road, CR 195/Cannon Drive, Thurman Baccus Road, East Hightower Trail, CSX Railroad, and the northern Social Circle Bypass where applicable, otherwise the Manual on Uniform Traffic Control Devices (MUTCD) will be referenced. No detours or road closures are anticipated for the construction of these intersections.

- Design Exceptions to controlling criteria anticipated:
 - AASHTO calls for a minimum radius of 1660 feet at a design speed of 65 mph with a maximum superelevation rate of 6%. The Social Circle Bypass project proposes a minimum radius of 1060 ft on its departure curve from SR 11.

	<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)

- Design Variances: None anticipated.
- Environmental concerns:
 - Through coordination with local officials and citizens that attended the Early Coordination Public Information Open House (PIOH) it was determined that there is an Environmental Justice community within the Corridor Study Area along Scott Terrace (CR 432). Federal Highway Administration (FHWA) states that the local residents define their own community; if proposed alignments are considered in this area close coordination will need to take place with the residents in delineating the Environmental Justice Community boundary. Through additional coordination meetings with local city and county officials, the recommended alternate was developed to avoid impacting the Environmental Justice community. The recommended alternative alignment proposes to construct the new location roadway primarily within Walton County. By shifting the departure from SR 11/S. Cherokee Road north into Walton County, the impacts to the Environmental Justice Community, as well as eligible historic structures, are avoided.
 - Estimate of one (1) potential relocation at this time.
 - Impacts to waters and wetlands of the US are expected, and are currently estimated at 1.6 acres. A permit will be required from the U.S. Army Corps of Engineers (ACOE). If impacts are less than 1.0 acre a Nationwide Permit (NWP) will be required; if impacts are greater than 1.0 acre an Individual 404 Permit will be required. If an Individual Permit is required, a Practical Alternatives Report will be completed as required. The permit type does not affect the environmental document approval schedule, however the time duration required to receive an Individual Permit takes approximately one (1) year and could affect the start of construction date.

- Historic Resources are present, but impacts are not anticipated.

<u>Name of Resource</u>	<u>Location</u>
○ Scott House	1074 Social Circle Road in Newton County
○ Sigman House	West side of SR 11 in Newton County
○ Stewart House	887 S Cherokee Road in Walton County
○ Holmes House	906 S Cherokee Road in Walton County
○ Former Georgia Railroad	East-West alignment through project area roughly parallel to SR 11 and East Hightower Trail

- Archaeological Resources may be present and impacts are unknown.

- Level of environmental analysis:

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

- Utility involvements:

- Railroad:
 - CSX Transportation
- Telephone:
 - Bellsouth
 - Verizon
- Cable:
 - Comcast Communications
 - City of Monroe CATV
- Power:
 - Georgia Power – Transmission
 - Georgia Power – Distribution
 - Snapping Shoals EMC
 - Walton EMC
- Gas:
 - City of Madison Gas
 - City of Social Circle Gas
- Water:
 - Newton County Water
 - City of Social Circle Water
- Sewer:
 - City of Social Circle Sewer

Project responsibilities:

- Design: Reynolds, Smith and Hills, Inc.
- Right of Way Acquisition: Reynolds, Smith and Hills, Inc.
- Relocation of Utilities: Utility Companies
- Letting to contract: GDOT
- Supervision of construction: GDOT

- Providing material pits: Construction Contractor

Coordination

- Initial Concept Meeting date (Minutes attached): 03/26/07
- Concept meeting date (Minutes pending): 04/25/07 (tentative)
- P. A. R. meetings, dates and results: Pending determination of ACOE Permit type.
- FEMA, USCG, and/or TVA: N/A
- Public involvement: Early Coordination Public Information Open House: 05/04/06
Public Information Open House: 05/03/07
- Local government comments: Consensus of preferred alignment received from City of Social Circle (Mayor Jim Burgess), Walton County (Chairman Kevin Little), and Newton County (Chairman Aaron Varner, Commissioner Monty Laster).
 - City of Social Circle Coordination Meeting to discuss alignment: 12/11/06
 - Walton County Coordination Meeting to discuss alignment: 02/05/07
 - Newton County Coordination Meeting to discuss alignment: 02/05/07
- Other projects in the area: No impacts or conflicts between this proposed new location roadway project and the following projects are anticipated.
Walton County (GDOT District 1)
 - P.I. No. 0000413, SR 11 from North of the City of Social Circle to Barrow County Line.
 - P.I. No. 0000414, SR 138 from Miller Bottom Rd to SR10/US 78, Preliminary Engineering (PE) is scheduled 2008, ROW and Construction is scheduled after 2009. The project is a widening project.
 - P.I. No. 0004708, Social Circle Pedestrian and Bicycle Trailways.Newton County (GDOT District 2)
 - P.I. No. 0006022, SR 11/I-20 Relocate Close Frontage Rd – River Rd Extension, Preliminary Engineering (PE) is scheduled 2009, ROW and Construction is scheduled after 2009. The project is a new construction project.
 - P.I. No. 231630, SR 12/US 278 from CR 653/Covington Bypass East to SR 142, Preliminary Engineering (PE) is underway, ROW is scheduled 2007-2008 and Construction is scheduled 2008. The project is a widening project.
 - P.I. No. 242230, SR 142 from I-20 to Alcovy Rd in Covington, Preliminary Engineering (PE) is underway, ROW is scheduled 2007 and Construction is scheduled 2009. The project is a widening project.
- Other coordination meetings to date to discuss alignment:
 - Solo Cup plant Representatives: 06/07/06
 - FHWA Meeting(s): 04/06/06, 07/06/06, 02/27/07
 - Town Hall Meeting with Newton County Officials: 07/24/06
 - GDOT Office of Transportation Data, Federal Highway Coordinator regarding functional classification (via email): 03/20/07
- Railroads: CSX Railroad
 - Standridge Color Corporation Representative to discuss alignment and future train

- traffic: 08/01/06 (via email)
- o GDOT Office of Traffic Safety and Design (OTSD), Office of Utilities, and Railroad Crossing Program Manger: 04/06/06, 04/12/07

Scheduling – Responsible Parties’ Estimate

- Time to complete the environmental process: 18 Months
- Time to complete preliminary construction plans: 18 Months
- Time to complete right of way plans: 12 Months
- Time to complete the Section 404 Permit: 18 Months
- Time to complete final construction plans: 9 Months
- Time to complete to purchase right of way: 8 Months
- List other major items that will affect the project schedule: None

Other alternates considered (See Attachment #11):

- **No Build Alternate**
This option does not meet the need and purpose of the proposed project. It does not address the safety and operational needs of SR 11 in downtown Social Circle.
- **GDOT Alternate**
The original alignment developed by GDOT Office of Environment/Location was prepared without knowledge of local industrial development underway. Due to impacts to local industrial developments located within the GDOT Alternate, this alignment was not considered for further development.

A conceptual redesign was needed to account for the industrial developments along the proposed corridor. The alternates described below were developed and considered. The alternative analysis and comparison considered the current and future land use, impacts to historical properties, impacts to the Environmental Justice community, roadway geometry, the number of bridge/culvert crossings, projected right-of-way costs, and estimated construction costs.

- **Alternate #1 (Preferred)**
This alternate is the northern most alignment and generally follows the upland contours south and east of downtown Social Circle. Horizontal geometry and adherence to logical termini are provided to accommodate the current and future traffic demands and meet the requirements of the proposed design features. The crossing angle with Cannon Drive (CR 195) is 84 degrees and with Thurman Baccus Road is 78 degrees. The crossing angles at these intersections, as well as the Little River tributaries are between the 70-90 degree requirements. The crossing angle of Social Circle Road (CR 114) is 58 degrees which does not fall within the 70-90 degree requirement. This alternate passes close to an Environmental Justice Community, which would require close coordination with the residents in delineating the Environmental Justice Community boundary. Although the exact limits of the Environmental Justice Community have not been determined, impacts to the community are likely because of the significant family connections between the residents along Scott Terrace and the Scott/Walker properties; the assumed Environmental Justice Community boundary could encompass approximately 145 acres.

There are five (5) possible bridge or culvert crossings over the Little River tributaries. Approximately 20 parcel impacts have been estimated along this alternate. The horizontal geometry offered by this alignment is one of the most desirable in comparison to the other alternates. Based on preliminary assessments, the vertical geometry is also expected to be the most desirable.

For this reason, Alternate #1 as originally proposed is rejected; however a modified Alternate #1 was derived. By shifting the departure from SR 11/S. Cherokee Road north into Walton County, the impacts to the Environmental Justice Community, as well as eligible historic structures, are avoided. When connecting to SR 11, the modified Alternate #1 allows free flow movement with a departure curve and then continues along the proposed Bypass route. SR 11 would be realigned to form a "T" intersection with the Bypass. This alternative utilizes a higher percentage of existing roadway/right-of-way by tying into SR 11 at Laurel Street. The completion of the Social Circle Bypass is not anticipated to cause the need for additional improvements to the existing SR 11 roadway corridor. This is the preferred alignment.

- **Alternate #2**

This alternate departs from SR 11 further north and closer to downtown Social Circle. The horizontal curve as it departs from SR 11 creates an undesirable reversal in alignment because of the proximity to an existing SR 11 horizontal curve to the south. The remainder of the horizontal geometry is good and adherence to logical termini is provided to accommodate the current and future traffic demands and meet the requirements of the proposed design features. The crossing angles with Cannon Drive (CR 195) and Thurman Baccus Road are 61 degrees and 63 degrees respectively, which do not fall within the 70-90 degree requirements. In addition a portion of Social Circle Road (CR 114) would have to be realigned to form an acceptable intersection with the Bypass. It appears that this alternate would avoid potentially eligible historic properties and structures. There are two (2) possible bridge or culvert crossings, one of which is skewed at 40-50 degrees over the Little River tributaries. Approximately 13 parcel impacts have been estimated along this alternate. Although this alternate minimizes impacts to the Environmental Justice Community impacts would not be avoided because the assumed Environmental Justice Community boundary could encompass approximately 145 acres due to the significant family connections between the residents along Scott Terrace and the Scott/Walker properties. This alternate also offers deficient departure geometry from SR 11 and unacceptable angles of intersection with existing streets. Since Environmental Justice Community impacts could not be avoided and geometry deficiencies would be present this alignment is rejected.

- **Alternate #3**

This alternate was created by combining the SR 11 departure of alternate #1 and the remainder of alternate #2 while attempting to avoid and minimize impacts to residential structures and properties. Although the horizontal geometry is sufficient, the horizontal geometry introduces additional curves that result in the alternate not offering any added benefit. Adherence to logical termini is provided to accommodate the current and future traffic demands and meet the requirements of the proposed design features. The crossing

angle with Social Circle Road (CR 114) is 58 degrees and with Cannon Drive (CR 195) is 68 degrees. The crossing angles at these intersections, as well as the Little River tributaries do not fall within the 70-90 degree requirements. This alternate passes close to an Environmental Justice Community. Although the exact boundary of the community has not been defined, right-of-way impacts to parcels within the community could occur. There are two (2) possible bridge or culvert crossings, one of which is skewed at 40-50 degrees, over the Little River tributaries. Approximately 16 parcel impacts have been estimated along this alternate. This alternate does not offer any added benefit in comparison to the other considered alternates. Although the exact limits, of the Environmental Justice Community, have not been determined, impacts to the community are likely because the assumed Environmental Justice Community boundary could encompass approximately 145 acres due to the significant family connections between the residents along Scott Terrace and the Scott/Walker properties. The horizontal geometry is sufficient; however the angles of intersection with existing streets are unacceptable and the Environmental Justice Community impacts could not be avoided causing this alternate to be rejected.

- **Alternate #4**

This alternate has good horizontal geometry and provides adherence to the logical termini to accommodate the current and future traffic demands and meet the requirements of the proposed design features. The crossing angle with Social Circle Road is 81 degrees, with Cannon Drive (CR 195) is 73 degrees and with Thurman Baccus Road is 72 degrees. The crossing angles at these intersections, as well as the Little River tributaries are between the 70-90 degree requirements. This alternate passes through an Environmental Justice Community. Although the exact boundary of the community has not been defined, substantial impacts would be made to the community because the assumed Environmental Justice Community boundary could encompass approximately 145 acres due to the significant family connections between the residents along Scott Terrace and the Scott/Walker properties. In addition there may be impacts to structures/properties within the Environmental Justice Community. There are two (2) possible bridge or culvert crossings over the Little River tributaries. Approximately 17 parcel impacts have been estimated along this alternate. The acceptable horizontal geometry along this alternate and the acceptable angles of intersection with most existing streets cannot offset the direct impacts this alternate would have on the Environmental Justice Community. This alternate is rejected.

- **Alternate #5**

This alternate which provides good horizontal geometry to accommodate the current and future traffic demands and meet the requirements of the proposed design features and adherence to the logical termini is provided with a shift to the south in an attempt to reduce impacts to residences. The crossing angle with Social Circle Road is 78 degrees, with Cannon Drive (CR 195) is 89 degrees and with Thurman Baccus Road is 78 degrees. The crossing angles at these intersections, as well as the Little River tributaries are between the 70-90 degree requirements. This alternate avoids direct impacts to potential historic structures as well as the structures within the Environmental Justice Community. The exact boundary of the community has not been defined so impacts to the

Environmental Justice Community may still occur because the assumed Environmental Justice Community boundary could encompass approximately 145 acres due to the significant family connections between the residents along Scott Terrace and the Scott/Walker properties. In addition, there may be impacts to existing cemeteries. This alternate runs parallel to and could utilize the existing right-of-way of Barbara Trail (CR 166) which was suggested in public comments received at the May 4, 2006 PIOH. There are six (6) possible bridge or culvert crossings over the Little River tributaries. Approximately 18 parcel impacts have been estimated along this alternate. This alternate offers acceptable horizontal geometry and angles of intersection with existing streets. Although possible Environmental Justice Community impacts could most likely be minimized they would not be avoided. This alternate is rejected.

- **Alternate #6**

This alternate is the southern most alignment and provides good horizontal geometry and adherence to logical termini to accommodate the current and future traffic demands and meet the requirements of the proposed design features, as well as a reduction in impacts to residential structures. The crossing angle of Little River Road is 52 degrees and is not within the 70-90 degree requirements. The crossing angle with Social Circle Road is 71 degrees, with Cannon Drive (CR 195) is 81 degrees and with Thurman Baccus Road is 72 degrees. The crossing angles at these intersections, as well as the Little River tributaries are between the 70-90 degree requirements. This alternate avoids direct impacts to potential historic structures as well as the structures within the Environmental Justice Community. The exact boundary of the community has not been defined so impacts to the Environmental Justice Community may still occur because the assumed Environmental Justice Community boundary could encompass approximately 145 acres due to the significant family connections between the residents along Scott Terrace and the Scott/Walker properties. It is believed that impacts to existing cemeteries can be avoided with this alternative. This alternate runs parallel to and could utilize the existing right-of-way of Barbara Trail (CR 166) which was suggested in public comments received at the May 4, 2006 PIOH. There are four (4) possible bridge or culvert crossings over the Little River tributaries. Approximately 17 parcel impacts have been estimated along this alternate. Despite acceptable horizontal geometry, acceptable angles of intersection with existing street, and avoidance of the structures with the Environmental Justice Community and eligible historic structures, this alternate does not offer any benefit over modified Alternate #1A. This alternate was rejected due to the aforementioned reasons.

- **Alternate #7**

A grade separation of the proposed Bypass over the CSX railroad was considered an alternate. Based on the information provided by the Federal Railroad Administration (FRA) National Inventory rail traffic on the CSX rail corridor from Atlanta to Augusta are currently 16 freight trains per day with trains operating at 50 MPH maximum. Freight traffic is expected to continue to grow and with design year ADT values projected over 10,000 and truck percentages over 10% a grade separated overpass will improve safety conditions for the traveling public as well as emergency vehicle access. The railroad overpass alternate would utilize any of the above alternates (1 through 6) up to

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County: Newton/Walton Counties

the intersection with Thurman Baccus Road. At this point the alternate would continue further east and north to cross over E. Hightower Trail and the CSX railroad approximately 1,250 feet east of the existing intersection of the northern Social Circle Bypass and E. Hightower Trail. The alignment would then curve back to the west to tie into the existing northern Social Circle Bypass approximately 3,500 feet north of E. Hightower Trail. It is anticipated that a bridge would also be required over a potentially wetland low area as the alternate approaches E. Hightower Trail. Approximately four (4) additional parcel impacts have been estimated along this alternate. From the comparisons of the Highway-Rail Grade Crossing Safety adjustment factors and cost estimate, the grade separated overpass alternative is not warranted at this time. An at-grade crossing is sufficient at this location currently and in the design year 2031. The cost-to-benefit ratio for the grade separated overpass alternate was discussed with the City of Social Circle officials and the GDOT OTSD. At the Initial Concept Team Meeting held on March 26, 2007, Mayor Jim Burgess did not see a need for grade separation for emergency vehicle access. He favored not moving forward with this alternate due to the major additional construction cost and delay. On April 12, 2007, Lenor Bromberg, RS&H met with Key Phillips, GDOT Office of Utilities. The meeting resulted in concurrence with the City of Social Circle officials, the construction cost out weighed the benefit of the grade separated overpass. Therefore, this alternate will not be considered for further development.

Value Engineering Process

VALUE ENGINEERING PROCESS

INTRODUCTION

This report summarizes the analysis, conclusions and recommendations of the PBS&J Value Engineering Team as they performed the VE Study for the Georgia Department of Transportation.

The Value Engineering Study team and its leadership were provided by PBS&J. This VE Team consisted of the following:

Les M. Thomas, P.E., CVS-Life	Certified Value Specialist
Luke Clarke, P.E., AVS	Highway Design Engineer
David Lighthall, AVS	Highway Construction Specialist

The Value Engineering Team followed the Seven Step Value Engineering job plan as promulgated by SAVE International. This Seven Step job plan includes the following:

- Investigative

During this phase of the VE Team's work, the team received a briefing from the Georgia Department of Transportation (GDOT) design team and staff. This briefing included discussions of the design intent behind the project, the cost concerns, the physical project limitations. In the working session that followed, the VE Team developed cost models from the cost data provided by the designers and familiarized themselves with the construction drawings and other data that was available to the team. Some of the representative project information (concept report, cost estimate, and special provisions) may be found in the tabbed section of this report entitled Project Description. Following this current narrative the reader will also find a cost model done in the Pareto fashion, i.e., identifying the highest costs down to the lowest costs for the larger construction cost elements. This cost model, developed by the VE Team, was used by the VE Team to help focus their week of work. The headings on the Pareto Chart also were used as headings for creative phase activities.

- Analysis

During this phase the VE Team determined the “Functions” of the project. This was accomplished by reviewing the project from the simplest format in asking the questions of “What is the project suppose to do?”, and “How is it suppose to accomplish this purpose? In the Value Engineering vernacular, the answers to these questions are cast in the form of active verbs and measurable nouns. These verb/noun pairs form the basis of the function analysis which distinguishes a Value Engineering effort from a potentially damaging cost cutting exercise.

The important functions of the project were identified as follows:

- Project Objective/Goals
 - Provide a truck by-pass around the City of Social Circle
 - Accommodate existing housing
 - Connect to existing north easterly by-pass
 - Provide a safe route with an operational speed of 55 mph
- Project Basic Functions
 - Construct a 24' roadway on new alignment
 - Construct a new intersection for SR 11 and Cherokee Street
 - Construct stream crossings
 - Comply with current regulations

- Speculation

The VE team performed a brainstorming session to identify ideas that might help meet the project objectives.

- Evaluation

Once the VE Team identified the creative ideas, it was necessary to decide which alternatives should be carried forward. This is the work of the Evaluation or Judgment Phase. The VE Team reflected back on the project constraints and objectives shared with the team by the owner’s representatives, in the kick-off meeting on the first day of the workshop. From that guidance, the team selected ideas that they believed would improve the project by a vote process.

Following that selection process, the VE Team used the following values as measures of whether or not an alternative had enough merit to be carried forward in the VE process:

- o Construction Cost Savings
- o Maintainability
- o Ability to Implement the Idea
- o General Acceptability of the Alternatives
- o Constructability

- Development

During this phase, the VE Team developed each of the selected design alternatives. This effort included a detailed explanation of the idea with sketches as appropriate to clarify the idea from the original concept, advantages and disadvantages, a technical explanation and an estimation of the cost and resultant savings if implemented. (see the tabbed section – Study Results)

- Recommendation

During this phase the VE Team reviews the alternative ideas to confirm which ones are appropriate for the project, have an opportunity for success and which will improve the value of the project if implemented.

- Presentation

As noted earlier, the team made an informal “out-briefing” on the last day of the workshop, designed to inform the Owners and the Designers of the initial findings of the VE Study. This written report is intended to formalize those findings.

The following Function – Worth - Cost Analysis, was utilized to focus the team and stimulate brainstorming; a copy of the Attendance Sheets is also attached so that the reader can be informed about who participated in the Study proceedings.

FUNCTION - COST - WORTH



PROJECT Georgia Department of Transportation STP- 0007-00(217) - PI No. 0007217 Social Circle ByPass, Newton/Walton Counties					SHEET NO.: 1 of 2		
NO.	ELEMENT	Function			Cost	Worth	Comments
		Verb	Noun	Kind	(000)	(000)	
1	OVERALL PROJECT	Increase	Traffic Capacity	B	\$ 33,650.00	\$ 25,000.00	C/W = 1.34
		Facilitate	Access	B			
		Enhance	Safety	S			
2	ROW	Accommodate	Widening	B	\$ 17,402.00	\$ 15,000.00	C/W = 1.16
		Facilitate	Utilities	RS			
		Accommodate	Amenities	S			
3	ASPHALT PAVING	Create	Lanes	B	\$ 3,245.00	\$ 2,700.00	C/W = 1.20
		Increase	Capacity	B			
		Enhance	Safety	RS			
5	CONCRETE PAVEMENT	Connect	Points	B	\$ 1,780.00	\$ 1,500.00	C/W = 1.188
		Support	Traffic	B			
		Support	Road	S			
6	GRADING	Avoid	Flooding	RS	\$ 1,505.00	\$ 1,000.00	C/W = 1.50
		Connect	Points	B			
		Facilitate	Safe Construction	S			
7	TRAFFIC CONTROL	Enhance	Safety	RS	\$ 1,393.00	\$ 1,393.00	C/W = 1.0

Function defined as: **Action Verb** Kind: B = Basic HO = Higher Order Cost/Worth Ratio =
Measurable Noun S = Secondary LO = Lower Order (Total Cost ÷ Basic Worth)
 RS = Required Secondary

FUNCTION - COST - WORTH



PROJECT Georgia Department of Transportation STP- 0007-00(217) - PI No. 0007217 Social Circle ByPass, Newton/Walton Counties					SHEET NO.: 2 of 2		
NO.	ELEMENT	Function			Cost (000)	Worth (000)	Comments
		Verb	Noun	Kind			
8	AGGREGATE BASE	Support	Wearing Course	B	\$ 781.00	\$ 600.00	C/W = 1.20
9	DRAINAGE (DR)	Convey	Storm Water	B	\$ 373.00	\$ 200.00	C/W = 1.86
		Facilitate	Utilities	S			
		Enhance	Safety	RS			
10	TRAFFIC SIGNAL ITEMS	Enhance	Safety	S	\$ 353.00	\$ 353.00	C/W = 1.0
		Control	Traffic	B			
11	SIGNING & MARKING	Enhance	Directions	S			C/W = 1.0
12	EROSION CONTROL	Stabilize	Earthwork	S	\$ 247.00	\$ 247.00	C/W = 1.
		Protect	Environment	RS			
		Connect	Points	B			
13	BRIDGES	Support	Traffic	B	\$ 3,400.00	\$ 2,000.00	C/W = 1.7

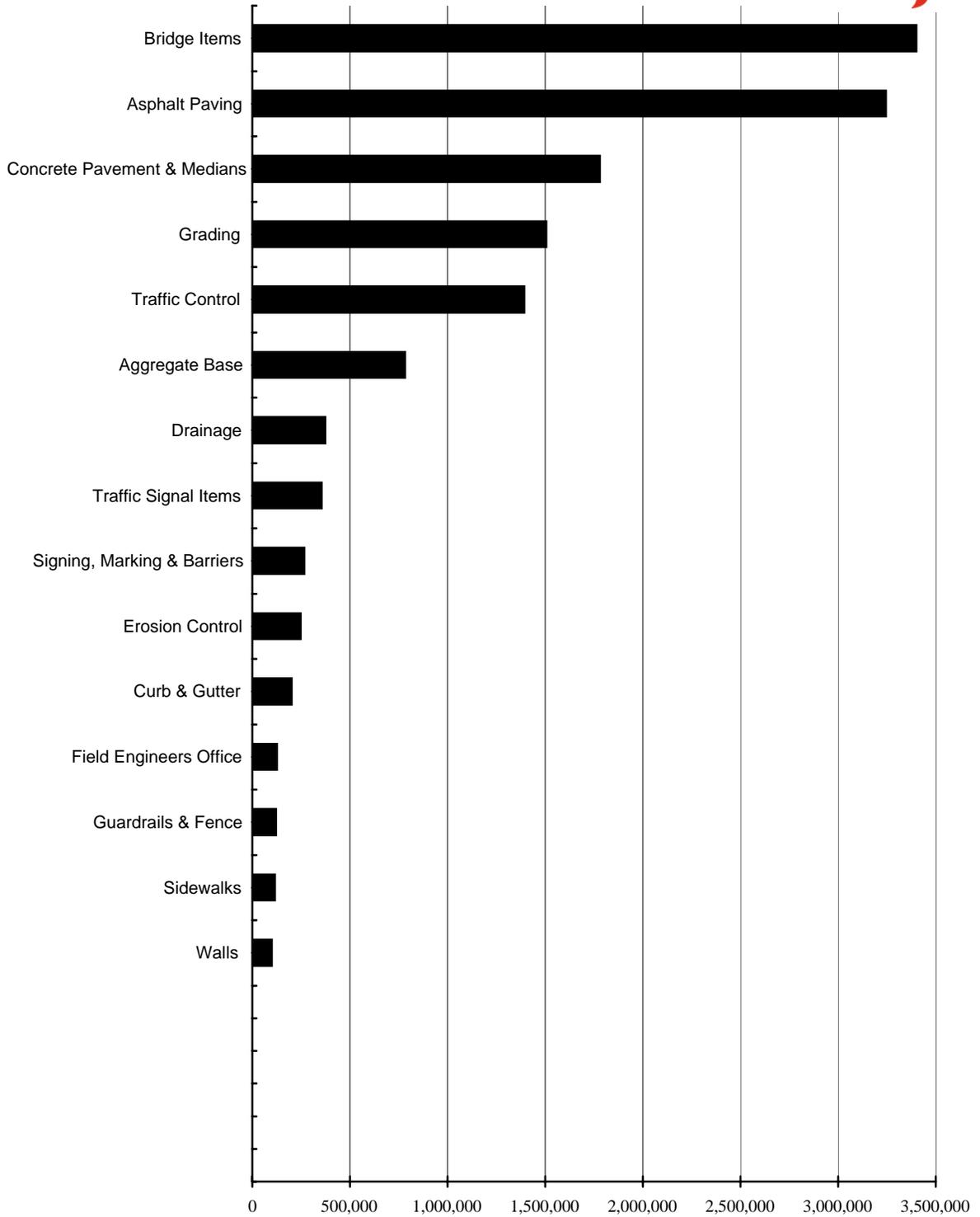
Function defined as: **Action Verb** Kind: B = Basic HO = Higher Order Cost/Worth Ratio =
Measurable Noun S = Secondary LO = Lower Order (Total Cost ÷ Basic Worth)
 RS = Required Secondary

PARETO CHART - COST HISTOGRAM



Georgia Department of Transportation STP- 0007-00(217) - PI No. 0007217 Social Circle ByPass, Newton/Walton Counties			
PROJECT ELEMENT	COST	PERCENT	CUMLATIVE PERCENT
Bridge Items	3,400,000	24.27%	24.27%
Asphalt Paving	3,245,100	23.17%	47.44%
Concrete Pavement & Medians	1,780,396	12.71%	60.15%
Grading	1,505,233	10.75%	70.90%
Traffic Control	1,393,754	9.95%	80.85%
Aggregate Base	781,348	5.58%	86.42%
Drainage	373,146	2.66%	89.09%
Traffic Signal Items	353,550	2.52%	91.61%
Signing, Marking & Barriers	264,878	1.89%	93.50%
Erosion Control	247,233	1.77%	95.27%
Curb & Gutter	201,400	1.44%	96.71%
Field Engineers Office	125,000	0.89%	97.60%
Guardrails & Fence	120,803	0.86%	98.46%
Sidewalks	115,500	0.82%	99.29%
Walls	100,000	0.71%	100.00%
Subtotal not including R/W costs	\$ 14,007,341	100.00%	
E & C Rate @ 10%	\$ 1,400,734		
Subtotal =	\$ 15,408,075		
Total Construction Cost =	\$ 15,408,075		
Right-of-Way =	\$ 17,402,725.00		
Reimb. Utilities =	\$ 840,000.00		
TOTAL	\$ 33,650,800	mp Mark-up:	140%

PARETO CHART - COST HISTOGRAM



DESIGNER PRESENTATION



Georgia Department of Transportation
STP- 0007-00(217) - PI No. 0007217

February 25, 2008

Social Circle ByPass, Newton/Walton Counties

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VE TEAM PRESENTATION



Georgia Department of Transportation
 STP- 0007-00(217) - PI No. 0007217

February 28, 2008

Social Circle ByPass, Newton/Walton Counties

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Creative Idea Listing & Evaluation



PROJECT: Georgia Department of Transportation STP- 0007-00(217) - PI No. 0007217 Social Circle ByPass, Newton/Walton Counties		Sheet No. 1 of 1
No.	IDEA DESCRIPTION	RATING
	ROADWAY (RD)	
RD - 1	USE 2' PAVED SHOULDER	5
RD - 2	LOWER PROFILE GRADE TO REDUCE FILL AND TO USE SHORTER BOX CULVERTS	2
RD - 3	RE-ALIGN TO REDUCE FILL AND SREAM CROSSING COSTS	1
RD - 4	USE CONSPAN IN-LIEU OF BRIDGES	3
RD- 5	RE-ALIGN PROFILE AT BACCUS ROAD	1
RD - 6	RE-ALIGN PROFILE AT CANNON ROAD	1
RD - 7	USE EXISTING SOLD ACCESS ROAD	4
RD- 8	RE-ALIGN VERTICAL TO REDUCE "CUT"	5
RD - 9	MODIFY SR-11 AND CHEROKEE STREET SOUTH TO PROVIDE LEFT TURN AND STORAGE	1
RD- 10	RE-ROUTE SR-11 ALONG SR 278 THENCE NORTH TO EXISTING SOUTHERLY TERMINUS OF SR-11 BY-PASS	2
RD - 11	BEGIN BY-PASS AT SR-11 (SOUTH) NORTH OF LITTLE RIVER ROAD AND SOUTH OF BARBARA	4
RD - 12	CROSS LITTLE RIBER TO THE SOUTH, DELETE TWO CROSSINGS	1
RD - 13	USE 4' PAVED SHOULDERS	4