

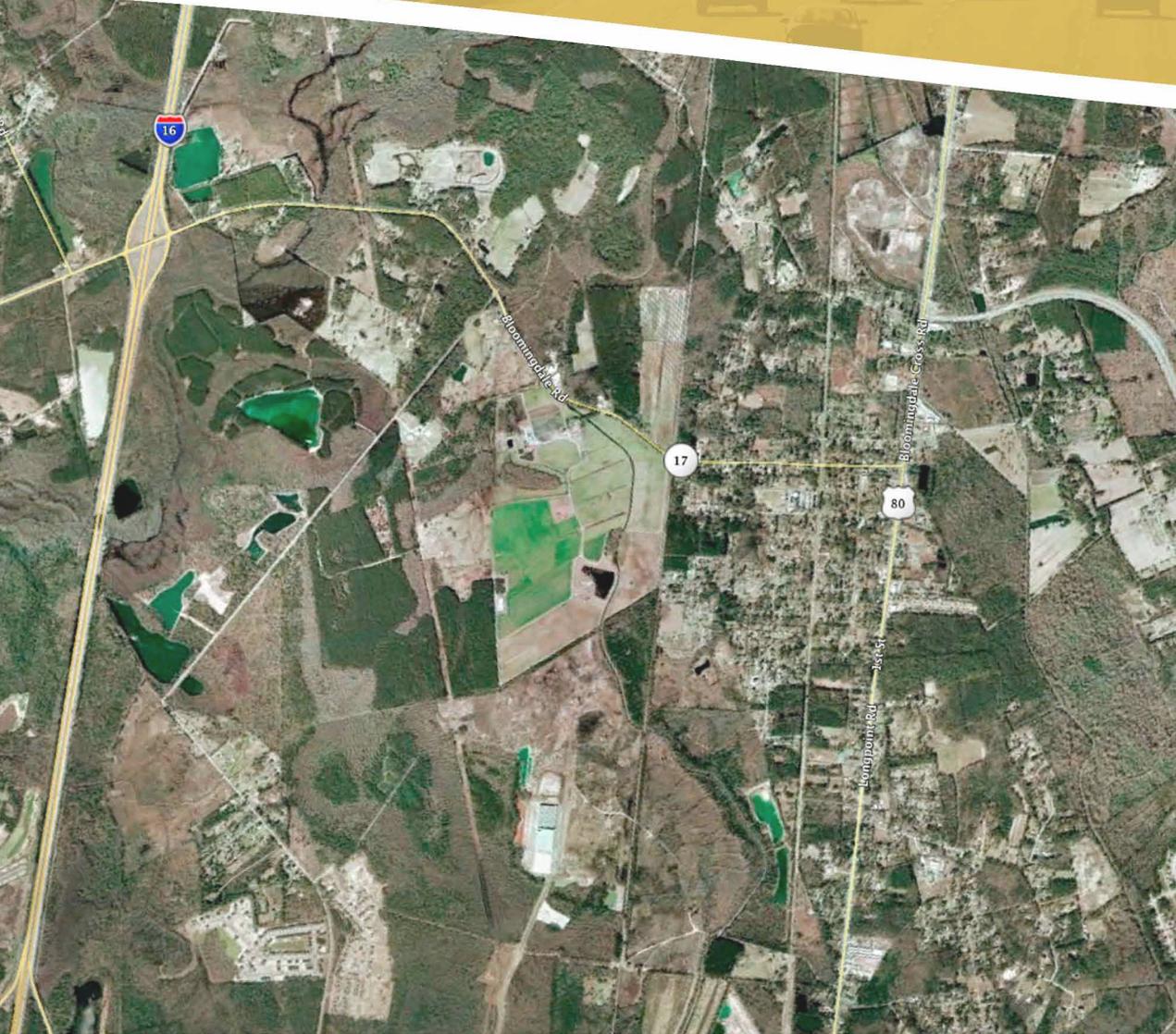
Value Engineering Study Report

Georgia Department of Transportation

STP00-0218-01(001) – P.I. No. 522790 • CSSTP-0007-00(259) - P.I. No. 0007259

Jimmy DeLoach Parkway Extension – from I-16 to US 80 and US 80/

Jimmy DeLoach Parkway Interchange • Chatham County



03251 | dv | 10



Value Engineering Team



Design Team



McGee Partners, Inc.



March 31, 2010

Ms. Lisa Myers
Design Review Engineer Manager/VE Coordinator
Georgia Department of Transportation-Engineering Services
One Georgia Center
600 W. Peachtree Street NW
Atlanta, GA 30308

RE: Submittal of the final Value Engineering Report
STP00-0218-01(001) – P.I. No. 522790
CSSTP-0007-00(259) - P.I. No. 0007259
Jimmy DeLoach Parkway Extension - from I-16 to US 80
Chatham County

Dear Ms. Myers:

Please find enclosed two (2) hard copies and one (1) CD of our final Value Engineering Report for Jimmy DeLoach Parkway Extension - from I-16 to US 80, Chatham County.

Using the Value Engineering “Job Plan” – Investigation, Analysis (*Function*), Speculation, Evaluation & Development, the VE Team identified:

- Eight (8) Alternatives recommended to improve the project value.

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,

PBS&J

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

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

A handwritten signature in black ink that reads 'Randy S. Thomas'.

Randy S. Thomas, CVS
Assistant Team Leader

Value Engineering Study Report

Georgia Department of Transportation

**STP00-0218-01(001) – P.I. No. 522790 and CSSTP-0007-00(259) - P.I. No. 0007259
Jimmy DeLoach Parkway Extension - from I-16 to US 80 and US 80/ Jimmy
DeLoach Parkway Interchange
Chatham County**

Table of Contents

Executive Summary

- Introduction
- Project Description
- Project Concerns and Objectives
- Value Engineering Process
- Observations
- Conclusions and Recommendations
- Summary of Alternatives and Design Suggestions

Study Results

- Introduction
- Documentation of Alternatives and Design Suggestions

Project Description

- Introduction of the Project
- Representative Documents

Value Engineering Process

- Introduction and Job Plan
- Agenda
- Pareto Charts
- Fast Diagram
- Attendance Sheet for Designers and VE Team Presentations
- Creative Idea Listing and Evaluation Worksheet

EXECUTIVE SUMMARY

INTRODUCTION

The subject of this Value Engineering study is Georgia Department of Transportation projects: STP00-0218-01(001) – P.I. No. 522790 and CSSTP-0007-00(259) - P.I. No. 0007259 "Jimmy DeLoach Parkway Extension" and "Jimmy DeLoach Parkway at US 80 proposed new interchange" respectively. This extension connects the Jimmy DeLoach Parkway from its current intersection with US 80 to I-16 at its interchange with SR 17 via a portion of the existing SR 17 ROW and a new alignment.

This project is located in the western portion of Chatham County, Georgia.



PROJECT DESCRIPTION

The project will be serve as a divided principal or major four lane arterial route. The project as proposed would include four new 12-ft. travel lanes separated by a median of variable width (24' to 44'). Provision for bicycles is provided on the new paved shoulders. Grade separations are provided for the Ogeechee River, and the CSX railroad. The new interchange project at US 80 will provide a grade separation between US 80 and the Jimmy DeLoach Parkway.

PROJECT CONCERNS AND OBJECTIVES

The project is to provide a high level of traffic service between major sections of the urbanized area and to provide for the safe and efficient movement of traffic between longer trips within and through the area. The project will traverse wetlands, the City of Bloomington, the CSX railroad, and numerous residential and commercial properties. Also, to accommodate the project and provide access to the area traffic, realignment of other roads will be performed.

VALUE ENGINEERING PROCESS

The Value Engineering team followed the seven step Value Engineering Job Plan as promulgated by SAVE International.

Using the first two steps of the Value Engineering Job Plan - Investigation & Analysis (*Function Analysis*); the VE Team identified the goal of this project to be "improve access"

This led the team through the "Speculative" phase, wherein possible alternatives were identified. Following this, the VE Team moved to the Evaluation and Development Phases where the ideas were determined to either offer an improvement to the project value, or discarded.

Observations

The VE Team noted the following items of the projects:

1. The extension project at its connection to SR 17, reduces the number of lanes from 4 to 2. An effect of this is that the southbound truck traffic is forced to merge into to the "left" lane (normally the "passing" lane) and then 1,600 feet further south, turn right onto I-16. Our observation is that it might avoid "merging" problem and allow the trucks to flow smoothly onto I-16 if the southbound parkway was extended to the west on ramp of I-16.
2. The "extension project" will provide access to the majority of the existing streets of the City of Bloomington; however, the following project - the "new interchange" will delete these -
3. There would probably be significant cost savings and a reduction of impacts to local residents if the two projects were combined.
4. It is noted that the approved project concept report states that "The entire facility is designed as a divided principal or major four lane arterial with 200-ft right of way and with controlled access to provide a high level of traffic service between major sections of the urbanized area and to provide for the safe and efficient movement of traffic between longer trips within and through the area". With this basic functional requirement, it appears that construction of the grade separation at US 80 and a smooth transition onto I-16 which would eliminate traffic signals might better serve the project goal at this stage than construction of roadway and other interchanges which are planned for removal in the near future (US 80 Interchange), side street improvements, and or access ramps.
5. It is noted that 2:1 side slopes are shown on the drawings and that the soils report suggest no less than 3:1 in this area.

Conclusions and Recommendations:

The VE Team concluded that the project should meet the functional requirements of the project as proposed.

The VE Team identified, developed and **recommends Eight (8) Design Alternatives** for implementation to improve the value of the project – see the following "*Summary of Alternatives and Design Suggestions*".

Summary of Alternatives & Design Suggestions



PROJECT:		Georgia Department of Transportation STP00-0218-01(001) – P.I. No. 522790 CSSTP-0007-00(259) - P.I. No. 0007259 Jimmy DeLoach Parkway Extension - from I-16 to US 80 and US 80/ Jimmy DeLoach Parkway Interchange Chatham County	SHEET NO.: 1 of 1
ALTERNATIVE NUMBER	DESCRIPTION OF ALTERNATIVE	INITIAL COST SAVINGS	
	P.I. No. 522790		
	ROADWAY (RD)		
RD-1	Use a 32' depressed median in-lieu of 44' depressed median	\$ 610,045	
RD-2	Use Type "A" in-lieu of a Type "B" south bound left turn lane onto driveway at STA 107+00	\$ 231,397	
RD-3	Lower the profile grade over the CSX railroad crossing	\$ 1,131,781	
RD-14	Use separate structures for Little Ogeechee River Bridge and a Type A south bound left turn lane reducing bridge width requirement.	\$ 378,263	
RD-22	Provide single span bridges with MSE walled abutments at the CSX railroad crossing	\$ 267,032	
	P.I. No. 0007259		
	INTERCHANGE (I)		
I-3	Reduce sum of paved should widths on ramps from 14' to 12'	\$ 77,935	
I-4	Use single span bridges w/ MSE walls	\$ 241,945	
I-6	Use 40' end spans on bridges across US 80	\$ 209,853	

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 choices that clearly could have an impact on the eventual cost and performance of the finished project.

This introductory sheet is followed by a **Summary of Alternatives**. 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 enclosed **Summary of Alternatives** 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.

The 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**.

Value Analysis Design Alternative



PROJECT:	Georgia Department of Transportation STP00-0218-01(001) – P.I. No. 522790 Jimmy DeLoach Parkway Extension - from I-16 to US 80	ALTERNATIVE NO.:
		RD-1
DESCRIPTION:	Use a 32' depressed median in-lieu of 44' depressed median	SHEET NO.: 1 of 4

Original Design:

The original design calls for the construction of a 44' grassy, depressed median from STA 133+00 to the southern terminus of the project at I-16.

Alternative:

The alternative proposes constructing a 32' grassy, depressed median from STA 133+00 to the southern terminus of the project at I-16.

Opportunities:

- Reduction in ROW required
- Reduction in pipe/drainage quantities

Risks:

- None apparent

Technical Discussion:

In Table 6.3 of GDOT Design Standards for Arterial Roadways, the table indicates that 32' medians are acceptable on four lane arterials with a 60 mph design speed. The alternative proposes narrowing the proposed 44' depressed median to 32'. The alternative appears to be acceptable by GDOT Design Standards, and appears to be functionally equivalent.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$14,823,066		\$14,823,066
ALTERNATIVE	\$14,213,021		\$14,213,021
SAVINGS	\$610,045		\$610,045

Illustration

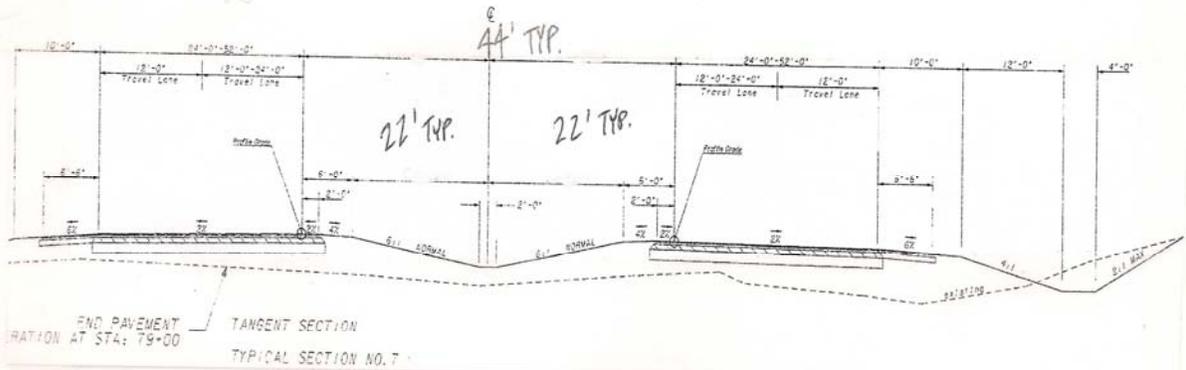


PROJECT: **Georgia Department of Transportation
STP00-0218-01(001) – P.I. No. 522790
Jimmy DeLoach Parkway Extension - from I-16 to US 80**

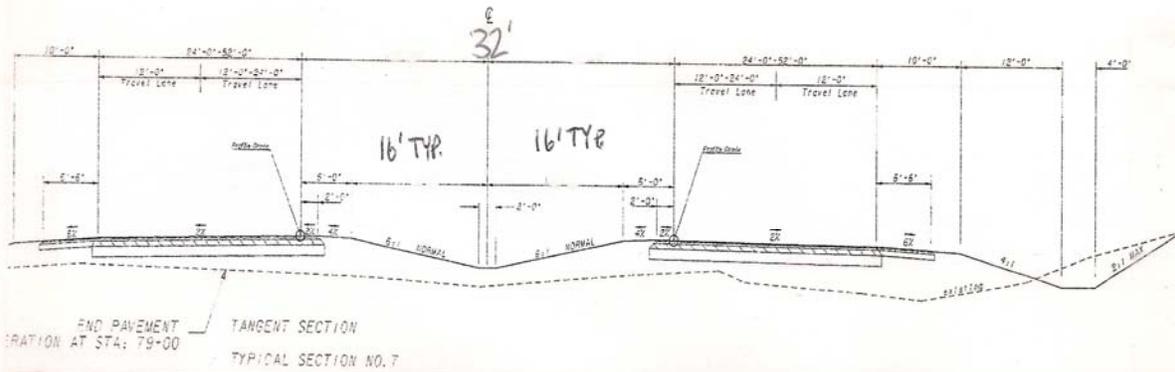
ALTERNATIVE NO.:
RD-1

DESCRIPTION: **Use a 32' depressed median in-lieu of 44' depressed median**

SHEET NO.: **2** of **4**



ORIGINAL DESIGN - 44' MEDIAN



ALTERNATIVE DESIGN - 32' MEDIAN

Calculations



PROJECT: **Georgia Department of Transportation
STP00-0218-01(001) – P.I. No. 522790
Jimmy DeLoach Parkway Extension - from I-16 to US 80**

ALTERNATIVE NO.:
RD-1

DESCRIPTION: **Use a 32' depressed median in lieu of 44' depressed
median**

SHEET NO.: **3** of **4**

Reduce median width from 44' w to 32' w from STA 133+00 to STA 30+00=10,300LF x 12' w reduction=
123,600SF/43,560SF/AC=2.84 AC area reduction.

ROW Calculations:

Costs derived from ROW Cost estimate dated March 15, 2007. Total burdened ROW costs for project=
\$12,827,290. Total area to be acquired=69.96AC.

Therefore, \$12,827,290/69.96Acres = \$183,351.77/Acre average burdened cost.

Costs estimated are fully burdened per acre to include damages, all contingencies, improvements, relocations,
etc. Average cost per acre used to estimate ROW savings.

Hardin Canal structure reduction:

Original design=147'DBL 10' x 14' bridge box culvert at STA 94+57.90

Alternative reduces overall length by 8' from 147' to 139'

Total costs for Hardin Canal structure are summarized in cost estimate provided to VE team dated 2/17/2010.

Total cost= \$537,225 -Reduction %= 139LF/147LF= 94.5%= 5.5% overall reduction.

Median Drainage reduction:

STA 33+62.16- 18" reduce by 4'

STA 36+50- 18" reduce by 4'

STA 39+00-18" reduce by 4'

STA 53+00- 18" reduce by 4'

STA 55+44.28- 18" reduce by 4'

STA 58+00- 18"- reduce by 4'

STA 60+50- 18"- reduce by 4'

STA 62+50- 18" reduce by 4'

STA 65+50- 18" reduce by 4'

STA 68+00- 18"- reduce by 4'

STA 73+50- 18" reduce by 4'

STA 76+45- 18" reduce by 4'

STA 79+00- 18"- reduce by 4'

STA 81+50- 18"- reduce by 4'

STA 84+25- 18"- reduce by 4'

STA 88+50- 18"- reduce by 4'

STA 91+50- 18"-reduce by 4'

STA 93+00- 18"- reduce by 4'

STA 95+50- 18"-reduce by 4'

STA 98+29.40- 18" reduce by 4'

STA 104+00- 18"- reduce by 4'

STA 108+36-18" reduce by 4'

STA 119+00- 36" reduce by 4'

STA 125+50-18"- reduce by 4'

STA 132+00- 18" reduce by 4'



Cost Worksheet

PROJECT:	Georgia Department of Transportation STP00-0218-01(001) – P.I. No. 522790 and Jimmy DeLoach Parkway Extension - from I-16 to US 80 Chatham County	ALTERNATIVE NO.:
		RD-1
DESCRIPTION:	Use a 32' depressed median in-lieu of 44' depressed median	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
ROW required	AC	69.96	\$ 183,352	\$ 12,827,290	\$ 67	\$ 183,352	\$ 12,306,571
550-1180 Storm Drain, 18"	LF	2,180	\$ 42	\$ 91,560	\$ 2,084	\$ 42	\$ 87,528
550-1360 Storm Drain, 36"	LF	270	\$ 72	\$ 19,440	\$ 266	\$ 72	\$ 19,152
Hardin Canal Reduction							
(See Calculations)	LS	1	\$ 537,225	\$ 537,225	\$ 1	\$ 537,225	\$ 507,678
Sub-total				\$ 13,475,515			\$ 12,920,928
Mark-up at 10.00%				\$ 1,347,551			\$ 1,292,093
TOTAL				\$ 14,823,066			\$ 14,213,021

Estimated Savings:	\$610,045
--------------------	-----------

Value Analysis Design Alternative



PROJECT: **Georgia Department of Transportation
STP00-0218-01(001) – P.I. Nos. 522790
Jimmy Deloach Parkway Extension - from I-16 to US 80
Chatham County**

DESCRIPTION: **Use Type "A" in-lieu of a Type "B" south bound left turn
lane onto driveway at STA 107+00**

ALTERNATIVE NO.:
RD-2

SHEET NO.: 1 of 4

Original Design:

The original design proposes using a Type "B" median left turn lane at STA 107+00 on the northbound and southbound lanes which would serve possible future driveways.

Alternative Design:

The alternative design proposes using a Type "A" median turn lane at STA 107+00 on just the southbound lane.

Opportunities:

- Reduce the width required for the new bridge over the CSX railroad
- Provide additional space for U turning traffic
- Reduce the initial construction cost

Risks:

- None apparent

Technical Discussion:

The GDOT Standards state that Type "B" median crossovers are the preferred type of median crossover; but that Type "A" median crossovers can be used as the situation may allow. At this particular location, the median turn lane is being provided for a future driveway to access the adjacent properties. The south bound traffic will be heading downhill therefore would have a greater sight distance than if this were on level or uphill grade.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 231,397	\$ 0	\$ 231,397
ALTERNATIVE	\$ 0	\$ 0	\$ 0
SAVINGS	\$ 231,397	\$ 0	\$ 231,397

Illustration

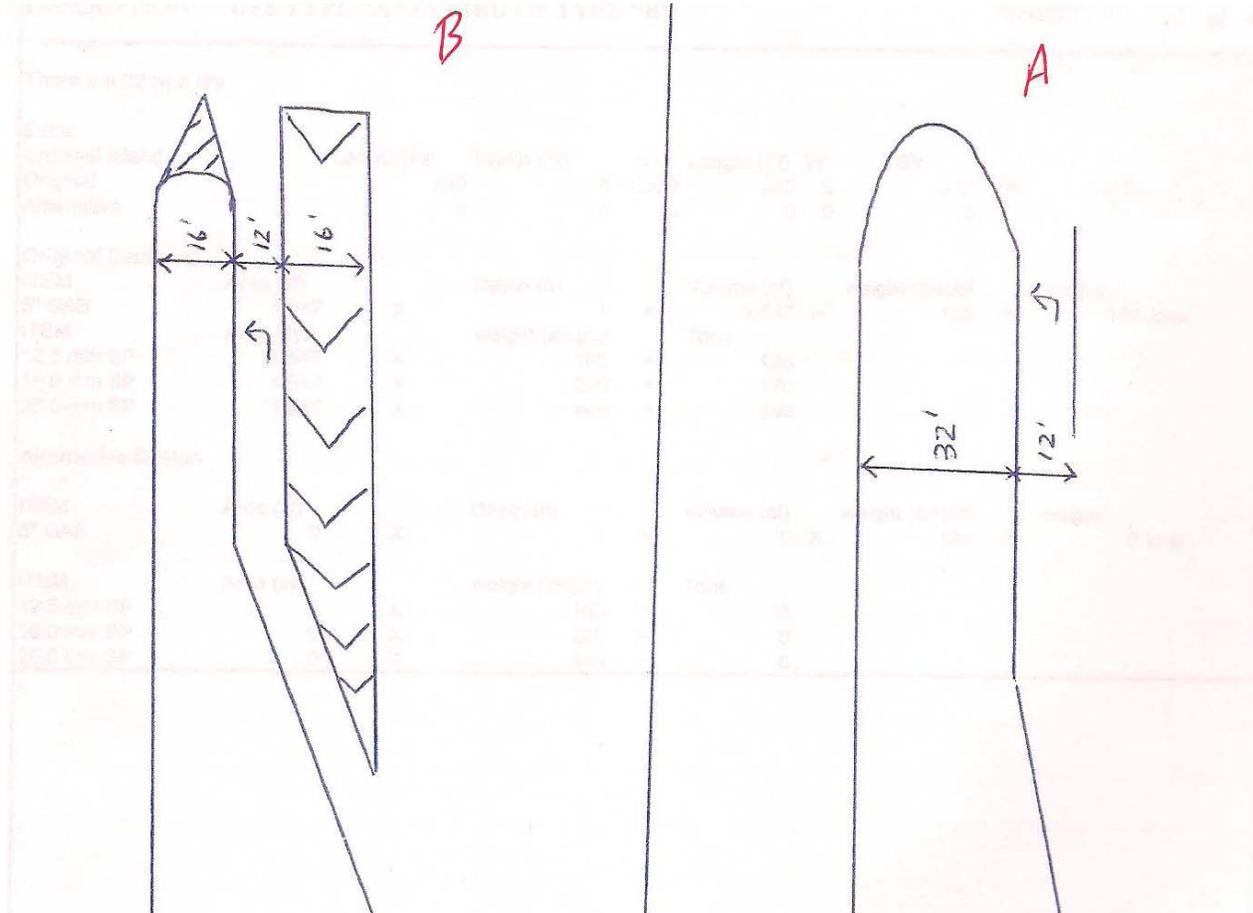


PROJECT: Georgia Department of Transportation
STP00-0218-01(001) – P.I. Nos. 522790
Jimmy Deloach Parkway Extension - from I-16 to US 80
Chatham County

ALTERNATIVE NO.:
RD-2

DESCRIPTION: Use Type "A" in-lieu of a Type "B" south bound left turn
lane onto driveway at STA. 107+00

SHEET NO.: 2 of 4



Calculations



**PROJECT: Georgia Department of Transportation
STP00-0218-01(001) – P.I. Nos. 522790
Jimmy Deloach Parkway Extension - from I-16 to US 80
Chatham County**

**ALTERNATIVE NO.:
RD-2**

**DESCRIPTION: Use Type "A" in-lieu of a Type "B" south bound left turn
lane onto driveway at STA. 107+00**

SHEET NO.: 3 of 4

Original Design Paving:

		Storage length	Storage Width	Taper Length	Taper Width	Paved Area - SY	lbs/sy	Tons
12.5 mm Superpave	TN	432	28	566	28	1552	220	171
19.0 mm Superpave	TN	432	28	566	28	1552	220	171
25.0 mm Superpave	TN	432	28	566	28	1552	330	256
GAB	SY	432	28	566	28	1552		

Alternative Design Paving:

		Storage length	Storage Width	Taper Length	Taper Width	Paved Area - SY	lbs/sy	Tons
12.5 mm Superpave	TN	432	14	566	7	556	220	61
19.0 mm Superpave	TN	432	14	566	7	556	220	61
25.0 mm Superpave	TN	432	14	566	7	556	330	92
GAB	SY	432	14	566	7	556		

Cost Worksheet



PROJECT:	Georgia Department of Transportation STP00-0218-01(001) – P.I. Nos. 522790 Jimmy Deloach Parkway Extension - from I-16 to US 80 Chatham County	ALTERNATIVE NO.:	RD-2
DESCRIPTION:	Use Type "A" in-lieu of a Type "B" south bound left turn lane onto driveway at STA. 107+00	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
Use Type A in-lieu of Type B				Type B			Type A
12.5 mm Superpave	TN	171	\$ 105.00	\$ 17,931	61	\$ 105.00	\$ 6,423
19.0 mm Superpave	TN	171	\$ 110.00	\$ 18,785	61	\$ 110.00	\$ 6,729
25.0 mm Superpave	TN	256	\$ 95.00	\$ 24,335	92	\$ 95.00	\$ 8,717
GAB	SY	1,552	\$ 25.00	\$ 38,811	556	\$ 25.00	\$ 13,903
Reduce Width of westerly CSX bridge	SF	1,300	\$85.00	\$ 110,500	0	\$ 85.00	\$ -
Sub-total				\$ 210,361			\$ -
Mark-up at 10.00%				\$ 21,036			\$ -
TOTAL				\$ 231,397			\$ -

Estimated Savings: \$231,397

Value Analysis Design Alternative



PROJECT: **Georgia Department of Transportation
STP00-0218-01(001) – P.I. Nos. 522790
Jimmy DeLoach Parkway Extension - from I-16 to US 80**

ALTERNATIVE NO.:
RD-3

DESCRIPTION: **Lower profile grade over the CSX railroad crossing**

SHEET NO.: **1** of **4**

Original Design:

The original design provides 31'-4" of clearance over the CSX railroad.

Alternative:

The alternative proposes reducing the clearance to 24'-4".

Opportunities:

- Reduce R.O.W. cost
- Reduce Earthwork costs
- Reduced wetland impacts
- Reduce drainage costs
- Improve approach fill stability

Risks:

- None apparent

Technical Discussion:

The proposed bridge height provides 31'-4" of clearance over the CSX railroad. The current minimum standard height clearance is 23'-0". Therefore, it appears reasonable to reduce the height.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 1,131,781	\$ 0	\$ 1,131,781
ALTERNATIVE	\$ 0	\$ 0	\$ 0
SAVINGS	\$ 1,131,781	\$ 0	\$ 1,131,781

Illustration

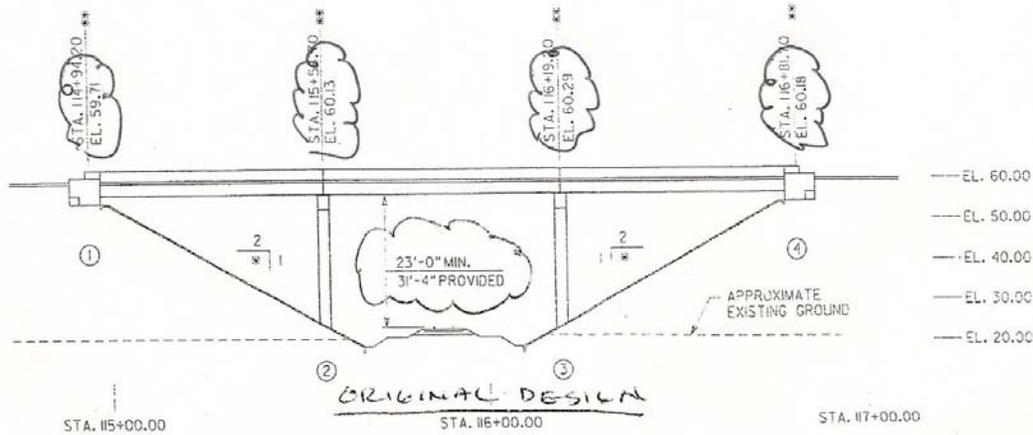


PROJECT: **Georgia Department of Transportation
STP00-0218-01(001) – P.I. Nos. 522790
Jimmy DeLoach Parkway Extension - from I-16 to US 80**

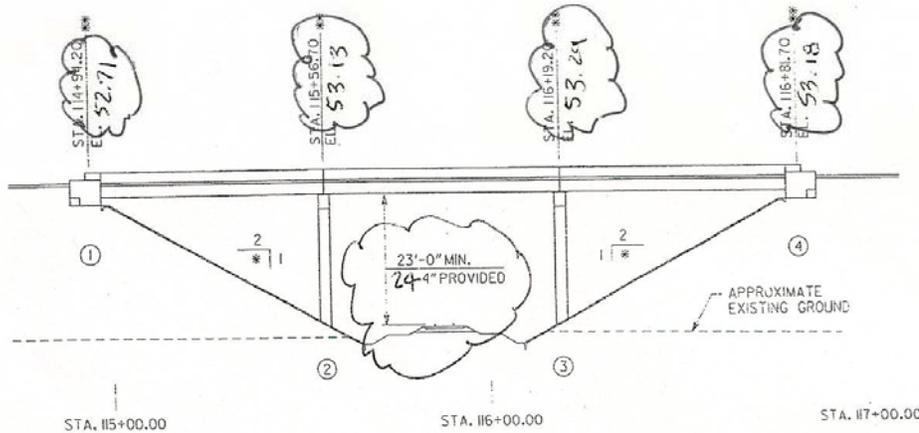
ALTERNATIVE NO.:
RD-3

DESCRIPTION: **Lower Profile Grade over the CSX Railroad Crossing**

SHEET NO.: **2** of **4**



ELEVATION
NB BRIDGE SHOWN
SB BRIDGE SIMILAR



ELEVATION
NB BRIDGE SHOWN
SB BRIDGE SIMILAR
ALTERNATIVE DESIGN
NTS

Calculations



PROJECT: **Georgia Department of Transportation
STP00-0218-01(001) – P.I. Nos. 522790
Jimmy DeLoach Parkway Extension - from I-16 to US 80**

ALTERNATIVE NO.:
RD-3

DESCRIPTION: **Lower Profile Grade over the CSX Railroad Crossing**

SHEET NO.: **3** of **4**

Assume the grade will be lowered 7'-0" to allow 24'-4" clearance.

Reduction in Earthwork: Station 104+00 to Station 114+50 and Station 116+25 to Station 129+50.

Average width- $(180' + 275' + 300' + 170') / 4 \Rightarrow 230'$

Length- $1050' + 1325' = 2375'$

Volume- $(2375' \times 230' \times 7.0') / (27\text{CF/CY}) \Rightarrow 141,620 \text{ CY}$

Reduction in slope paving:

@ 2:1 end slope 7'-0" in height will reduce the slope paving by 14'-0" on each slope.

Area- $(14.0' \times 125' \times 2 \text{ each}) / (9 \text{ SF/SY}) \Rightarrow 400 \text{ SY}$

Reduction in R.O.W.:

@ 2:1 side slope 7'-0" in height will reduce the R.O.W. by 14'-0" on each side for a total of 28' in width.

Area- $(28.0' \times 2600') / (43,560 \text{ SF/AC}) \Rightarrow 1.61 \text{ AC}$

1.61 ac x \$25,000 \Rightarrow \$40,250

Net cost	=	\$40,250
Scheduling @ 55%	=	\$22,135
Court cost @ 60%	=	\$37,430
Market Appreciation@ 40%	=	<u>\$39,925</u>
Total	=	\$139,740

Reduction in drainage structures:

18" RCP 3 each x 14' \Rightarrow 42 LF

36" RCP 1 each x 28' \Rightarrow 28 LF

18" CMP 26 each x 14' \Rightarrow 364 LF

Cost Worksheet



PROJECT:	Georgia Department of Transportation STP00-0218-01(001) – P.I. Nos. 522790 Jimmy DeLoach Parkway Extension - from I-16 to US 80 Chatham County	ALTERNATIVE NO.:	RD-3
DESCRIPTION:	Lower Profile Grade over the CSX Railroad Crossing	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
Embankment	CY	141,620	\$ 6.00	\$ 849,720	0	\$ 6.00	\$ -
R.O.W.	LS	1	\$ 139,740	\$ 139,740	0	\$ -	\$ -
Concrete Slope Paving	SY	400	\$ 50.00	\$ 20,000	0	\$ -	\$ -
18" RCP	LF	42	\$ 42.00	\$ 1,764	0		\$ -
36" RCP	LF	28	\$ 72.00	\$ 2,016	0		\$ -
18" CMP (Slope Drain)	LF	364	\$ 43.00	\$ 15,652	0		\$ -
Sub-total				\$ 1,028,892			\$ -
Mark-up at 10.00%				\$ 102,889			\$ -
TOTAL				\$ 1,131,781			\$ -

Estimated Savings: \$1,131,781

Value Analysis Design Alternative



PROJECT: **Georgia Department of Transportation
STP00-0218-01(001) – P.I. Nos. 522790
Jimmy DeLoach Parkway Extension - from I-16 to US 80**

ALTERNATIVE NO.: **RD-14**

DESCRIPTION: **Relocate or delete southbound U-turn at STA. 44+00;
use separate structures for Little Ogeechee River Bridge**

SHEET NO.: **1** of **8**

Original Design:

The original design calls for a southbound to northbound U-turn at STA. 44+00. To allow for this activity at this location, the original design called for a single structure to carry the Jimmy DeLoach Parkway across Little Ogeechee River. The proposed bridge is 150'-0" in length and made up of three 50'-0" spans. To accommodate the 4 – 12' travel lanes, the 44'-0" median which includes the type "B" southbound U-turn lane, 10' outside shoulders, and a standard concrete safety barrier. the bride was designed as a single structure with an out-to-out width of 115'-3".

Alternative:

The alternative proposes relocating or deleting the southbound U-turn lane and constructing separate structures to be used for the northbound and southbound traffic.

Opportunities:

- Reduce initial construction cost
- Reduce impact to wetlands
- Improve construction staging

Risks:

- None apparent

Technical Discussion:

The proposed location of the southbound to northbound U-turn at STA. 44+00 impacts the existing wetlands and resulted in a full width single bridge at STA 46+50 to cross the Ogeechee River. The drawings at STA 31+00, propose another median opening. This median opening could also be modified to provide the function of the U-turn lane. It is noted that perhaps placing the U-turn at STA 31+00 could also be a clean method to "drop" the inside southbound lane. This modification could also be included and used to "offset" and the cost and allow the extension of the two (2) southbound lanes to the existing I-16 westbound on-ramp where the "second" lane could be "dropped" thereby not impacting any future improvements of this interchange; and possibly allow reconstruction of the I-16 interchange to be postponed as this modification would may extend the life of the existing interchange by providing a smooth and expedient movement of truck traffic.

As this U-turn is relatively close to the end of the project, it may be reasonable to delete the U-turn.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 1,331,138	\$ 0	\$ 1,331,138
ALTERNATIVE	\$ 952,875	\$ 0	\$ 952,875
SAVINGS	\$ 378,263	\$ 0	\$ 378,263

Illustration

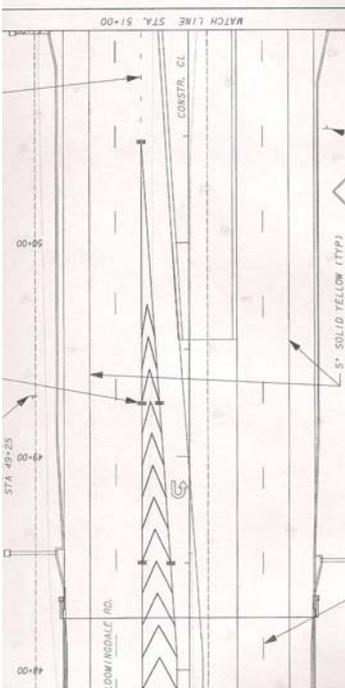


PROJECT: **Georgia Department of Transportation
STP00-0218-01(001) – P.I. Nos. 522790
Jimmy DeLoach Parkway Extension - from I-16 to US 80**

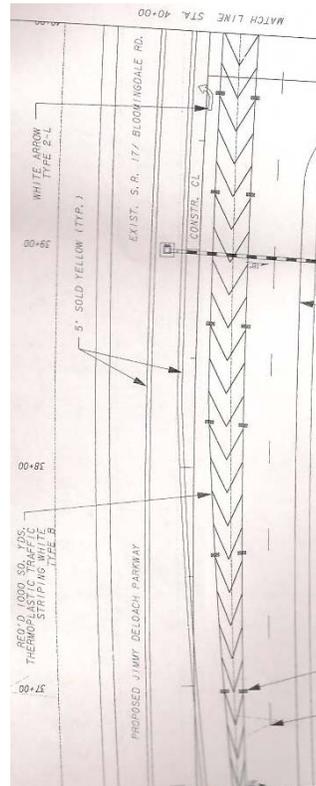
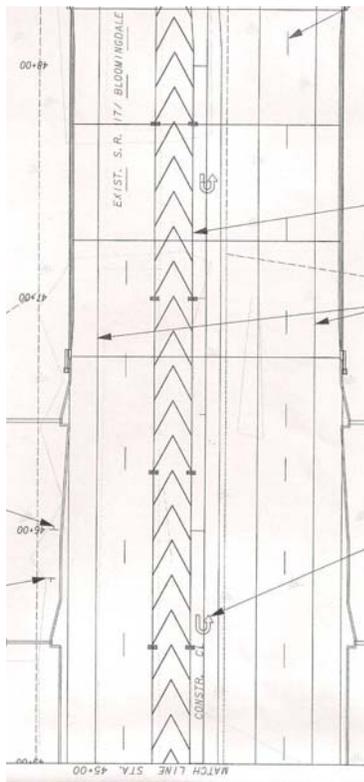
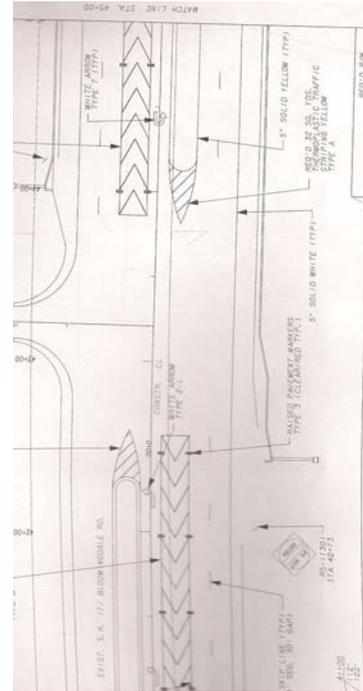
ALTERNATIVE NO.:
RD-14

DESCRIPTION: **Relocate or delete southbound U-turn at STA. 44+00; use
separate structures for Little Ogeechee River Bridge**

SHEET NO.: **2** of **8**



Current Design



Illustration

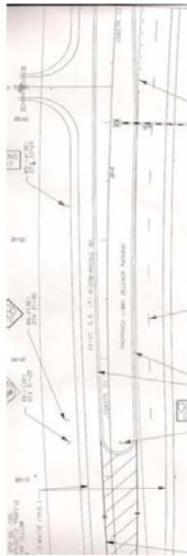


PROJECT: **Georgia Department of Transportation
STP00-0218-01(001) – P.I. Nos. 522790
Jimmy DeLoach Parkway Extension - from I-16 to US 80**

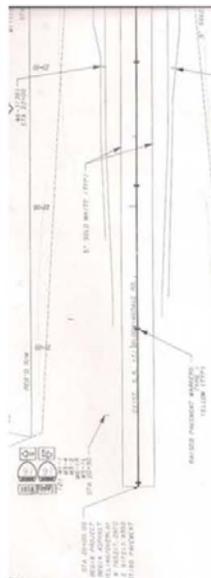
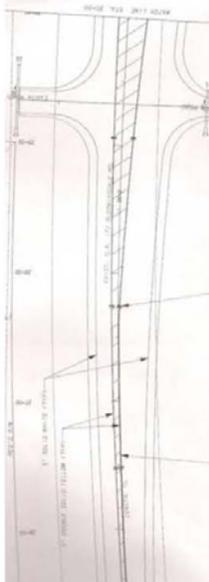
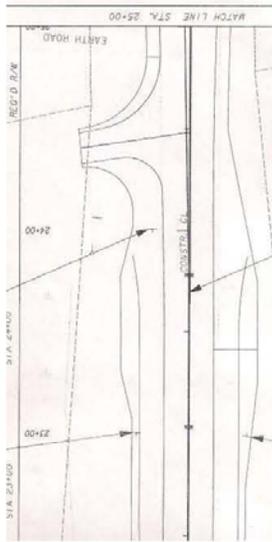
ALTERNATIVE NO.:
RD-14

DESCRIPTION: **Relocate or delete southbound U-turn at STA. 44+00; use
separate structures for Little Ogeechee River Bridge**

SHEET NO.: **3** of **8**



Current Design



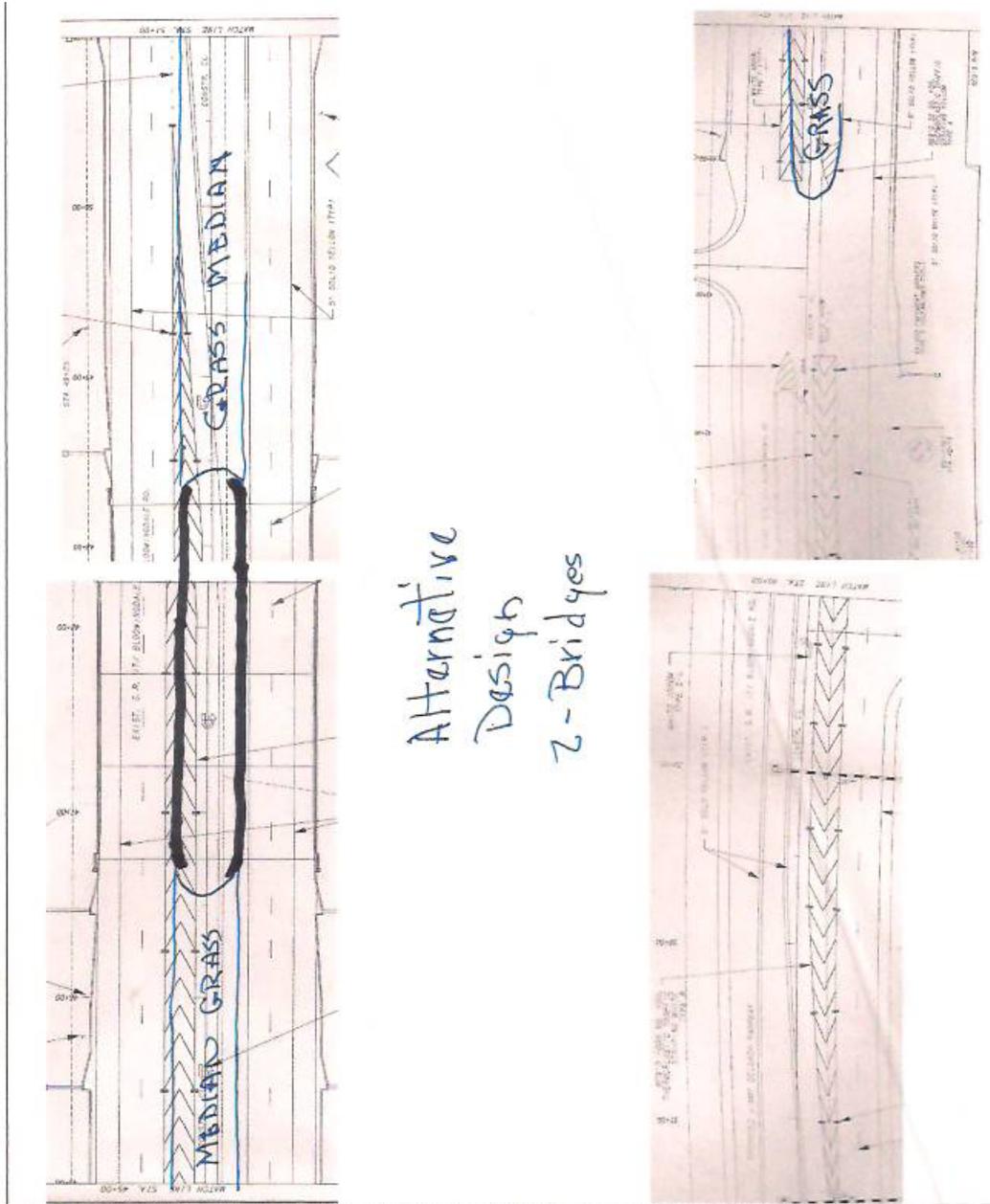
Illustration



PROJECT: Georgia Department of Transportation
STP00-0218-01(001) – P.I. Nos. 522790
Jimmy Deloach Parkway Extension - from I-16 to US 80

ALTERNATIVE NO.:
RD-14

DESCRIPTION: Relocate or delete southbound U-turn at STA. 44+00; use separate structures for Little Ogeechee River Bridge
SHEET NO.: 4 of 8



Illustration

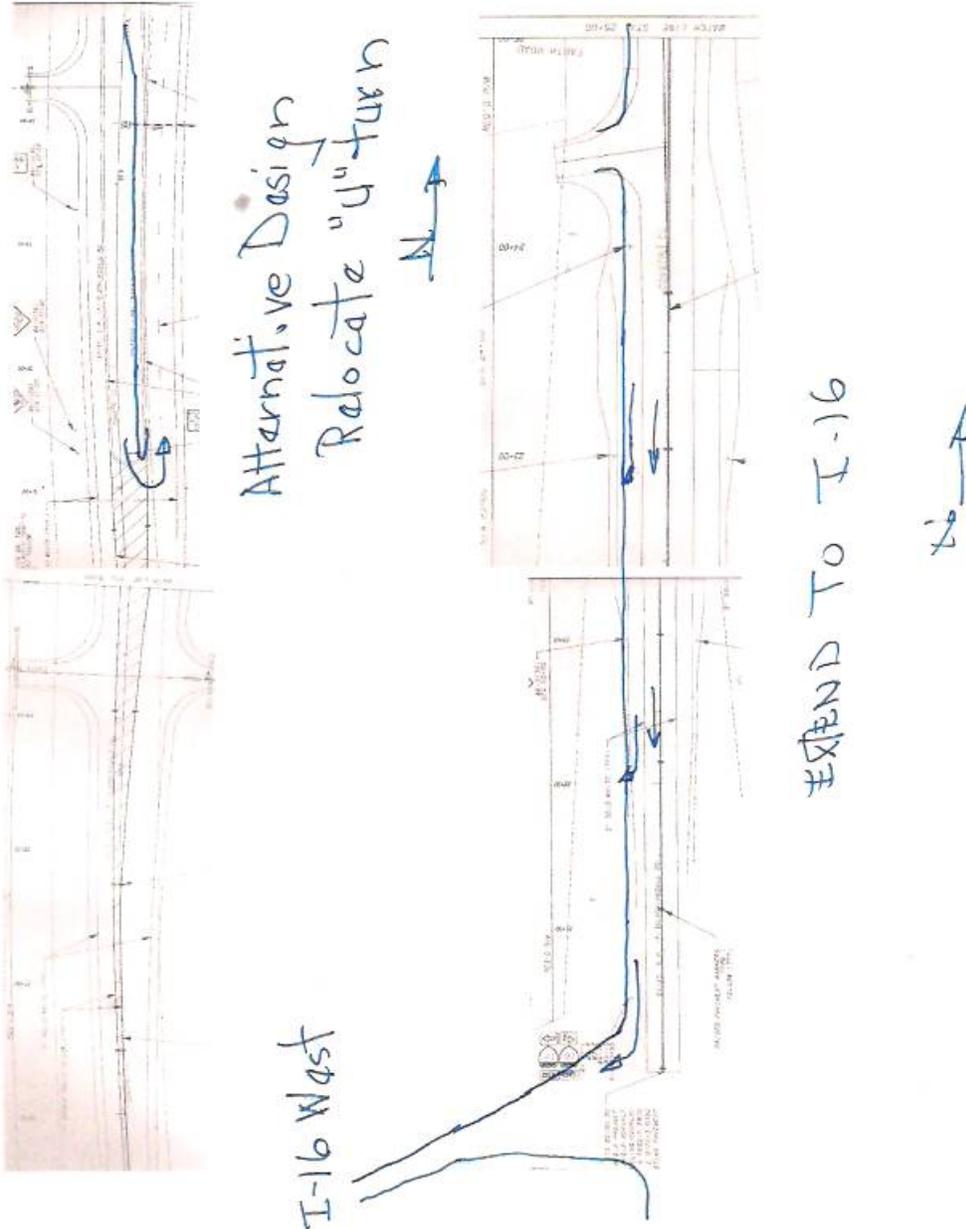


PROJECT: Georgia Department of Transportation
STP00-0218-01(001) – P.I. Nos. 522790
Jimmy Deloach Parkway Extension - from I-16 to US 80

ALTERNATIVE NO.:
RD-14

DESCRIPTION: Relocate or delete southbound U-turn at STA. 44+00; use separate structures for Little Ogeechee River Bridge

SHEET NO.: 5 of 8



Illustration

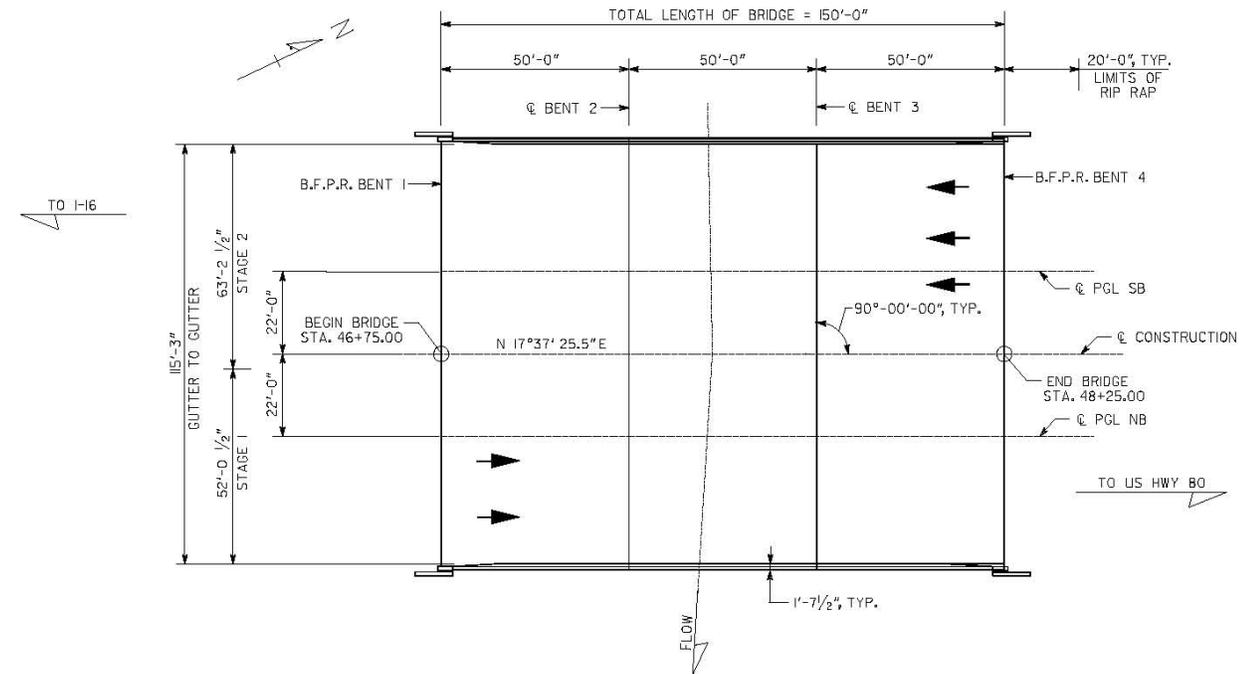


PROJECT: **Georgia Department of Transportation
STP00-0218-01(001) – P.I. Nos. 522790
Jimmy Deloach Parkway Extension - from I-16 to US 80**

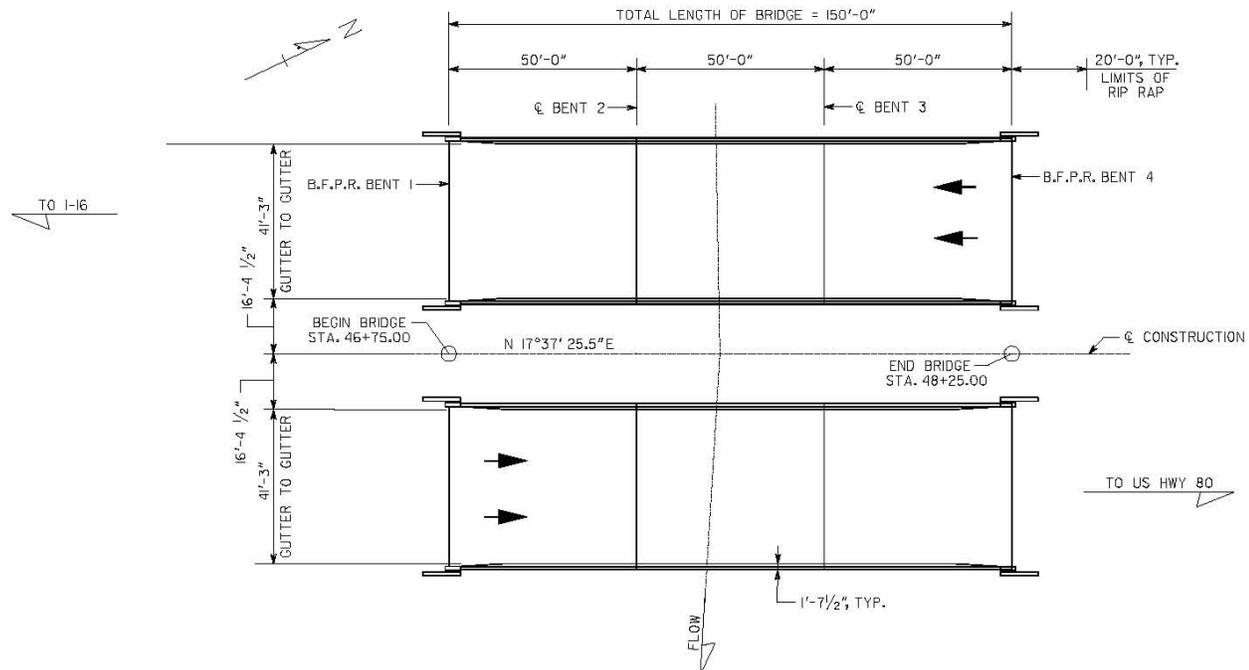
ALTERNATIVE NO.:
RD-14

DESCRIPTION: **Relocate or delete southbound U-turn at STA. 44+00; use
separate structures for Little Ogeechee River Bridge**

SHEET NO.: **6** of **8**



CURRENT DESIGN - PLAN



ALTERNATIVE R-14 - PLAN

Calculations



PROJECT: **Georgia Department of Transportation
STP00-0218-01(001) – P.I. Nos. 522790
Jimmy Deloach Parkway Extension - from I-16 to US 80**

ALTERNATIVE NO.:
RD-14

DESCRIPTION: **Relocate or delete southbound U-turn at STA. 44+00; use separate structures for Little Ogeechee River Bridge** SHEET NO.: **7 of 8**

Note:

- 1) Reduction from current design = savings for alternative
- 2) Construction cost of bridge used is \$70/SF as used on the current design cost estimate provided to the VE Team.
- 3) Hard Copies of Current Bridge Design Provided to the VE Team did not match DGN files provided. The VE Team assumed Current Design shown on the Hard Copies to supersede that shown in the DGN files and developed sketches and calculations accordingly.

Current Design (3 Span – 150' Long, 115'-3" Out-to-Out Bridge)

Surface area of bridge = $150' \times 115.25' = 17,287.50$ SF

Other components / treatments / fill assumed same for current design & alternative, therefore, not considered – conservative.

Alternative Design (Twin, 3 Span – 150' Long, 41'-3" Out-to-Out Bridges)

Surface area of bridge = $2 \times 150' \times 41.25' = 12,375.00$ SF

NOTE:

A more detailed cost analysis may be performed on sufficiently developed alternative bridge plans to be able to itemize major components and realize greater cost savings than that shown in this study. For example, savings in paving and embankment costs can be realized in using Type A Turn Lanes in-lieu of Type B.

Value Analysis Design Alternative



PROJECT: **Georgia Department of Transportation
STP00-0218-01(001) – P.I. Nos. 522790
Jimmy DeLoach Parkway Extension - from I-16 to US 80**

ALTERNATIVE NO.: **RD-22**

DESCRIPTION: **Provide single span bridges with MSE walled abutments
at CSX RR crossing**

SHEET NO.: 1 of 5

Original Design:

The original design calls for a dual structure carrying Jimmy DeLoach Parkway across CSX RR. The bridges are 187'-6" in length, made up of three 62'-6" spans. The out-to-out width of the northbound bridge is 41'-3", accommodating 2 – 12" travel lanes, 10' outside shoulder, 4' inside shoulder and standard concrete safety barriers. The southbound bridge is tapered to accommodate a turn lane and varies in width from 46'-1 7/16" to 55'-4 3/4".

Alternative:

The alternative proposes providing MSE Walled Abutments and eliminating the end spans on both bridges. All vertical geometry remains the same.

Opportunities:

- Potential savings in construction costs
- Less encroachment on CSX R/W
- Accommodates future track expansion

Risks:

- None apparent

Technical Discussion:

100' long single span bridges would span the CSX RR. This span length not only stays out of the CSX Right of Way but also provides for the addition of two more RR Tracks in the future. The shorter (relative to the original design) bridges can be constructed by providing MSE Walled abutments.

BT – 54 girders made of 9 ksi concrete can be used to span the 100', therefore, there is no effect on the PGL and the vertical clearance to the RR remains well above the 23'-0" minimum required.

The calculations of quantities and savings are provided in the following pages.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 1,613,156	\$ 0	\$ 1,613,156
ALTERNATIVE	\$ 1,346,123	\$ 0	\$ 1,346,123
SAVINGS	\$ 267,032	\$ 0	\$ 267,032

Illustration

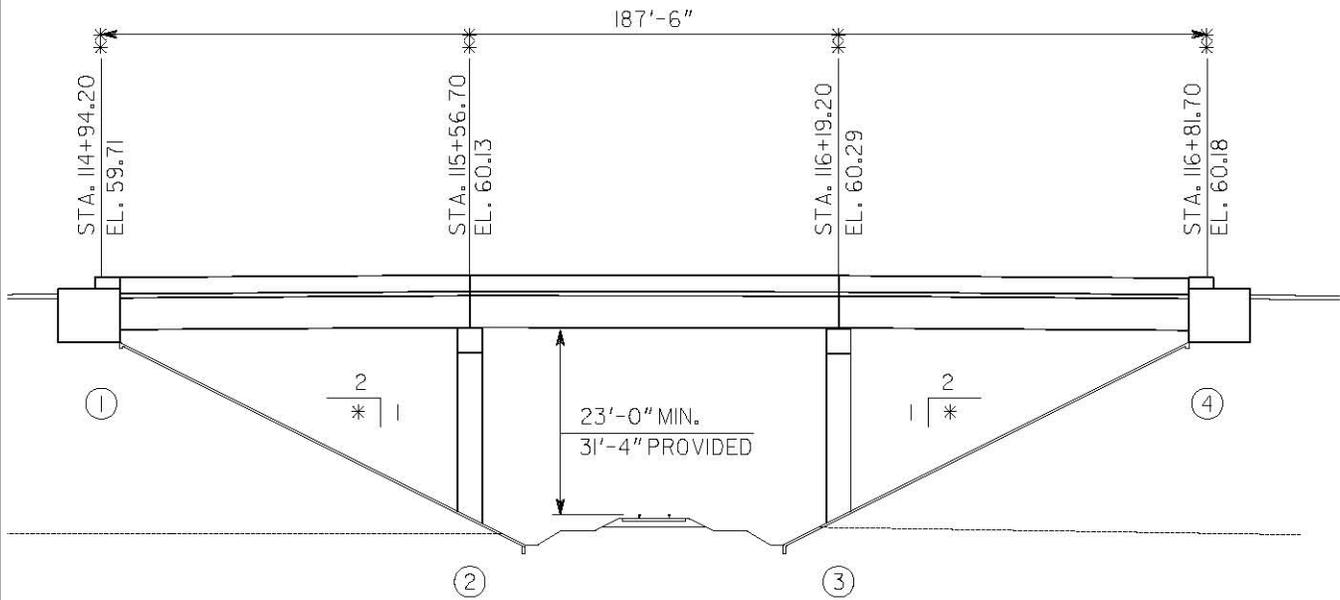


PROJECT: **Georgia Department of Transportation
STP00-218-01(001) – P.I. Nos. 522790
Jimmy DeLoach Parkway Extension - from I-16 to US 80**

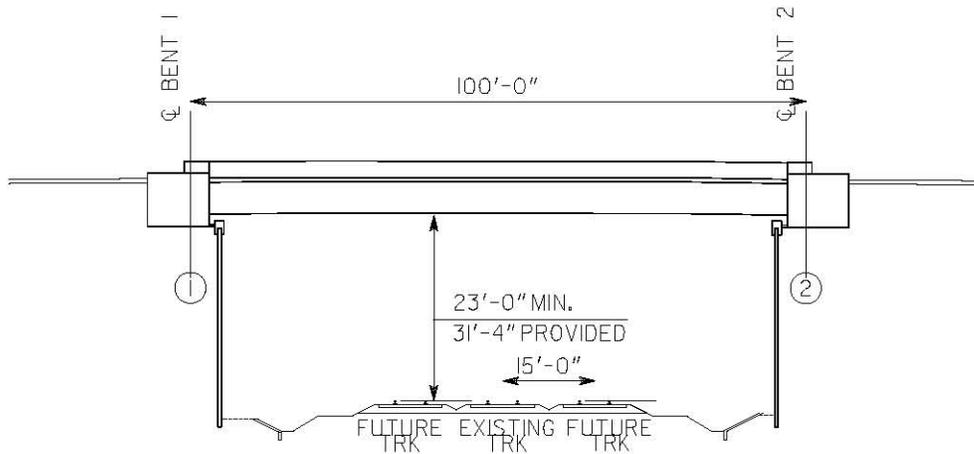
ALTERNATIVE NO.:
RD-22

DESCRIPTION: **Provide single span bridges with MSE walled abutments
at CSX RR crossing**

SHEET NO.: **3** of **5**



CURRENT DESIGN - ELEVATION



ALTERNATIVE R22 - ELEVATION

Calculations



PROJECT: **Georgia Department of Transportation
STP00-0218-01(001) – P.I. Nos. 522790
Jimmy DeLoach Parkway Extension - from I-16 to US 80** ALTERNATIVE NO.:
RD-22

DESCRIPTION: **Provide single span bridges with MSE walled abutments
at CSX RR crossing** SHEET NO.: **4 of 5**

Note:

- 1) Reduction from current design = savings for alternative.
- 2) Construction cost of bridge used is \$85/SF as used on the current design cost estimate provided to the VE Team.
- 3) Average Paving Cost assumed = \$75 / SY.

Current Design (Two 3 Spans – 187.5’ Long, SB Width Varies, NB 41’-3” Out-to-Out Bridges)

Surface area of bridge = $187.5' \times \{ 41.25' + [0.5 \times (55.13' + 46.40)] \} = 17,253 \text{ SF}$

Other components / treatments assumed same for current design & alternative, therefore, not considered – conservative.

Alternative Design (Two, Single Span – 100’ Long, SB Width Varies, NB 41’-3” Out-to-Out Bridges)

Surface area of bridge = $100.0' \times \{ 41.25' + [0.5 \times (52.5' + 44.5)] \} = 8,975 \text{ SF (Approximate)}$

Additional Asphalt Paving Area required = $\{ (187.5' - 100') \times [41.25 + (0.5 \times (52.5 + 44.5))] \} / 9 = 872.5 \text{ SY (Approximate - conservative)}$

Additional Guardrail required = $4 \times (187.5' - 100') \times 110\% \pm = 400 \text{ LF (Approximate - conservative)}$

Additional 30’ MSE Wall Required (125’ long, 2:1 side slopes) = $2 \times \{ 2 \times (\frac{1}{2} \times 30' \times 30') + (125' \times 30') \} = 9300 \text{ SF}$

Additional Coping Required = $2 \times \{ 125' + (2 \times \text{SQRT}(30^2 + 30^2)) \} = 420 \text{ LF}$

Additional Backfill Required = $\{ (2 \times 4650' \times 87.5') / 27 \} = 300 \text{ CY}$

NOTE:

A more detailed cost analysis may be performed on sufficiently developed alternative bridge plans to be able to itemize major components and realize greater cost savings than that shown in this study.

Cost Worksheet



PROJECT:	Georgia Department of Transportation STP00-0218-01(001) – P.I. Nos. 522790 Jimmy DeLoach Parkway Extension - from I-16 to US 80 Chatham County	ALTERNATIVE NO.:
		RD-22
DESCRIPTION:	Provide single span bridges with MSE walled abutments at CSX RR crossing	SHEET NO.: 5 of 5

CONSTRUCTION ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/ UNIT	TOTAL	NO. OF UNITS	COST/ UNIT	TOTAL
Bridge	SF	17,253	\$ 85.00	\$ 1,466,505	8,975	\$ 85.00	\$ 762,875
Asphalt Paving	SY	0	\$ 75.00	\$ -	872.5	\$ 75.00	\$ 65,438
Guardrail	LF	0	\$ 17.34	\$ -	400	\$ 17.34	\$ 6,936
MSE Wall (30')	SF	0	\$ 40.00	\$ -	9300	\$ 40.00	\$ 372,000
Coping	LF	0	\$ 35.00	\$ -	420	\$ 35.00	\$ 14,700
Backfill	CY	0	\$ 6.00	\$ -	300	\$ 6.00	\$ 1,800
Sub-total				\$ 1,466,505			\$ 1,223,749
Mark-up at 10.00%				\$ 146,651			\$ 122,375
TOTAL				\$ 1,613,156			\$ 1,346,123

Estimated Savings: \$267,032

Value Analysis Design Alternative



PROJECT: **Georgia Department of Transportation
CSSTP-0007-00(259) - P.I. No. 0007259
US 80/ Jimmy DeLoach Parkway Interchange** ALTERNATIVE NO.: **I-3**

DESCRIPTION: **Reduce the sum of the ramp's paved shoulders from 14' to 12'** SHEET NO.: **1 of 4**

Original Design:

The original design proposes a 4' left shoulder and a 10' right shoulder on all exit and entrance ramps for a sum total of 14'.

Alternative Design:

The alternative design would propose utilizing either a 2' left shoulder and a 10' right shoulder, a 4' left shoulder and an 8' right shoulder or another combination whose sum is equal to 12'.

Opportunities:

- Reduced paving costs
- Comply with AASHTO policy

Risks:

- None apparent

Technical Discussion:

According to AASHTO's Policy on Geometric Design of Highways and Streets (Page 838), for one way ramps," the sum of the left and right shoulder widths should not exceed 10 to 12 feet".

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 589,709	\$ 0	\$ 589,709
ALTERNATIVE	\$ 511,773	\$ 0	\$ 511,773
SAVINGS	\$ 77,935	\$ 0	\$ 77,935

Illustration

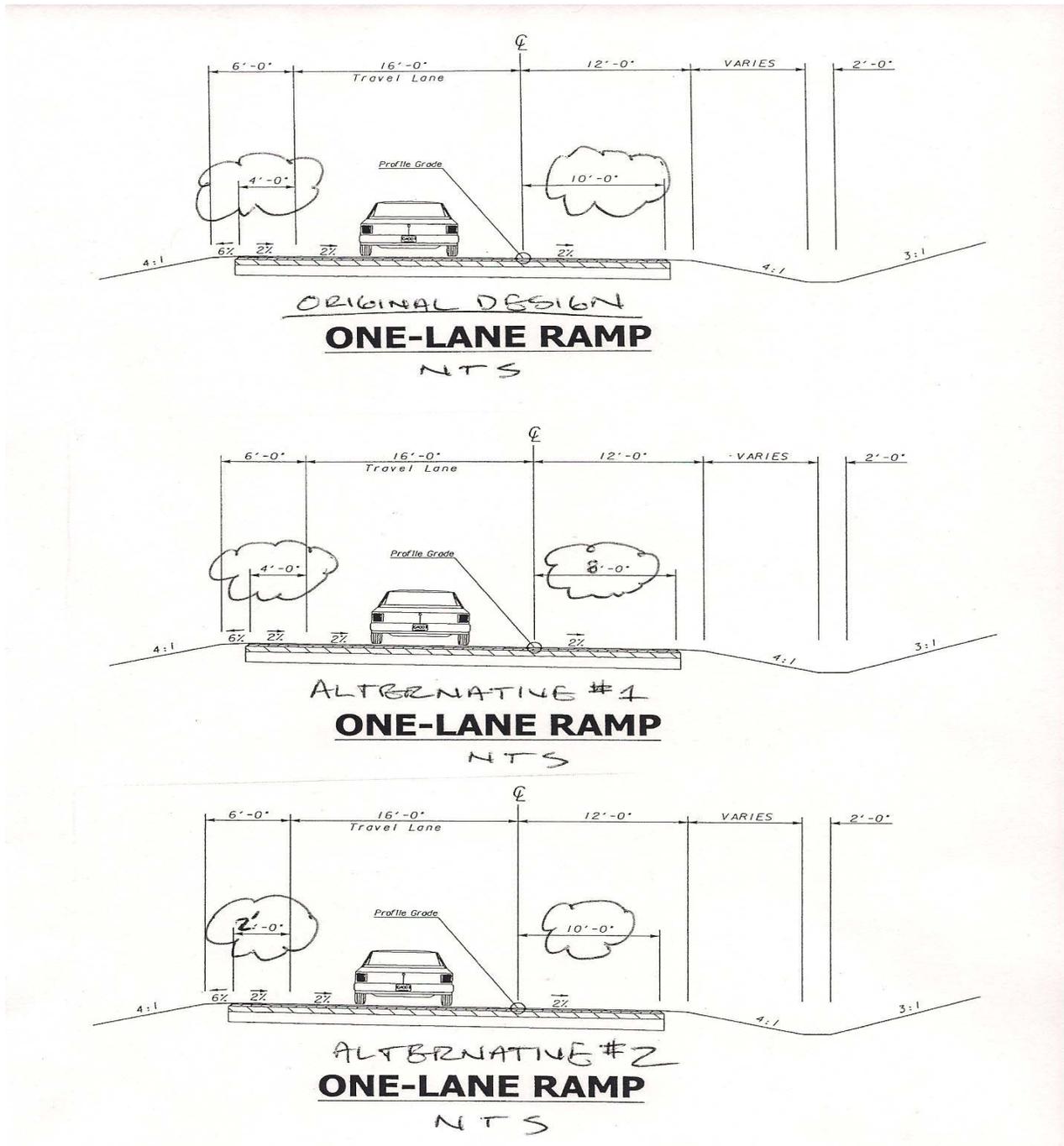


PROJECT: Georgia Department of Transportation
CSSTP-0007-00(259) - P.I. No. 0007259
US 80/ Jimmy DeLoach Parkway Interchange

ALTERNATIVE NO.:
I-3

DESCRIPTION: Reduce the sum of the ramp's paved shoulders from 14' to 12'

SHEET NO.: 2 of 4



Calculations



PROJECT: **Georgia Department of Transportation
CSSTP-0007-00(259) - P.I. No. 0007259
US 80/ Jimmy DeLoach Parkway Interchange**

ALTERNATIVE NO.:
I-3

DESCRIPTION: **Reduce the sum of the ramp's paved shoulders from 14'
to 12'**

SHEET NO.: **3** of **4**

Assume the use of a 4' inside shoulder and an 8' outside shoulder

US-80 Ramp 'SE' = 1,650 LF
US-80 Ramp 'NE' = 2,350 LF
US-80 Ramp 'NW' = 1,600 LF
US-80 Ramp 'SW' = 2,4000 LF

Total length = 8,000 LF

Original Design:

Area = (8,000 LF x 14.0 FT) / (9 SF/SY) => 12,445 SY (112,000 SF)

Superpave 12.5mm = [(12,445 SY x 165 #/SY-IN) / (2000#/TN)] => 1,027 TN
Superpave 19.0mm = [(12,445 SY x 220 #/SY-IN) / (2000#/TN)] => 1,369 TN
Superpave 25.0mm = [(12,445 SY x 440 #/SY-IN) / (2000#/TN)] => 2,738 TN
12" GAB 112,000 SF x 1.0' depth x (135#/CF) / (2,000 / TN) => 7,560 TN

Alternative Design:

Area = (8,000 LF x 12.0 FT) / (9 SF/SY) => 10,667 SY (96,000 SF)

Superpave 12.5mm = [(10,667 SY x 165 #/SY-IN) / (2000#/TN)] => 880 TN
Superpave 19.0mm = [(10,667 SY x 220 #/SY-IN) / (2000#/TN)] => 1,173 TN
Superpave 25.0mm = [(10,667 SY x 440 #/SY-IN) / (2000#/TN)] => 2,347 TN
12" GAB 96,000 SF x 1.0' depth x (135#/CF) / (2,000 / TN) => 6,480 TN
Earthwork (1.625' x 2') x (8,000 LF) / (27CF/CY) => 963 CY

Cost Worksheet



PROJECT:	Georgia Department of Transportation CSSTP-0007-00(259) - P.I. No. 0007259 US 80/ Jimmy DeLoach Parkway Interchange Chatham County	ALTERNATIVE NO.:	I-3
DESCRIPTION:	Reduce the sum of the ramp's paved shoulders from 14' to 12'	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
Embankment	CY	0	\$ 6.00	\$ -	963	\$ 6.00	\$ 5,778
12.5 mm Superpave	TN	1,027	\$ 75.00	\$ 77,025	880	\$ 75.00	\$ 66,000
19.0 mm Superpave	TN	1,369	\$ 75.00	\$ 102,675	1,173	\$ 75.00	\$ 87,975
25.0 mm Superpave	TN	2,738	\$ 75.00	\$ 205,350	2,347	\$ 75.00	\$ 176,025
12" GAB	TN	7,560	\$ 19.98	\$ 151,049	6,480	\$ 19.98	\$ 129,470
				\$ -			\$ -
Sub-total				\$ 536,099			\$ 465,248
Mark-up at 10.00%				\$ 53,610			\$ 46,525
TOTAL				\$ 589,709			\$ 511,773

Estimated Savings: \$77,935

Value Analysis Design Alternative



PROJECT: **Georgia Department of Transportation
CSSTP-0007-00(259) - P.I. No. 0007259
US 80/ Jimmy DeLoach Parkway Interchange**

ALTERNATIVE NO.:
I-4

DESCRIPTION: **Use single span bridges with MSE walls**

SHEET NO.: **1** of **4**

Original Design:

The original design calls for twin structures carrying Jimmy DeLoach Parkway across US 80. The bridges are 260'-0" in length, made up of three spans, two 60'-6" end spans and a 139'-0" intermediate span. The out-to-out width of the bridges is 39'-3", each accommodating 2 – 12" travel lanes, an 8' outside shoulder and a 4' inside shoulder, and standard concrete safety barriers.

At the time of the VE Study, the Bridge Plans & Elevation were developed only to the concept stage.

Alternative:

The alternative proposes providing MSE walled abutments and eliminating the end spans. All other geometry remains the same.

Opportunities:

- Potential savings in construction costs and construction time due to reduced bridge length
- Reduction in two end bents
- Lesser maintenance requirements

Risks:

- None apparent

Technical Discussion:

155' long single span bridges would span US 80. The shorter (relative to the original design) twin bridges can be constructed by providing MSE walled abutments.

BT – 72 girders made of 9 ksi concrete can be used to span 155', therefore, there is no effect on the PGL and vertical clearance to US 80 from the original design, assuming the same depth of beam is used in the current design (as it appears from the conceptual drawings).

The calculations of quantities and savings are provided in the following pages.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 1,574,592	\$ 0	\$ 1,574,592
ALTERNATIVE	\$ 1,332,647	\$ 0	\$ 1,332,647
SAVINGS	\$ 241,945	\$ 0	\$ 241,945

Illustration

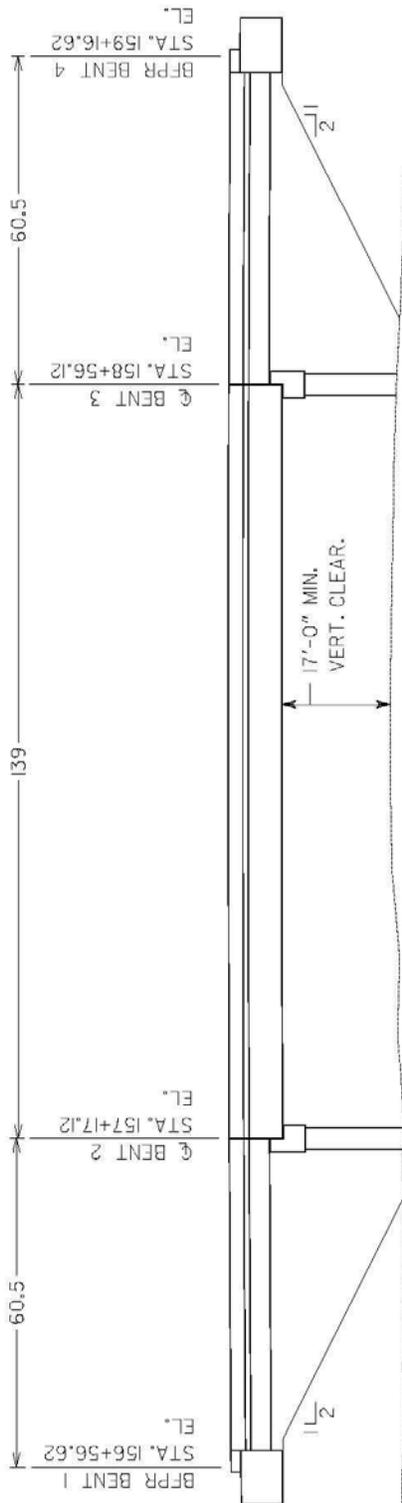


PROJECT: **Georgia Department of Transportation
CSSTP-0007-00(259) - P.I. No. 0007259
US 80/ Jimmy DeLoach Parkway Interchange**

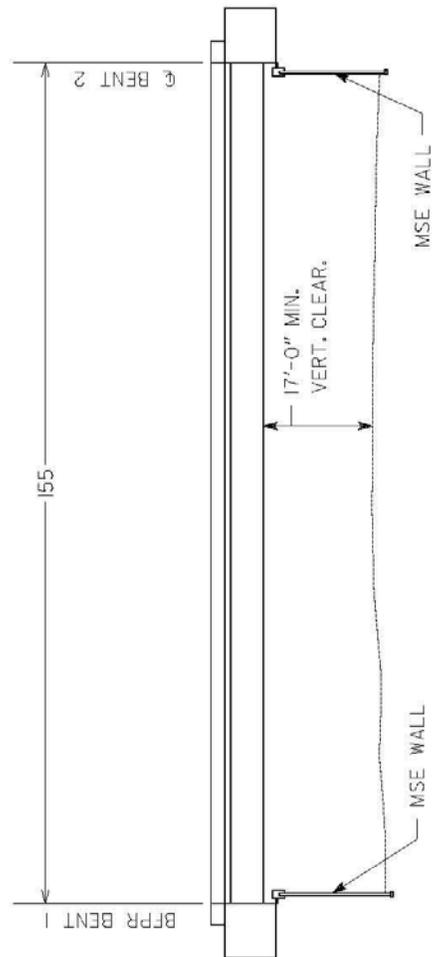
ALTERNATIVE NO.:
I-4

DESCRIPTION: **Use single span bridges with MSE walls**

SHEET NO.: **2** of **4**



CURRENT DESIGN - ELEVATION



ALTERNATIVE I-4 - ELEVATION

Calculations



PROJECT: **Georgia Department of Transportation
CSSTP-0007-00(259) - P.I. No. 0007259
US 80/ Jimmy DeLoach Parkway Interchange**

ALTERNATIVE NO.:
I-4

DESCRIPTION: **Use single span bridges with MSE walls**

SHEET NO.: **3** of **4**

Note:

- 1) **Reduction from current design = savings for alternative.**
- 2) **Construction cost of bridge used is \$85/SF as used on the current design cost estimate provided to the VE Team.**
- 3) **Average Paving Cost assumed = \$75 / SY.**

Current Design (Twin 3 Span – 260.5’ Long, 39’-3” Out-to-Out Bridges)

Surface area of bridge = $2 \times 260.5' \times 39.25' = 20,449.25 \text{ SF}$

Other components / treatments assumed same for current design & alternative, therefore, not considered – conservative.

Alternative Design (Twin, Single Span – 155’ Long, 41’-3” Out-to-Out Bridges)

Surface area of bridge = $2 \times 155' \times 39.25' = 12,167.5 \text{ SF}$

Additional Asphalt Paving Area required = $2 \times (260.5' - 155') \times 39.25 / 9 = 920 \text{ SY}$

Additional Guardrail required = $4 \times (260.5' - 155') = 422 \text{ LF}$

Additional 20’ MSE Wall Required (125’ long, 2:1 side slopes) = $2 \times \{2 \times (\frac{1}{2} \times 20' \times 20') + (125' \times 20')\} = 5800 \text{ SF}$

Additional Coping Required = $2 \times \{125' + (2 \times \text{SQRT}(20^2 + 20^2))\} = 365 \text{ LF}$

Additional Backfill Required = $\{(2 \times 2900' \times 52.5') / 27\} = 11,280 \text{ CY}$

NOTE:

A more detailed cost analysis may be performed on sufficiently developed alternative bridge plans to be able to itemize major components and realize greater cost savings than that shown in this study.

Cost Worksheet



PROJECT: Georgia Department of Transportation CSSTP-0007-00(259) - P.I. No. 0007259 US 80/ Jimmy DeLoach Parkway Interchange Chatham County	ALTERNATIVE NO.: I-4
DESCRIPTION: Use single span bridges with MSE walls	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
Bridge	SF	20,449	\$ 70.00	\$ 1,431,448	12,168	\$ 70.00	\$ 851,725
Asphalt Paving	SY	0	\$ 75.00	\$ -	920	\$ 75.00	\$ 69,000
Guardrail	LF	0	\$ 17.34	\$ -	422	\$ 17.34	\$ 7,317
MSE Wall (20')	SF	0	\$ 35.00	\$ -	5800	\$ 35.00	\$ 203,000
Coping	LF	0	\$ 35.00	\$ -	365	\$ 35.00	\$ 12,775
Backfill	CY	0	\$ 6.00	\$ -	11280	\$ 6.00	\$ 67,680

NOTE: REDUCTION IN ALTERNATIVE = COST OF CURRENT DESIGN

Sub-total				\$ 1,431,448			\$ 1,211,497
Mark-up at 10.00%				\$ 143,145			\$ 121,150
TOTAL				\$ 1,574,592			\$ 1,332,647

Estimated Savings: \$241,945

Value Analysis Design Alternative



PROJECT: **Georgia Department of Transportation
CSSTP-0007-00(259) - P.I. No. 0007259
US 80/ Jimmy DeLoach Parkway Interchange**

ALTERNATIVE NO.:
I - 6

DESCRIPTION: **Use 40' end spans on bridges across US 80**

SHEET NO.: **1** of **4**

Original Design:

The original design calls for twin structures carrying Jimmy DeLoach Parkway across US 80. The bridges are 260'-0" in length, made up of three spans, two 60'-6" end spans and a 139'-0" intermediate span. The out-to-out width of the bridges is 39'-3", each accommodating 2 – 12" travel lanes, an 8' outside shoulder and a 4' inside shoulder, and standard concrete safety barriers.

At the time of the VE Study, the Bridge Plans & Elevation were developed only to the concept stage.

Alternative:

The alternative proposes reducing the end spans from 60'-6" to 40'-0". All other geometry remains the same.

Opportunities:

- Potential savings in construction costs

Risks:

- Minimal redesign effort (as the design is in the preliminary phase)

Technical Discussion:

The shorter (relative to the original design) twin bridges can be constructed by reducing the end spans to 40'-0". The end rolls should be adjusted to fall within end span envelope. Also, drainage management under the bridge will need to be addressed.

The calculations of quantities and savings are provided in the following pages.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 1,574,592	\$ 0	\$ 1,574,592
ALTERNATIVE	\$ 1,364,739	\$ 0	\$ 1,364,739
SAVINGS	\$ 209,853	\$ 0	\$ 209,853

Illustration

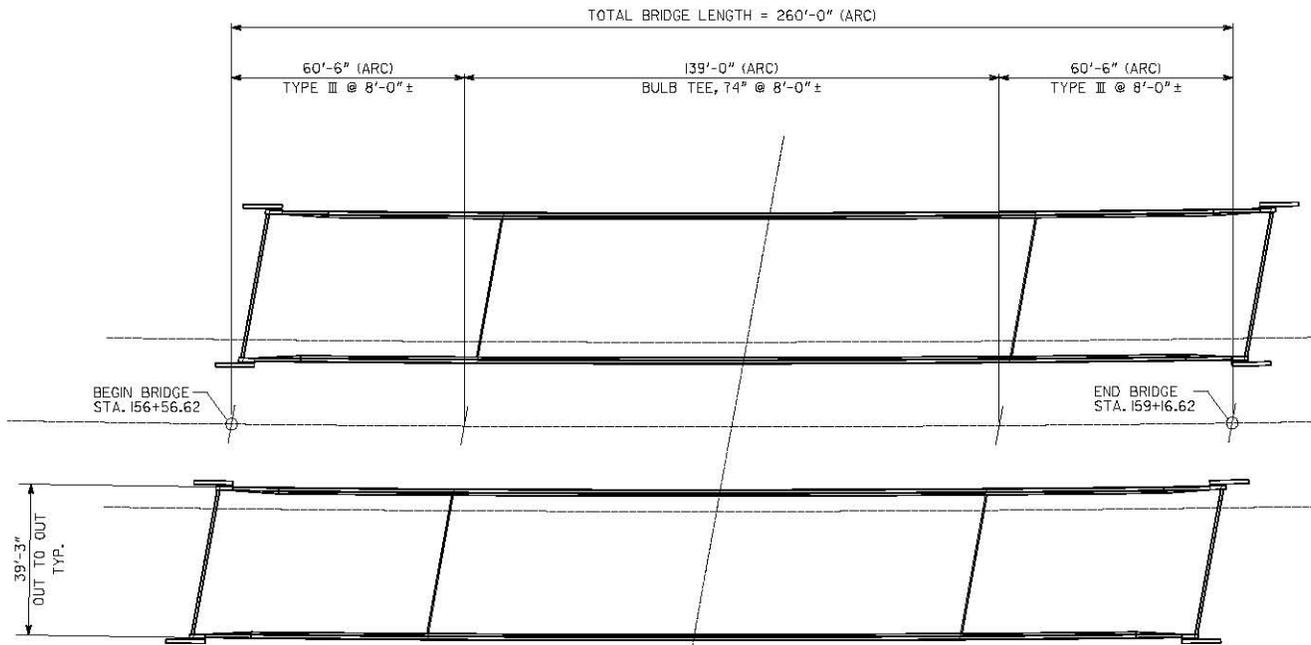


PROJECT: **Georgia Department of Transportation
CSSTP-0007-00(259) - P.I. No. 0007259
US 80/ Jimmy DeLoach Parkway Interchange**

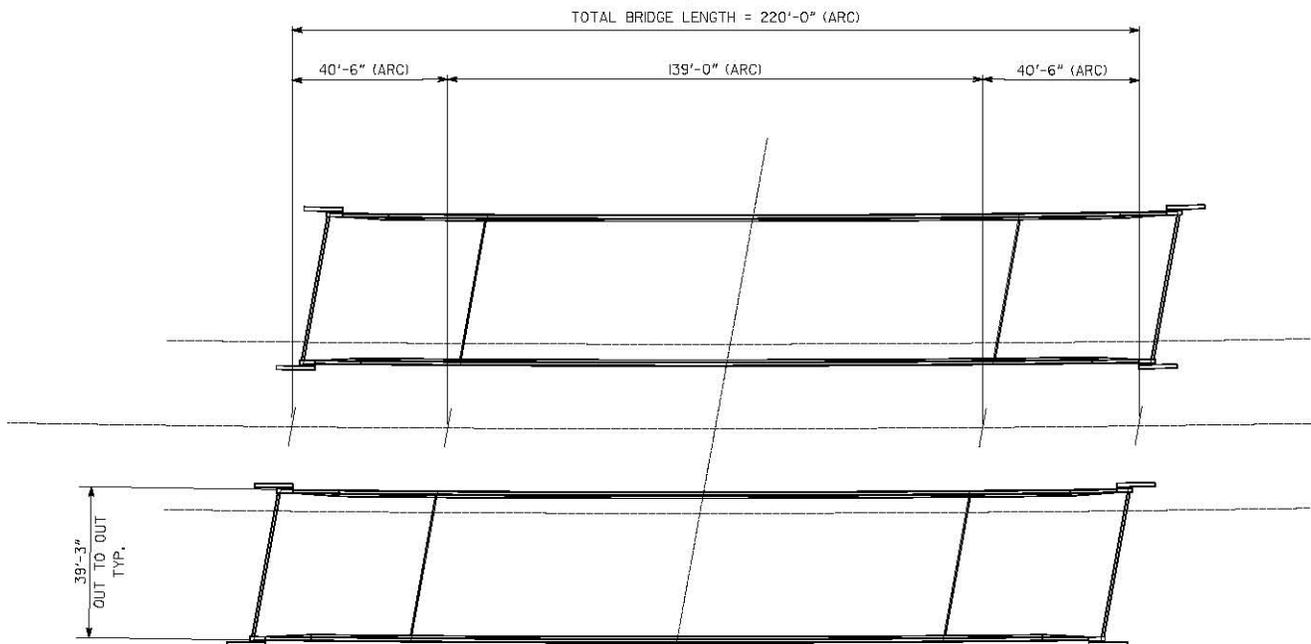
ALTERNATIVE NO.:
I-6

DESCRIPTION: **Use 40' end spans on bridges across US 80**

SHEET NO.: **2** of **4**



CURRENT DESIGN - PLAN



ALTERNATIVE I-6 - PLAN

Calculations



PROJECT: **Georgia Department of Transportation
CSSTP-0007-00(259) - P.I. No. 0007259
US 80/ Jimmy DeLoach Parkway Interchange**

ALTERNATIVE NO.:
1 - 6

DESCRIPTION: **Use 40' end spans on bridges across US 80**

SHEET NO.: **3** of **4**

Note:

- 1) Reduction from current design = savings for alternative.**
- 2) Construction cost of bridge used is \$85/SF as used on the current design cost estimate provided to the VE Team.**
- 3) Average Paving Cost assumed = \$75 / SY.**

Current Design (3 Span – 260.5' Long, 39'-3" Out-to-Out Bridge)

Surface area of bridge = $2 \times 260.5' \times 39.25' = 20,449.25 \text{ SF}$

Other components / treatments / fill assumed same for current design & alternative, therefore, not considered – conservative.

Alternative Design (Twin, 3 Span – 150' Long, 41'-3" Out-to-Out Bridges)

Surface area of bridge = $2 \times 220.5' \times 39.25' = 17,309.25 \text{ SF}$

Additional Asphalt Paving Area required = $4 \times 20' \times 39.25 / 9 = 350 \text{ SY}$

Additional Guardrail required = $8 \times 20' = 160 \text{ LF}$

NOTE:

A more detailed cost analysis may be performed on sufficiently developed alternative bridge plans to be able to itemize major components and realize greater cost savings than that shown in this study.

Cost Worksheet



PROJECT:	Georgia Department of Transportation CSSTP-0007-00(259) – P.I. No. 0007259 US 80/ Jimmy Deloach Parkway Interchang Chatham County	ALTERNATIVE NO.:	I - 6
DESCRIPTION:	Use 40' end spans on bridges across US 80	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
Bridge	SF	20,449	\$ 70.00	\$ 1,431,448	17,309	\$ 70.00	\$ 1,211,648
Asphalt Paving	SY	0	\$ 75.00	\$ -	350	\$ 75.00	\$ 26,250
Guardrail	LF	0	\$ 17.34	\$ -	160	\$ 17.34	\$ 2,774

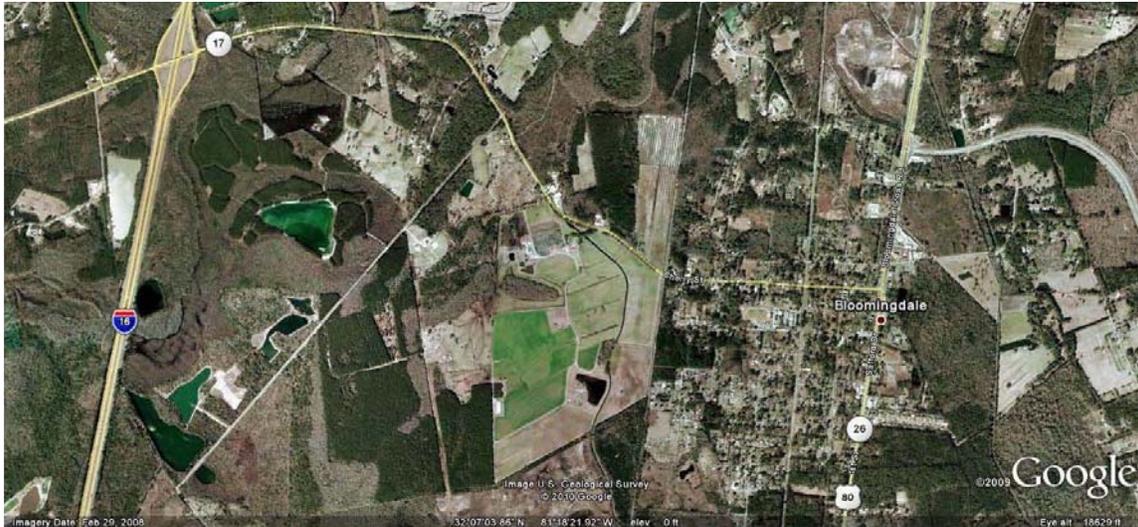
NOTE: REDUCTION IN ALTERNATIVE = COST OF CURRENT DESIGN							
Sub-total				\$ 1,431,448			\$ 1,240,672
Mark-up at	10.00%			\$ 143,145			\$ 124,067
	TOTAL			\$ 1,564,592			\$

Estimated Savings:	\$209,853
--------------------	-----------

PROJECT DESCRIPTION

INTRODUCTION

Located in the western portion of Chatham County, Georgia, this project involves the "Jimmy Deloach Parkway Extension" and the "Jimmy Deloach Parkway at US 80 proposed new interchange." The extension connects the Jimmy Deloach Parkway from its current intersection with US 80 to I-16 at its interchange with SR 17 via a portion of the existing SR 17 ROW and a new alignment.



The project will serve as a divided principal, or major four-lane, arterial route. The project as proposed would include four new 12-foot travel lanes separated by a median of variable width (24' to 44') and provide a cyclist lane for bicycles on the new paved shoulders. Grade separations are provided for the Ogeechee River, and the CSX railroad. The new interchange project at US 80 will provide a grade separation between US 80 and the Jimmy Deloach Parkway.

NEED AND PURPOSE

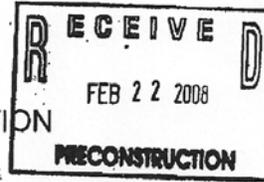
The primary objective of this project is to provide a high level of traffic service between major sections of the urbanized area and make the section safe and efficient between longer trips within and through the area. The project will traverse wetlands, the City of Bloomington, the CSX railroad, and numerous residential and commercial properties. Also, to accommodate the project and provide access to the area traffic, realignment of other roads will be performed.

The designs for the projects have been prepared by **Thomas & Hutton Engineering Company and McGee Partners, Inc.**

REPRESENTATIVE DOCUMENTS

The VE Team utilized the GDOT supplied project materials noted below, plus the preliminary plans provided by Thomas & Hutton Engineering Company and McGee Partners, Inc.

- Georgia Department of Transportation
 - Construction Cost Estimates
 - Concept Reports
 - Project Location Map
 - Traffic Analysis
 - Typical Road Section
-



DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE STP-218-1 (1), Chatham County OFFICE Urban Design
 Jimmy DeLoach Parkway Extension
 from I-16 to US 80
 P.I. No. 522790 DATE February 18, 2008

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

TO Genetha Rice- Singleton, Assistant Director of Preconstruction

SUBJECT **Revised Project Concept Report**

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

The Georgia Department of Transportation's Design Policy Manual, Version 2.0, states in Chapter 6, Section 6.8.2, that all arterials with design speeds greater than 45 mph will require a 24-ft raised median, a 44-ft depressed median, or a positive barrier system. Conforming to this policy will require the design to be modified to show a 24-foot raised median instead of a 20-foot raised median. The revision will affect the new location of the project from Main Street to US 80.

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

DATE: _____ *SEE NEXT PAGE - JBB -*
State Transportation Planning Administrator

JBB:ASW:lcs *ASW*

Attachment
See Distribution List

REVISED PROJECT CONCEPT REPORT

Need and Purpose: Phase II of Jimmy Deloach Parkway is needed as an extension of the Phase I Jimmy Deloach Parkway. The entire facility is designed as a divided principal or major four lane arterial with 200-ft of right of way and with controlled access to provide a high level of traffic service between major sections of the urbanized area and to provide for the safe and efficient movement of traffic between longer trips within and through the area. The traffic projections for the Phase II extension of the Parkway to Bloomingdale Cross Road and I-16 are approximately 5,000 vehicles per day by the year 2010. The projections are expected to be considerably higher as announcements for development are incorporated into the demographics forecasts. The developments include the western quadrant of Savannah Quarters and the industrial park on the northern section of the Parkway. The need and purpose of the Parkway in the long range transportation plan was clearly identified as a "developmental highway".

Project location: From westbound I-16/ SR17 Interchange (Existing Mile Point 0.22) to Pine Barren Road/ SR17 Intersection (existing Mile Point 2.06) to Jimmy Deloach Parkway, Phase I @ US80/ SR26 (New Location) in Bloomingdale, Georgia, approximately 2.61 miles.

Description of the approved concept: Widen and reconstruct Bloomingdale Road from I-16 to Pine Barren Road. There will be new location from Pine Barren Road to US80/ SR26 in Bloomingdale, Georgia.

PDP Classification: Major (X) Minor ()

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

Functional Classification: Urban Principal Arterial

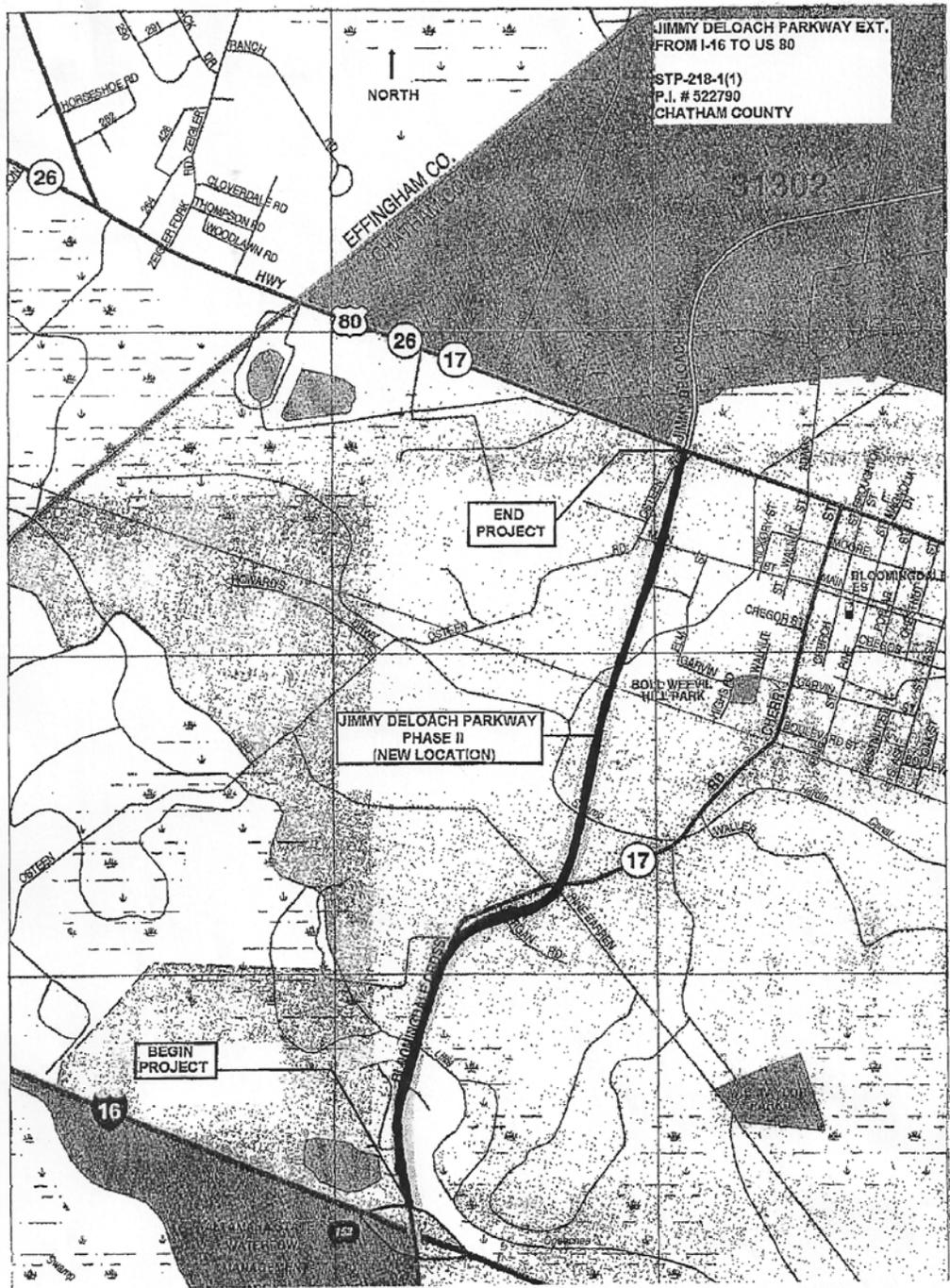
U. S. Route Number(s): N/A **State Route Number(s):** SR17

Traffic (AADT) as shown in the approved concept:

Current Year: 3500 (1995) Design Year: 16000 (2015)

Proposed features to be revised: The proposed feature to be revised is the typical section. The typical section will be revised to reflect the Georgia Department of Transportation's Design Policy Manual which states in Chapter 6, Section 6.8.2, that all arterials with design speeds greater than 45 mph will require a 24-ft raised median, a 44-ft depressed median, or a positive barrier system. Also the project design units have been revised from Metric to English.

Describe the revised feature(s) to be approved: The raised median width will be revised from 20-ft to 24-ft within the new location area of the project from Main Street to US80/ SR26. The proposed 44-ft depressed median from I-16/Bloomingdale Cross Road Intersection to Main Street will remain as proposed in the original concept.



Updated traffic data (AADT):

Current Year: 7200 (2009)

Design Year: 40000 (2029)

Programmed/Schedule:

P.E.: 1997

R/W: LOCL

Construction: LR

VE Study Required

YES (X)

NO ()

Revised cost estimates:

1. Construction cost including E&C, \$19,817,747
2. Right-of-Way, \$12,800,000
3. Utilities, \$660,450

Is the project located in a Non-attainment area?

YES ()

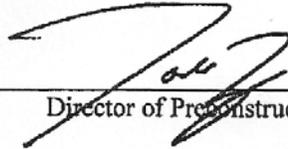
NO (X)

Recommendation: This office recommends that the proposed revision to the concept be approved for implementation.

Attachments:

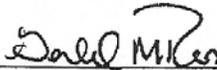
1. Sketch Map
2. Cost Estimate
3. Updated Traffic Diagrams
4. Typical Section

Concur:



Director of Preconstruction

Approve:



Chief Engineer

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE P. I. No. 0007259, Chatham County **OFFICE** Preconstruction
CSSTP-0007-00(259)
Jimmy DeLoach Parkway @ US 80 -
Proposed New Interchange **DATE** April 17, 2008

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
Angela Alexander
Paul Liles
Glen Durrence
Brad Saxon
BOARD MEMBER

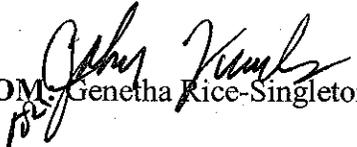
**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENTAL CORRESPONDENCE

FILE: P.I. No. 0007259, Chatham County
CSSTP-0007-00(259)
Jimmy DeLoach Parkway @ US 80-
Proposed New Interchange

OFFICE: Preconstruction

DATE: April 14, 2008

FROM:  Genetha Rice-Singleton, Assistant Director of Preconstruction

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

SUBJECT: *PROJECT CONCEPT REPORT*

This project is the construction of a new interchange where Jimmy DeLoach Parkway currently intersects US 80/SR 26/SR 17 at-grade. The existing section of Jimmy DeLoach Parkway begins at US 80/SR 26/SR 17, extending north across I-95 and terminates at SR 21. The existing southern terminus of Jimmy DeLoach Parkway forms a "T" intersection with US 80/SR 26/SR 17. Additionally, a planned extension of Jimmy DeLoach Parkway [GDOT Project STP-218-1(1), Chatham County, and P.I. No. 522790-], beginning at I-16 and extending north to US 80/SR 26/SR 17, is currently in preliminary design, and construction is expected to begin in 2014. The Jimmy DeLoach Parkway extension to I-16 would improve regional connectivity by providing an alternative, direct route from the western portion of Chatham County traveling on I-16 to the Georgia Ports Authority area and to I-95 north of Savannah. Preliminary traffic studies for the existing intersection of Jimmy DeLoach Parkway and US 80/SR 26/SR 17 determined an annual traffic growth rate of 3.5 percent. The planned signalized intersection is expected to have unacceptable level of service (LOS E/F) for traffic operations by year 2030. The proposed interchange would facilitate the efficient flow of traffic along the Parkway, by replacing the at-grade signalized intersection with a grade separated interchange.

The proposed project will construct a full diamond interchange with one full lane movement in each quadrant. Additional width pavement will be provided at the crossroads ramp termini to facilitate traffic turning movements. Jimmy DeLoach Parkway would be the mainline and bridge over US 80. A portion of Osteen Road would be reconstructed on new alignment to intersect with US 80 west of the interchange.

Environmental concerns include requiring a COE 404 permit; an Environmental Assessment will be prepared; Extensive public involvement has been completed including presenting various alternatives to the public; A PIOH was held for the preferred alternative on April 26, 2007. Time saving procedures is not appropriate.

P.I. No. 0007259, Chatham County
Page 2
April 14, 2008

The estimated costs for this project are:

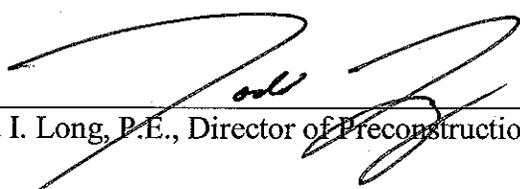
	<u>PROPOSED</u>	<u>APPROVED</u>	<u>FUNDING</u>	<u>PROG DATE</u>
Construction (includes E&C)	\$22,884,000	\$7,000,000	L230	LR
Right-of-way & Utilities	\$13,826,000	\$2,000,000	Local	Local

*PMA sent 2-28-2006 requesting Chatham County do PE & utilities; right-of-way (local funded) and construction is unfunded at this time.

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**

INTERDEPARTMENT CORRESPONDENCE

FILE: P.I. No. 0007259 **OFFICE:** Environment/Location
DATE: March 5, 2008
FROM:  Glenn Bowman, P.E., State Environmental/Location Engineer
TO: Genetha-Rice Singleton, Assistant Director of Preconstruction
SUBJECT: **PROJECT CONCEPT REPORT**
CSSTP-0007-00(259) / Chatham County
Jimmy DeLoach Parkway at US 80 Interchange

The Concept Report for the above project has been reviewed and it appears satisfactory for approval subject to the following comments:

1. One historic farm is located near the intersection of Bloomingdale and Pine Barren Roads. Also, several houses are located along Osteen Road which may be National Register (NR) eligible pending a history survey. An archaeological study indicated that archaeological deposits may be associated with these structures. The CSX RR at the southern end of the project would be NR eligible.
2. A public hearing will be required for an EA.

If you have any questions, please contact Glenn Bowman at (404)699-4401.

GB:lc

Attachment

cc: Brian Summers
Jamie Simpson
Angela Alexander
Keith Golden
Ben Buchan
Glenn Durrence
Paul Liles

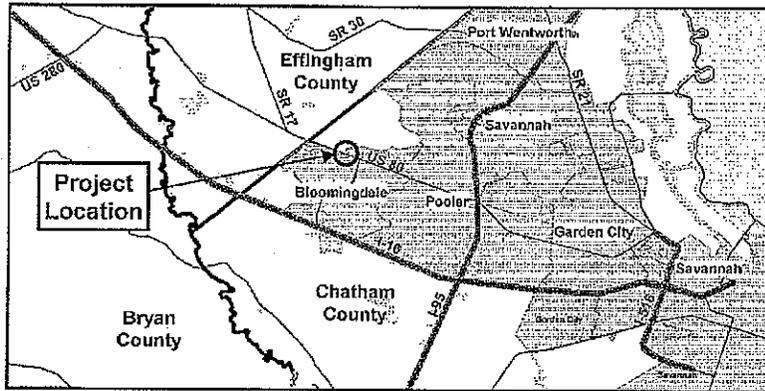
**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

Office of Urban Design

PROJECT CONCEPT REPORT

US 80/Jimmy DeLoach Parkway Interchange
Project Number: CSSTP-0007-00(259)
County: Chatham
P. I. Number: 0007259

Federal Route Number: US 80
State Route Number: SR 17 & 26



Recommendation for approval:

DATE 18 FEB 08

Alfred S. Williams
Project Manager

DATE 2/19/08

James B. Burch
State Urban Design Engineer

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

DATE _____

State Transportation Planning Administrator

DATE _____

State Financial Management Administrator

DATE 3/6/08

John Boman
State Environmental/Location Engineer

DATE _____

State Traffic Safety and Design Engineer

DATE _____

District Engineer

DATE _____

Project Review Engineer

DATE _____

State Bridge and Structural Design Engineer

February 4, 2008

P:\3003003\Proj\Concept\ConceptReport\ConceptReport_P10007259_080204.doc

VALUE ENGINEERING PROCESS

This report summarizes the analysis and conclusions by the PBS&J Value Engineering team as they performed a VE Study during the period of March 8 -11 in Atlanta, Georgia, for the Georgia Department of Transportation.

INTRODUCTION

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

Les M. Thomas, PE, CVS-Life	Team Leader
Luke Clarke, PE, AVS	Senior Highway Design Engineer
Kevin Martin, Esq., AVS	Highway Construction Specialist
Ramesh Kalvakaalva, P.E., AVS	Senior Bridge Engineer

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:

- **Investigation/Information Phase** – during this phase of the VE Team’s work, the team received a briefing from the Georgia Department of Transportation (GDOT) staff and its consultant. This briefing included discussions of the design intent behind the project, the cost concerns, and 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 Phase** – 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 supposed to do?”, and “How is it supposed 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. A FAST diagram was prepared highlighting the projects required functions.

- The important functions of the project were identified as follows:
 - **Project Objective/Goals**
 - **Enable/encourage growth**
 - **Reduce travel time**
 - **Accommodate wetlands**
 - **Provide bicycle access**
 - **Project Basic Functions**
 - **Connect existing Jimmy Deloach Parkway with I-16**
 - **Separate grade intersection with CSX railroad**
- **Speculation Phase** - The VE team performed a brainstorming session to identify ideas that might help meet the project objectives:
 - **Eliminate any unnecessary work while maintaining project functional requirements**
 - **Identify other means of providing function requirements**
 - **Improve service**
 - **Reduce impact to wetlands**

This brainstorming session initially identified numerous ideas that were then evaluated in the Judgment phase. The reader will find the creative worksheets enclosed. These same work sheets were also used to record the results of the Judgment/Evaluation Phase.

- **Evaluation Phase** – 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 and that were capable of being implemented 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:

- Construction cost savings
- Improve value
- Maintainability
- Ability to implement the idea
- General acceptability of the alternatives

- Constructability
- Scheduling delays

Based on these criteria, the VE Team evaluated the alternatives and graded them from 5 (Excellent) down to 1 (Poor). Other notes about the alternatives are annotated at the bottom of the enclosed creative and evaluation sheets.

- **Development Phase** – During this phase, the VE Team developed each of the selected design alternatives whose rating was “4” or “5” because of time constraints. If time permitted, the team will develop additional recommendations. 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 Phase** – 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 Phase** – 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.

VALUE ENGINEERING STUDY AGENDA

for

Georgia Department of Transportation

**STP00-0218-01(001) – P.I. No. 522790 and CSSTP-0007-00(259) - P.I. No. 0007259
Jimmy Deloach Parkway Extension - from I-16 to US 80
and US 80/ Jimmy Deloach Parkway new interchange
Chatham County**

March 8-11, 2010

Pre-Workshop Activities

VE Team Leader organizes study, coordinates with the Owner and Designer the project objectives and materials necessary. The VE Team receives and reviews all project documents. The team develops a Pareto Chart and/or Cost Model for the project.

Day One

9:00-10:30 Design Team Presentation (Information Phase)

- Introduction of participants, owner, designer, and VE team members
- Presentation of the project by the design engineer including:
 - History and background
 - Design Criteria and Constraints
 - Special “U” turn requirements
 - Special needs (schools, businesses, etc.)
 - Sidewalks, bicycle lanes, and or multi-use trails
 - Historical Property protection
 - Current Construction Completion Schedule
 - Project Cost Estimate and Budget Constraints
- Owner Presentation – special requirements, definition of life cycle period and interest rate for life cycle costs
- Review VE Pareto Chart/Cost Model
- Discussion, questions and answers
- Overview of the VE Process and Agenda – Workshop goals & project goals

10:30-12:00 VE Team reviews project (Information Phase)

- Review design team’s presentation
- Review agenda and goals of the study
- Visit project site if time permits

1:00-2:30 Function Analysis Phase

- Analyze Cost Model – Pareto
- Identify basic and secondary functions
- Complete Function Matrix/FAST Diagram

2:30-5:00 Creative Phase

- Brainstorming of alternative ideas

Day Two

8:00-10:00 Evaluation Phase

- Establish criteria for evaluation
- Rank ideas
- Identify “best” ideas for development
- Identify those ideas that will become Design Suggestions
- Develop a cost/worth analysis
- Identify a “champion” for each idea to be developed

10:00-5:00 Development Phase

- Develop alternative ideas design suggestions with assessment of original design and write up new alternatives including:
 - Opportunities & risks
 - Illustrations
 - Calculations
 - Cost worksheets
 - Life cycle cost analysis

Day Three

8:00-5:00 Development Phase

- Continue developing Alternative Ideas
- Continue developing Design Suggestions
- Prepare for presentation to Owners and Designers

Day Four

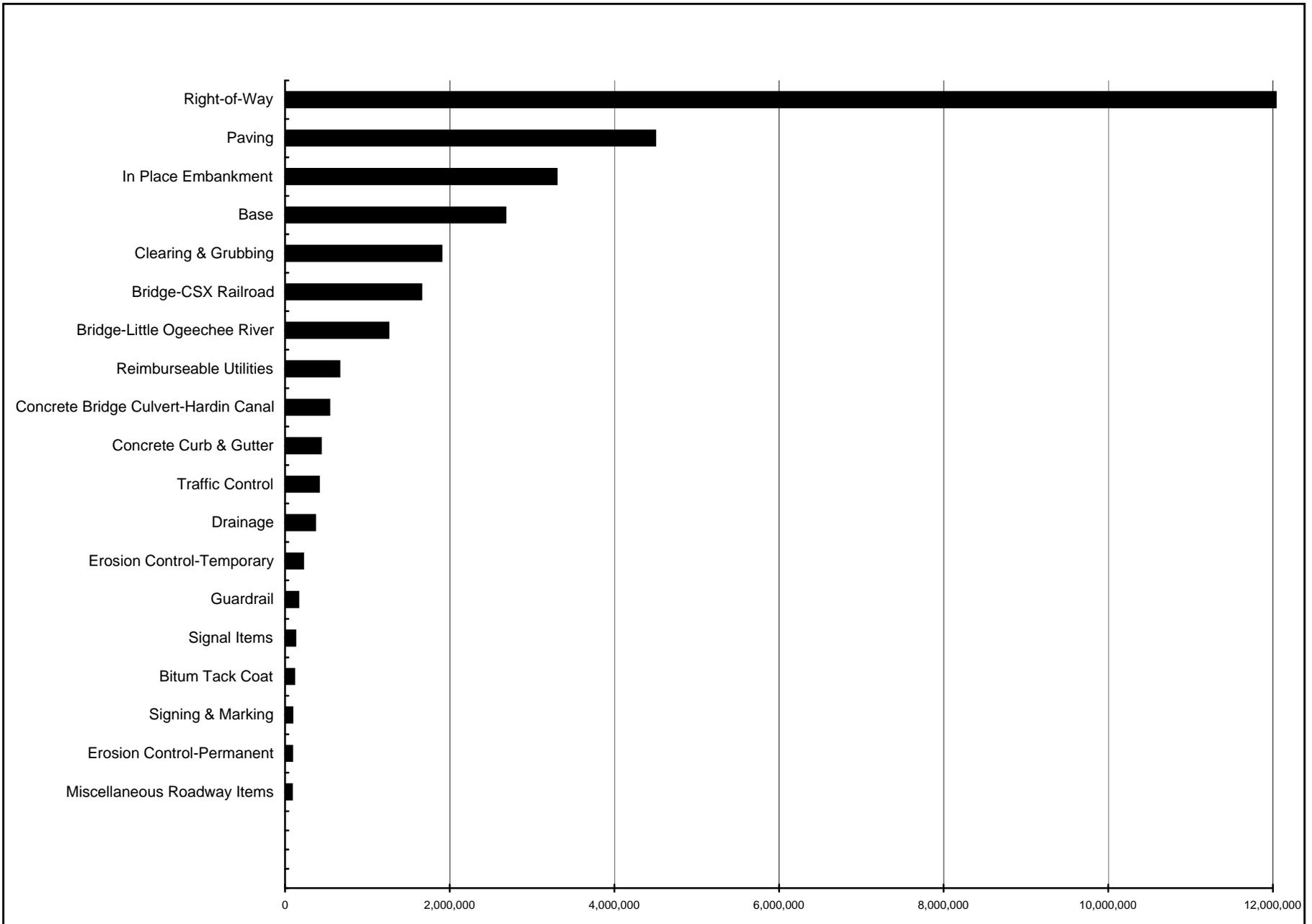
8:00-9:00 Prepare Presentation

9:00-10:00 VE Team Presentation

PARETO CHART - COST HISTOGRAM



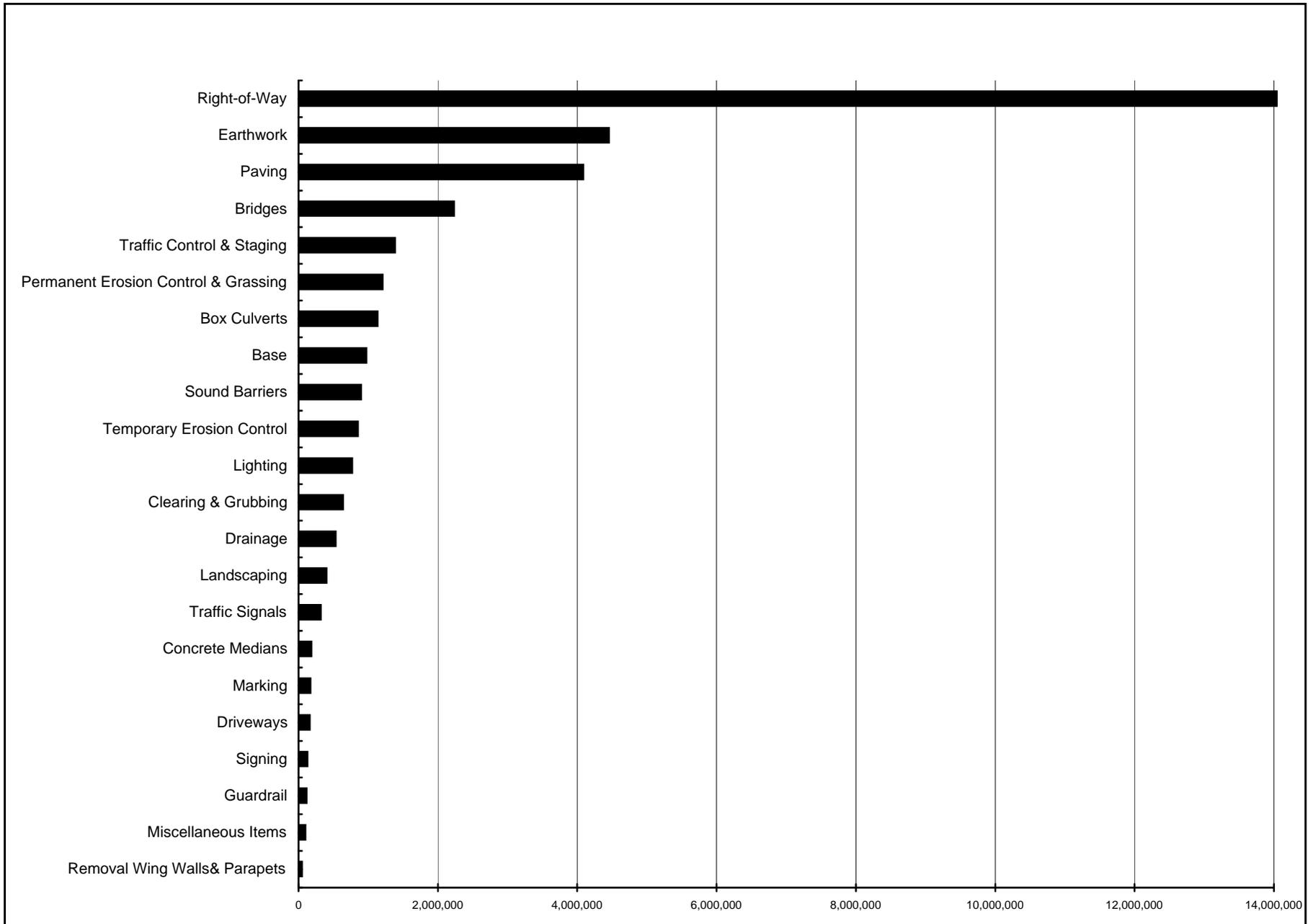
PROJECT: Georgia Department of Transportation STP00-0218-01(001) – P.I. No. 522790 Jimmy Deloach Parkway Extension from I-16 to US 80 Chatham County			
PROJECT ELEMENT	COST	PERCENT	CUM. PERCENT
Right-of-Way	12,800,000	71.45%	71.45%
Paving	4,495,800	25.10%	96.55%
In Place Embankment	3,300,000	18.42%	114.97%
Base	2,678,800	14.95%	129.92%
Clearing & Grubbing	1,900,000	10.61%	140.53%
Bridge-CSX Railroad	1,655,870	9.24%	149.77%
Bridge-Little Ogeechee River	1,256,430	7.01%	156.78%
Reimbursable Utilities	660,450	3.69%	160.47%
Concrete Bridge Culvert-Hardin Canal	537,225	3.00%	163.47%
Concrete Curb & Gutter	435,000	2.43%	165.90%
Traffic Control	412,000	2.30%	168.20%
Drainage	365,060	2.04%	170.24%
Erosion Control-Temporary	220,540	1.23%	171.47%
Guardrail	162,520	0.91%	172.37%
Signal Items	124,500	0.69%	173.07%
Bitum Tack Coat	112,500	0.63%	173.70%
Signing & Marking	87,934	0.49%	174.19%
Erosion Control-Permanent	87,755	0.49%	174.68%
Miscellaneous Roadway Items	82,402	0.46%	175.14%
Construction Cost less ROW & Utilites	\$ 17,914,336		
E & C Rate @10%	\$ 1,791,433		
Total Construction Costs	\$ 19,705,769		
Right-of-Way	\$ 12,800,000		
Utilities Reimbursement	\$ 660,450		
TOTAL	\$ 33,166,219		



PARETO CHART - COST HISTOGRAM

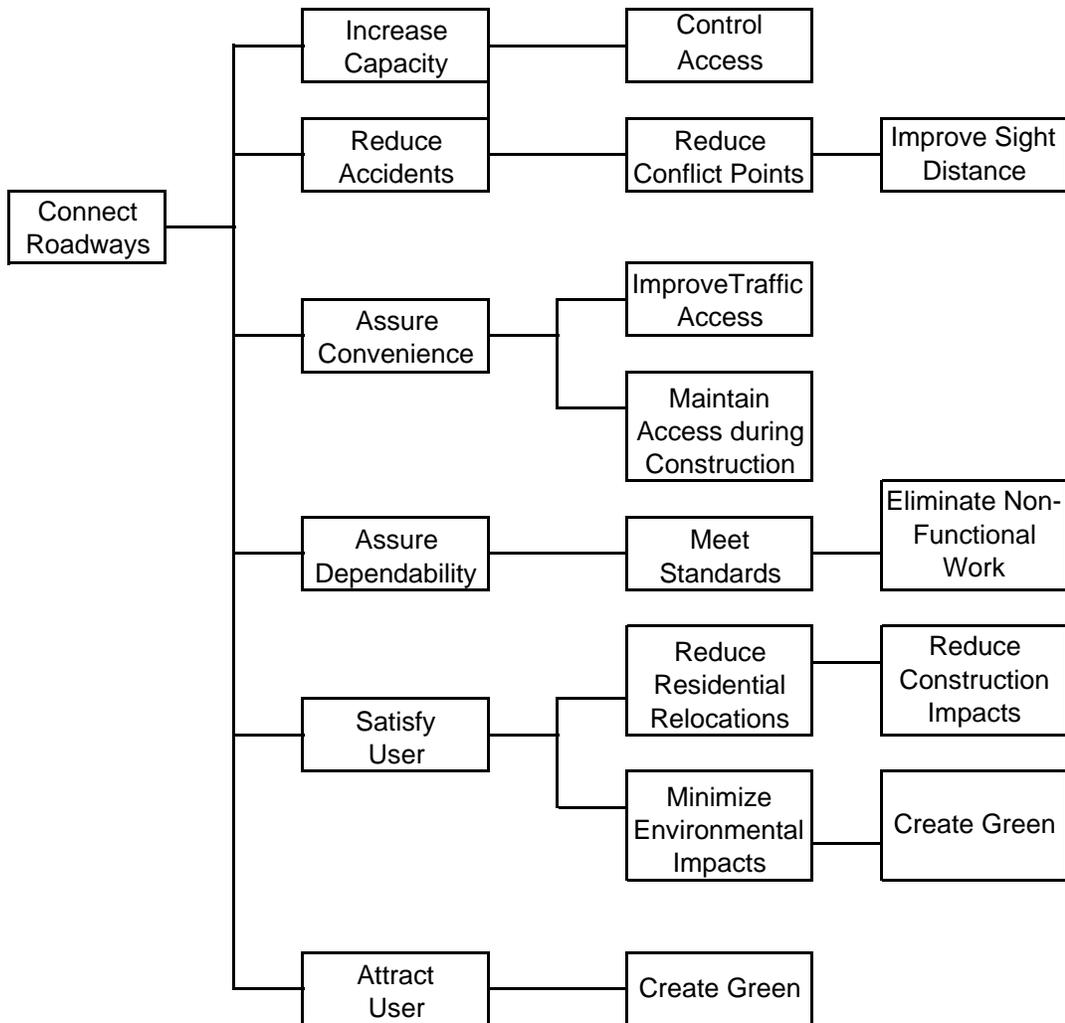


PROJECT: Georgia Department of Transportation CSSTP-0007-00(259) - P.I. No. 0007259 US 80/ Jimmy Deloach Parkway Interchange Chatham County			
PROJECT ELEMENT	COST	PERCENT	CUM. PERCENT
Right-of-Way	14,140,157	67.97%	67.97%
Earthwork	4,457,550	21.43%	89.40%
Paving	4,087,528	19.65%	109.05%
Bridges	2,231,400	10.73%	119.77%
Traffic Control & Staging	1,385,643	6.66%	126.43%
Permanent Erosion Control & Grassing	1,207,537	5.80%	132.24%
Box Culverts	1,134,423	5.45%	137.69%
Base	972,826	4.68%	142.37%
Sound Barriers	900,000	4.33%	146.69%
Temporary Erosion Control	853,858	4.10%	150.80%
Lighting	770,000	3.70%	154.50%
Clearing & Grubbing	640,000	3.08%	157.58%
Drainage	533,973	2.57%	160.14%
Landscaping	400,000	1.92%	162.07%
Traffic Signals	320,000	1.54%	163.60%
Concrete Medians	184,218	0.89%	164.49%
Marking	172,391	0.83%	165.32%
Driveways	159,622	0.77%	166.09%
Signing	126,732	0.61%	166.70%
Guardrail	116,329	0.56%	167.25%
Miscellaneous Items	99,062	0.48%	167.73%
Removal Wing Walls& Parapets	50,000	0.24%	167.97%
Construction Cost less ROW & Utilites	\$ 20,803,092		
E & C Rate @10%	\$ 2,080,309		
Total Construction Costs	\$ 22,883,401		
Right-of-Way	\$ 14,140,157		
Utilities Reimbursement	\$ -		
TOTAL	\$ 37,023,558		



CUSTOMER FUNCTION/TASK DIAGRAM
Project Nos. STP00-0218-01(001) – P.I. No. 522790
CSSTP-0007-00(259) - P.I. No. 0007259
Chatham County

Jimmy DeLoach Parkway Extension - from I-16 to US 80 and new US 80 Interchange



DESIGNER PRESENTATION



MEETING PARTICIPANTS

Geogia Department of Transportation STP00-0218-01(001) – P.I. No. 522790 & CSSTP-0007-00(259) - P.I. 0007259		March 8, 2010	
Jimmy DeLoach Parkway Extension - from I-16 to US 80 and US 80/ Jimmy DeLoach Parkway Interchange			
Chatham County			
NAME	ORGANIZATION & TITLE	E-MAIL	PHONE
Lisa Myers	 GDOT - Engineering Services	lmyers@dot.ga.gov	404-631-1770
Matt Sanders	 GDOT-Engineering Services	msanders@dot.ga.gov	404-631-1752
Ken Werho	 GDOT-Traffic Operations	kwerho@dot.ga.gov	404-635-8144
Les Thomas, PE, CVS	 PBS&J	lmthomas@pbsj.com	678-677-6420
Luke Clarke, PE, AVS	 PBS&J	lwclarke@pbsj.com	205-746-4615
Kevin Martin, Esq., AVS	 PBS&J	klmartin@pbsj.com	205-969-3776
Ramesh Kalvakaalva, P.E., AVS	 Civil Services, Inc.	rameshk@civilservicesinc.com	770-312-2014
John Giordano	 Thomas and Hutton	giordano.j@thomasandhutton.com	912-721-4054
Doyle Kelley	 Thomas and Hutton	kelley.d@thomasandhutton.com	912-721-4160
Tommy Crochet	 McGee Partners	tcrochet@mcgeepartners.com	770-938-6400
Chris Marsengill	 McGee Partners	cmarsengill@mcgeepartners.com	770-938-6400
Masood Shabazaz	Heath & Lineback	mshabazaz@heath-lineback.com	770-424-1668
Larry Bowman	 GDOT-Environmental Services	lbowman@dot.ga.gov	404-631-1362
Steve Gaston	 GDOT-Bridge	sgaston@dot.ga.gov	404-631-1864
Robert Murphy	 GDOT-P.D.	romurphy@dot.ga.gov	404-631-1586
Teresa Scott	 GDOT	tscott@dot.ga.gov	912-427-5788
Cory Knox	 GDOT	cknox@dot.ga.gov	
Will Murphy			

VE TEAM PRESENTATION



MEETING PARTICIPANTS

Georgia Department of Transportation STP00-0218-01(001) – P.I. No. 522790 & CSSTP-0007-00(259) - P.I. 0007259			March 11, 2010
Jimmy DeLoach Parkway Extension - from I-16 to US 80 and US 80/ Jimmy DeLoach Parkway Interchange			
Chatham County			
NAME	ORGANIZATION & TITLE	E-MAIL	PHONE
Matt Sanders	 GDOT-Engineering Services	msanders@dot.ga.gov	404-631-1752
Les Thomas, PE, CVS	 PBS&J	lmthomas@pbsj.com	678-677-6420
Luke Clarke, PE, AVS	 PBS&J	lwclarke@pbsj.com	205-746-4615
Kevin Martin, Esq., AVS	 PBS&J	klmartin@pbsj.com	205-969-3776
Ramesh Kalvakaalva, P.E., AVS	 Civil Services, Inc.	rameshk@civilservicesinc.com	770-312-2014
John Giordano	 Thomas and Hutton	giordano.j@thomasandhutton.com	912-721-4054
Tommy Crochet	 McGee Partners	tcrochet@mcgeepartners.com	770-938-6400
Chris Marsengill	 McGee Partners	cmarsengill@mcgeepartners.com	770-938-6400
Steve Gaston	 GDOT-Bridge	sgaston@dot.ga.gov	404-631-1864
Robert Murphy	 GDOT-P.D.	romurphy@dot.ga.gov	404-631-1586
Mark Pickering	 Thomas and Hutton	mpickering@thomasandhutton.com	912-721-4054

CREATIVE IDEA LISTING



**PROJECT: Georgia Department of Transportation
 STP00-0218-01(001) – P.I. No. 522790
 and CSSTP-0007-00(259) - P.I. No. 0007259
 Jimmy DeLoach Parkway Extension - from I-16 to US 80 and
 US 80/ Jimmy DeLoach Parkway Interchange
 Chatham County**

SHEET NO.: 1 of 2

NO.	IDEA DESCRIPTION	RATING
ROADWAY (RD) P.I. No. 522790 Jimmy DeLoach Parkway Extension		
RD-1	Use 32' depressed median in-lieu of 44' depressed median	5
RD-2	Use Type "A" in-lieu of a Type "B" south bound left turn lane onto driveway	4
RD-3	Lower profile grade over the CSX railroad crossing	4
RD-4	Use box culverts in-lieu of a bridge at Little Ogeechee River	1
RD-5	Use a multi-use trail for bikes and reduce paved shoulder width	Obs
RD-6	Reduce shoulder width on bridge approaches	2
RD-7	Shift alignment to the west from Sta. 140+00 to Sta. 95+00 to avoid leaving an uneconomic parcel.	2
RD-8	Use 20' raised grass median through out project	2
RD-9	Use 44' grassed median throughout project	2
RD-10	Use 8' shoulder with 6'6" paved	2
RD-11	Do not re-align Pine Barren Rd.	2
RD-12	On bridges, use a 6'6" outside and a 4' inside shoulder	2
RD-13	Remove taper from CSX bridge	See RD 2
RD-14	Use separate structures for the Little Ogeechee River Bridge	4
RD-15	At Sta. 85+00 lower profile grade by 10' on Jimmy DeLoach	3
RD-16	Close Garvin and Main Street median openings	2
RD-17	Utilize future ramp alignment for interim roadway alignment	2
RD-18	Use C&G w/block-out guardrail on fill sections	2
RD-19	Reduce R/W "required"; use R/W needed to specifically construct the project in-lieu of an arbitrary width.	2
RD-20	From Sta. 133+00 to Sta. 157+00 delete 4' of full depth paving and increase median by 4' to yield a 24' median	2
RD-21	Use grass in-lieu of concrete for median construction	ABD
RD-22	Provide single span bridges with MSE walled abutments at the CSX railroad crossing	4

**Rating: 1→2 = Not to be Developed; 3 = Varying Degrees of Development Potential;
 4→5 = Most likely to be Developed; DS = Design Suggestion; ABD = Already Being Done; OB= Observation**

