



GEORGIA DEPARTMENT OF TRANSPORTATION

SR 49 South of CS 629 to SR 7 from SR 49 to South of CS 740

Peach County

PESTP-0003-00(623) – P.I. No. 0003623

VALUE ENGINEERING REPORT



FEBRUARY 2011

Submitted by:





February, 2011

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

RE: Value Engineering Report
Project No: PESTP-0003-00(623)
PI No: 0003623
SR 49 South of CS 629 to SR 7 from SR 49 to South of CS 740
Peach County

Dear Ms. Myers:

Please find enclosed two (2) hard copies and one (1) CD of our Value Engineering Report for the proposed SR 49 South of CS 629 to SR 7 from SR 49 to South of CS 740 drainage improvements. Using the Value Engineering "Job Plan" – Investigation, Analysis (*Function*), Speculation, Evaluation & Development, the VE Team identified:

Six (6) Alternatives recommended for improving 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.

Please contact me at 678-677-6420 should you have any questions regarding this submittal.

On behalf of our VE Team, we thank you very much for the 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". The signature is written in a cursive, slightly stylized font.

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

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1 EXECUTIVE SUMMARY

1.1 INTRODUCTION

The primary purpose of the proposed project is to improve the drainage along SR 49 South of CS 629 to SR 7 from SR 49 to South of CS 740. This will reduce the risk of pavement failure resulting from a structurally deficient stormwater collection system. Project documents were designed by Heath & Lineback Engineers, Incorporated

1.2 PROJECT DESCRIPTION

Project STP-0003-00(623) proposes to replace the existing terra cotta longitudinal drainage system, curb and gutter, and sidewalks on SR 49 between SR 96 and the CSX railroad. Proposed improvements to the drainage system also include replacing the system extending from SR 49 to the 36" cross drain near College Street and the 42" culvert near the intersection of SR 96 and SR 7/US 341. On the north end of the project, the drainage system will outfall at the downstream side of an existing double 7' x 7' concrete culvert under SR 7/US 341. On the south end of the project, the drainage system will outfall approximately 50' from the intersection of Railroad Street and Preston Street and drainage structure A-41.

The proposed roadway would consist of two 12' lanes with a 14' two way left turn lane between East Church Street and SR 96 and two 12' lanes with variable width shoulders between the CSX railroad and East Church Street. Signal upgrades are proposed for the intersections at SR49 and SR 7 and SR 49 at West Main Street. Total length of the project is 0.7068 miles. The roadway is classified as a Rural Minor Arterial.



Figure 1-1: Beginning of project CSX to E. Church St.



Figure 1-2: E. Church St. to SR-96 looking west



Figure 1-2: SR-96 to project end looking west

The Value Engineering (VE) team followed the seven step Value Engineering job plan as promulgated by SAVE International. Refer to Section 4.2 of this report for additional information on the VE process. The seven step Job Plan includes the following:

Information Phase – during this phase of the VE Team’s work, the team received a briefing from the design team. 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 made available to the team. The VE Team thence visited the project site.

Function Analysis Phase – during this phase the VE Team determined the “**Functions**” of the project. This was accompanied by reviewing the project by 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 project’s required functions.

Speculation/Creative Phase – The VE Team performed a brainstorming session to identify ideas that might help meet the project objectives. These ideas fell into the following major headings:

Drainage System
Roadway arrangement

The brainstorming session identified twenty (20) ideas, which follow.

CREATIVE IDEA LISTING



PROJECT: Georgia Department of Transportation Project No: PESTP-0003-00(623) PI No: 0003623 SR 49 South of CS 629 to SR 7 from SR 49 to South of CS 740 Peach County		SHEET NO.: 1 of 1
NO.	IDEA DESCRIPTION	RATING
Drainage (DR)		
DR-1	Increase the number of outfalls to reduce size of piping	1
DR-2	Combine dual system into a single system (collector) under sidewalk	2
DR-3	Use a single line, under pavement, from College to Main to reduce risk to structures in the historical area	OB
DR-4	Use elliptical pipe in minimum cover areas	2
DR-5	Use a 5x4 box culvert in-lieu of 60" from B60-B66	2
DR-6	Use a 24" combo curb and gutter in-lieu of 30"	3
DR-7	Reduce length of jack and bore from B59-B60	4
DR-8	Reduce the size of outfall from B60-B66 by utilizing existing outfall	4
DR-9	Re-route C1 to C8 collection system to go through the B33 system	4
DR-10	Place proposed drainage structures in same location of existing storm drain to minimize impacts to utilities	4
DR-11	Angle outfall downstream at B66	OB
DR-12	Excavate and replace the existing 24" and 2-24" piping	2
DR-13	Use two jack and bore sections in-lieu of one from drainage structures A-41 to A-55	4
DR-14	Eliminate piping in selective areas	4
DR-15	Use HDPE or CP smoothbore in-lieu of RCP	2
Roadway (RD)		
RD-1	Use 11' travel lanes in-lieu of 12' travel lanes	2
RD-2	Use 12' two-way left turn lane in lieu of 14'	2
RD-3	Re-surface in-lieu of full depth reconstruction	2
RD-4	Provide for lane closures during night time	OB
RD-5	Construct two-12' travel lanes in-lieu of three lanes	2
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		

Evaluation Phase – During this phase, the VE Team determines which of the creative ideas offer the best opportunity to improve the value of the project for further development. The first step is to determine the criteria that the ideas should be evaluated against. The VE Team reflected back on the project constraints and objectives shared with the team by the Owner’s representatives and the design team members and listed the following:

- First Costs
- Impact on existing utilities
- Impact on traffic during construct
- Impact on businesses
- Operational and Maintenance Costs

Development Phase – During this phase, the VE Team developed each of the selected alternatives whose score was 4 or greater because of time constraints. If time permits, 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 cost savings if implemented.

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

Presentation Phase – the team made a presentation to the Georgia Department of Transportation on the last day of the workshop. This presentation was designed to express the intent and clarify each of the recommended alternatives. This report is intended to formalize those findings.

1.3 OBSERVATIONS

The VE team noted the following which might be considered:

- Angle outfall downstream at B66
- Provide for lane closures during night time

1.4 CONCLUSIONS AND RECOMMENDATIONS

The VE Team identified, developed, and recommends **Six design alternatives** for implementation to improve the value of the project as shown on the following page:



Summary of Alternatives & Design Suggestions

PROJECT: Georgia Department of Transportation Project No: PESTP-0003-00(623) PI No: 0003623 SR 49 South of CS 629 to SR 7 from SR 49 to South of CS 740 Peach County		SHEET NO.: 1 of 1
ALTERNATIVE NUMBER	DESCRIPTION OF ALTERNATIVE	INITIAL COST SAVINGS
	Drainage (DR)	
DR-7	Reduce length of jack and bore sections between B59 and B60	\$ 50,968
DR-8	Reduce the size of outfall from B60-B66 by utilizing existing outfall	\$ 38,581
DR-9	Re-route C1 to C8 collection system to go through the B33 system	\$ 73,541
DR-10	Place proposed drainage structures in same location of existing storm drain to minimize impacts to utilities	\$ 110,000
DR-13	Use two jack and bore sections in-lieu of one from drainage structures A-41 to A-55	\$ 76,699
DR-14	Eliminate piping in selective areas	\$ 30,633



2 STUDY RESULTS

2.1 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; opportunities and risks; technical discussions; sketches; calculations; and a cost estimate of the impact of the alternative.

It should be noted that the estimated cost/savings calculated for these alternatives are very preliminary and are only presented to indicate a probable magnitude of cost impact on the project.

Also, these alternatives are "stand alone" ideas. In some cases they may be "added" to another alternative, or in other cases they may present a different method of constructing the same elements and are therefore not additive. A summary is provided in Section 1-4 - Conclusions and Recommendation.

Therefore the users of this report are asked to consider these alternatives as a smorgasbord of choices for selection and use as appropriate as the project progresses.

2.2 COST CALCULATIONS

The cost calculations are intended only as an indicator 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.

2.3 ALTERNATIVES AND DESIGN SUGGESTIONS

Following are the ***six design alternatives*** for implementation to improve the value of the project:

2.3.1 ALTERNATIVE NUMBER DR - 7

Value Analysis Design Alternative

PROJECT:	Georgia Department of Transportation PESTP-0003-00(623) – PI No: 0003623 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740 Peach County	ALTERNATIVE NO.: DR-7
DESCRIPTION:	Reduce the length of the jack and bore section in drainage structures B-59 to B-60	SHEET NO.: 1 of 4

Original Design:

The original design proposes a jack and bore run of 204 LF of 78” steel casing with a 60” RCP transfer pipe.

Alternative:

The alternative proposes to reduce the length of the jack and bore casing to 55 LF.

Opportunities:

- Reduction in cost of drainage structure
- Easier construction

Risks:

- None

Technical Discussion:

It appears that the proposed length of steel casing may not be functionally required.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 82,007	\$ 0	\$ 82,007
ALTERNATIVE	\$ 31,039	\$ 0	\$ 31,039
SAVINGS	\$ 50,968	\$ 0	\$ 50,968

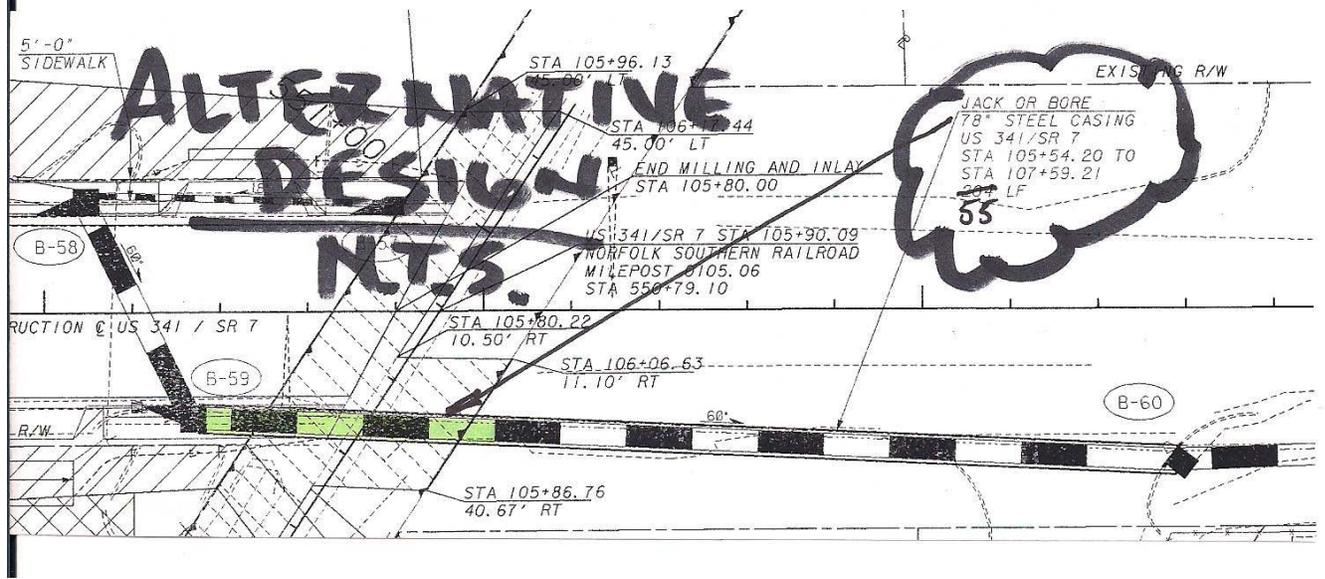
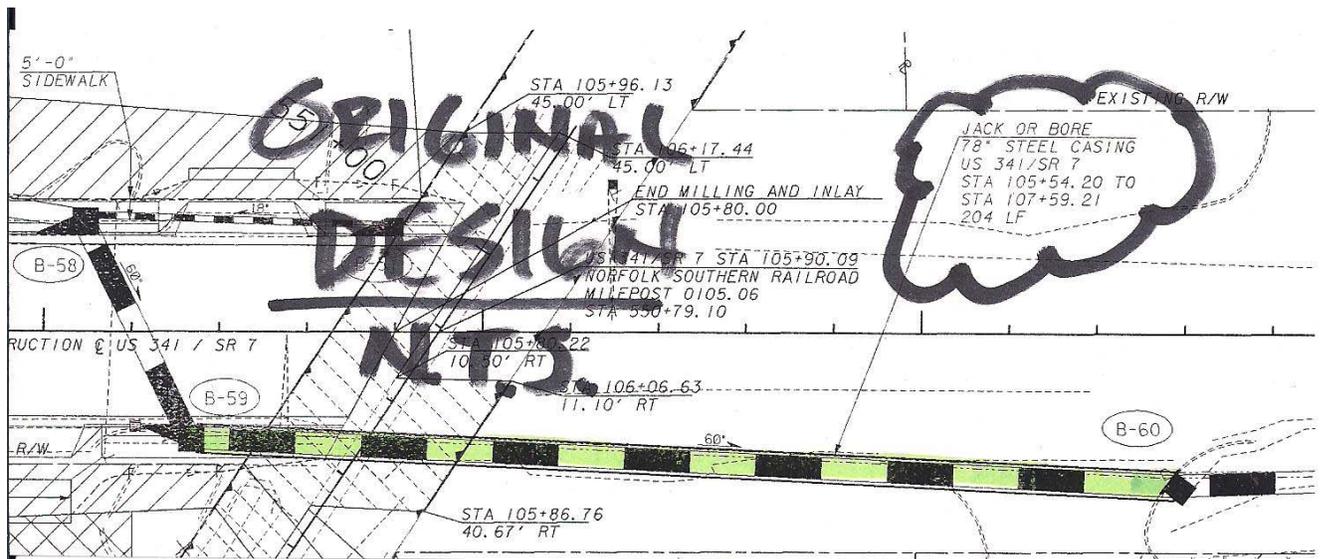
Illustrations

PROJECT: Georgia Department of Transportation
 PESTP-0003-00(623) – PI No: 0003623
 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740
 Peach County

ALTERNATIVE NO.:
DR-7

DESCRIPTION: Reduce the length of the jack and bore section in drainage structures B-59 to B-60

SHEET NO.: 2 of 4



Calculations

PROJECT: Georgia Department of Transportation
PESTP-0003-00(623) – PI No: 0003623
SR49 South of CS 629 to SR7 from SR 49 to South of CS 740
Peach County

ALTERNATIVE NO.:
DR-7

DESCRIPTION: Reduce the length of the jack and bore section in drainage
structures B-59 to B-60

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

From plans- drainage structure B-59 to B-60 => 204 LF

Length of alternative design => 55 LF

Cost Worksheet

PROJECT: Georgia Department of Transportation PESTP-0003-00(623) – PI No: 0003623 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740	ALTERNATIVE NO.: DR - 7
DESCRIPTION: Reduce the length of the jack and bore section in drainage structures B-59 to B-60	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
Jack & Bore 78" Steel Pipe	LF	204	\$ 310.97	\$ 63,438	55	\$ 310.97	\$ 17,103
60" Storm Drain Pipe-RCP	LF	204	\$ 54.48	\$ 11,114	204	\$ 54.48	\$ 11,114
Sub-total				\$ 74,552			\$ 28,217
Const Mark-up	10.00%			\$ 7,455			\$ 2,822
TOTAL				\$ 82,007			\$ 31,039
Estimated Savings:							\$50,968



2.3.2 ALTERNATIVE NUMBER DR-8

Value Analysis Design Alternative

PROJECT:	Georgia Department of Transportation PESTP-0003-00(623) – PI No: 0003623 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740 Peach County	ALTERNATIVE NO.: DR-8
DESCRIPTION:	Reduce size of B-60 to B-66 by utilizing existing outfall	SHEET NO.: 1 of 3

Original Design:

The original design proposes to reroute most of the discharge into a new outfall pipe.

Alternative:

The alternative proposes to maximize the flow to the existing outfall, reducing the size of the new outfall pipe

Opportunities:

- More closely matches the existing drainage pattern
- Reduces drainage costs

Risks:

- The condition of the existing outfall is unknown
- Requires re-design of the outfall system hydraulics

Technical Discussion:

Presently all site runoff is carried by the existing outfall pipe. The proposed design reduces the amount of runoff flowing to the existing outfall pipe. This alternative proposes to utilize and maximize the existing outfall system and size the new outfall to carry only the excess flow. It appears the new outfall pipe can be reduced to a 48" RCP. (This assumption should be checked hydraulically)

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 148,863	\$ 0	\$ 148,863
ALTERNATIVE	\$ 110,283	\$ 0	\$ 110,283
SAVINGS	\$ 38,581	\$ 0	\$ 38,581

Calculations

PROJECT: Georgia Department of Transportation
PESTP-0003-00(623) – PI No: 0003623
SR49 South of CS 629 to SR7 from SR 49 to South of CS 740
Peach County

ALTERNATIVE NO.:
DR-8

DESCRIPTION: Reduce size of B-60 to B-66 by utilizing existing outfall

SHEET NO.: **2** of 3

Original Design

Length of Outfall Pipe from B-60 thru B-66

$$225' + 82' + 84' + 175' + 174' + 227' + 246 = 1263 \text{ LF}$$

Proposed Design

Length of Outfall Pipe from B-60 thru B-66

Length of Outfall Pipe = 1263 LF

Cost Worksheet

PROJECT: Georgia Department of Transportation PESTP-0003-00(623) – PI No: 0003623 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740	ALTERNATIVE NO.: <div style="text-align: right; font-weight: bold; font-size: 1.2em;">DR - 8</div>
DESCRIPTION: Reduce size of B-60 thru B-66 by utilizing existing outfall	SHEET NO.: 3 of 3

CONSTRUCTION ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/ UNIT	TOTAL	NO. OF UNITS	COST/ UNIT	TOTAL
550-1600-Stm Dr Pipe 60"	LF	1,263	\$ 107.15	\$ 135,330			
550-1480-Stm Dr Pipe 48"	LF	1,263			1263	\$ 79.38	\$ 100,257
Sub-total				\$ 135,330			\$ 100,257
Const't Mark-up 10.00%				\$ 13,533			\$ 10,026
TOTAL				\$ 148,863			\$ 110,283
Estimated Savings:							\$38,581



2.3.3 ALTERNATIVE NUMBER DR-9

Value Analysis Design Alternative

<p>PROJECT: Georgia Department of Transportation PESTP-0003-00(623) – PI No: 0003623 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740 Peach County</p>	<p>ALTERNATIVE NO.: DR-9</p>
<p>DESCRIPTION: Reroute C1 to C8 thru B-33</p>	<p>SHEET NO.: 1 of 4</p>

Original Design:
 The original design proposes to discharge Basin 3 runoff to the Railroad side ditch

Alternative:
 The alternative proposes to reroute system C-1 to C-8 into the System B outfall, ending the project at Sta. 45+60, eliminating all impacts at the Railroad

<p>Opportunities:</p> <ul style="list-style-type: none"> • Reduction in drainage and construction costs • Eliminates all required improvements from 45+60 to 47+30 • Eliminates all Railroad impacts 	<p>Risks:</p> <ul style="list-style-type: none"> • Requires re-design of System C-1 to C-8 and of outfall System B
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Technical Discussion:
 As presently designed, discharging all of Basin 3 runoff into the Railroad side ditch is a change to the existing drainage pattern. Accommodating this additional runoff will also require improvements to the Railroad side ditch. The proposed design will more closely match the existing drainage pattern. Additionally, since no drainage improvements are needed beyond Sta. 45+60, all roadway improvements beyond that point can be eliminated, resulting in substantial savings.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 139,169	\$ 0	\$ 139,169
ALTERNATIVE	\$ 65,628	\$ 0	\$ 65,628
SAVINGS	\$ 73,541	\$ 0	\$ 73,541

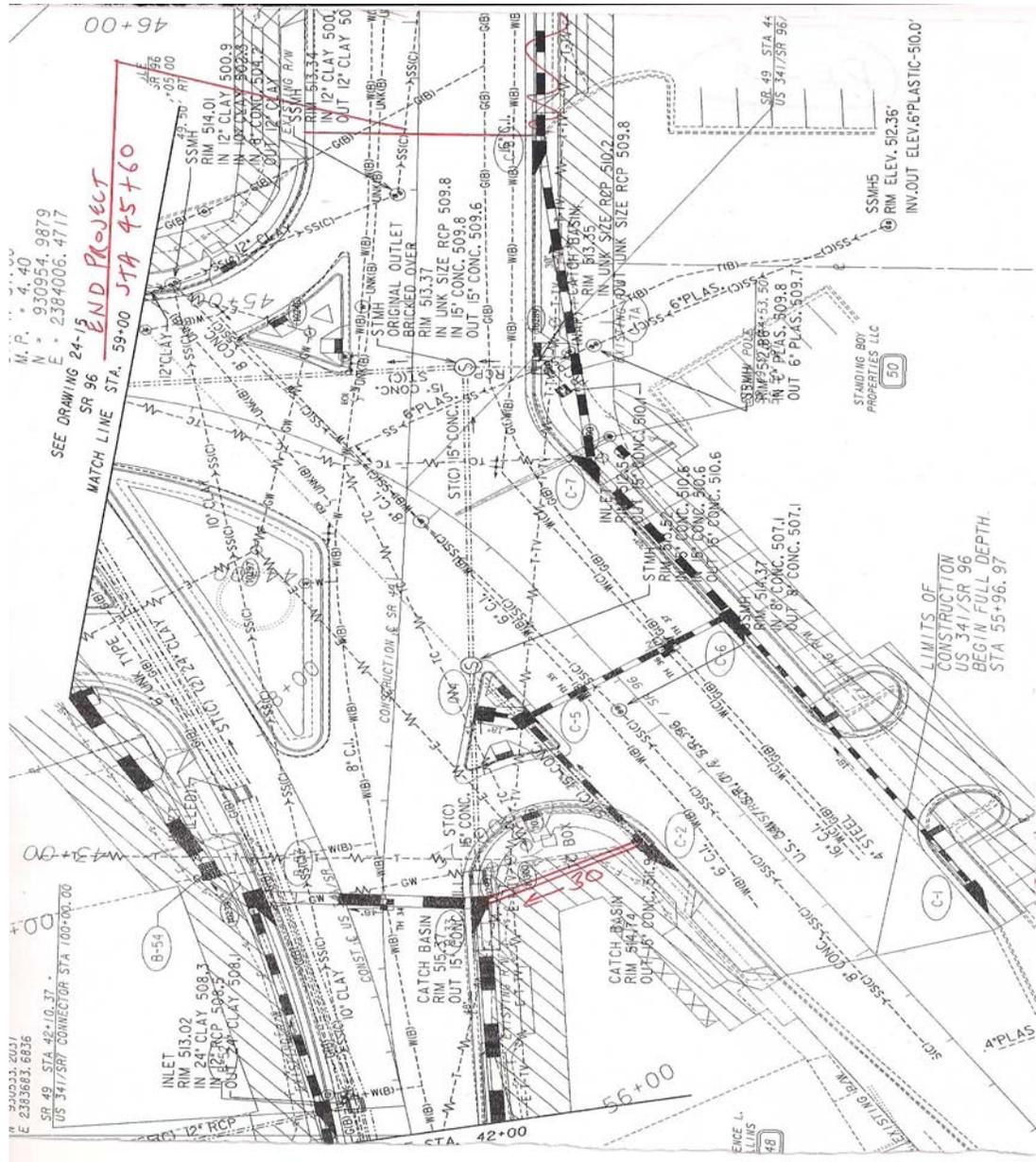
Illustrations

PROJECT: Georgia Department of Transportation
 PESTP-0003-00(623) – PI No: 0003623
 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740
 Peach County

ALTERNATIVE NO.:
DR-9

DESCRIPTION: Re-route C1 to C8 thru B-33

SHEET NO.: 2 of 4



Calculations

<p>PROJECT: Georgia Department of Transportation PESTP-0003-00(623) – PI No: 0003623 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740 Peach County</p>	<p>ALTERNATIVE NO.: DR-9</p>
<p>DESCRIPTION: Reroute C1 to C8 thru B-33</p>	<p>SHEET NO.: 3 of 4</p>
<p>Original Design</p> <p>Roadway Improvements from Sta. 45+60 to End of Project</p> <ul style="list-style-type: none"> -Pavement = 160' long x 60.25' width = 9640 SF = 1070 SY -AC 12.5MM SP = 1070 SY x 165#/SY = 176,550 LBS = 88 TN -AC 19.0MM SP = 1070 SY x 220#/SY = 235,400 LBS = 118 TN -AC Leveling = 30 TN -Mill Asph Conc Pvmt = 1070 SY -Curb & Gutter = 160' long x 2 (each side) = 320 LF -Sidewalk = 160' long x 5' width x 2 (each side) = 1600 SF = 178 SY <p>Drainage Improvements</p> <ul style="list-style-type: none"> -Stm Dr Pipe 18" = 110 LF -Stm Dr Pipe 30" = 174 LF -Stm Dr Pipe 42" = 89 LF -Stm Dr Pipe 54" = 66'+16'+163'+88'+147'+57' = 537 LF (System C) -Jack or Bore – Steel, 60" = 69 LF -Catch Basin, GP 1 = 3 EA <p>Proposed Design</p> <ul style="list-style-type: none"> -Stm Dr Pipe 30" = 50 LF -Stm Dr Pipe 60" = 66'+16'+163'+88'+147'+57' = 537 LF (Upsize System C) 	

Cost Worksheet

PROJECT: Georgia Department of Transportation PESTP-0003-00(623) – PI No: 0003623 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740	ALTERNATIVE NO.: DR - 9
DESCRIPTION: Reroute C-1 to C-8 thru B-33	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
423-5010-Mill Asph Conc Pmnt	SY	1,070	\$ 6.21	\$ 6,645			\$ -
402-1812- AC Leveling	TN	30	\$ 66.23	\$ 1,987			\$ -
402-3190- 19mm Superpave	TN	118	\$ 65.94	\$ 7,781			\$ -
402-3130- 12.5mm Superpave	TN	88	\$ 70.06	\$ 6,165			\$ -
441-0106- Conc Sidewalk, 6"	SY	178	\$ 17.49	\$ 3,113			
441-6222- Conc C & G/ 8"x30" TP2	LF	320	\$ 14.44	\$ 4,621			
550-1180- Stm Dr Pipe 18"	LF	110	\$ 28.73	\$ 3,160			\$ -
550-1300- Stm Dr Pipe 30"	LF	174	\$ 42.44	\$ 7,385	50	\$ 42.44	\$ 2,122
550-1420- Stm Dr Pipe 42"	LF	89	\$ 65.41	\$ 5,821			\$ -
550-1540- Stm Dr Pipe 54"	LF	537	\$ 99.89	\$ 53,641			
550-1600- Stm Dr Pipe 60"	LF	0	\$ 107.15	-	537	\$ 107.15	\$ 57,540
615-1000- Jack or Bore Pipe - Stl 60"	LF	69	\$ 295.00	\$ 20,355			
Catch Basin, GP 1	EA	3	\$ 2,149	\$ 6,447			
Sub-total				\$ 127,121			\$ 59,662
Const Mark-up 10.00%				\$ 12,048			\$ 5,966
TOTAL				\$ 139,169			\$ 65,628
Estimated Savings:							\$73,541



2.3.4 ALTERNATIVE NUMBER DR-10

Value Analysis Design Alternative

PROJECT:	Georgia Department of Transportation PESTP-0003-00(623) – PI No: 0003623 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740 Peach County	ALTERNATIVE NO.: DR-10																
DESCRIPTION:	Place proposed drainage structures in same location of existing storm drain to minimize impacts to utilities.	SHEET NO.: 1 of 4																
<p>Original Design:</p> <p>The original design proposes a dual system for storm drainage located on the east and west sides of the roadway using RCP from Approximate STA 25+00 to approximate STA 47+00.</p> <p>Alternative:</p> <p>The alternative proposes constructing a single 4'x 4' precast culvert in lieu of the proposed double RCP run from approximate STA 25+00 to approximate STA 47+00.</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Opportunities:</p> <ul style="list-style-type: none"> • Reduction in utility conflicts • Greater hydraulic capacity • Removal of existing VCP, eliminating future void problems </td> <td style="width: 50%; vertical-align: top;"> <p>Risks:</p> <ul style="list-style-type: none"> • None apparent </td> </tr> </table> <p>Technical Discussion:</p> <p>The alternative proposes constructing a single precast 4'x4' culvert from approximate STA 25+00 to approximate STA 47+00 in the same location as the existing dual 24" VCP. Substituting the single precast for the dual pipe system offers several advantages. First, it reduces the initial cost by substituting a single precast run in lieu of a dual system contemplated with various sizes of RCP. Secondly, by placing the precast in the same location as the existing VCP will require removal of the existing pipe, eliminating substantial flowable fill costs as well as eliminating the possibility of future voids that may occur by leaving the VCP in situ. Lastly, a single system will allow for fewer disruption during construction phasing by allowing the drainage to be installed in one open cut as opposed to two open cuts required by construction of a dual system.</p>			<p>Opportunities:</p> <ul style="list-style-type: none"> • Reduction in utility conflicts • Greater hydraulic capacity • Removal of existing VCP, eliminating future void problems 	<p>Risks:</p> <ul style="list-style-type: none"> • None apparent 														
<p>Opportunities:</p> <ul style="list-style-type: none"> • Reduction in utility conflicts • Greater hydraulic capacity • Removal of existing VCP, eliminating future void problems 	<p>Risks:</p> <ul style="list-style-type: none"> • None apparent 																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">COST SUMMARY</th> <th style="width: 17%;">INITIAL COST</th> <th style="width: 17%;">PRESENT WORTH RECURRING COSTS</th> <th style="width: 33%;">PRESENT WORTH LIFE-CYCLE COST</th> </tr> </thead> <tbody> <tr> <td>ORIGINAL DESIGN</td> <td style="text-align: right;">\$ 403,362</td> <td style="text-align: right;">\$ 0</td> <td style="text-align: right;">\$ 403,362</td> </tr> <tr> <td>ALTERNATIVE</td> <td style="text-align: right;">\$ 305,855</td> <td style="text-align: right;">\$ 0</td> <td style="text-align: right;">\$ 305,855</td> </tr> <tr> <td>SAVINGS</td> <td style="text-align: right;">\$ 97,507</td> <td style="text-align: right;">\$ 0</td> <td style="text-align: right;">\$ 97,507</td> </tr> </tbody> </table>			COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST	ORIGINAL DESIGN	\$ 403,362	\$ 0	\$ 403,362	ALTERNATIVE	\$ 305,855	\$ 0	\$ 305,855	SAVINGS	\$ 97,507	\$ 0	\$ 97,507
COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST															
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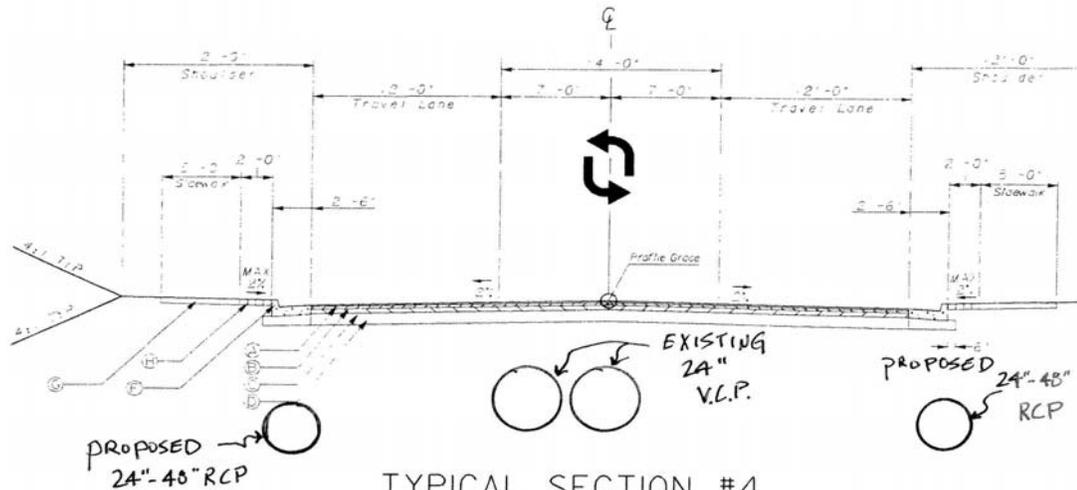
Illustrations

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 Peach County

ALTERNATIVE NO.:
DR-10

DESCRIPTION: Place proposed drainage structures in same location of existing storm drain to minimize impacts to utilities.

SHEET NO.: 2 of 4



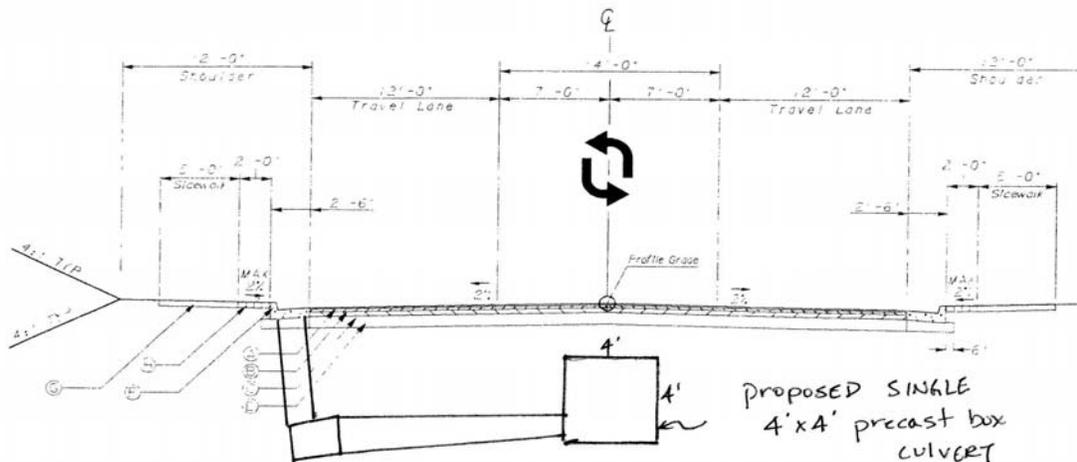
ORIGINAL DESIGN

TYPICAL SECTION #4

TANGENT SECTION

SR 49
THREE LANE
STA 25+00.00 TO STA 42+00.00

N.T.S.



ALTERNATIVE

TYPICAL SECTION #4

TANGENT SECTION

SR 49
THREE LANE
STA 25+00.00 TO STA 42+00.00

N.T.S.

Calculations

PROJECT:	Georgia Department of Transportation PESTP-0003-00(623) – PI No: 0003623 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740 Peach County	ALTERNATIVE NO.: DR-10
DESCRIPTION:	Place proposed drainage structures in same location of existing storm drain to minimize impacts to utilities.	SHEET NO.: 3 of 4
<p>The alternative idea is to construct a single 4’x4’ precast box culvert in lieu of the double run of various pipe sizes from approximate STA 25+00 to approximate STA 47+00.</p> <p><u>Pipe quantities= 2200 LF x 2 runs=4400 LF pipe total</u></p> <p>24”RCP- STA 25+00-STA 27+50 x 2= 500 LF</p> <p>30” RCP- STA 27+50-STA 36+00 x 2= 1700 LF</p> <p>42”RCP- STA 36+00-STA 39+00 x 2= 600 LF</p> <p>48” RCP- STA 39+00-STA 47+00 x 2= 1600LF</p> <p><u>Flowable Fill saved by removal of dual existing 24” VC</u></p> <p>512 CY by volume</p> <p><u>4’x4’ culvert quantities</u></p> <p>2200 LF x 0.25 CY/LF =550 CY total volume for single 4’x4’ culvert</p>		

Cost Worksheet

PROJECT: Georgia Department of Transportation		ALTERNATIVE NO.:					
PESTP-0003-00(623) – PI No: 0003623		DR - 10					
SR49 South of CS 629 to SR7 from SR 49 to South of CS 740		SHEET NO.: 4 of 4					
DESCRIPTION: Place proposed drainage structures in same location of existing storm drain to minimize impacts to utilities.							
CONSTRUCTION ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/UNIT	TOTAL	NO. OF UNITS	COST/UNIT	TOTAL
24" RCP	LF	1,514	\$ 34.86	\$ 52,778	1,014	\$ 40.00	\$ 40,560
30" RCP	LF	2,113	\$ 41.47	\$ 87,626	413	\$ 45.00	\$ 18,585
42" RCP	LF	635	\$ 73.45	\$ 46,641	35	\$ 70.00	\$ 2,450
48" RCP	LF	1,600	\$ 79.10	\$ 126,560	0	\$ 80.00	-
Flowable Fill	CY	512	\$ 173.00	\$ 88,576	0	\$ 173.00	-
Class A Concrete, inc. reinforcing steel	CY	37	\$ 467.30	\$ 17,290	550	\$ 467.30	\$ 257,015
Sub-total				\$ 366,693			
Const Mark-up 10.00%				\$ 36,669			
TOTAL				\$ 403,362			
Estimated Savings:							\$97,507



2.3.5 ALTERNATIVE NUMBER DR-13

Value Analysis Design Alternative

PROJECT:	Georgia Department of Transportation PESTP-0003-00(623) – PI No: 0003623 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740 Peach County	ALTERNATIVE NO.: DR-13
DESCRIPTION:	Use two jack and bore sections in lieu of one from drainage structures A-41 to A-55	SHEET NO.: 1 of 4

Original Design:

The original design proposes to jack and bore a single run of 225 LF of 54” steel casing with a 36” RCP transfer pipe.

Alternative:

The alternative proposes to jack and bore two sections of 36” heavy wall steel pipe and open cut to weld in the center section.

Opportunities:

- Reduction in cost of drainage structure
- Easier construction

Risks:

- Requires NSRR permission to work inside their Right of Way.

Technical Discussion:

A jack and bore length of 225’ will prove to be much more difficult than two 50’ sections with installation by means of open cut for the center section.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 90,449	\$ 0	\$ 90,449
ALTERNATIVE	\$ 13,750	\$ 0	\$ 13,750
SAVINGS	\$ 76,699	\$ 0	\$ 76,699

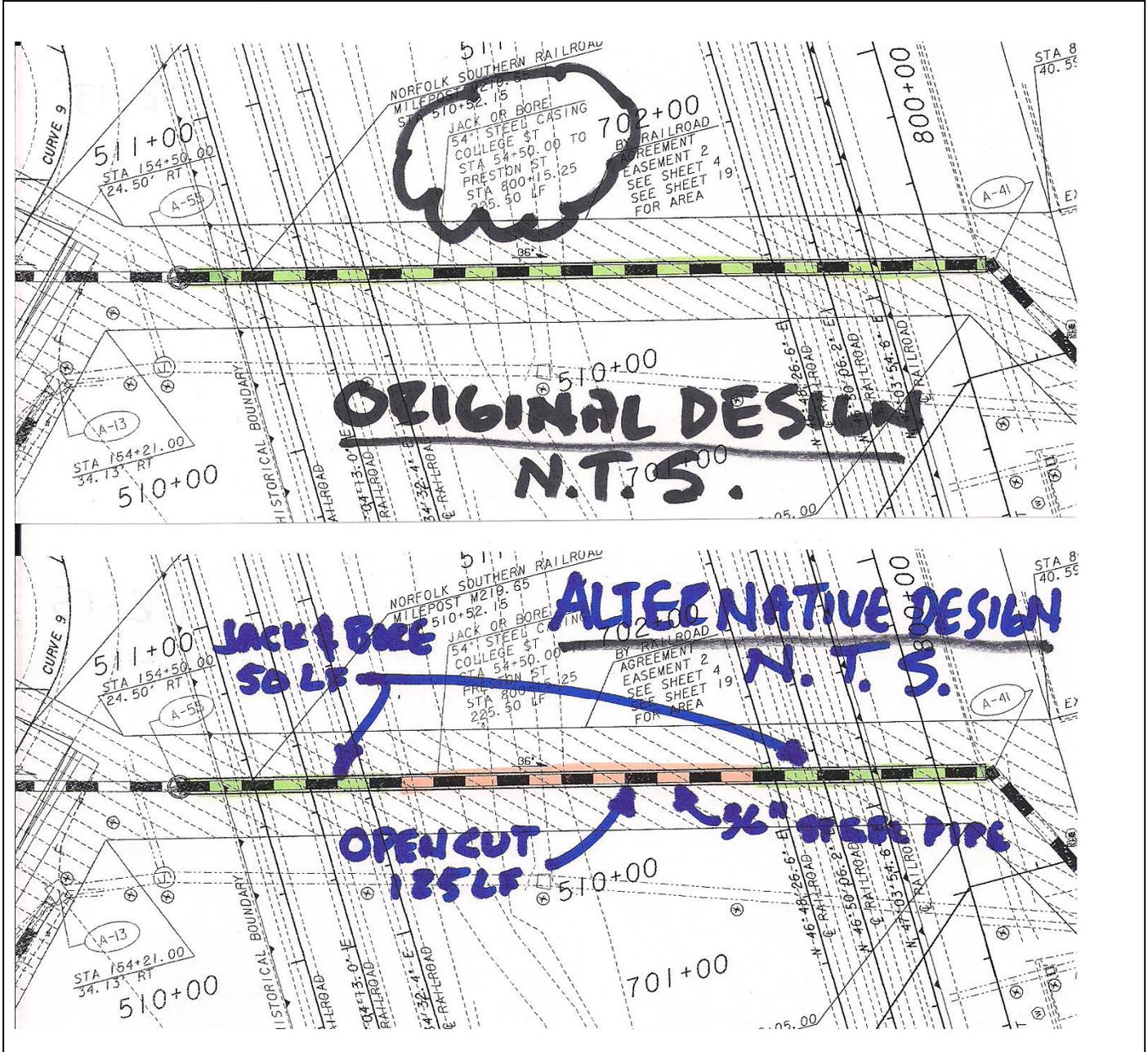
Illustrations

PROJECT: Georgia Department of Transportation
 PESTP-0003-00(623) – PI No: 0003623
 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740
 Peach County

ALTERNATIVE NO.:
DR-13

DESCRIPTION: Use two jack and bore sections in lieu of one from
 drainage structures A-41 to A-55

SHEET NO.: 2 of 4



Calculations

PROJECT: Georgia Department of Transportation
PESTP-0003-00(623) – PI No: 0003623
SR49 South of CS 629 to SR7 from SR 49 to South of CS 740
Peach County

ALTERNATIVE NO.:
RD-13

DESCRIPTION: Use two jack and bore sections in lieu of one from drainage
structures A-41 to A-55

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

From plans- drainage structure A-41 to A-55 => 225 LF

Assume 2-50' jack and bore sections => 100 LF

Open cut section = 225 LF – (50LF + 50 LF) => 125 LF

Cost Worksheet

PROJECT: Georgia Department of Transportation PESTP-0003-00(623) – PI No: 0003623 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740	ALTERNATIVE NO.: DR - 13
DESCRIPTION: Use two jack and bore sections in lieu of one from drainage structures A-41 to A-55	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
Jack & Bore 36" Steel Pipe	LF	0	\$ 280.00	\$ -	100	\$ 280.00	\$ 28,000
Jack & Bore 54" Steel Pipe	LF	225	\$ 310.97	\$ 69,968	0	\$ 310.97	\$ -
36" Storm Drain Pipe-RCP	LF	225	\$ 54.48	\$ 12,258	0	\$ 54.48	\$ -
36" Storm Drain Pipe-Steel	LF	0	\$ 100.00	\$ -	125	\$ 100.00	\$ 12,500
				\$ -			\$ -
Sub-total				\$ 82,226			\$ 12,500
Const Mark-up	10.00%			\$ 8,223			\$ 1,250
	TOTAL			\$ 90,449			\$ 13,750
Estimated Savings:							\$76,699



2.3.6 ALTERNATIVE NUMBER DR-14

Value Analysis Design Alternative

<p>PROJECT: Georgia Department of Transportation PESTP-0003-00(623) – PI No: 0003623 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740 Peach County</p>	<p>ALTERNATIVE NO.: DR-14</p>		
<p>DESCRIPTION: Eliminate Piping in Selected Areas</p>	<p>SHEET NO.: 1 of 9</p>		
<p>Original Design: The original design proposes drainage layout as shown in Illustrations 1 thru 6</p> <p>Alternative: The alternative proposes various realignments</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Opportunities:</p> <ul style="list-style-type: none"> • Reduction in lengths of various Storm Drain Pipe • Reduction in drainage related costs </div> <div style="width: 45%;"> <p>Risks:</p> <ul style="list-style-type: none"> • Requires additional Hydraulic Calculations • Requires additional open-cuts across the Roadway </div> </div> <p>Technical Discussion:</p> <p>Due to utility conflicts, a dual storm system (along each edge of roadway) is required. In a few locations, those utility conflicts a minimal, allowing for a lateral connection across the roadway, rather than a lengthy longitudinal run of pipe. Additionally, some alignment modifications can be made while maintaining the designed site collection points. These revisions result in the reduction of storm drain pipe required. These changes will require additional hydraulic calculations to verify the sizes of the receiving pipes.</p>			
COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 55,782	\$ 0	\$ 55,782
ALTERNATIVE	\$ 25,150	\$ 0	\$ 25,150
SAVINGS	\$ 30,633	\$ 0	\$ 30,633

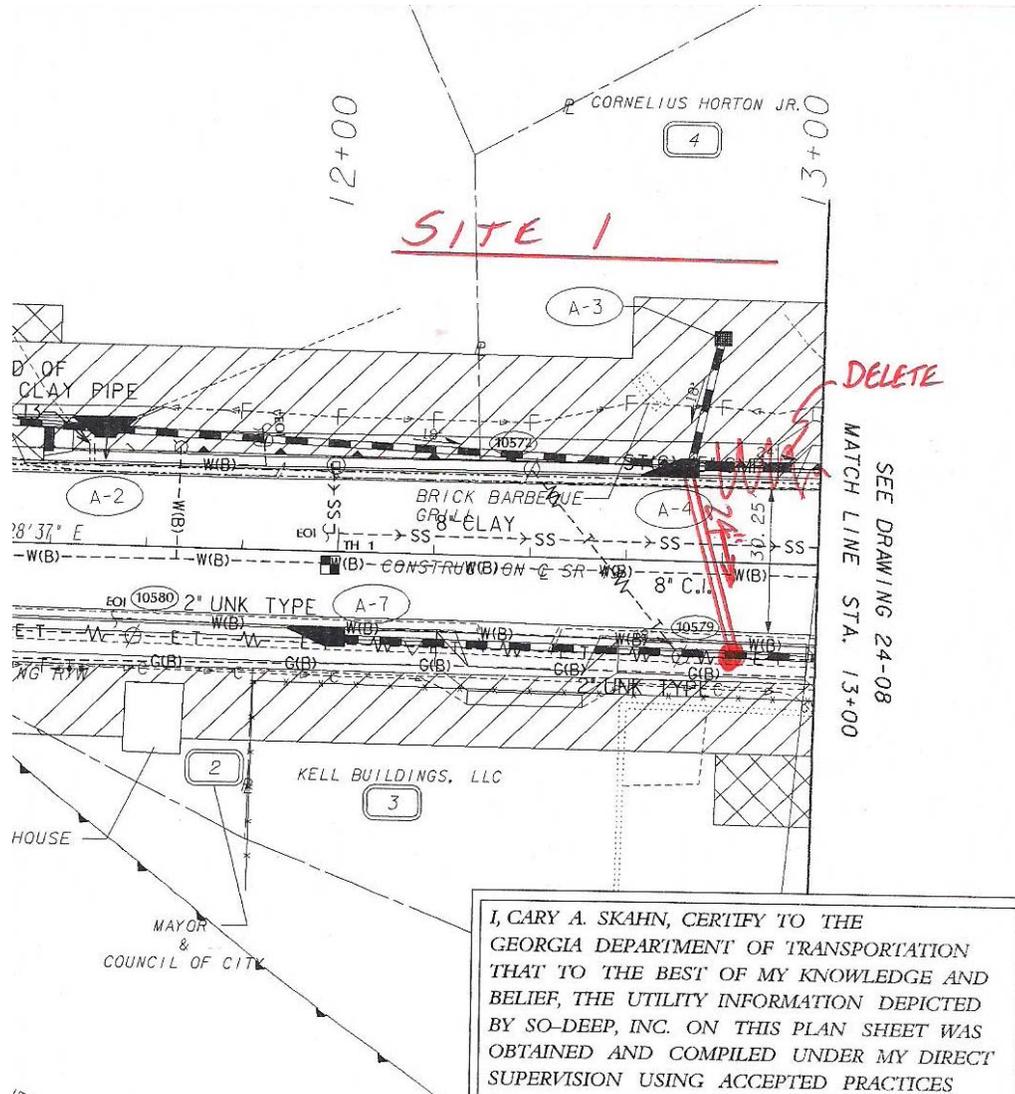
Illustrations

PROJECT: Georgia Department of Transportation
 PESTP-0003-00(623) – PI No: 0003623
 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740
 Peach County

ALTERNATIVE NO.:
DR-14

DESCRIPTION: Eliminate Piping in Selected Areas - Site #1

SHEET NO.: 2 of 9



I, CARY A. SKAHN, CERTIFY TO THE GEORGIA DEPARTMENT OF TRANSPORTATION THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE UTILITY INFORMATION DEPICTED BY SO-DEEP, INC. ON THIS PLAN SHEET WAS OBTAINED AND COMPILED UNDER MY DIRECT SUPERVISION USING ACCEPTED PRACTICES

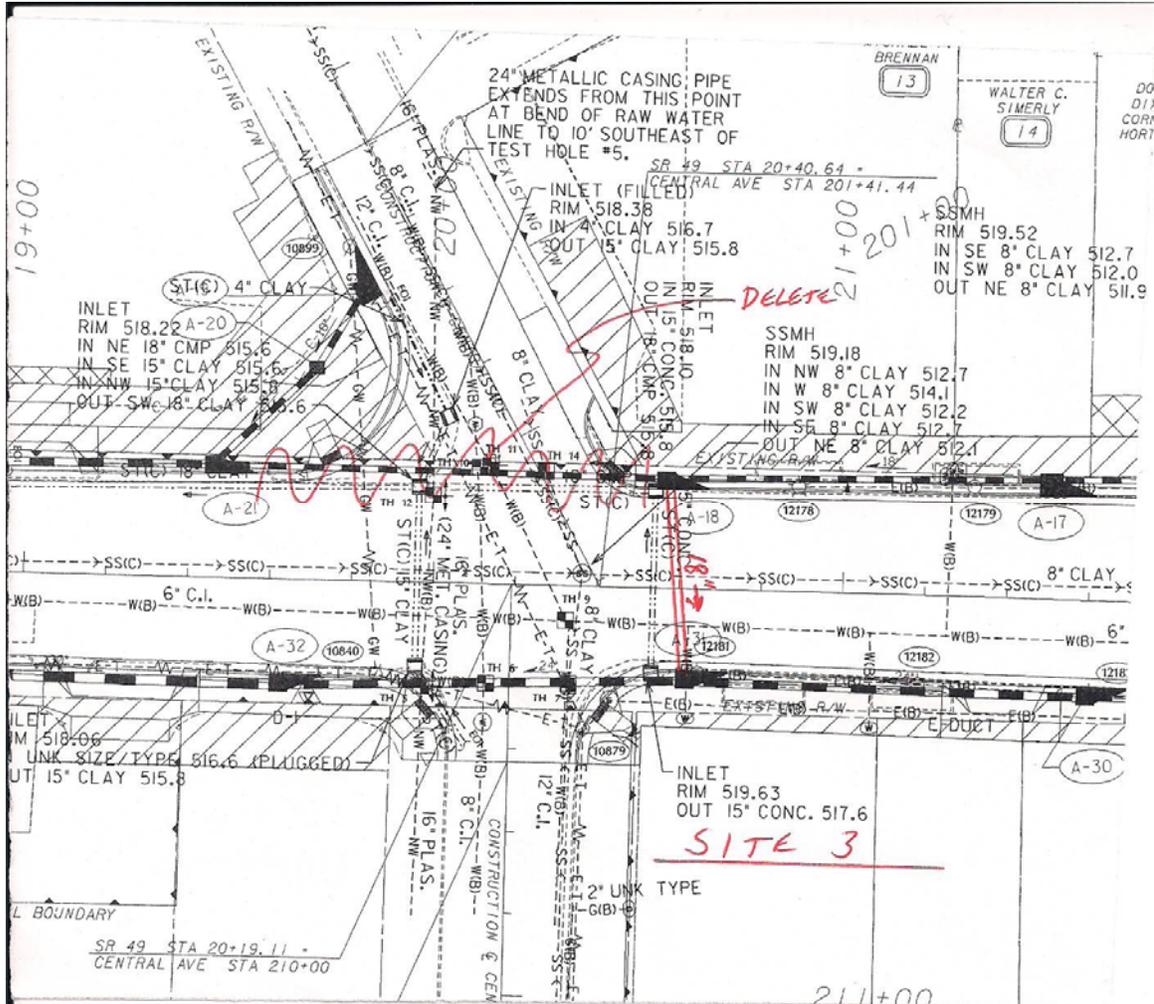
Illustrations

PROJECT: Georgia Department of Transportation
 PESTP-0003-00(623) – PI No: 0003623
 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740
 Peach County

ALTERNATIVE NO.:
DR-14

DESCRIPTION: Eliminate Piping in Selected Areas - Site 3

SHEET NO.: 4 of 9



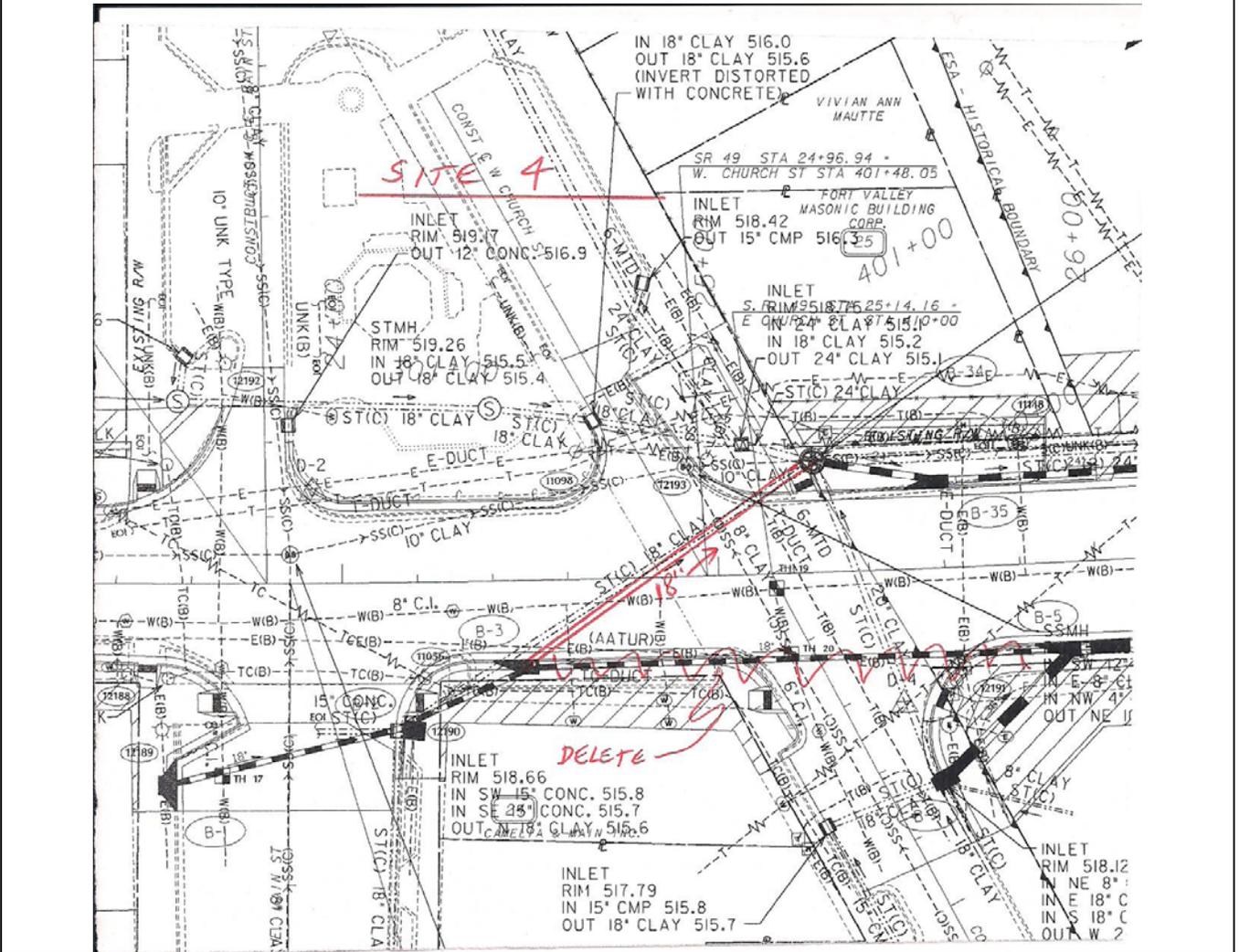
Illustrations

PROJECT: Georgia Department of Transportation
 PESTP-0003-00(623) – PI No: 0003623
 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740
 Peach County

ALTERNATIVE NO.:
DR-14

DESCRIPTION: Eliminate Piping in Selected Areas - Site 4

SHEET NO.: 5 of 9



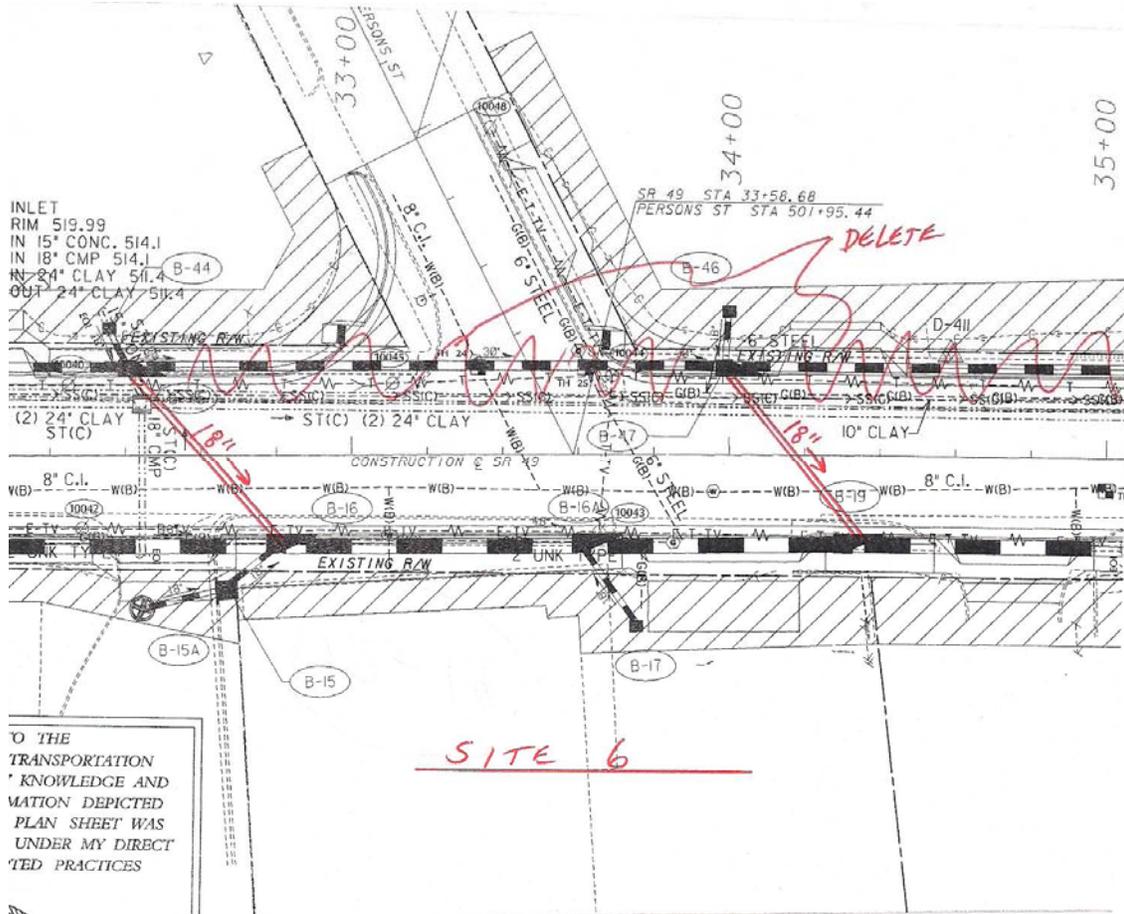
Illustrations

PROJECT: Georgia Department of Transportation
 PESTP-0003-00(623) – PI No: 0003623
 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740
 Peach County

ALTERNATIVE NO.:
DR-14

DESCRIPTION: Eliminate Piping in Selected Areas - Site 6

SHEET NO.: 7 of 9



Calculations

<p>PROJECT: Georgia Department of Transportation PESTP-0003-00(623) – PI No: 0003623 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740 Peach County</p>	<p>ALTERNATIVE NO.: DR-14</p>
<p>DESCRIPTION: Eliminate Piping in Selected Areas</p>	<p>SHEET NO.: 8 of 9</p>

Original Design

- Site 1 - A-4 to A-6 = 185' 24" Stm Dr Pipe
- Site 2 – A-28 to A-93 = 65' 30" Stm Dr Pipe, 38' 36" Stm Dr Pipe, 1 Stm MH
- Site 3 – A-18 to A-21 = 110' 18" Stm Dr Pipe
- Site 4 – B-3 to B-5 = 145' 18" Stm Dr Pipe
- Site 5 – B-37 to B-39 = 112' 24" Stm Dr Pipe
 B-39 to B-41 = 160' 24" Stm Dr Pipe
- Site 6 – B-46 to B-47 = 158' 30" Stm Dr Pipe
 B-47 to B-48 = 240' 30" Stm Dr. Pipe

Proposed Design (as shown in Illustrations 2-7)

- Site 1 - A-4 to MH = 42' 24" Stm Dr Pipe
- Site 2 – A-25 to A-35 = 45' 30" Stm Dr Pipe,
 A-36 to A-38 = 38' 36" Stm Dr Pipe
- Site 3 – A-18 to A-31 = 48' 18" Stm Dr Pipe
- Site 4 – B-3 to B-35 = 95' 18" Stm Dr Pipe
- Site 5 – B-37 to B-9 = 48' 24" Stm Dr Pipe
 B-39 to B-11 = 48' 18" Stm Dr Pipe
- Site 6 – B-46 to B-16 = 60' 30" Stm Dr Pipe
 B-47 to B-19 = 58' 30" Stm Dr. Pipe

Cost Worksheet

PROJECT: Georgia Department of Transportation PESTP-0003-00(623) – PI No: 0003623 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740	ALTERNATIVE NO.: <div style="text-align: right; font-weight: bold; font-size: 1.2em;">DR - 14</div>
DESCRIPTION: Eliminate Piping in Selected Sections	SHEET NO.: 9 of 9

CONSTRUCTION ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/UNIT	TOTAL	NO. OF UNITS	COST/UNIT	TOTAL
550-1180- Stm Dr Pipe 18"	LF	290	\$ 28.73	\$ 8,332	203	\$ 28.73	\$ 5,832
550-1240- Stm Dr Pipe 24"	LF	517	\$ 34.44	\$ 17,805	138	\$ 34.44	\$ 4,753
550-1300- Stm Dr Pipe 30"	LF	503	\$ 42.44	\$ 21,347	163	\$ 42.44	\$ 6,918
550-1360- Stm Dr Pipe 36"	LF	38	\$ 54.48	\$ 2,070	73	\$ 54.48	\$ 3,977
668-4300- Stm Sew Manhole	EA	1	\$1,914.00	\$ 1,914	1	\$ 1,914.00	\$ 1,914
Sub-total				\$ 51,469			\$ 23,394
Const Mark-up 10.00%				\$ 4,314			\$ 1,756
TOTAL				\$ 55,782			\$ 25,150
Estimated Savings:							\$30,633



3 PROJECT DESCRIPTION

3.1 INTRODUCTION

Project STP-0003-00(623) proposes to replace the existing terra cotta longitudinal drainage system, curb and gutter, and sidewalks on SR 49 between SR 96 and the CSX railroad. Proposed improvements to the drainage system also include replacing the system extending from SR 49 to the 36" cross drain near College Street and the 42" culvert near the intersection of SR 96 and SR 7/US 341. On the north end of the project, the drainage system will outfall at the downstream side of an existing double 7' x 7' concrete culvert under SR 7/US 341. On the south end of the project, the drainage system will outfall approximately 50' from the intersection of Railroad Street and Preston Street and drainage structure A-41.

The proposed roadway would consist of two 12' lanes with a 14' two way left turn lane between East Church Street and SR 96 and two 12' lanes with variable width shoulders between the CSX railroad and East Church Street. Signal upgrades are proposed for the intersections at SR49 and SR 7 and SR 49 at West Main Street. Total length of the project is 0.7068 miles. The roadway is classified as a Rural Minor Arterial.

3.2 NEED AND PURPOSE

The drainage system is seventy years old and is inadequate to handle the increased discharges due to development in the area. Increased strain on the system has caused pipes to break which has caused parts of the roadway to collapse.

4 VALUE ENGINEERING PROCESS

4.1 WORK SHOP TEAM

PBS&J's Value Engineering (VE) team performed a VE study February 14-17, 2011 in the offices of Georgia Department of Transportation, Atlanta, Georgia. The team followed the SAVE International's seven-step Value Engineering job plan as outlined in this section. The VE Study team consisted of the following members:

Les Thomas, P.E., CVS
 Luke Clarke, P.E., AVS
 Jeff Strickland, P.E.
 Kevin Martin, Esq., AVS
 Randy Thomas, CVS

Team Leader
 Team Highway Design Engineer
 Team Drainage Engineer
 Team Construction Specialist
 Assistant Team Leader

4.2 SEVEN-STEP VALUE ENGINEERING JOB PLAN

The VE team followed the SAVE International’s Seven-step Value Engineering job plan:

- Information Phase**
- Function Analysis Phase**
- Speculation/Creative Phase**
- Evaluation Phase**
- Development Phase**
- Recommendation Phase**
- Presentation Phase**

Information Phase— during this phase of the VE Team’s work, the team received a briefing from the GDOT staff members and their design team. 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 made available to the team.

Function Analysis Phase— during this phase the VE Team determined the “**Functions**” of the project. This was accompanied by reviewing the project by asking the questions such as: “*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 that distinguishes a Value Engineering effort from a potentially damaging cost-cutting exercise. A Functional Analysis System Technique (FAST) diagram was prepared highlighting the projects required functions.

Speculation/Creative Phase — The VE Team performed a brainstorming session to identify ideas that might help meet the project objectives. These ideas fell into the following major headings:

- Drainage System
- Roadway Construction

The brainstorming session identified twenty (20) ideas. See page 1-7 for listing.

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 and the design team members. This guidance emerged on the first day of the study at the kick-off meeting. From that guidance, the team was able to select ideas that they believed would improve the project by a matrix 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:

First Costs
 Constructability
 Reliability

Development Phase— During this phase, the VE team developed each of the selected alternatives whose score was 4 or higher because of time constraints. 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 titled *Study Results*).

Recommendation Phase - The VE team prepares its recommendations to be presented to the Georgia Department of Transportation. The recommendation includes the team's estimate of the savings that might be realized if implemented.

Presentation Phase— As noted earlier, the team made an informal “out-briefing” on the last day of the workshop. This presentation was 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 is a flow chart that represents the work done prior to, during and after the VE workshop is completed on site:

Source: SAVE International

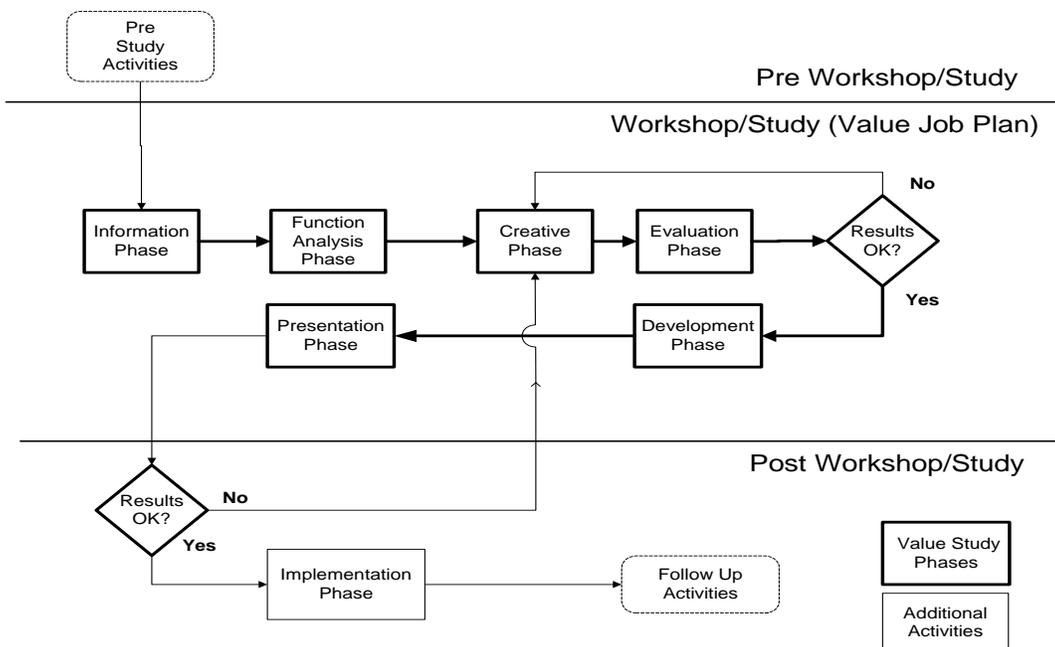


Figure 4-1 – Value Engineering Job Plan

4.3 VE WORKSHOP AGENDA

VALUE ENGINEERING STUDY AGENDA
SR 49 South of CS 629 to SR 7 from SR 49 to South of CS 740
Peach County
February 14-17, 2011

Pre-Workshop Activities VE team leader organizes study, coordinates with the Owner and Designer to attain 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 needs
 Current Construction Completion Schedule
 Project Cost Estimate if available and Budget Constraints
 Owner Presentation – special requirements, definition of life-cycle period and interest rate for life-cycle costs
 Discussion, questions and answers
 Overview of the VE process and agenda – Workshop goals and project goals
- 10:30-12:00** VE Team reviews project (Information Phase)
 Review design team’s presentation
 Review agenda and goals of the study
 VE Team visits project site
- 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
 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 and 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

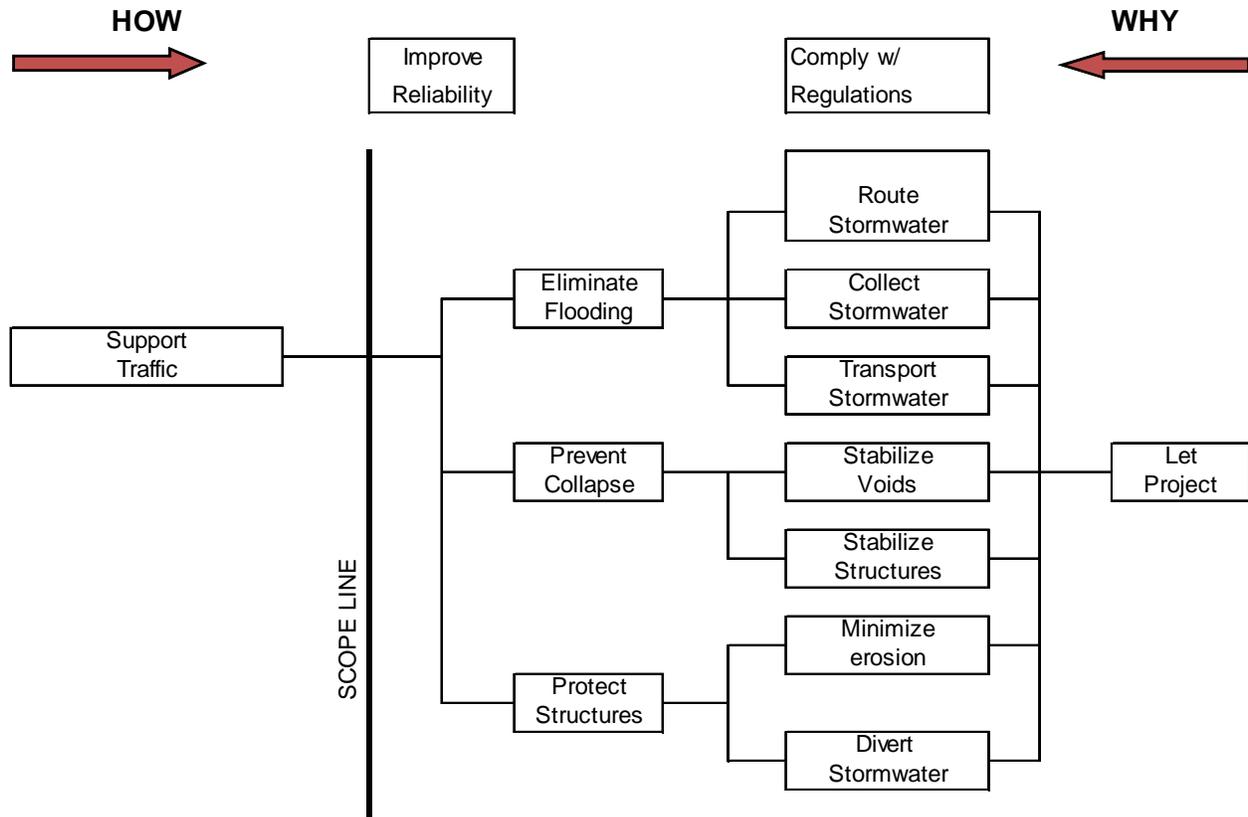
8:00-9:00 Prepare presentation
9:00-10:00 VE team presentation

4.4 CONSTRUCTION CAPITAL COST ESTIMATE

The VE Team was provided with a construction cost estimate . An estimate of the right of way acquisition cost was also given to the team . The team used this information to concentrate its efforts towards the area of the project having the least Value.

4.5 FUNCTIONAL ANALYSIS SYSTEM TECHNIQUE (FAST) DIAGRAM

**FUNCTIONAL ANALYSIS SYSTEMS TECHNIQUE (FAST)
 SR49 South of CS 629 to SR7 from SR 49 to South of CS 740
 PESTP-0003-00(623) – PI No: 0003623
 Georgia Department of Transportation
 Peach County**

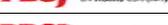


4.6 ATTENDANCE SHEET FOR DESIGNERS AND VE TEAM PRESENTATIONS

DESIGNER PRESENTATION



MEETING PARTICIPANTS

Geogia Department of Transportation		February 14, 2011		
PESTP-0003-00(623) - p.i. No. 0003623				
SR 49 from South of CS 629 to SR 7 & SR 7 from SR 49 to South of CS 740				
Peach 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
Ron Wishon		GDOT-Engineering Services	rwishon@dot.ga.gov	404-631-1753
Ken Werho		GDOT-Traffic Operations	kwerho@dot.ga.gov	404-635-8144
James K. Magnus		GDOT-Construction	jmagnus@dot.ga.gov	404-631-1971
Les Thomas		PBS&J	lmthomas@pbsj.com	678-677-6420
Kevin Martin		PBS&J	klmartin@pbsj.com	205-969-3776
Luke Clarke		PBS&J	lwclarke@pbsj.com	205-969-3776
Randy Thomas		PBS&J	rsthomas@pbsj.com	770-883-1545
Jeff Strickland		PBS&J	jpstrickland@pbsj.com	205-969-3776
Jason Mobley		GDOT-District 3	jmobley@dot.ga.gov	706-646-6990
Tom Barwick		Heath & Lineback Engineers	tbarwick@heath-lineback.com	770-424-1668
Allen Krivsky		Heath & Lineback Engineers	akrivsky@heath-lineback.com	770-424-1668
Bill Rountree		GDOT-District 3 -Preconstruction Engineer	brountree@dot.ga.gov	706-646-6987
Debra Pruitt		GDOT-District 3 - Environmental	dpruittdot.ga.gov	706-646-6984
Kerry Gore		GDOT-District 3- Utility Engineer	kgore@dot.ga.gov	706-646-6692
Mike England		GDOT-District 3 -Traffic Operations	mengland@dot.ga.gov	706-646-6678
Ken Robinson		GDOT-District 3 - Maintenance & Construction	krobinson@dot.ga.gov	706-646-6929
David Millen		GDOT-District 3 -Engineer	dmillen@dot.ga.gov	706-646-6900



VE TEAM PRESENTATION



MEETING PARTICIPANTS

Georgia Department of Transportation				February 17, 2011
PESTP-0003-00(623) - PI No. 0003623				
SR 49 from South of CS 629 to SR 7 & SR 7 from SR 49 to South of CS 740				
Peach County				
Lisa Myers		GDOT - Engineering Services	lm Myers@dot.ga.gov	404-631-1770
Matt Sanders		GDOT-Engineering Services	msanders@dot.ga.gov	404-631-1752
Ron Wishon		GDOT-Traffic Operations	kwerho@dot.ga.gov	404-635-8144
Les Thomas		PBS&J	lmthomas@pbsj.com	678-677-6420
Kevin Martin		PBS&J	rsthomas@pbsj.com	770-883-1545
Luke Clarke		PBS&J	lwclarke@pbsj.com	205-969-3776
Jeff Strickland		PBS&J	jpstrickland@pbsj.com	205-969-3776
Jason Mobley		GDOT	jbusby@dot.ga.gov	404-631-1154
Tom Barwick		Heath & Lineback Engineers	tbarwick@heath-lineback.com	770-424-1668
Allen Krivsky		Heath & Lineback Engineers	akrivsky@heath-lineback.com	770-424-1668
Tyler Peek		GDOT-District 3	tpeek@dot.ga.gov	706-646-6665